CONTRACT RESULTING FROM REQUEST FOR PROPOSAL NUMBER (RFP) No. 10089601-20-K, Wellness Program for San Diego Fire-Rescue and Police Departments

This Contract (Contract) is entered into by and between the City of San Diego, a municipal corporation (City), and the successful proposer to Request for Proposal (RFP) # (RFP) No. 10089601-20-K, Wellness Program for San Diego Fire-Rescue and Police Departments (Contractor).

RECITALS

On or about 12/16/2019, City issued an RFP to prospective proposers on services to be provided to the City. The RFP and any addenda and exhibits thereto are collectively referred to as the "RFP." The RFP is attached hereto as Exhibit A.

City has determined that Contractor has the expertise, experience, and personnel necessary to provide the wellness program.

City wishes to retain Contractor to provide the wellness program as further described in the Scope of Work, attached hereto as Exhibit B. (Services).

For good and valuable consideration, the sufficiency of which is acknowledged, City and Contractor agree as follows:

ARTICLE I
CONTRACTOR SERVICES

1.1 Scope of Work. Contractor shall provide the Services to City as described in Exhibit B which is incorporated herein by reference. Contractor will submit all required forms and information described in Exhibit A to the Purchasing Agent before providing Services.

1.2 General Contract Terms and Provisions. This Contract incorporates by reference the General Contract Terms and Provisions, attached hereto as Exhibit C.

ARTICLE II
DURATION OF CONTRACT

2.1 Term. This Contract shall be for a period of three (3) years beginning on the Effective Date. City may, in its sole discretion, extend this Contract for two (2) additional one year period(s). The term of this Contract shall not exceed five years unless approved by the City Council by ordinance.

2.2 Effective Date. This Contract shall be effective on the date it is executed by the last Party to sign the Contract, and approved by the City Attorney in accordance with San Diego Charter Section 40.

ARTICLE III
COMPENSATION

3.1 Amount of Compensation. City shall pay Contractor for performance of all Services

rendered in accordance with Exhibit D (Price Schedule) with this Contract in an amount not to exceed the amount authorized in the Resolution approved by City Council.

3.2 Minimum Number of Exams. The parties agree that the minimum number of exams that will be performed per fiscal is 80% of those listed within the Scope of Work (Section A) for the San Diego Fire-Rescue Department (SDFD), subject to the following exceptions:

3.2.1 SDFD is not required to meet the 80% minimum number of exams in the event of any natural or manmade disasters or emergencies (i.e. wild-fires, pandemic etc.) during which SDFD employees are unable to attend regularly scheduled exams.

3.2.2 SDFD is not require to meet the 80% minimum number of exams if, through the City's budget approval process, SDFD is not allocated sufficient funds to meet the 80% minimum number of exams in a fiscal year.

ARTICLE IV
WAGE REQUIREMENTS

4.1 Reserved.

ARTICLE V
CONTRACT DOCUMENTS

5.1 Contract Documents. The following documents comprise the Contract between the City and Contractor: this Contract and all exhibits thereto, the RFP; the Notice to Proceed; and the City's written acceptance of exceptions or clarifications to the RFP, if any.

5.2 Contract Interpretation. The Contract Documents completely describe the Services to be provided. Contractor will provide any Services that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for or identified in the Contract Documents. Words or phrases which have a well-known technical or construction industry or trade meaning and are used to describe Services will be interpreted in accordance with that meaning unless a definition has been provided in the Contract Documents.

5.3 Precedence. In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the Parties will use the order of precedence as set forth below. The 1st document has the highest priority. Inconsistent provisions in the Contract Documents that address the same subject, are consistent, and have different degrees of specificity, are not in conflict and the more specific language will control. The order of precedence from highest to lowest is as follows:

1st Any properly executed written amendment to the Contract

2nd The Contract

3rd The RFP and the City's written acceptance of any exceptions or clarifications to the RFP, if any

4th Contractor's Pricing

5.4 Counterparts. This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 Public Agencies. Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

ARTICLE VI
MISCELLANEOUS PROVISIONS

6.1 Mutual Indemnity. Each party hereto shall indemnify, defend, save and hold harmless the other parties, and each of them and their respective agents, servants and employees, of and from any and all liabilities, claims, demands, debts, suits, actions and causes of action arising out of, or in any manner connected with, any act or omission of such indemnifying party hereunder or its agents, servants, or employees, done or performed pursuant to the terms and condition hereof.

6.2 Termination for Convenience. This Agreement may be terminated at the convenience of either Party upon thirty (30) days written notice; the thirtieth (30th) day after such written notice is provided to the other party shall be known as the "Early Termination Date." In the event of a termination pursuant to the terms of this paragraph, SDSM must continue to provide the services described in this Agreement through the Early Termination Date, and the City's financial contribution pursuant to the terms of this Agreement shall continue through the Early Termination Date.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

SAN DIEGO SPORTS MEDICINE
AND FAMILY HEALTH CENTER

SAN DIEGO SPORTS MEDICINE AND FAMILY HEALTH CENTER
Proposer

6699 ALVARADO RD #2100
Street Address

SAN DIEGO, CA 92120
City

(619) 229-3909
Telephone No.

DOCTORS@SDSM.COM
E-Mail

BY:
Signature of
Proposer's Authorized
Representative

Richard A. Parker, DO.
Print Name

President
Title

5.18.2020
Date

CITY OF SAN DIEGO
A Municipal Corporation

BY:

Print Name:
Rolando Charvel

Chief Financial Officer

6/17/2020
Date Signed

Approved as to form this 7th day of
July, 2020.
MARA W. ELLIOTT, City Attorney

BY:
Deputy City Attorney

RR-313072

The City of SAN DIEGO

Request for Proposal (RFP) for
Wellness Program for San Diego Fire-Rescue and Police Departments

Solicitation Number:	10089601-20-K
Solicitation Issue Date:	December 16, 2019
Recommended Pre-proposal Conference:	9:00 a.m., January 3, 2020 at the following location: San Diego Police Plaza 4020 Murphy Canyon Rd San Diego, CA 92123
Questions and Comments Due:	12:00 p.m., January 9, 2020
Proposal Due Date and Time (Closing Date):	2:00 p.m., January 27, 2020
Contract Terms:	For a period of three (3) years beginning on the Effective Date with two (2) additional one (1) year options to renew, as defined in Article I, Section 1.2 of the City's General Contract Terms and Conditions.
City Contact:	Brent Krohn, Program Coordinator, 1200 Third Avenue, Suite 200, San Diego, CA 92101 BKrohn@sandiego.gov, (619) 236-6044
Submissions:	Respondent is required to provide four (4) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein. Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued. **Note: Emailed submissions will not be accepted.**

CONTRACT RESULTING FROM REQUEST FOR PROPOSAL (RFP) No. 10089601-20-K, Wellness Program for San Diego Fire-Rescue and Police Departments

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RECITALS

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City has determined that Contractor has the expertise, experience, and personnel necessary to provide the wellness program.

City wishes to retain Contractor to provide the wellness program as further described in the Scope of Work, attached hereto as Exhibit B. (Services).

For good and valuable consideration, the sufficiency of which is acknowledged, City and Contractor agree as follows:

ARTICLE I
CONTRACTOR SERVICES

1.1 Scope of Work. Contractor shall provide the Services to City as described in Exhibit B which is incorporated herein by reference. Contractor will submit all required forms and information described in Exhibit A to the Purchasing Agent before providing Services.

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2.1 Term. This Contract shall be for a period of three (3) years beginning on the Effective Date. City may, in its sole discretion, extend this Contract for two (2) additional one year period(s). The term of this Contract shall not exceed five years unless approved by the City Council by ordinance.

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ARTICLE III
COMPENSATION

3.1 Amount of Compensation. City shall pay Contractor for performance of all Services rendered in accordance with this Contract in an amount not to exceed the amount authorized in the Resolution approved by City Council.

ARTICLE IV
WAGE REQUIREMENTS

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ARTICLE V
CONTRACT DOCUMENTS

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IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

SAN DIEGO SPORTS MEDICINE
AND FAMILY HEALTH CENTER

SAN DIEGO SPORTS MEDICINE AND FAMILY HEALTH CENTER
Proposer

6699 ALVARADO RD #2100
Street Address

SAN DIEGO, CA 92120
City

(619) 229-3909
Telephone No.

DOCTORS@SDSM.COM
E-Mail

BY:
Signature of
Proposer's Authorized
Representative

Richard A. Parker, DO.
Print Name

President
Title

5.18.2020
Date

CITY OF SAN DIEGO
A Municipal Corporation

BY:

Print Name:
Rolando Charvel

Chief Financial Officer

6/17/2020
Date Signed

Approved as to form this 7th day of
July, 2020.
MARA W. ELLIOTT, City Attorney

BY:
Deputy City Attorney

RR-313072

EXHIBIT A
PROPOSAL SUBMISSION AND REQUIREMENTS

A. PROPOSAL SUBMISSION

1. Timely Proposal Submittal. Proposals must be submitted as described herein to the Purchasing & Contracting Department (P&C).

1.1 Reserved.

1.2 Paper Proposals. The City will accept paper proposals in lieu of eProposals. Paper proposals must be submitted in a sealed envelope to the Purchasing & Contracting Department (P&C) located at 1200 Third Avenue, Suite 200, San Diego, CA 92101. The Solicitation Number and Closing Date must be referenced in the lower left-hand corner of the outside of the envelope. Faxed proposals will not be accepted.

1.3 Proposal Due Date. Proposals must be submitted prior to the Closing Date indicated on the eBidding System. E-mailed and/or faxed proposals will not be accepted.

1.4 Pre-Proposal Conference. Pre-proposal conference information is noted on the eBidding System.

1.4.1 Proposers are encouraged to attend the pre-proposal conference. Failure to attend does not relieve proposer of the responsibility to fulfill RFP and addenda requirements, and does not relieve Contractors from performing.

1.5 Questions and Comments. Written questions and comments must be submitted electronically via the eBidding System no later than the date specified on the eBidding System. Only written communications relative to the procurement shall be considered. The City's eBidding System is the only acceptable method for submission of questions. All questions will be answered in writing. The City will distribute questions and answers without identification of the inquirer(s) to all proposers who are on record as having received this RFP, via its eBidding System. No oral communications can be relied upon for this RFP. Addenda will be issued addressing questions or comments that are determined by the City to cause a change to any part of this RFP.

1.6 Contact with City Staff. Unless otherwise authorized herein, proposers who are considering submitting a proposal in response to this RFP, or who submit a proposal in response to this RFP, are prohibited from communicating with City staff about this RFP from the date this RFP is issued until a contract is awarded.

2. Proposal Format and Organization. Unless electronically submitted, all proposals should be securely bound and must include the following completed and executed forms and information presented in the manner indicated below:

Tab A - Submission of Information and Forms.

2.1 Completed and signed Contract Signature Page. If any addenda are issued, the latest Addendum Contract Signature Page is required.

2.2 Exceptions requested by proposer, if any. The proposer must present written factual or legal justification for any exception requested to the Scope of Work, the Contract, or the Exhibits thereto. Any exceptions to the Contract that have not been accepted by the City in writing are deemed rejected. The City, in its sole discretion, may accept some or all of proposer's exceptions, reject proposer's exceptions, and deem the proposal non-responsive, or award the Contract without proposer's proposed exceptions. The City will not consider exceptions addressed elsewhere in the proposal.

2.3 The Contractor Standards Pledge of Compliance Form.

2.4 Equal Opportunity Contracting forms including the Work Force Report and Contractors Certification of Pending Actions.

2.5 Reserved.

2.6 Licenses as required in Exhibit B.

2.7 Reserved.

2.8 Additional Information as required in Exhibit B.

2.9 Reserved.

2.8 Reserved.

2.10 Reserved.

Tab B - Executive Summary and Responses to Specifications.

2.11 A title page.

2.12 A table of contents.

2.13 An executive summary, limited to one typewritten page, that provides a high-level description of the proposer's ability to meet the requirements of the RFP and the reasons the proposer believes itself to be best qualified to provide the identified services.

2.14 Proposer's response to the RFP.

Tab C - Cost/Price Proposal (if applicable). Proposers shall submit a cost proposal in the form and format described herein. Failure to provide cost(s) in the form and format requested may result in proposal being declared non-responsive and rejected.

3. Proposal Review. Proposers are responsible for carefully examining the RFP, the Specifications, this Contract, and all documents incorporated into the Contract by reference before submitting a proposal. If selected for award of contract, proposer shall be bound by same unless the City has accepted proposer's exceptions, if any, in writing.

4. Addenda. The City may issue addenda to this RFP as necessary. All addenda are incorporated into the Contract. The proposer is responsible for determining whether addenda

were issued prior to a proposal submission. Failure to respond to or properly address addenda may result in rejection of a proposal.

5. Quantities. The estimated quantities provided by the City are not guaranteed. These quantities are listed for informational purposes only. Quantities vary depending on the demands of the City. Any variations from the estimated quantities shall not entitle the proposer to an adjustment in the unit price or any additional compensation.

6. Quality. Unless otherwise required, all goods furnished shall be new and the best of their kind.

6.1 Items Offered. Proposer shall state the applicable trade name, brand, catalog, manufacturer, and/or product number of the required good, if any, in the proposal.

6.2 Brand Names. Any reference to a specific brand name in a solicitation is illustrative only and describes a component best meeting the specific operational, design, performance, maintenance, quality, or reliability standards and requirements of the City. Proposer may offer an equivalent or equal in response to a brand name referenced (Proposed Equivalent). The City may consider the Proposed Equivalent after it is subjected to testing and evaluation which must be completed prior to the award of contract. If the proposer offers an item of a manufacturer or vendor other than that specified, the proposer must identify the maker, brand, quality, manufacturer number, product number, catalog number, or other trade designation. The City has complete discretion in determining if a Proposed Equivalent will satisfy its requirements. It is the proposer's responsibility to provide, at their expense, any product information, test data, or other information or documents the City requests to properly evaluate or demonstrate the acceptability of the Proposed Equivalent, including independent testing, evaluation at qualified test facilities, or destructive testing.

7. Modifications, Withdrawals, or Mistakes. Proposer is responsible for verifying all prices and extensions before submitting a proposal.

7.1 Modification or Withdrawal of Proposal Before Proposal Opening. Prior to the Closing Date, the proposer or proposer's authorized representative may modify or withdraw the proposal by providing written notice of the proposal modification or withdrawal to the City Contact via the eBidding System. E-mail or telephonic withdrawals or modifications are not permissible.

7.2 Proposal Modification or Withdrawal of Proposal After Proposal Opening. Any proposer who seeks to modify or withdraw a proposal because of the proposer's inadvertent computational error affecting the proposal price shall notify the City Contact identified on the eBidding System no later than three working days following the Closing Date. The proposer shall provide worksheets and such other information as may be required by the City to substantiate the claim of inadvertent error. Failure to do so may bar relief and allow the City recourse from the bid surety. The burden is upon the proposer to prove the inadvertent error. If, as a result of a proposal modification, the proposer is no longer the apparent successful proposer, the City will award to the newly established apparent successful proposer. The City's decision is final.

8. Incurred Expenses. The City is not responsible for any expenses incurred by proposers in participating in this solicitation process.

9. Public Records. By submitting a proposal, the proposer acknowledges that any information submitted in response to this RFP is a public record subject to disclosure unless the City determines that a specific exemption in the California Public Records Act (CPRA) applies. If the proposer submits information clearly marked confidential or proprietary, the City may protect such information and treat it with confidentiality to the extent permitted by law. However, it will be the responsibility of the proposer to provide to the City the specific legal grounds on which the City can rely in withholding information requested under the CPRA should the City choose to withhold such information. General references to sections of the CPRA will not suffice. Rather, the proposer must provide a specific and detailed legal basis, including applicable case law, that clearly establishes the requested information is exempt from the disclosure under the CPRA. If the proposer does not provide a specific and detailed legal basis for requesting the City to withhold proposer's confidential or proprietary information at the time of proposal submittal, City will release the information as required by the CPRA and proposer will hold the City, its elected officials, officers, and employees harmless for release of this information. It will be the proposer's obligation to defend, at proposer's expense, any legal actions or challenges seeking to obtain from the City any information requested under the CPRA withheld by the City at the proposer's request. Furthermore, the proposer shall indemnify and hold harmless the City, its elected officials, officers, and employees from and against any claim or liability, and defend any action brought against the City, resulting from the City's refusal to release information requested under the CPRA which was withheld at proposer's request. Nothing in the Contract resulting from this proposal creates any obligation on the part of the City to notify the proposer or obtain the proposer's approval or consent before releasing information subject to disclosure under the CPRA.

10. Right to Audit. The City Auditor may access proposer's records as described in San Diego Charter section 39.2 to confirm contract compliance.

B. PRICING

1. Fixed Price. All prices shall be firm, fixed, fully burdened, FOB destination, and include any applicable delivery or freight charges, and any other costs required to provide the requirements as specified in this RFP. The lowest total estimated contract price of all the proposals that meet the requirements of this RFP will receive the maximum assigned points to this category as set forth in this RFP. The other price schedules will be scored based on how much higher their total estimated contract prices compare with the lowest:

$$\left(1 - \frac{\text{(contract price} - \text{lowest price)}}{\text{lowest price}}\right) \times \text{maximum points} = \text{points received}$$

For example, if the lowest total estimated contract price of all proposals is $100, that proposal would receive the maximum allowable points for the price category. If the total estimated contract price of another proposal is $105 and the maximum allowable points is 60 points, then that proposal would receive (1 – ((105 – 100) / 100) x 60 = 57 points, or 95% of the maximum points. The lowest score a proposal can receive for this category is zero points (the score cannot be a negative number). The City will perform this calculation for each Proposal.

2. Taxes and Fees. Taxes and applicable local, state, and federal regulatory fees should not be included in the price proposal. Applicable taxes and regulatory fees will be

added to the net amount invoiced. The City is liable for state, city, and county sales taxes but is exempt from Federal Excise Tax and will furnish exemption certificates upon request. All or any portion of the City sales tax returned to the City will be considered in the evaluation of proposals.

3. Escalation. An escalation factor is not allowed unless called for in this RFP. If escalation is allowed, proposer must notify the City in writing in the event of a decline in market price(s) below the proposal price. At that time, the City will make an adjustment in the Contract or may elect to re-solicit.

4. Unit Price. Unless the proposer clearly indicates that the price is based on consideration of being awarded the entire lot and that an adjustment to the price was made based on receiving the entire proposal, any difference between the unit price correctly extended and the total price shown for all items shall be offered shall be resolved in favor of the unit price.

C. EVALUATION OF PROPOSALS

1. Award. The City shall evaluate each responsive proposal to determine which proposal offers the City the best value consistent with the evaluation criteria set forth herein. The proposer offering the lowest overall price will not necessarily be awarded a contract.

2. Sustainable Materials. Consistent with Council Policy 100-14, the City encourages use of readily recyclable submittal materials that contain post-consumer recycled content.

3. Evaluation Process.

3.1 Process for Award. A City-designated evaluation committee (Evaluation Committee) will evaluate and score all responsive proposals. The Evaluation Committee may require proposer to provide additional written or oral information to clarify responses. Upon completion of the evaluation process, the Evaluation Committee will recommend to the Purchasing Agent that award be made to the proposer with the highest scoring proposal.

3.2 Reserved.

3.3 Site Inspection and Interview of Key Personnel. The City will conduct site inspection(s) of any facility(ies) if one or more proposals score within five (5) points or less of the proposal with the highest score based on initial scoring of Evaluation Criteria A-D. Site inspection(s) and interview of key personnel will only be conducted for the proposer with the highest scoring proposal and those proposers scoring within five (5) points or less of the highest scoring proposal. Site inspection(s) and interview of key personnel will be made by the Evaluation Committee in order to clarify the proposals and to answer any questions needed to complete the evaluation of the proposal submitted. Site inspection(s) and interview of key personnel will be scored as part of the selection process. The City will complete all reference checks prior to any oral interview. Proposers are required to complete their site inspection(s) and interview of key personnel within seven (7) workdays after the City's request. Proposers should be prepared to discuss and substantiate any of the areas of the proposal submitted, as well as proposer's qualifications to furnish the subject goods and services. Proposer is responsible for any costs incurred for the oral presentation and interview of the key personnel.

3.4 Discussions/Negotiations. The City has the right to accept the proposal that serves the best interest of the City, as submitted, without discussion or negotiation. Contractors should, therefore, not rely on having a chance to discuss, negotiate, and adjust their proposals. The City may negotiate the terms of a contract with the winning proposer based on the RFP and the proposer's proposal, or award the contract without further negotiation.

3.5 Reserved.

3.6 Evaluation Criteria. The following elements represent the evaluation criteria that will be considered during the evaluation process:

	MAXIMUM EVALUATION POINTS
A. Responsiveness to the RFP. 1. Requested information included and thoroughness of response 2. Understanding of the project and ability to deliver as exhibited in the Executive Summary. 3. Technical Aspects	**20**
B. Staffing Plan. 1. Qualifications of personnel adequate for requirement 2. Availability/Geographical location of personnel for required tasks 3. Clearly defined Roles/Responsibilities of personnel 4. Documentation proof for Staff who have passed/cleared any security background checks	**20**
C. Firm's Capability to provide the services and expertise and Past Performance. 1. Relevant experience of the Firm and subcontractors 2. Previous relationship of firm and subcontractors on similar projects 3. Other pertinent experience 4. Location in the general geographical area of the project and knowledge of the locality of the Project 5. Past/Prior Performance 6. Capacity/Capability to meet The City of San Diego needs in a timely manner 7. Reference checks	**35**
D. Price.	**10**
E. Site Inspection and Interview of Key Personnel 1. Cleanliness 2. Professionalism; presentation of "Self" and "Team"; Clarity, brevity and completeness of responses to questions 3. Security and confidentiality of records and patient information 4. Equipment and Facilities	**15**
SUB TOTAL MAXIMUM EVALUATION POINTS:	**100**
F. Participation by Small Local Business Enterprise (SLBE) or Emerging Local Business Enterprise (ELBE) Firms*	**12**

	MAXIMUM EVALUATION POINTS
FINAL MAXIMUM EVALUATION POINTS INCLUDING SLBE/ELBE:	**112**

*The City shall apply a maximum of an additional 12 percentage points to the proposer's final score for SLBE OR ELBE participation. Refer to Equal Opportunity Contracting Form, Section V.

D. ANNOUNCEMENT OF AWARD

1. Award of Contract. The City will inform all proposers of its intent to award a Contract in writing.

2. Obtaining Proposal Results. No solicitation results can be obtained until the City announces the proposal or proposals best meeting the City's requirements. Proposal results may be obtained by: (1) e-mailing a request to the City Contact identified on the eBidding System or (2) visiting the P&C eBidding System to review the proposal results. To ensure an accurate response, requests should reference the Solicitation Number. Proposal results will not be released over the phone.

3. Multiple Awards. City may award more than one contract by awarding separate items or groups of items to various proposers. Awards will be made for items, or combinations of items, which result in the lowest aggregate price and/or best meet the City's requirements. The additional administrative costs associated with awarding more than one Contract will be considered in the determination.

E. PROTESTS. The City's protest procedures are codified in Chapter 2, Article 2, Division 30 of the San Diego Municipal Code (SDMC). These procedures provide unsuccessful proposers with the opportunity to challenge the City's determination on legal and factual grounds. The City will not consider or otherwise act upon an untimely protest.

F. SUBMITTALS REQUIRED UPON NOTICE TO PROCEED. The successful proposer is required to submit the following documents to P&C **within ten (10) business days** from the date on the Notice to Proceed letter:

1. Insurance Documents. Evidence of all required insurance, including all required endorsements, as specified in Article VII of the General Contract Terms and Provisions.

2. Taxpayer Identification Number. Internal Revenue Service (IRS) regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide goods or services to the City. This information is necessary to complete Form 1099 at the end of each tax year. To comply with IRS regulations, the City requires each Contractor to provide a Form W-9 prior to the award of a Contract.

3. Business Tax Certificate. Unless the City Treasurer determines a business is exempt, all businesses that contract with the City must have a current business tax certificate.

4. **Reserved.**

5. **Reserved.**

The City may find the proposer to be non-responsive and award the Contract to the next highest scoring responsible and responsive proposer if the apparent successful proposer fails to timely provide the required information or documents.

EXHIBIT B
SCOPE OF WORK

A. <u>OVERVIEW</u>

This Scope of Work shall consist of medical, physical wellness and rehabilitation services as specified in this RFP.

The City has the right to inspect all proposer's facilities prior to the final contract award.

The City of San Diego's Fire-Rescue and Police Departments seek to jointly obtain the services of a California Medical Corporation (defined as a firm that can employ physicians without violation of the "Corporate Practice of Medicine" Laws in the State of California; refer to Ca.gov website) to provide medical, wellness and rehabilitation services ("Services") to all classifications of San Diego Firefighters, Lifeguards and Police Officers. The Services sought shall be provided in accordance with the Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI) (4th edition, 2018 and is provided as Attachment A) as the minimum standard, with the NFPA 1500 chapters 11 and 12 and NFPA 1583 standard as highly desired.

The initial Fire-Rescue Physical Wellness Program (2005) was initiated through a combination of Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) grant and City matching funds. Firefighter and lifeguard wellness and medical fitness exams have proven to be a benefit to the citizens the firefighters serve. The Wellness Program has met the International Association of Fire Chiefs (IAFC) and International Association of Firefighters (IAFF) criteria for this type of program. The program has been a benefit to the City by way of early identification and mitigation of risk factors that have potential for causing injuries and illnesses in a hazardous and demanding work environment. For these reasons and to avoid duplication of resources, strengthen the workforce, reduce injuries and to speed recovery (post-injury) the San Diego Police Department will participate in this joint RFP.

Overview of San Diego Fire-Rescue Department Participation:

- Participation in the Physical Wellness Program is purely voluntary for those Firefighters hired prior to 2005:
    - Currently approximately 400
    - Currently the approximate number of personal that do not participate – 30

- Firefighters hired after 2005 are required to participate in the program:
    - Currently approximately 530

- Firefighters who are involved in the following specialties require additional screenings:
    - Hazmat/CEDMAT Team – 116
    - US&R Team – 150
    - Bomb Squad Team – 13

- Participation in the Wellness Program is purely voluntary by Lifeguards:
    - Currently approximately 80

- Currently, the San Diego Firefighter's Regional Wellness Program conducts approximately 850 exams per year. Eight hundred and ten (810) of these exams are

male and forty (40) are female. The average age of the Wellness Participant is 41 years and ranges from 21 to 62 years. The number of Participants over age 40 is approximately 435.

Overview of San Diego Police Department Participation:

- Participation in the Physical Wellness Program is purely voluntary for sworn San Diego Police Department employees
    - Current total workforce approximately 1700
    - Initial number estimated to participate 150 per year with the potential increase of 150 participants per year up to a maximum of 750 at the end of the five-year period

Consequently, there will be those who have voluntarily enrolled and required to participate in the Physical Wellness Program (Program Participants) and those who may receive services under contract that are non-participants of the Physical Wellness Program (Program Non-Participants)

B. <u>REQUIREMENTS AND TASKS</u>

All services provided by Proposer shall be in accordance with the most current, established industry standards, which are anticipated to evolve throughout the duration of this Agreement. In order to provide the City with the most innovative services and best care possible, nothing herein shall prohibit Proposer from suggesting alterations or additions to the services provided during the term of this Agreement.

Proposer shall provide the following on an annual basis:

1. COMPLETE PHYSICAL WELLNESS MEDICAL EVALUATION

    a. Provision of Required Paperwork and Services Prior to Physical Wellness Medical Evaluation.

        i. Proposer shall provide the following necessary forms, reports, and documentation as listed below:

            1. Introductory letter describing the Wellness Initiative to new participants
            2. Health history/lifestyle questionnaire
            3. Exercise risk assessment
            4. Participant information
            5. HIPAA information and acknowledgment
            6. Nutrition risk assessment
            7. Arbitration agreement
            8. Explanation of testing procedures
            9. Instructions for participation

10. Respiratory fit clearance form

11. Request for immunization records

12. Directions to facilities

13. Electronic participation survey

ii. Laboratory Analyses (participant will have labs drawn at least one (1) week prior to the evaluation but no more than 120 days)

1. Proposer shall coordinate with each department's respective wellness officer(s), or designee (Fire-Rescue & Police Department employee provided as oversight and coordination of the contract)

2. Proposer shall provide laboratory facilities spread throughout the city and within each fire battalion that can be utilized by our personnel on an individual basis while on duty

a. Proposer shall make contact with individuals that have not completed their blood draw at least two (2) weeks prior to the participant's Physical Wellness Medical Evaluation

3. Costs for this service shall be included as part of the Physical Wellness Medical Evaluations in the Price Schedule

4. Reference WFI (4TH edition) blood analysis section for required blood components and to include the following:

a. Chemistry Panel (SMAC 20)

b. Prostate Specific Antibody (PSA) for men over the age 40

c. CBC with differential

i. HbA1c performed for all Blood Glucose levels above 120 mg/dl.

d. Thyroid Stimulating Hormone test

e. Any future test that becomes part of either a WFI revision or for standard medical care

5. The laboratory must be certified to perform medical analysis of blood and related tests by the State of California

b. Physical Wellness Medical Evaluation

i. Vital Signs to include height, weight, blood pressure, pulse, temperature and respirations

ii. A complete hands-on physical examination by a Qualified Physician (MD or DO). A Qualified Physician (male and female) must be Board Certified in a Primary Care Specialty and preferably have a subspecialty certification in Sports Medicine and special knowledge in firefighter health and safety. This periodic exam is a physical to be conducted every 12 months. This exam is designed to gather valuable data on the status of uniformed personnel in this occupational group as they progress through their careers. The exam is to include a thorough evaluation of the following systems of the body in accordance with the WFI (4th Edition) guidelines:

1. Head, Eyes, Ears, Nose, Throat
2. Neck
    a. Endocrine (thyroid gland)
3. Cardiovascular
4. Pulmonary
5. Gastrointestinal
6. Genitourinary
7. Rectal
8. Lymph nodes
9. Neurological
10. Musculoskeletal
11. Skin
12. DMV exam, if applicable (Physicians must be certified by the National Registry of Certified Medical Examiners to provide DMV exams)
13. FBI, Scuba and/or USAR physical report (as needed)
14. Follow-up consultation with physician at time of initial appointment
    a. A follow-up on findings from any prior annual examinations shall be reviewed by the physician at the time of the evaluation
    b. Any abnormal findings on the annual physical shall be addressed directly with the participant with specific recommendations to control or remedy the abnormality, and with recommendations for follow-up or referral

c. Referrals shall be made as appropriate for non-service connected issues using the participant's primary care provider

iii. Rotating biennial tests to be performed during all participants physical wellness exam, which shall be provided on the site of the medical evaluation

1. Chest X-Ray

a. If a member has a past positive PPD test then this will become an annual test

2. Ultrasound

a. Carotid Artery

b. Abdominal Aorta

c. Thyroid

iv. Respiratory Fitness Exam

1. Pulmonary evaluation test to include the following:

a. Spirometry (PVC, FEVl, FEVl/FVC ratio, Peak Expiratory flow rate)

b. Reference WFI (4TH edition) pulmonary evaluation section for additional required components

c. Any future test that becomes part of either a WFI revision or for standard medical care

v. Urinalysis

1. Reference WFI (4TH edition) blood analysis section for required urinalysis components

2. Any future test that becomes part of either a WFI revision or for standard medical care

vi. Perform department SCBA, N100 and other face piece fit testing

vii. Vision and Audiometric Examinations

1. Proposer shall provide vision and audiometric examinations as referenced by guidelines published by the California Department of Motor Vehicles (DMV)

viii. Resting ECG and 12 lead ECG

ix. Sub-maximal exercise test monitored with a 12-lead electrocardiogram

1. A primary and an alternative exercise method to meet sub-maximal testing shall be offered (e.g. treadmill or step mill) as specified in WFI 4th Edition

x. Department of Transportation (DOT)/Department of Motor Vehicles (DMV) physical form (required every two (2) years) which includes any necessary documentation/forms to complete a Medical Examiner's Card shall be performed annually for all participants as needed

1. Proposer shall provide DMV physicals for Wellness Program Participants. Physicians must be certified by the National Registry of Certified Medical Examiners to provide DMV exams

2. Proposer shall follow all current DMV guidelines

3. Proposer shall follow HIPAA privacy regulations

4. Department of Transportation (DOT)/Department of Motor Vehicles (DMV physical form (required every two (2) years) which includes any necessary documentation/forms to complete a Medical Examiner's Card

5. Proposer shall coordinate efforts as necessary with the staff of the City of San Diego

6. Complete Fire-Rescue DMV Form (Attachment B)

xi. Behavioral Wellness Evaluation

1. Clinical discussion and questionnaire

2. Referral to each department's specific resources as needed

xii. Cancer Detection

1. Proposer will present and deploy a comprehensive cancer detecting program designed to identify all occupational cancers. This shall be a combination of blood work, innovative ideas, and evaluations. As new technologies and/or medical discoveries become available they will be added to the standard blood panel and program. While the proposer shall not be limited by the list below, cancer detection must consist of the following:

a. Skin cancer screening performed annually with full body visual survey

b. Breast cancer screening for females age 40 or older utilizing digital mammography (or approved equivalent) and breast cancer risk assessment

c. Cervical cancer screening for females utilizing Pap smear

i. HPV testing as indicated

d. Lung cancer screening performed annually utilizing the following:

i. Chest x-ray biennial to coincide with the standard rotation

ii. Other diagnostic strategies biennial in the opposite years

e. Prostate cancer screening for men beginning at age 40 with digital rectal exam and PSA testing

f. Colon cancer screening beginning at age 45 with OC-Lite occult blood testing

g. Testicular cancer screening performed annually during physical exam

h. Bladder Cancer Screening

i. Oral Cancer Screening

xiii. Fitness Evaluation and Staff (Exercise Physiology, Strength, Conditioning and Certified Athletic Training)

1. Proposer shall employ fitness staff to conduct fitness evaluations and other activities relative to the Wellness Fitness Initiative, including fitness education. The fitness staff must be comprised of personnel with a master's degree or higher in the disciplines of Exercise Physiology and Nutrition. It is highly desirable that these individuals be certified in strength and conditioning through the American College of Sports Medicine (ACSM) or National Strength and Conditioning Association. Additionally, Fitness staff shall include the following personnel: Certified Physical and Athletic Trainer(s), Exercise Physiologist(s), and Registered Dietician(s)

2. The fitness staff shall be available to the participants in the program to directly perform fitness evaluations and the following services

a. Evaluate participant level of fitness

b. Evaluation level of improvement since past assessment(s), if assessed

c. Provide realistic job specific assessment tools for injury prevention jobs

d. Review current exercise program and make suggestions for modifications as appropriate

e. Comprehensive wellness/fitness program recommendations

f. Perform wellness age assessment

g. Orthopedic/musculoskeletal rehabilitation if prescribed by a physician

h. Fitness Evaluation

    i. Body composition

    ii. Abdominal endurance crunch test

    iii. Push-up evaluation of upper body strength and endurance

    iv. Functional Movement Screening Evaluation

    v. Strength testing, including vertical jump utilizing force platform (per WFI 4th edition)

    vi. Flexibility evaluation utilizing the Novel Acuflex I or equivalent trunk flexibility tester

    vii. Assessment of low back muscular endurance done each year

    viii. Alternative assessments of core strength and flexibility testing that meets or exceeds the WFI 4th Edition can be proposed and may be substituted with prior approval by the city

i. Provide individual recommendations for overall conditioning program

j. Fitness consultation

k. Development of personalized strength and flexibility programs

l. Nutrition Station

    i. Nutritional risk assessment and consultation

m. Preventative measures or techniques to mitigate developing injuries or rehabilitating past injuries not covered under worker's compensation

n. Develop and provide educational materials and instruction that addresses specific needs of the individual participant (i.e., core stabilization exercises, treatment and rehabilitation exercises for plantar fasciitis, rotator cuff injuries)

o. Entering data into a database for tracking of individual strength, flexibility and body composition measurements Provide educational workshops to be conducted during individual station visits and individual counseling to those participants at high risk as part of the ongoing educational program

xiv. Personalized Written and/or Electronic Health and Wellness Report

1. Each wellness participant shall receive at the immediate conclusion of their medical exam/fitness evaluation an electronic report utilizing a smartphone application similar to My Charts **HTTPS://APPS.APPLE.COM/US/APP/MYCHART/ID382952264** or equivalent. A written report will only be available by specific request of the participant.

    a. Electronic smart phone data should include, notifications, any information required prior to the visit, all past visit information and the current medical exam consisting of recent and all retrospective data from when participant began to attend wellness, to demonstrate individual medical and fitness trends for review with the physician. The proposer's physician shall review all parameters of the evaluation with the participant and provide a report detailing the findings of the Medical and Fitness Evaluation(s)

    b. Written report shall only include the medical exam consisting of recent and all retrospective data from when participant began to attend wellness, to demonstrate individual medical and fitness trends for review with the physician. The proposer's physician shall review all parameters of the evaluation with the participant and provide a report detailing the findings of the Medical and Fitness Evaluation(s)

2. The proposer shall within both digital and written formats include:

    a. The report shall outline recommendations for each individual participant to improve and maintain fitness as well as recommend treatment or follow-up for any medical conditions and include the following

i. Fitness profile with comparison information to other uniformed firefighters, lifeguards and police officers based on local and national data

ii. An evaluation of risk status (e.g. cardiovascular, cancer) and plans for modifying individual risk

iii. Individually tailored educational materials to help overall fitness and well being

b. The physician shall incorporate into the medical examination, any and all pertinent findings based upon the report and review with the participant strategies and education to improve overall health and fitness

xv. Follow-up

1. Proposer shall provide any and all pertinent data to participant in order to expedite any referral deemed prudent either within the workers' compensation system established by the city or through the participant's private health system

xvi. Hazardous Materials Technician/ CEDMAT Fire Inspectors Physical (Fire-Rescue Only)

1. Some wellness participants may be designated as Hazardous Materials Technician/ CEDMAT Fire Inspectors and their physical shall include additional specific requirements as follows:

a. Heavy metals (arsenic, mercury, and lead) testing and archiving of results upon acceptance and leaving the team

b. Cholinesterase annually

c. Any additional blood testing required for specific or known exposure

d. Hepatitis A series for new members

e. Fecal occult blood over age 45

f. Complete the HazMat report (Attachment C)

xvii. Bomb Squad Technician Physical (Fire-Rescue Only)

1. Some wellness participants may be designated as Bomb Squad Technicians and their physical shall include additional specific requirements as follows:

a. Heavy metals (arsenic, mercury, and lead) testing and archiving of results upon acceptance and leaving the team

b. Cholinesterase annually

c. Any additional blood testing required for specific or known exposure

d. Hepatitis A series for new members

e. Fecal occult blood over age 45

f. Complete the FBI physical report (Attachment D)

xviii. Urban Search and Rescue (US&R) Physical (Fire-Rescue Only)

1. US&R personnel managed by San Diego Fire-Rescue are employed by both the City of San Diego and outside (non-City) agencies/departments. All members are required to receive a comprehensive medical and fitness evaluation every year. Proposer shall include in their proposal the provision of this exam to all San Diego Fire-Rescue US&R personnel and approved civilian US&R personal as reflected in the Fee Schedule. The exam shall consist of additional specific requirements as follows:

    a. Heavy metal testing (arsenic, mercury and lead) and RBC cholinesterase performed at initial evaluation, when medically indicated and when leaving the program

    b. Any additional blood testing required for specific or known exposure

    c. Hepatitis A vaccination for all new San Diego Fire-Rescue US&R personnel

    d. Update vaccinations as needed

    e. Complete the USAR physical report (Attachment E)

xix. SCUBA Physical

1. Some Fire-Rescue and Police Department employees may perform underwater duties while utilizing a Self-Contained Underwater Breathing Apparatus (SCUBA). Proposer shall perform SCUBA physicals, as may be required, with the following additional requirements:

    a. Additional services as required

    b. Complete the SCUBA Physical Report (Attachment F)

c. Athletic Trainer

i. The Athletic Trainer will provide overall clinical support towards evaluating both participating Fire-Rescue and Police Department member's, developing individualized and group treatment and corrective exercise plans, restoring function and strength in firefighter, lifeguard and police related biomechanical movements and injuries

ii. Proposer shall provide the necessary number of staff to accommodate appointments

1. All athletic training sessions shall be conducted onsite at the facility identified by the City

2. When athletic training is requested, the initial appointment will be scheduled to take place within five (5) business days

3. With approval of the respective wellness officer(s), the athletic trainer can assist with academy recruit injury prevention

iii. The Athletic Trainer shall meet all following qualifications:

1. Education

a. Bachelor's Degree (Masters preferred) in Athletic Training

2. Licensure

a. National Athletic Trainer Association (NATA) Board of Certification credentials for Certified ATCs

b. National Strength and Conditioning Association Tactical Strength and Conditioning Facilitator (NSCA TSAC-F)

3. To be trained in Tactical Athletic Rehabilitation and Injury Prevention or to the highest standard of an Industrial Athlete

4. Minimum 5 years as a certified ATC (Certified Athletic Trainer)

5. Experience working with Tactical Athletes and/or in a First Responder Environment

a. Experience working with Division 1 college athletes or professional athletes is highly desired

6. Functional Movement Screen (FMS) Level 1 and 2 certifications or equivalent

7. Experience working with organizations similar in size and function to the Fire-Rescue and Police Departments with knowledge on how to organize and schedule for high usage rates

8. Knowledge and use of pre-OSHA recordable treatments such as: heat, ice, mechanical stimulation and reconditioning and functional exercises

9. Knowledge and experience in creating and managing individualized assessment and treatment programs

10. Basic understanding of injury prevention as it relates to the Workers Compensation nexus

d. Proposer shall provide a clerical staff member dedicated to working with the respective wellness officer(s), or designee on scheduling, coordination functions and other work identified

2. NON-PARTICIPANTS ARE REQUIRED TO RECEIVE MEDICAL EVALUATIONS SPECIFIC TO THEIR JOB DUTIES AND MAY INCLUDE:

a. Respiratory Fit Exam

i. Provide Respiratory Fit Examinations to Wellness Program Non-Participants as referenced by guidelines published by Cal-OSHA and WFI 4th Edition to include spirometry (FVC, FEVl, FEVl/FVC ratio, Peak Expiratory flow rate).

ii. Physical examination by the physician to include review of systems and hands-on physical examination of head, ears, eyes, nose, throat, heart and lungs. Past medical history and family history should be taken and reviewed by the physician

iii. Department SCBA and N100 facepiece fit test

b. DMV Physicals

i. Provide DMV physicals for Wellness Program Non-Participants, and be responsible for the following

1. Follow current DMV guidelines

2. Follow HIPAA privacy regulations

3. Department of Transportation (DOT)/Department of Motor Vehicles (DMV) physical form (required every two (2) years or sooner as regulated by the DMV) which includes any necessary documentation/forms to complete a Medical Examiner's Card for Class A, Class B and all firefighters

4. Coordinate all efforts as necessary with the staff of the City of San Diego

5. Physicians must be certified by the National Registry of Certified Medical Examiners to provide DMV exams

6. Complete Fire-Rescue DMV Form (Attachment B)

3. PROPOSERS SHALL PROVIDE THE BELOW ADDITIONAL SERVICES UNDER THIS CONTRACT THAT ARE NOT INCLUDED IN THE WELLNESS PARTICIPANT FEE

    a. Education Program

        i. Proposer shall propose an educational program, coordinated with and approved by the respective wellness officer(s), that may fluctuate but not to exceed 1040 hours annually or an estimated 20 hours per department per week. All education shall be coordinated through the respective department's respective wellness officer(s)

        ii. The Education Program proposed shall be multifaceted in its delivery and demonstrate an intent to address those areas of interest and concern for the health and fitness of the San Diego First Responders

        iii. Proposer shall include the following elements in the Education Program

            1. In station visits which will include, but not be limited to educational sessions on exercise, fitness, nutrition and health-related topics

            2. Individual counseling for high risk participants and those with specific nutrition and exercise needs

            3. Proposer will coordinate with the Cancer and Health Coordinator to aid in the prevention of occupational cancer

            4. Group education projects (challenges and competitions, development of resources or workout programs)

            5. Provide resources and consultation on health and fitness related issues identified in the medical exam not related to work-related injury or illness

            6. Provide a Registered Dietician to help those participants with high risk nutritional/health related problems

                a. The Registered Dietician position shall be at a minimum Bachelor's Degree qualified with a Master's Degree preferred

            7. Provide Certified Athletic Trainer or Registered Physical Therapist to help those with specific injury-related problems identified by a physician

            8. Provide resource material and manage content placed in a city-maintained webpage or app

a. Ability to access electronic copies of a physical wellness center newsletter

b. Communications on upcoming challenges and results of past efforts

c. Access to health and fitness materials in electronic format

d. Provide online tutorials and programs for stretching, yoga and injury prevention

e. Other content identified by the respective wellness officer(s)

b. Job-Wide Tuberculosis/PPD

i. Proposer shall provide infectious disease screening on a mobile basis for Tuberculosis

ii. Provide participants on-duty PPD/TB testing at strategic locations throughout the City, mutually agreed upon with the respective wellness officer(s) or designee and charged according to the pricing indicated on the Pricing Schedule.

iii. All forms for consent and education and any required reporting that will be provided by proposer

iv. The immunization service shall be provided by an appropriate licensed individual

v. The licensed individual will be required to read PPD test within 48 to 72 hours of any tests administered

1. All positive PPD test shall have a chest x-ray performed to determine if the individual has active TB

vi. For any individuals determined by City to have had a significant exposure or to be at high risk, the option to perform a QuantiFERON-TB Gold blood test shall be offered

vii. Scheduling will be determined by the City via the respective wellness officer(s) or designee

c. Immunizations/Vaccinations/Screening

i. Proposer shall make available to participants the vaccinations listed below. The participant may provide documentation of having received the following vaccinations, and at the recommendation of the physician and approval of the respective wellness officer(s), or designee, may receive additional vaccinations.

1. Hepatitis A (if on USAR, TRT or Swift Water Rescue)

2. Hepatitis B. Hepatitis B vaccination series shall be given until a follow-up confirmation of antibody production demonstrates conversion

3. Tetanus/Diphtheria

4. Pertussis

5. Influenza

6. MMR

7. Polio

8. HPV - shall be provided to all women participants up to 26 years of age, if a previous vaccination is not documented

9. Varicella

10. Pneumovax (Considered for individuals with appropriate risk factors)

ii. Proposer shall provide annual recommended Flu vaccinations on a mobile basis. All immunization records and history shall be maintained in patient's chart and reviewed at the time of Medical Evaluation, Fitness Evaluation or Respiratory Fit Exam

iii. Any other necessary immunizations will be given at the time of a Medical Evaluation Fitness Evaluation or Respiratory Fix Exam and be charged according to the Pricing Schedule.

iv. Any/all additional immunizations shall be approved and scheduled via the respective wellness officer(s) or designee

v. Hepatitis B vaccinations shall be made available to all personnel on a schedule determined by the City through the respective wellness officer(s) or designee

vi. Hepatitis B vaccination series shall be given until a follow-up confirmation of antibody production demonstrates conversion. Individuals who do not convert beyond the medically accepted series may be considered as non-converters

vii. All immunizations/vaccinations shall be authorized in writing by the respective wellness officer(s), or designee, in advance of performing such service

4. PROGRAM FACILITY AND EQUIPMENT REQUIREMENTS

a. Facility

i. Proposers shall provide pricing for both facilities (city owned facility and proposer owned facility)

1. City will decide the location of the wellness exams once all the bids are received

2. City reserves the right to change the location with a 120-day notice

ii. City Owned Facility

1. The joint use facility known as San Diego Police Plaza shall be utilized by the proposer if the City selects this location

    a. San Diego Police Plaza is located at 4020 Murphy Canyon Rd San Diego, CA 92123

2. All components of the Physical Wellness Medical Exam shall take place at San Diego Police Plaza

3. The proposers will be solely bidding on the staffing medical/clerical personnel and equipment essential to fulfill the requirements set forth in this document.

4. Offsite safe storage area for medical records of participants

    a. Policy shall be developed describing at minimum personnel with access and how confidentiality will be maintained and adhered to
    b. Industry standards for security must be maintained

iii. Proposer Owned Facility

1. Facility location (all co-located sites for all parts of wellness exam) shall be located central within the San Diego City limits

    a. Proposer shall describe in detail the facility or facilities utilized in fulfillment of any of the services required under this contract

    b. The facility used to perform Physical Wellness Medical Evaluations shall be structured so that all components of the examinations can be carried out in one geographic location (i.e. radiology, blood draw, etc.)

        i. The facility shall be set up in a way to ensure privacy and minimize distractions

        ii. The facility shall have a waiting room that connects to a series of rooms where the wellness exams take place

        iii. Only essential personnel (necessary to perform the exam) shall be in the waiting room, hallways, open spaces or any area near the wellness participates

c. Proposer shall provide dedicated, private offices for the respective wellness officer(s) co-located at the same location where the Physical Wellness Medical Examinations are performed. The offices shall include office furniture, internet access and a telephone line

d. Offsite safe storage area for medical records of participants

i. Policy shall be developed describing at minimum personnel with access and how confidentiality will be maintained and adhered to

ii. Industry standards for security must be maintained

iv. The following components of the contract are to take place in locations identified by the respective wellness officer(s)

1. Blood Draws

2. Immunizations/PPD

3. Education

b. Equipment

i. The proposer shall provide all necessary equipment to fulfill this contract

ii. Proposer shall be responsible for the provision of any and all equipment required to perform services under this contract, to include maintenance, repair and replacement

1. Proposer shall provide a list of the equipment that will be utilized and a schedule of maintenance and replacement according to the manufacturers guidelines

iii. Proposer shall provide any needed office furniture and file cabinets necessary for the exam rooms, physician and respective wellness officer(s) office

5. <u>STAFFING REQUIREMENTS</u>

a. Proposer shall describe the dedicated staff and provide resumes/list of qualifications for all staff assigned to this Physical Wellness Program

i. The City of San Diego Municipal Code Article 2, Division 28 provides direction and guidelines regarding the retention of the incumbent workforce for the Contractor

1. HTTPS://DOCS.SANDIEGO.GOV/MUNICODE/MUNICODECHAPTER02/CH02ART02DIVISION28.PDF

b. Proposer shall appoint a Board Certified Designated Medical Director, who is a Qualified Physician (MD or DO) to oversee the Physical Wellness Program

   i. The Designated Medical Director must have extensive clinical and administrative experience comparable to overseeing a Wellness Fitness Initiative Program

   ii. The Designated Medical Director should have experience in cardiovascular disease; exercise testing, musculoskeletal injury diagnosis and management, preventive medicine and lifestyle management

c. The Physician(s) providing services to this Wellness Program must be a Qualified Physician and shall work on site during periods of scheduled medical/fitness testing

d. The staff providing services under the Athletic Trainer program shall meet the qualifications as described above in section B.1.c

e. The staff providing services under the Physical Therapy program shall meet the qualifications as described below in section B.7.e

f. The staff providing services under this program shall have a working knowledge of firefighter, lifeguard and police officer injuries/illnesses and the IAFF Wellness Fitness Initiative

g. Staff shall have experience that demonstrates risk reduction, early detection of disease, injury prevention and proven worker's compensation cost reduction

h. Staff experience in fields relevant to firefighters, police and lifeguards such as occupational toxicology, industrial hygiene, epidemiology, infectious disease, pulmonary disease, cardiology, orthopedics, psychiatry, burn care and emergency medical care shall be considered highly desirable

i. Staff experience/familiarity with the job tasks of the firefighter, lifeguard and police officer including physical demands, psychosocial stressors, chemical, biological and physical exposures and the effects of medical conditions on job tasks shall be considered highly desirable

j. Staff knowledge in local, state and federal laws related to health and safety of the firefighter, lifeguard and police officer shall be considered highly desirable

k. Personnel responsible for conducting fitness examinations must be certified within their discipline at a master's degree level with certifications in strength and conditioning from one of the following organizations

   i. American Council on Exercise (ACE)

ii. American College of Sports Medicine (ACSM)

iii. National Strength and Conditioning Association (CSCS)

l. Personnel responsible for performing sub-maximal stress EKG testing must be qualified at the master's degree level in order to deliver appropriate education during testing and to develop an appropriate exercise prescription

m. Personnel responsible for performing nutrition assessments and counseling must have received special training in nutrition, preferably at the master's degree level or be a registered dietician

n. Contracted and Subcontracted Services

i. Identify all anticipated sub-contractors and their uses

ii. All staff and sub-contractors assigned to work at Police Plaza will be subject to a modified background check.

6. MEETINGS, DATA COLLECTION, AND REPORTING REQUIREMENTS

a. Proposer shall ensure that medical staff is available to meet with the city to discuss goals related to the Wellness Program on a regular ongoing basis (anticipated monthly)

b. Proposer shall provide an annual report to the San Diego Fire-Rescue and Police Chiefs, the Health & Safety Officer and respective wellness officer(s) from both the fire and police departments. The report shall address

i. General recognized trends associated with the health and fitness of Wellness Program Participants in accordance with the IAFF Wellness Fitness Initiative. Report shall include at a minimum the following

1. Demographics and age distribution

2. Current diagnoses and current habits

3. Exercise habits

4. Nutrition and diet risk

5. Medical demographic trends including height, weight, body fat and body mass index

6. Blood laboratory value trends, including triglycerides, cholesterol (HDL/LDL) and glucose

7. Blood pressure trends

8. Fitness (back endurance and cardiovascular)

9. Department Behavioral Wellness

ii. Strategies undertaken by proposer toward mitigation of negative trends or other steps undertaken to improve the general health and fitness of Wellness Program Participants

iii. Comparative data between this Wellness Program and other similar programs throughout the United States as described in the Wellness Fitness Initiative

iv. Demonstration of repeat participants for descriptions of additional trends noted within the program

v. Provide information on disease management capabilities, including

1. Top 10 diagnoses

2. Metabolic disease

3. Coronary artery disease

4. Diabetes

vi. All reports and information shared shall adhere to medical privacy laws as prescribed through HIPAA, unless authorized by the individual patient in writing

vii. All reports and data derived from the Wellness Program shall be considered the property of the City of San Diego and no release shall be authorized without express written consent of the city through the respective wellness officer(s)

viii. Using city provided data, provider to show annual data/graph indicating average days of Lost Work Days, Restricted Work Days and specific/aggregate workers compensation

c. Proposer shall have a demonstrable database and electronic medical record (EMR) that captures all information related to First Responder demographics, lifestyle, personal medical history, family history, immunizations, lab values, audiometric and pulmonary function values, vital signs, review of systems, current medical findings, and all health and fitness parameters consistent with the Wellness Fitness Initiative. The proposer must be prepared to demonstrate these capabilities in real time during the selection phase of this RFP. The database shall have the following additional capabilities

i. The database/EMR will be able to incorporate new medical and fitness tests, assessments, diagnostic tools and health risk assessments that are related to the changing Wellness Fitness Initiative and research available on First Responder health into their existing EMR and database. This system should be readily expandable and customizable at the direction and agreement of the Designated Medical Director and respective wellness officer(s)

ii. The database used to collect and aggregate information shall be secure as to comply with all appropriate medical privacy laws as prescribed through HIPAA

iii. The format of any database used to collect data under this program shall adhere to specifications described within the IAFF data dictionary as well as all the parameters needed to produce the reports outlined in the WFI4 (Attachment A)

iv. The database utilized for the program shall be able to integrate all historical (existing) raw medical records data for all Wellness Participants spanning at minimum the prior ten (10) prior years to present

1. Integration of data from previous system(s) shall be at no additional cost to the City

2. Integration of data shall not delay any transition between providers or the provision of medical/fitness examinations

3. The approval to release individual data shall adhere to existing privacy laws and may require explicit release of the individual Wellness Participant

4. All data collected shall meet or exceed the WFI 4th edition requirements

v. Medical Record Database

1. Proposer shall state what type of electronic medical record database will be used for meeting the city's data collection and reporting requirements

2. Proposer shall describe the electronic medical records database that will be used to obtain medical record information related to this proposal and required through the Wellness Fitness Initiative

3. Proposer shall describe how the electronic medical records database will provide reports similar to those currently provided to the city (sample annual report attached as Attachment G)

4. Proposer shall submit a plan/sample of reporting annual population management (i.e., "How many Firefighters age 45-50 have shown a decrease in their blood pressure over a 2-3-year period?")

7. Physical Therapy

a. Treat safety personnel of Fire-Rescue and Police Departments

i. Non-industrial when referred and paid for by an individual's private insurance

ii. Industrial injuries in accordance with California Labor Code and California Code of Regulations as part of the City of San Diego's Medical Provider Network

1. Billing for industrial injuries shall be in accordance with Official Medical Fee Schedule

b. Identify and reduce waste (time/regression of patient treatment) wherever found to improve the injury rehab process, ensuring that the treatment plan is designed to treat the first responder holistically utilizing the department's and City's integrated health resources to care for the member and ensure consistent injury rehabilitation education is implemented to avoid future injuries

c. Proposer shall provide the necessary number of staff to accommodate appointments

i. All Physical Therapy shall be conducted onsite at the facility identified by the City

ii. When Physical Therapy is requested or recommended by a provider, the initial appointment will be scheduled to take place within five (5) business days

d. The Physical Therapy staff shall be responsible to provide services to include, but not limited to the following:

i. Maintenance and restoration of maximum movement and functional ability

ii. Management and treatment of disorders and injuries of the musculoskeletal system to help restore conventional function

iii. Assistance in increasing and improving mobility following injuries

iv. Relief of pain from prior injuries

v. Prevention or limitation of permanent physical disabilities

e. The Physical Therapist(s) shall meet all following qualifications:

i. To be trained in Tactical Athletic Rehabilitation and Injury Prevention or to the highest standard of an Industrial Athlete

ii. The Physical Therapist shall be a registered physical therapist (RPT) with a minimum of 5 years' experience

iii. Experience working with Tactical Athletes and/or in a First Responder Environment

1. Experience working with Division 1 college athletes or professional athletes is highly desired

8. HIPAA COMPLIANCE PROGRAM REQUIREMENTS

    a. Proposer is required to implement a comprehensive plan and develop the appropriate policies and procedures to comply with the provisions of the Health Insurance Portability and Accountability Act of 1996 and the current rules and regulations enacted by the Department of Health and Human Services. The three (3) major components of HIPAA include

        i. Standards for Privacy and Individually Identifiable Health Information

        ii. Health Insurance Reform: Security Standards

        iii. Health Insurance Reform: Standards for Electronic Transaction Sets and Code Standards

        iv. Proposer is responsible for all aspects of complying with these rules and particularly those enacted to protect the confidentiality of patient information. Any violations of the HIPAA rules and regulations will be reported immediately to the contract administrator and the participant with proposer's actions to mitigate the effect of such violations

9. SITE INSPECTION AND INTERVIEW OF KEY PERSONNEL AT FACILITY(IES)

    a. The City Evaluation Committee shall conduct a site inspection of any facility(ies) or key personnel the Proposer designates will be providing services under this RFP, in accordance with Exhibit A. Evaluation of Proposals. The purpose of the site inspection and interview of the key personnel is to determine if the City is able to establish rapport and a productive professional working relationship with these individuals and to ensure that the facility(ies) meets the requirements to conduct examinations and testing as specified in the RFP. Proposers should be prepared to discuss and substantiate any of the areas of the Proposal submitted, as well as its qualifications to furnish the specified services.

10. CONTRACT ADMINISTRATION

    a. The Contract Administrator for this contract is the City's San Diego Fire-Rescue Department Fire Chief or the designee specified on purchase orders issued under this contract. The Contract Administrator will provide daily oversight of this contract to ensure compliance to the scope of work and/or performance to contract specifications. The Contract Administrator, or designee, is also responsible for oversight of all invoice payments and billing questions for purchase orders issued under this contract.

    b. The Purchasing Agent shall be responsible for all contractual matters and is the only individual authorized to make changes of any kind to the contract. The contractor shall not rely upon any oral change from anyone, or a written

request for change from someone other than the purchasing agent. All changes must be in writing, signed by the purchasing agent.

11. OPTION TO EXTEND SERVICES/TERM

The City of San Diego may require continued performance of any services within the limits and at the rates specified in the contract within the contract term. These rates may be adjusted only as required by law (for example, pursuant to adjustments in prevailing wage, minimum wage or local living wage rates). Upon City's determination to exercise an option to extend the services/term, the City may increase the compensation 5%, or based upon the Centers for Medicare/Medicaid Services (CMS), National Health Expenditure Data (NHE), Table 3, annual percent change from previous year shown, other private funds (https://www.cms.gov/NationalHealthExpendData/downloads/tables.pdf), whichever is less. If any such adjustment results in a change in the contract price, that change must be agreed to by the parties in writing pursuant to the General Contract Terms and Provisions (attached). The option provision may be exercised more than once. The Purchasing Agent may exercise the option by written notice to the Contractor within 30 days prior to the expiration of the prior term.

If a contract term is applicable, the City of San Diego may extend the term of this contract by written notice to the Contractor within 30 days; provided, the City of San Diego gives the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the City of San Diego to an extension.

If the City of San Diego exercises this option, the extended contract shall be considered to include this option clause.

C. INSURANCE REQUIRMENTS

The following are the minimum insurance requirements for this contract:

Commercial General Liability: with limits no less than $2,000,000 per occurrence and no less than $4,000,000 general aggregate. Refer to section 7.2.5 Other Insurance Provisions in the City's General Contract Terms & Provisions document for additional requirements relating to Commercial General Liability.

Commercial Automobile Liability: with limits no less than $1,000,000 per accident for bodily injury and property damage.

Workers Compensation: with limits no less than $1,000,000 per accident for bodily injury or disease.

Professional Liability: with limits no less than $2,000,000 per occurrence or claim, $4,000,000 aggregate.

Cyber Liability: with limits of no less than $1,000,000 for each occurrence and an annual aggregate of $2,000,000.



THE CITY OF SAN DIEGO

GENERAL CONTRACT TERMS AND PROVISIONS

APPLICABLE TO GOODS, SERVICES, AND CONSULTANT CONTRACTS

ARTICLE I
SCOPE AND TERM OF CONTRACT

1.1 Scope of Contract. The scope of contract between the City and a provider of goods and/or services (Contractor) is described in the Contract Documents. The Contract Documents are comprised of the Request for Proposal, Invitation to Bid, or other solicitation document (Solicitation); the successful bid or proposal; the letter awarding the contract to Contractor; the City's written acceptance of exceptions or clarifications to the Solicitation, if any; and these General Contract Terms and Provisions.

1.2 Effective Date. A contract between the City and Contractor (Contract) is effective on the last date that the contract is signed by the parties and approved by the City Attorney in accordance with Charter section 40. Unless otherwise terminated, this Contract is effective until it is completed or as otherwise agreed upon in writing by the parties, whichever is the earliest. A Contract term cannot exceed five (5) years unless approved by the City Council by ordinance.

1.3 Contract Extension. The City may, in its sole discretion, unilaterally exercise an option to extend the Contract as described in the Contract Documents. In addition, the City may, in its sole discretion, unilaterally extend the Contract on a month-to-month basis following contract expiration if authorized under Charter section 99 and the Contract Documents. Contractor shall not increase its pricing in excess of the percentage increase described in the Contract.

ARTICLE II
CONTRACT ADMINISTRATOR

2.1 Contract Administrator. The Purchasing Agent or designee is the Contract Administrator for purposes of this Contract, and has the responsibilities described in this Contract, in the San Diego Charter, and in Chapter 2, Article 2, Divisions 5, 30, and 32.

2.1.1 Contractor Performance Evaluations. The Contract Administrator will evaluate Contractor's performance as often as the Contract Administrator deems necessary throughout the term of the contract. This evaluation will be based on criteria including the quality of goods or services, the timeliness of performance, and adherence to applicable laws, including prevailing wage and living wage. City will provide Contractors who receive an unsatisfactory rating with a copy of the evaluation and an opportunity to respond. City may consider final evaluations, including Contractor's response, in evaluating future proposals and bids for contract award.

2.2 Notices. Unless otherwise specified, in all cases where written notice is required under this Contract, service shall be deemed sufficient if the notice is personally delivered or deposited in the United States mail, with first class postage paid, attention to the Purchasing Agent. Proper notice is effective on the date of personal delivery or five (5) days after deposit in a United States postal mailbox unless provided otherwise in the Contract. Notices to the City shall be sent to:

Purchasing Agent
City of San Diego, Purchasing and Contracting Division
1200 3rd Avenue, Suite 200
San Diego, CA 92101-4195

ARTICLE III
COMPENSATION

3.1 Manner of Payment. Contractor will be paid monthly, in arrears, for goods and/or services provided in accordance with the terms and provisions specified in the Contract.

3.2 Invoices.

3.2.1 Invoice Detail. Contractor's invoice must be on Contractor's stationary with Contractor's name, address, and remittance address if different. Contractor's invoice must have a date, an invoice number, a purchase order number, a description of the goods or services provided, and an amount due.

3.2.2 Service Contracts. Contractor must submit invoices for services to City by the 10th of the month following the month in which Contractor provided services. Invoices must include the address of the location where services were performed and the dates in which services were provided.

3.2.3 Goods Contracts. Contractor must submit invoices for goods to City within seven days of the shipment. Invoices must describe the goods provided.

3.2.4 Parts Contracts. Contractor must submit invoices for parts to City within seven calendar (7) days of the date the parts are shipped. Invoices must include the manufacturer of the part, manufacturer's published list price, percentage discount applied in accordance with Pricing Page(s), the net price to City, and an item description, quantity, and extension.

3.2.5 Extraordinary Work. City will not pay Contractor for extraordinary work unless Contractor receives prior written authorization from the Contract Administrator. Failure to do so will result in payment being withheld for services. If approved, Contractor will include an invoice that describes the work performed and the location where the work was performed, and a copy of the Contract Administrator's written authorization.

3.2.6 Reporting Requirements. Contractor must submit the following reports using the City's web-based contract compliance portal. Incomplete and/or delinquent reports may cause payment delays, non-payment of invoice, or both. For questions, please view the City's online tutorials on how to utilize the City's web-based contract compliance portal.

3.2.6.1 Monthly Employment Utilization Reports. Contractor and Contractor's subcontractors and suppliers must submit Monthly Employment Utilization Reports by the fifth (5th) day of the subsequent month.

3.2.6.2 Monthly Invoicing and Payments. Contractor and Contractor's subcontractors and suppliers must submit Monthly Invoicing and Payment Reports by the fifth (5th) day of the subsequent month.

3.3 Annual Appropriation of Funds. Contractor acknowledges that the Contract term may extend over multiple City fiscal years, and that work and compensation under this Contract is contingent on the City Council appropriating funding for and authorizing such work and compensation for those fiscal years. This Contract may be terminated at the end of the fiscal year for which sufficient funding is not appropriated and authorized. City is not obligated to pay Contractor for any amounts not duly appropriated and authorized by City Council.

3.4 Price Adjustments. Based on Contractor's written request and justification, the City may approve an increase in unit prices on Contractor's pricing pages consistent with the amount requested in the justification in an amount not to exceed the increase in the Consumer Price Index, San Diego Area, for All Urban Customers (CPI-U) as published by the Bureau of Labor Statistics, or 5.0%, whichever is less, during the preceding one year term. If the CPI-U is a negative number, then the unit prices shall not be adjusted for that option year (the unit prices will not be decreased). A negative CPI-U shall be counted against any subsequent increases in the CPI-U when calculating the unit prices for later option years. Contractor must provide such written request and justification no less than sixty days before the date in which City may exercise the option to renew the contract, or sixty days before the anniversary date of the Contract. Justification in support of the written request must include a description of the basis for the adjustment, the proposed effective date and reasons for said date, and the amount of the adjustment requested with documentation to support the requested change (e.g. CPI-U or 5.0%, whichever is less). City's approval of this request must be in writing.

ARTICLE IV
SUSPENSION AND TERMINATION

4.1 City's Right to Suspend for Convenience. City may suspend all or any portion of Contractor's performance under this Contract at its sole option and for its convenience for a reasonable period of time not to exceed six (6) months. City must first give ten (10) days' written notice to Contractor of such suspension. City will pay to Contractor a sum equivalent to the reasonable value of the goods and/or services satisfactorily provided up to the date of suspension. City may rescind the suspension prior to or at six (6) months by providing Contractor with written notice of the rescission, at which time Contractor would be required to resume performance in compliance with the terms and provisions of this Contract. Contractor will be entitled to an extension of time to complete performance under the Contract equal to the length of the suspension unless otherwise agreed to in writing by the Parties.

4.2 City's Right to Terminate for Convenience. City may, at its sole option and for its convenience, terminate all or any portion of this Contract by giving thirty (30) days' written notice of such termination to Contractor. The termination of the Contract shall be effective upon receipt of the notice by Contractor. After termination of all or any portion of the Contract, Contractor shall: (1) immediately discontinue all affected performance (unless the notice directs

otherwise); and (2) complete any and all additional work necessary for the orderly filing of documents and closing of Contractor's affected performance under the Contract. After filing of documents and completion of performance, Contractor shall deliver to City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials created or received by Contractor in performing this Contract, whether completed or in process. By accepting payment for completion, filing, and delivering documents as called for in this section, Contractor discharges City of all of City's payment obligations and liabilities under this Contract with regard to the affected performance.

4.3 City's Right to Terminate for Default. Contractor's failure to satisfactorily perform any obligation required by this Contract constitutes a default. Examples of default include a determination by City that Contractor has: (1) failed to deliver goods and/or perform the services of the required quality or within the time specified; (2) failed to perform any of the obligations of this Contract; and (3) failed to make sufficient progress in performance which may jeopardize full performance.

4.3.1 If Contractor fails to satisfactorily cure a default within ten (10) calendar days of receiving written notice from City specifying the nature of the default, City may immediately cancel and/or terminate this Contract, and terminate each and every right of Contractor, and any person claiming any rights by or through Contractor under this Contract.

4.3.2 If City terminates this Contract, in whole or in part, City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, equivalent goods or services and Contractor shall be liable to City for any excess costs. Contractor shall also continue performance to the extent not terminated.

4.4 Termination for Bankruptcy or Assignment for the Benefit of Creditors. If Contractor files a voluntary petition in bankruptcy, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors, the City may at its option and without further notice to, or demand upon Contractor, terminate this Contract, and terminate each and every right of Contractor, and any person claiming rights by and through Contractor under this Contract.

4.5 Contractor's Right to Payment Following Contract Termination.

4.5.1 Termination for Convenience. If the termination is for the convenience of City an equitable adjustment in the Contract price shall be made. No amount shall be allowed for anticipated profit on unperformed services, and no amount shall be paid for an as needed contract beyond the Contract termination date.

4.5.2 Termination for Default. If, after City gives notice of termination for failure to fulfill Contract obligations to Contractor, it is determined that Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of City. In such event, adjustment in the Contract price shall be made as provided in Section 4.3.2. City's rights and remedies are in addition to any other rights and remedies provided by law or under this Contract.

4.6 Remedies Cumulative. City's remedies are cumulative and are not intended to be exclusive of any other remedies or means of redress to which City may be lawfully entitled in case of any breach or threatened breach of any provision of this Contract.

ARTICLE V
ADDITIONAL CONTRACTOR OBLIGATIONS

5.1 Inspection and Acceptance. The City will inspect and accept goods provided under this Contract at the shipment destination unless specified otherwise. Inspection will be made and acceptance will be determined by the City department shown in the shipping address of the Purchase Order or other duly authorized representative of City.

5.2 Responsibility for Lost or Damaged Shipments. Contractor bears the risk of loss or damage to goods prior to the time of their receipt and acceptance by City. City has no obligation to accept damaged shipments and reserves the right to return damaged goods, at Contractor's sole expense, even if the damage was not apparent or discovered until after receipt.

5.3 Responsibility for Damages. Contractor is responsible for all damage that occurs as a result of Contractor's fault or negligence or that of its' employees, agents, or representatives in connection with the performance of this Contract. Contractor shall immediately report any such damage to people and/or property to the Contract Administrator.

5.4 Delivery. Delivery shall be made on the delivery day specified in the Contract Documents. The City, in its sole discretion, may extend the time for delivery. The City may order, in writing, the suspension, delay or interruption of delivery of goods and/or services.

5.5 Delay. Unless otherwise specified herein, time is of the essence for each and every provision of the Contract. Contractor must immediately notify City in writing if there is, or it is anticipated that there will be, a delay in performance. The written notice must explain the cause for the delay and provide a reasonable estimate of the length of the delay. City may terminate this Contract as provided herein if City, in its sole discretion, determines the delay is material.

5.5.1 If a delay in performance is caused by any unforeseen event(s) beyond the control of the parties, City may allow Contractor to a reasonable extension of time to complete performance, but Contractor will not be entitled to damages or additional compensation. Any such extension of time must be approved in writing by City. The following conditions may constitute such a delay: war; changes in law or government regulation; labor disputes; strikes; fires, floods, adverse weather or other similar condition of the elements necessitating cessation of the performance; inability to obtain materials, equipment or labor; or other specific reasons agreed to between City and Contractor. This provision does not apply to a delay caused by Contractor's acts or omissions. Contractor is not entitled to an extension of time to perform if a delay is caused by Contractor's inability to obtain materials, equipment, or labor unless City has received, in a timely manner, documentary proof satisfactory to City of Contractor's inability to obtain materials, equipment, or labor, in which case City's approval must be in writing.

5.6 Restrictions and Regulations Requiring Contract Modification. Contractor shall immediately notify City in writing of any regulations or restrictions that may or will require Contractor to alter the material, quality, workmanship, or performance of the goods and/or services to be provided. City reserves the right to accept any such alteration, including any resulting reasonable price adjustments, or to cancel the Contract at no expense to the City.

5.7 Warranties. All goods and/or services provided under the Contract must be warranted by Contractor or manufacturer for at least twelve (12) months after acceptance by City, except automotive equipment. Automotive equipment must be warranted for a minimum of 12,000 miles or 12 months, whichever occurs first, unless otherwise stated in the Contract. Contractor is responsible to City for all warranty service, parts, and labor. Contractor is required to ensure that warranty work is performed at a facility acceptable to City and that services, parts, and labor are available and provided to meet City's schedules and deadlines. Contractor may establish a warranty service contract with an agency satisfactory to City instead of performing the warranty service itself. If Contractor is not an authorized service center and causes any damage to equipment being serviced, which results in the existing warranty being voided, Contractor will be liable for all costs of repairs to the equipment, or the costs of replacing the equipment with new equipment that meets City's operational needs.

5.8 Industry Standards. Contractor shall provide goods and/or services acceptable to City in strict conformance with the Contract. Contractor shall also provide goods and/or services in accordance with the standards customarily adhered to by an experienced and competent provider of the goods and/or services called for under this Contract using the degree of care and skill ordinarily exercised by reputable providers of such goods and/or services. Where approval by City, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.

5.9 Records Retention and Examination. Contractor shall retain, protect, and maintain in an accessible location all records and documents, including paper, electronic, and computer records, relating to this Contract for five (5) years after receipt of final payment by City under this Contract. Contractor shall make all such records and documents available for inspection, copying, or other reproduction, and auditing by authorized representatives of City, including the Purchasing Agent or designee. Contractor shall make available all requested data and records at reasonable locations within City or County of San Diego at any time during normal business hours, and as often as City deems necessary. If records are not made available within the City or County of San Diego, Contractor shall pay City's travel costs to the location where the records are maintained and shall pay for all related travel expenses. Failure to make requested records available for inspection, copying, or other reproduction, or auditing by the date requested may result in termination of the Contract. Contractor must include this provision in all subcontracts made in connection with this Contract.

5.9.1 Contractor shall maintain records of all subcontracts entered into with all firms, all project invoices received from Subcontractors and Suppliers, all purchases of materials and services from Suppliers, and all joint venture participation. Records shall show name, telephone number including area code, and business address of each Subcontractor and Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

5.10 Quality Assurance Meetings. Upon City's request, Contractor shall schedule one or more quality assurance meetings with City's Contract Administrator to discuss Contractor's performance. If requested, Contractor shall schedule the first quality assurance meeting no later than eight (8) weeks from the date of commencement of work under the Contract. At the quality assurance meeting(s), City's Contract Administrator will provide Contractor with feedback, will note any deficiencies in Contract performance, and provide Contractor with an opportunity to address and correct such deficiencies. The total number of quality assurance meetings that may be required by City will depend upon Contractor's performance.

5.11 Duty to Cooperate with Auditor. The City Auditor may, in his sole discretion, at no cost to the City, and for purposes of performing his responsibilities under Charter section 39.2, review Contractor's records to confirm contract compliance. Contractor shall make reasonable efforts to cooperate with Auditor's requests.

5.12 Safety Data Sheets. If specified by City in the solicitation or otherwise required by this Contract, Contractor must send with each shipment one (1) copy of the Safety Data Sheet (SDS) for each item shipped. Failure to comply with this procedure will be cause for immediate termination of the Contract for violation of safety procedures.

5.13 Project Personnel. Except as formally approved by the City, the key personnel identified in Contractor's bid or proposal shall be the individuals who will actually complete the work. Changes in staffing must be reported in writing and approved by the City.

5.13.1 Criminal Background Certification. Contractor certifies that all employees working on this Contract have had a criminal background check and that said employees are clear of any sexual and drug related convictions. Contractor further certifies that all employees hired by Contractor or a subcontractor shall be free from any felony convictions.

5.13.2 Photo Identification Badge. Contractor shall provide a company photo identification badge to any individual assigned by Contractor or subcontractor to perform services or deliver goods on City premises. Such badge must be worn at all times while on City premises. City reserves the right to require Contractor to pay fingerprinting fees for personnel assigned to work in sensitive areas. All employees shall turn in their photo identification badges to Contractor upon completion of services and prior to final payment of invoice.

5.14 Standards of Conduct. Contractor is responsible for maintaining standards of employee competence, conduct, courtesy, appearance, honesty, and integrity satisfactory to the City.

5.14.1 Supervision. Contractor shall provide adequate and competent supervision at all times during the Contract term. Contractor shall be readily available to meet with the City. Contractor shall provide the telephone numbers where its representative(s) can be reached.

5.14.2 City Premises. Contractor's employees and agents shall comply with all City rules and regulations while on City premises.

5.14.3 Removal of Employees. City may request Contractor immediately remove from assignment to the City any employee found unfit to perform duties at the City. Contractor shall comply with all such requests.

5.15 Licenses and Permits. Contractor shall, without additional expense to the City, be responsible for obtaining any necessary licenses, permits, certifications, accreditations, fees and approvals for complying with any federal, state, county, municipal, and other laws, codes, and regulations applicable to Contract performance. This includes, but is not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work.

5.16 Contractor and Subcontractor Registration Requirements. Prior to the award of the Contract or Task Order, Contractor and Contractor's subcontractors and suppliers must register with the City's web-based vendor registration and bid management system. The City may not award the Contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified by the City, the City reserves the right to rescind the Contract award and to make the award to the next responsive and responsible proposer of bidder.

ARTICLE VI
INTELLECTUAL PROPERTY RIGHTS

6.1 Rights in Data. If, in connection with the services performed under this Contract, Contractor or its employees, agents, or subcontractors, create artwork, audio recordings, blueprints, designs, diagrams, documentation, photographs, plans, reports, software, source code, specifications, surveys, system designs, video recordings, or any other original works of authorship, whether written or readable by machine (Deliverable Materials), all rights of Contractor or its subcontractors in the Deliverable Materials, including, but not limited to publication, and registration of copyrights, and trademarks in the Deliverable Materials, are the sole property of City. Contractor, including its employees, agents, and subcontractors, may not use any Deliverable Material for purposes unrelated to Contractor's work on behalf of the City without prior written consent of City. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City, without the prior written consent of the City.

6. 2 Intellectual Property Rights Assignment. For no additional compensation, Contractor hereby assigns to City all of Contractor's rights, title, and interest in and to the content of the Deliverable Materials created by Contractor or its employees, agents, or subcontractors, including copyrights, in connection with the services performed under this Contract. Contractor

shall promptly execute and deliver, and shall cause its employees, agents, and subcontractors to promptly execute and deliver, upon request by the City or any of its successors or assigns at any time and without further compensation of any kind, any power of attorney, assignment, application for copyright, patent, trademark or other intellectual property right protection, or other papers or instruments which may be necessary or desirable to fully secure, perfect or otherwise protect to or for the City, its successors and assigns, all right, title and interest in and to the content of the Deliverable Materials. Contractor also shall cooperate and assist in the prosecution of any action or opposition proceeding involving such intellectual property rights and any adjudication of those rights.

6. 3 Contractor Works. Contractor Works means tangible and intangible information and material that: (a) had already been conceived, invented, created, developed or acquired by Contractor prior to the effective date of this Contract; or (b) were conceived, invented, created, or developed by Contractor after the effective date of this Contract, but only to the extent such information and material do not constitute part or all of the Deliverable Materials called for in this Contract. All Contractor Works, and all modifications or derivatives of such Contractor Works, including all intellectual property rights in or pertaining to the same, shall be owned solely and exclusively by Contractor.

6. 4 Subcontracting. In the event that Contractor utilizes a subcontractor(s) for any portion of the work that comprises the whole or part of the specified Deliverable Materials to the City, the agreement between Contractor and the subcontractor shall include a statement that identifies the Deliverable Materials as a "works for hire" as described in the United States Copyright Act of 1976, as amended, and that all intellectual property rights in the Deliverable Materials, whether arising in copyright, trademark, service mark or other forms of intellectual property rights, belong to and shall vest solely with the City. Further, the agreement between Contractor and its subcontractor shall require that the subcontractor, if necessary, shall grant, transfer, sell and assign, free of charge, exclusively to City, all titles, rights and interests in and to the Deliverable Materials, including all copyrights, trademarks and other intellectual property rights. City shall have the right to review any such agreement for compliance with this provision.

6. 5 Intellectual Property Warranty and Indemnification. Contractor represents and warrants that any materials or deliverables, including all Deliverable Materials, provided under this Contract are either original, or not encumbered, and do not infringe upon the copyright, trademark, patent or other intellectual property rights of any third party, or are in the public domain. If Deliverable Materials provided hereunder become the subject of a claim, suit or allegation of copyright, trademark or patent infringement, City shall have the right, in its sole discretion, to require Contractor to produce, at Contractor's own expense, new non-infringing materials, deliverables or works as a means of remedying any claim of infringement in addition to any other remedy available to the City under law or equity. Contractor further agrees to indemnify, defend, and hold harmless the City, its officers, employees and agents from and against any and all claims, actions, costs, judgments or damages, of any type, alleging or threatening that any Deliverable Materials, supplies, equipment, services or works provided under this contract infringe the copyright, trademark, patent or other intellectual property or

proprietary rights of any third party (Third Party Claim of Infringement). If a Third Party Claim of Infringement is threatened or made before Contractor receives payment under this Contract, City shall be entitled, upon written notice to Contractor, to withhold some or all of such payment.

6.6 Software Licensing. Contractor represents and warrants that the software, if any, as delivered to City, does not contain any program code, virus, worm, trap door, back door, time or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being used in accordance with its user manuals, either automatically, upon the occurrence of licensor-selected conditions or manually on command. Contractor further represents and warrants that all third party software, delivered to City or used by Contractor in the performance of the Contract, is fully licensed by the appropriate licensor.

6.7 Publication. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City without prior written consent from the City.

6.8 Royalties, Licenses, and Patents. Unless otherwise specified, Contractor shall pay all royalties, license, and patent fees associated with the goods that are the subject of this solicitation. Contractor warrants that the goods, materials, supplies, and equipment to be supplied do not infringe upon any patent, trademark, or copyright, and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City, its elected officials, officers, and employees from all liability, loss and damages, whether general, exemplary or punitive, suffered as a result of any actual or claimed infringement asserted against the City, Contractor, or those furnishing goods, materials, supplies, or equipment to Contractor under the Contract.

ARTICLE VII
INDEMNIFICATION AND INSURANCE

7.1 Indemnification. To the fullest extent permitted by law, Contractor shall defend (with legal counsel reasonably acceptable to City), indemnify, protect, and hold harmless City and its elected officials, officers, employees, agents, and representatives (Indemnified Parties) from and against any and all claims, losses, costs, damages, injuries (including, without limitation, injury to or death of an employee of Contractor or its subcontractors), expense, and liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, and litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, any goods provided or performance of services under this Contract by Contractor, any subcontractor, anyone directly or indirectly employed by either of them, or anyone that either of them control. Contractor's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the sole negligence or willful misconduct of the Indemnified Parties.

7.2 Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by Contractor, his agents, representatives, employees or subcontractors.

Contractor shall provide, at a minimum, the following:

7.2.1 Commercial General Liability. Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than $1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

7.2.2 Commercial Automobile Liability. Insurance Services Office Form Number CA 0001 covering Code 1 (any auto) or, if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than $1,000,000 per accident for bodily injury and property damage.

7.2.3 Workers' Compensation. Insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

7.2.4 Professional Liability (Errors and Omissions). For consultant contracts, insurance appropriate to Consultant's profession, with limit no less than $1,000,000 per occurrence or claim, $2,000,000 aggregate.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City requires and shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

7.2.5 Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:

7.2.5.1 Additional Insured Status. The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 if a later edition is used).

7.2.5.2 Primary Coverage. For any claims related to this contract, Contractor's insurance coverage shall be primary coverage at least as broad as ISO CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7.2.5.3 Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to City.

7.2.5.4 Waiver of Subrogation. Contractor hereby grants to City a waiver of any right to subrogation which the Workers' Compensation insurer of said Contractor may acquire against City by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

7.2.5.5 Claims Made Policies (applicable only to professional liability). The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of work.

7.3 Self Insured Retentions. Self-insured retentions must be declared to and approved by City. City may require Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

7.4 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-VI, unless otherwise acceptable to City.

City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of California and is included on the List of Approved Surplus Lines Insurers (LASLI list). All policies of insurance carried by non-admitted carriers are subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7.5 Verification of Coverage. Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right

to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

7.6 Special Risks or Circumstances. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

7.7 Additional Insurance. Contractor may obtain additional insurance not required by this Contract.

7.8 Excess Insurance. All policies providing excess coverage to City shall follow the form of the primary policy or policies including but not limited to all endorsements.

7.9 Subcontractors. Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a format at least as broad as the CG 20 38 04 13 endorsement.

ARTICLE VIII
BONDS

8.1 Payment and Performance Bond. Prior to the execution of this Contract, City may require Contractor to post a payment and performance bond (Bond). The Bond shall guarantee Contractor's faithful performance of this Contract and assure payment to contractors, subcontractors, and to persons furnishing goods and/or services under this Contract.

8.1.1 Bond Amount. The Bond shall be in a sum equal to twenty-five percent (25%) of the Contract amount, unless otherwise stated in the Specifications. City may file a claim against the Bond if Contractor fails or refuses to fulfill the terms and provisions of the Contract.

8.1.2 Bond Term. The Bond shall remain in full force and effect at least until complete performance of this Contract and payment of all claims for materials and labor, at which time it will convert to a ten percent (10%) warranty bond, which shall remain in place until the end of the warranty periods set forth in this Contract. The Bond shall be renewed annually, at least sixty (60) days in advance of its expiration, and Contractor shall provide timely proof of annual renewal to City.

8.1.3 Bond Surety. The Bond must be furnished by a company authorized by the State of California Department of Insurance to transact surety business in the State of California and which has a current A.M. Best rating of at least "A-, VIII."

8.1.4 Non-Renewal or Cancellation. The Bond must provide that City and Contractor shall be provided with sixty (60) days' advance written notice in the event of non-renewal, cancellation, or material change to its terms. In the event of non-renewal, cancellation, or

material change to the Bond terms, Contractor shall provide City with evidence of the new source of surety within twenty-one (21) calendar days after the date of the notice of non-renewal, cancellation, or material change. Failure to maintain the Bond, as required herein, in full force and effect as required under this Contact, will be a material breach of the Contract subject to termination of the Contract.

8.2 Alternate Security. City may, at its sole discretion, accept alternate security in the form of an endorsed certificate of deposit, a money order, a certified check drawn on a solvent bank, or other security acceptable to the Purchasing Agent in an amount equal to the required Bond.

ARTICLE IX
CITY-MANDATED CLAUSES AND REQUIREMENTS

9.1 Contractor Certification of Compliance. By signing this Contract, Contractor certifies that Contractor is aware of, and will comply with, these City-mandated clauses throughout the duration of the Contract.

9.1.1 Drug-Free Workplace Certification. Contractor shall comply with City's Drug-Free Workplace requirements set forth in Council Policy 100-17, which is incorporated into the Contract by this reference.

9.1.2 Contractor Certification for Americans with Disabilities Act (ADA) and State Access Laws and Regulations: Contractor shall comply with all accessibility requirements under the ADA and under Title 24 of the California Code of Regulations (Title 24). When a conflict exists between the ADA and Title 24, Contractor shall comply with the most restrictive requirement (i.e., that which provides the most access). Contractor also shall comply with the City's ADA Compliance/City Contractors requirements as set forth in Council Policy 100-04, which is incorporated into this Contract by reference. Contractor warrants and certifies compliance with all federal and state access laws and regulations and further certifies that any subcontract agreement for this contract contains language which indicates the subcontractor's agreement to abide by the provisions of the City's Council Policy and any applicable access laws and regulations.

9.1.3 Non-Discrimination Requirements.

9.1.3.1 Compliance with City's Equal Opportunity Contracting Program (EOCP). Contractor shall comply with City's EOCP Requirements. Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractors shall ensure that their subcontractors comply with this program. Nothing in this Section shall be interpreted to hold a Prime Contractor liable for any discriminatory practice of its subcontractors.

9.1.3.2 Non-Discrimination Ordinance. Contractor shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring or treatment of

subcontractors, vendors or suppliers. Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, or other sanctions. Contractor shall ensure that this language is included in contracts between Contractor and any subcontractors, vendors and suppliers.

9.1.3.3 Compliance Investigations. Upon City's request, Contractor agrees to provide to City, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor further agrees to fully cooperate in any investigation conducted by City pursuant to City's Nondiscrimination in Contracting Ordinance. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.4 Equal Benefits Ordinance Certification. Unless an exception applies, Contractor shall comply with the Equal Benefits Ordinance (EBO) codified in the San Diego Municipal Code (SDMC). Failure to maintain equal benefits is a material breach of the Contract.

9.1.5 Contractor Standards. Contractor shall comply with Contractor Standards provisions codified in the SDMC. Contractor understands and agrees that violation of Contractor Standards may be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.6 Noise Abatement. Contractor shall operate, conduct, or construct without violating the City's Noise Abatement Ordinance codified in the SDMC.

9.1.7 Storm Water Pollution Prevention Program. Contractor shall comply with the City's Storm Water Management and Discharge Control provisions codified in Division 3 of Chapter 4 of the SDMC, as may be amended, and any and all applicable Best Management Practice guidelines and pollution elimination requirements in performing or delivering services at City owned, leased, or managed property, or in performance of services and activities on behalf of City regardless of location.

Contractor shall comply with the City's Jurisdictional Urban Runoff Management Plan encompassing Citywide programs and activities designed to prevent and reduce storm water pollution within City boundaries as adopted by the City Council on January 22, 2008, via Resolution No. 303351, as may be amended.

Contractor shall comply with each City facility or work site's Storm Water Pollution Prevention Plan, as applicable, and institute all controls needed while completing the services to minimize any negative impact to the storm water collection system and environment.

9.1.8 Service Worker Retention Ordinance. If applicable, Contractor shall comply with the Service Worker Retention Ordinance (SWRO) codified in the SDMC.

9.1.9 Product Endorsement. Contractor shall comply with Council Policy 000-41 concerning product endorsement which requires that any advertisement referring to City as a user of a good or service will require the prior written approval of the Mayor.

9.1.10 Business Tax Certificate. Unless the City Treasurer determines in writing that a contractor is exempt from the payment of business tax, any contractor doing business with the City of San Diego is required to obtain a Business Tax Certificate (BTC) and to provide a copy of its BTC to the City before a Contract is executed.

9.1.11 Equal Pay Ordinance. Unless an exception applies, Contractor shall comply with the Equal Pay Ordinance codified in San Diego Municipal Code sections 22.4801 through 22.4809. Contractor shall certify in writing that it will comply with the requirements of the Equal Pay Ordinance throughout the duration of the Contract.

9.1.11.1 Contractor and Subcontract Requirement. The Equal Pay Ordinance applies to any subcontractor who performs work on behalf of a Contractor to the same extent as it would apply to that Contractor. Contractor shall require subcontractors performing work for contractor under their contract with the City to certify compliance with the Equal Pay Ordinance in their written subcontracts.

9.1.11.2 Notice Requirement. Contractor must post a notice informing its employees of their rights under the Equal Pay Ordinance in their workplace or job site.

ARTICLE X
CONFLICT OF INTEREST AND VIOLATIONS OF LAW

10.1 Conflict of Interest Laws. Contractor is subject to all federal, state and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices including, but not limited to, California Government Code sections 1090, *et. seq.* and 81000, *et. seq.*, and the Ethics Ordinance, codified in the SDMC. City may determine that Contractor must complete one or more statements of economic interest disclosing relevant financial interests. Upon City's request, Contractor shall submit the necessary documents to City.

10.2 Contractor's Responsibility for Employees and Agents. Contractor is required to establish and make known to its employees and agents appropriate safeguards to prohibit employees from using their positions for a purpose that is, or that gives the appearance of being, motivated by the desire for private gain for themselves or others, particularly those with whom they have family, business or other relationships.

10.3 Contractor's Financial or Organizational Interests. In connection with any task, Contractor shall not recommend or specify any product, supplier, or contractor with whom

Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.

10.4 Certification of Non-Collusion. Contractor certifies that: (1) Contractor's bid or proposal was not made in the interest of or on behalf of any person, firm, or corporation not identified; (2) Contractor did not directly or indirectly induce or solicit any other bidder or proposer to put in a sham bid or proposal; (3) Contractor did not directly or indirectly induce or solicit any other person, firm or corporation to refrain from bidding; and (4) Contractor did not seek by collusion to secure any advantage over the other bidders or proposers.

10.5 Hiring City Employees. This Contract shall be unilaterally and immediately terminated by City if Contractor employs an individual who within the twelve (12) months immediately preceding such employment did in his/her capacity as a City officer or employee participate in negotiations with or otherwise have an influence on the selection of Contractor.

ARTICLE XI
DISPUTE RESOLUTION

11.1 Mediation. If a dispute arises out of or relates to this Contract and cannot be settled through normal contract negotiations, Contractor and City shall use mandatory non-binding mediation before having recourse in a court of law.

11.2 Selection of Mediator. A single mediator that is acceptable to both parties shall be used to mediate the dispute. The mediator will be knowledgeable in the subject matter of this Contract, if possible.

11.3 Expenses. The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator, and the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties, unless they agree otherwise.

11.4 Conduct of Mediation Sessions. Mediation hearings will be conducted in an informal manner and discovery will not be allowed. The discussions, statements, writings and admissions will be confidential to the proceedings (pursuant to California Evidence Code sections 1115 through 1128) and will not be used for any other purpose unless otherwise agreed by the parties in writing. The parties may agree to exchange any information they deem necessary. Both parties shall have a representative attend the mediation who is authorized to settle the dispute, though City's recommendation of settlement may be subject to the approval of the Mayor and City Council. Either party may have attorneys, witnesses or experts present.

11.5 Mediation Results. Any agreements resulting from mediation shall be memorialized in writing. The results of the mediation shall not be final or binding unless otherwise agreed to in writing by the parties. Mediators shall not be subject to any subpoena or liability, and their actions shall not be subject to discovery.

ARTICLE XII
MANDATORY ASSISTANCE

12.1 Mandatory Assistance. If a third party dispute or litigation, or both, arises out of, or relates in any way to the services provided to the City under a Contract, Contractor , its agents, officers, and employees agree to assist in resolving the dispute or litigation upon City's request. Contractor's assistance includes, but is not limited to, providing professional consultations, attending mediations, arbitrations, depositions, trials or any event related to the dispute resolution and/or litigation.

12.2 Compensation for Mandatory Assistance. City will compensate Contractor for fees incurred for providing Mandatory Assistance. If, however, the fees incurred for the Mandatory Assistance are determined, through resolution of the third party dispute or litigation, or both, to be attributable in whole, or in part, to the acts or omissions of Contractor, its agents, officers, and employees, Contractor shall reimburse City for all fees paid to Contractor, its agents, officers, and employees for Mandatory Assistance.

12.3 Attorneys' Fees Related to Mandatory Assistance. In providing City with dispute or litigation assistance, Contractor or its agents, officers, and employees may incur expenses and/or costs. Contractor agrees that any attorney fees it may incur as a result of assistance provided under Section 12.2 are not reimbursable.

ARTICLE XIII
MISCELLANEOUS

13.1 Headings. All headings are for convenience only and shall not affect the interpretation of this Contract.

13.2 Non-Assignment. Contractor may not assign the obligations under this Contract, whether by express assignment or by sale of the company, nor any monies due or to become due under this Contract, without City's prior written approval. Any assignment in violation of this paragraph shall constitute a default and is grounds for termination of this Contract at the City's sole discretion. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

13.3 Independent Contractors. Contractor and any subcontractors employed by Contractor are independent contractors and not agents of City. Any provisions of this Contract that may appear to give City any right to direct Contractor concerning the details of performing or providing the goods and/or services, or to exercise any control over performance of the Contract, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

13.4 Subcontractors. All persons assigned to perform any work related to this Contract, including any subcontractors, are deemed to be employees of Contractor, and Contractor shall be directly responsible for their work.

13.5 Covenants and Conditions. All provisions of this Contract expressed as either covenants or conditions on the part of City or Contractor shall be deemed to be both covenants and conditions.

13.6 Compliance with Controlling Law. Contractor shall comply with all applicable local, state, and federal laws, regulations, and policies. Contractor's act or omission in violation of applicable local, state, and federal laws, regulations, and policies is grounds for contract termination. In addition to all other remedies or damages allowed by law, Contractor is liable to City for all damages, including costs for substitute performance, sustained as a result of the violation. In addition, Contractor may be subject to suspension, debarment, or both.

13.7 Governing Law. The Contract shall be deemed to be made under, construed in accordance with, and governed by the laws of the State of California without regard to the conflicts or choice of law provisions thereof.

13.8 Venue. The venue for any suit concerning solicitations or the Contract, the interpretation of application of any of its terms and conditions, or any related disputes shall be in the County of San Diego, State of California.

13.9 Successors in Interest. This Contract and all rights and obligations created by this Contract shall be in force and effect whether or not any parties to the Contract have been succeeded by another entity, and all rights and obligations created by this Contract shall be vested and binding on any party's successor in interest.

13.10 No Waiver. No failure of either City or Contractor to insist upon the strict performance by the other of any covenant, term or condition of this Contract, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this Contract, shall constitute a waiver of any such breach of such covenant, term or condition. No waiver of any breach shall affect or alter this Contract, and each and every covenant, condition, and term hereof shall continue in full force and effect without respect to any existing or subsequent breach.

13.11 Severability. The unenforceability, invalidity, or illegality of any provision of this Contract shall not render any other provision of this Contract unenforceable, invalid, or illegal.

13.12 Drafting Ambiguities. The parties acknowledge that they have the right to be advised by legal counsel with respect to the negotiations, terms and conditions of this Contract, and the decision of whether to seek advice of legal counsel with respect to this Contract is the sole responsibility of each party. This Contract shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Contract.

13.13 Amendments. Neither this Contract nor any provision hereof may be changed, modified, amended or waived except by a written agreement executed by duly authorized representatives of City and Contractor. Any alleged oral amendments have no force or effect. The Purchasing Agent must sign all Contract amendments.

13.14 Conflicts Between Terms. If this Contract conflicts with an applicable local, state, or federal law, regulation, or court order, applicable local, state, or federal law, regulation, or court order shall control. Varying degrees of stringency among the main body of this Contract, the exhibits or attachments, and laws, regulations, or orders are not deemed conflicts, and the most stringent requirement shall control. Each party shall notify the other immediately upon the identification of any apparent conflict or inconsistency concerning this Contract.

13.15 Survival of Obligations. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with this Contract, as well as all continuing obligations indicated in this Contract, shall survive, completion and acceptance of performance and termination, expiration or completion of the Contract.

13.16 Confidentiality of Services. All services performed by Contractor, and any sub-contractor(s) if applicable, including but not limited to all drafts, data, information, correspondence, proposals, reports of any nature, estimates compiled or composed by Contractor, are for the sole use of City, its agents, and employees. Neither the documents nor their contents shall be released by Contractor or any subcontractor to any third party without the prior written consent of City. This provision does not apply to information that: (1) was publicly known, or otherwise known to Contractor, at the time it was disclosed to Contractor by City; (2) subsequently becomes publicly known through no act or omission of Contractor; or (3) otherwise becomes known to Contractor other than through disclosure by City.

13.17 Insolvency. If Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the Contract, written notification of the bankruptcy to the Purchasing Agent and the Contract Administrator responsible for administering the Contract. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of City contract numbers and contracting offices for all City contracts against which final payment has not been made. This obligation remains in effect until final payment is made under this Contract.

13.18 No Third Party Beneficiaries. Except as may be specifically set forth in this Contract, none of the provisions of this Contract are intended to benefit any third party not specifically referenced herein. No party other than City and Contractor shall have the right to enforce any of the provisions of this Contract.

13.19 Actions of City in its Governmental Capacity. Nothing in this Contract shall be interpreted as limiting the rights and obligations of City in its governmental or regulatory capacity.

The Fire Service Joint Labor Management

Wellness-Fitness Initiative

















FOURTH EDITION

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The Fire Service Joint Labor Management Wellness-Fitness Initiative

4th Edition

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International Standard Book Number: 0-942920-50-3



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The Fire Service Joint Labor Management Wellness-Fitness Initiative

4th Edition

Task Force Cities



FOREWORD



Harold A. Schaitberger
IAFF General President



Thomas Jenkins
IAFC President

The International Association of Fire Fighters and the International Association of Fire Chiefs have continued to work together in an unprecedented endeavor. We have gathered and maintained for over 12 years some of North America's finest fire departments to build a stronger fire service by strengthening our foundation — the fire fighter and EMS responder. Meeting the challenges of tomorrow's fire service requires that we keep our uniformed personnel fit and healthy today.

The ***Fire Service Joint Labor Management Wellness-Fitness Initiative*** has been an exciting challenge for everyone involved in this very positive endeavor. In this document and throughout the process of its development, enhancement and revision, we have addressed the needs of the total individual in a program designed to build and maintain fit and healthy uniformed personnel. Fitness — physical, mental, and emotional — requires an effective wellness program that is made available to recruits, incumbents, and retirees. Components of the Wellness-Fitness Initiative include medical evaluation, fitness, rehabilitation and injury prevention, behavioral health, and data collection.

It is no secret that, historically, the fire service has placed a great deal of its focus on maintaining apparatus and equipment rather than the uniformed personnel who provide emergency services and use such equipment. Fire fighters and EMS responders respond to emergency incidents that require extreme physical exertion and often result in adverse physiological and psychological outcomes. Over time, these adverse outcomes impact the overall wellness of the fire fighting and emergency response system. Often, past attempts to address personnel fitness have been piecemeal, such as recent trends to unilaterally implement timed, task-based performance tests. Such piecemeal approaches have failed to produce universally acceptable and productive results.

Fire chiefs and IAFF local union presidents participating in the Fire Service Joint Labor Management Wellness-Fitness Initiative have contributed to developing an overall wellness-fitness system with a holistic, positive, rehabilitating and educational focus. All participants have committed themselves to overcoming the historic fire service punitive approaches to physical fitness and wellness issues. They have committed to moving beyond negative timed, task-based performance testing to progressive wellness improvement. Moreover, in a joint endeavor all labor and management representatives have committed themselves to the implementation of an individualized wellness-fitness program that is based on the recommendations located in this document.

The ultimate goal of the comprehensive ***Fire Service Joint Labor Management Wellness-Fitness Initiative*** is to improve the quality of life of all uniformed personnel. The project seeks to demonstrate the value of investing wellness resources for the duration of uniformed personnel's careers in order to maintain fit, healthy, and capable fire fighters and EMS responders. An effective program will minimize the expenditures on lost work time, workers compensation, and disability. In addition, through data collection and analysis, participating departments will create an invaluable database which can be utilized throughout the fire service.

This comprehensive project on physical fitness and wellness issues involved the creation and now 12 years later, the continuation of a network of geographically diverse fire departments with excellent union/management relations. Each of the fire departments selected was represented by the fire chief and the IAFF local union president, Additionally, significant input from technical experts from each department was given. As participants, the fire department and IAFF local union officials detailed their physical fitness programs and needs. They provided feedback to help assist in creating and implementing a practical fire service program, and were committed to sharing new knowledge with the consortium. The IAFF has facilitated this effort and provided the necessary resources to complete this project. The IAFC, as an organization, participated in all phases of this WFI revision.

For the past twelve years, numerous task force meetings and technical committee meetings were held as part of this Initiative. The task force, consisting of the IAFF, the IAFC and the fire department chiefs and IAFF local union presidents, directed the content of the document. Each department was represented on the technical committee by exercise physiologists, fitness coordinators, department physicians, behavioral health professionals, and information management personnel. Expert advisors were utilized throughout the process to assist with meeting proceedings. Facilitating and coordinating the work of the task force and technical committees was completed by the IAFF Division of Health, Safety and Medicine.

ACKNOWLEDGMENTS

The Fire Service Joint Labor Management Wellness-Fitness Initiative is now a complete medical, physical fitness and wellness program package. Since the initial distribution of this manual, the IAFF, the IAFC, the Task Force, and technical committee members have continued to address each of the Initiative's components. The fourth revision of this manual reflects our commitment to keep this project current and seek its full implementation in all career fire departments.

The IAFF Department of Occupational Health and Safety would like to lend its appreciation and gratitude to those individuals who contributed their talent, knowledge and expertise towards the development and completion of the Fire Service Joint Labor Management Wellness-Fitness Initiative.

Foremost to the leadership of the IAFF and the IAFC for their joint commitment on behalf of labor and management in meeting the challenge to design and implement an unprecedented program to save fire fighters' and EMS responders' lives. The foresight of IAFF General President Harold Schaitberger and IAFC President Thomas Jenkins drove this historic labor/management effort to its success and created a future model to address mutually important labor and management issues. The organizational commitments allowed this project to be completed with unanimity in all issues before an extremely diverse group.

Special acknowledgment is given to the IAFF Division of Occupational Health, Safety and Medicine staff responsible for coordinating the Initiative process and manual for their persistence in completing the directed research as well as the manual writing and organization of the project, including Jim Brinkley, Director of Occupational Health and Safety, Lawrence Petrick Jr., Deputy Director Occupational Health and Safety, and IAFF Health and Safety Assistants Jason Atkins, Courtney Benedict, Ron McGraw, Racquel Segall, Lauren Kosc, and Bill Bussing. The Division's administrative staff, especially Teri Byrnes and Joyce Vanlandingham, were responsible for the preparation of all meeting materials and meeting aids. Assistance in editing and final document design and layout was done by the IAFF's Communications Department, Jane Blume Director and Kristin Hazlett, Production Assistant. Video production was provided by E18 Media – Marty Sonnenberg and Erin Hart. In addition, Dr. Virginia Weaver, Dr. Aisha Rivera, and the IAFF Occupational Medicine Fellows from Johns Hopkins School of Hygiene and Public Health provided valuable assistance with the development and review of all medical related issues. Further assistance was provided by Dr. Thomas Hales, NIOSH, Dr. David Frost, University of Toronto, Dr. Stefanos Kales, Harvard School of Medicine, and Dr. Kerry Kuehl, Oregon Health and Science University. We were also assisted by a number of fire department physicians, who served as technical representatives, and worked on this document, especially Dr. Don Stewart, Fairfax County Fire And Rescue, Dr. Paul Parrish, Austin Fire Department, Dr. Steve Moffatt, Indianapolis Fire Department, Dr. David Prezant, FDNY, Dr. Frank Pratt, Los Angeles County Fire Department and Dr. Tony Lynch, Calgary Fire Department.

We gratefully recognize the IAFC officials and staff who participated in the project, including IAFC President Chief Thomas Jenkins, Mark Light, Chief Executive Director and John Woulfe, Program Director.

We are indebted to the Fire Service Joint Labor Management Wellness-Fitness Initiative Task Force, including the IAFF, the IAFC, the ten fire departments and IAFF local unions and their technical, medical and operations staff for the commitment of time and resources, and for their thoughtful direction and insight to the final program's implementation. Each department and IAFF local union, regardless of the numbers of personnel committed to the project participated equally in a balance with the IAFF and IAFC that assured the Initiative's success.

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International Association of Fire Chiefs
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Seattle, Washington Fire Department
Harold Scoggins, Fire Chief
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Literally, hundreds of members of the above departments and locals participated over the past 19 years. However, we must recognize the efforts of members of our PFT Oversight Committee, who continually assisted in the revision process, especially Ian Crosby, IAFF Local 255 — Calgary; Michael Cacciola, IAFF Local 854 — New York; Andy Arredondo, IAFF Local 493, Phoenix; Jill Craig, IAFF Local 975 — Austin; George Cruz, Derek Alkonis IAFF Local 1014 —Los Angeles County, Melissa Kennedy, IAFF local 27 – Seattle; Sue Shepard IAFF Local 416 — Indianapolis..

Finally, we also wish to recognize the special experts we utilized during the process: Joanna Gaitens PhD, MPH, and Melissa McDiarmid, MD, MPH, both Associate Professors of Medicine, University of Maryland; Julie Collier, Physical Therapist, Fairfax County Fire & Rescue Department; Dr. Suzy Bird Gulliver, Clinical Psychologist, Texas A&M University; Frank Leto, FDNY Counseling Services Unit Local 854; Willie Ostiguy, Boston FD EAP Coordinator, Local 718.
The completion of this project could not have been possible without the professionalism and commitment of everyone involved. We recognize and applaud every member of this group for all the hard work they have done throughout the past two years. Our organizations will remain committed to continue developing programs to improve the quality of life of all fire fighters and emergency medical personnel.

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MISSION STATEMENT

Every fire department in cooperation with its local IAFF affiliate must develop an overall wellness/fitness system to maintain uniformed personnel physical and mental capabilities. While such a program may be mandatory agreement to initiate it must be mutual between the administration and its members represented by the local union. Any program of physical fitness must be positive and not punitive in design; require participation by all uniformed personnel in the department once implemented; allow for age, gender, and position in the department; allow for on-duty-time participation utilizing facilities and equipment provided or arranged by the department; provide for rehabilitation and remedial support for those in need; contain training and education components, and, be reasonable and equitable to all participants. The program must address the following key points.

- Confidentiality of behavioral, medical, and fitness evaluations
- Physical fitness and wellness programs that are educational and rehabilitative, and not punitive
- Performance testing that promotes progressive wellness improvement
- Commitment by labor and management to a positive individualized fitness/wellness program
- Develop a holistic wellness approach that includes:
- Medical evaluation
- Fitness
- Rehabilitation
- Behavioral health
- The program should be long term, and, where possible, be made available to retirees.

CHAPTER 1 — Introduction

THE FIRE SERVICE JOINT LABOR MANAGEMENT WELLNESS-FITNESS INITIATIVE

This chapter highlights the following:

- **The Initiative**
- **What is Wellness?**
- **Uniformed Personnel and Wellness**
- **The Union and Wellness**
- **Fire Chiefs and Wellness**
- **Community Support for Wellness**
- **Financial and Administrative Commitment**
- **Overview of Document Content**

THE INITIATIVE

The Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI) is a historic partnership between the IAFF and the IAFC as a way to improve the wellness of fire department uniformed personnel. Ten public professional fire departments from the United States and Canada participated. Each of these departments committed themselves to this Wellness-Fitness Initiative by requiring mandatory participation of all of their uniformed personnel in this program. This intrepid move to commit labor and management to the wellness of their uniformed personnel will carry the fire service into the 21st century.

The Fire Service Joint Labor Management Wellness-Fitness Initiative is a non-punitive program.

The brand and logo for the WFI was established in 2007. All WFI products, including the Initiative, the Candidate Physical Ability Test (CPAT) and the Peer Fitness Trainer (PFT) Certification bear this name and logo.

The intention of the WFI is that its implementation should be a positive individualized program that is non-punitive. All component results are measured against the individual's previous examinations and assessments not against any standard or norm. However, medical practice standards may be used when results indicate that life saving intervention is required.

Confidentiality of medical information is the most critical aspect of the WFI. The unauthorized release of personal details which may be recorded as part of a medical evaluation causes legal, ethical, and personal problems for the employee, employer and examining physician. All information obtained from medical and physical evaluations should be considered confidential. The employer will only have access to information regarding fitness for duty, necessary work restrictions, and if needed, appropriate accommodations. Also, all medical information must be maintained in separate files from all other personnel information.

WHAT IS WELLNESS?

Wellness is a term that refers to an individual's state of mind as well as their physical state, balancing between health and physical, mental, emotional and spiritual fitness. The concept of wellness also entails having access to rehabilitation, when indicated. Moreover, wellness should be an interactive process where an individual becomes aware of and practices healthy choices to establish a balanced lifestyle.

In fire departments wellness programs are intended to strengthen uniformed personnel so that their mental, physical, and emotional capabilities are resilient enough to withstand the stresses and strains of life and the workplace.

A wellness program should not be perceived as just another program, but rather as a complete commitment to the

- health, safety and longevity of all uniformed personnel;
- productivity and performance of all fire crews; and
- cost effectiveness and welfare of the fire department.

The Initiative is considered a total program, where all components must be implemented for the benefit of both the individual and department.

UNIFORMED PERSONNEL AND WELLNESS

Fire fighting continues to be one of the most dangerous occupations in the United States and Canada. Research reveals the need for high levels of physical fitness to safely perform the necessary duties of the fire service. The long hours, shift work, sporadic high intensity work, strong emotional involvement, and exposure to human suffering places fire fighting among the most stressful occupations in the world. High levels of stress, intense physical demands, arduous work and short and long-term exposure to chemicals and infectious disease contribute to heart disease, lung disease and cancer, which are the three leading causes of death and occupational disease disability.

Wellness is important concept for all uniformed personnel. In many departments, some individuals may gravitate to job tasks other than fire fighting due to personal necessity or interest and can include: EMS activities; rescue; hazardous materials response; or fire investigations. However, all tasks include significant physical and emotional stresses.

Wellness is a personal commitment that all uniformed personnel must make to survive and to sustain a successful career in the professional fire service. When uniformed personnel are ill or injured, malnourished or overweight, over stressed or out of balance, it affects their ability to effectively do their job.

There are many benefits of wellness for uniformed personnel. Some of these include:

- greater strength and stamina;
- weight reduction and/or maintenance;
- lower cholesterol and blood pressure levels;
- decreased risk of death, injury, or disability from disease;
- improved job performance and work satisfaction;
- improved physical performance;
- better posture and joint functioning;
- reduced anxiety, stress, tension, and depression;
- increased energy, general vitality, and mental sharpness;
- enhanced self-esteem and self-image;
- improved sleep patterns;
- enhanced capacity to recover from strenuous and exhaustive work;
- increased homeostasis ability;
- improved mobility, balance, and coordination.

THE UNION AND WELLNESS

In implementing wellness-fitness programs unions must assume a leadership role for their members. Traditionally, safety in fire fighting entailed purchasing the latest equipment, such as new apparatus, protective clothing, or the latest technology. Yet, the most important component in responding to emergencies is the fire fighter and EMS provider. The definition for safety in fire fighting must expand to include a wellness-physical fitness program for uniformed personnel. Unions must work to ensure that uniformed personnel have the opportunity to attain and maintain a healthy body and mind so they can perform their work duties to the best of their abilities.

The responsibility for a wellness-fitness program is not simply the responsibility of management, but should have union input and cooperation in the process. Without union participation in establishing such a program there will be limited or no member "buy in" to the program. A wellness-fitness program must be collaborative between labor and management and is educational and rehabilitative and not punitive in nature.

Fire fighter unions work hard to improve the economic status of their members. A quality wellness-fitness program will help all members perform their duties, while allowing them to enjoy the fruits of their labor when they retire.

FIRE CHIEFS AND WELLNESS

As previously stated, wellness is a commitment that all uniformed personnel must make to meet the demands and rigors of the job. It is the fire chief's job to ensure that excellent customer service is delivered to the community by healthy uniformed personnel. In order to achieve such a workplace uniformed personnel can enhance their performance in an environment where workplace safety, regulatory compliance, and positive attitudes exist.

Fire chiefs must support their commitment to wellness with actions and policies that improve the overall quality of life of uniformed personnel. Fire chiefs should take the long view with their commitment to wellness, considering how best to enable the wellness of their members throughout careers and into retirement. Implementation of an evidenced based wellness program will facilitate compliance with workplace regulations and improve the responsiveness of fire chiefs to directives from governing political bodies.

Finally, in most departments, a fire chief is not only an administrator but also an active fire fighter, subject to the same stresses and other occupational hazards. Thus, a fire chief's commitment to wellness serves both personal and professional interests.

COMMUNITY SUPPORT FOR WELLNESS

Every fire incident or response within a community is unique. The ability of uniformed personnel to effectively respond is improved by their level of physical and mental preparedness. A wellness program is a cost effective measure for the community in that injury rates and sick leave usage are reduced. This enables controlling the overtime costs that are associated with filling vacant positions or utilizing other agencies for response. Wellness programs can facilitate fire department compliance with federal, state, and local laws related to issues such as infectious disease training and testing, as well as breathing apparatus certification. Utilizing a wellness program to address such issues will eliminate using costly outside consulting agencies, thus reducing costs while achieving uniformed personnel wellness. Fire departments with members who are medically, physically, and mentally fit provide better service to their communities while realizing reductions in disability retirements by their uniformed personnel.

FINANCIAL AND ADMINISTRATIVE COMMITMENT

The implementation of a wellness program is not free. However, there may be significant cost benefits to initiating or expanding a wellness program. Wellness programs have repeatedly been shown to provide long-term savings.

Fire department wellness programs make economic sense and by adopting and implementing an occupational wellness program, such as the WFI, fire departments can reduce occupational claims and costs while simultaneously improving the quality and longevity of a fire fighter's life; Other benefits include:

- Prevention, early detection and reduction of premature fire fighter musculoskeletal injuries, cardiovascular disease , and cancer through a comprehensive health risk screening;
- Avoiding passive impacts to reduce off-duty injury/illness costs through health promotion programs.
- Behavioral health programs that will further enhance, complement and improve the cost savings of a comprehensive wellness program.

The fire service's greatest asset is not equipment, apparatus or stations, but rather its personnel. It is through personnel that fire departments are able to serve the public, accomplish their missions, and able to make a difference in the community. A commitment and investment in a wellness program helps to gain the members' trust, which in turn benefits every program and each call answered by the fire department. Therefore, placing a high priority on wellness makes sense for everyone including fire service personnel, tax payers, and the public served.

OVERVIEW OF DOCUMENT CONTENT

The Fire Service Joint Labor Management Wellness-Fitness Initiative has five main components. Each component is significant to the implementation of a wellness-fitness program and lends itself to achieving a holistic approach. The The five components are:

1. Medical evaluations
2. Physical fitness;
3. Medical/fitness/injury rehabilitation;
4. Behavioral health;
5. Data collection and reporting.

Structure of Manual

Each of the components is presented as a separate chapter. Each chapter begins with an introduction which explains the need of that component within the context of the WFI. The introduction is followed by a description of the necessary services that should be included to meet the objective of the larger component. Applicable protocols or detailed programs are included or referenced in the document, where appropriate.

National Fire Protection Association Standard 1582 and the WFI

The IAFF worked directly with the National Fire Protection Association (NFPA), as well as the Technical Committee responsible for NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, to ensure consistency in both documents. IAFF provided copyrighted materials to NFPA, with the provision that the incumbent evaluations mirror the Wellness-Fitness Initiative.

The current 2018 edition of NFPA 1582 document includes a stringent standard for candidate fire fighters, as well as a flexible guide for incumbent fire fighters medical determinations, which are based upon the specifics of their condition, as well as the duties and functions of their job. Job tasks are addressed in Chapter 9, with an explanation of medical conditions that can potentially interfere with a member's ability to safely perform essential job task. The key word here is potentially.

Most importantly, presence of one or more of the conditions listed in Chapter 9 for incumbent fire department members does not indicate a blanket prohibition for the incumbent member from continuing to perform essential job tasks, nor does it require automatic retirement or separation from the fire department. However, it does provide the Fire Department Physicians guidance to determine a member's ability to medically and physically function using an individual medical assessment for the conditions listed in the chapter.

Conversely, the standard does provide specific requirements for candidates. Unlike the guidance provided for incumbents, the standard provides specific medical conditions that can affect a candidate's ability to safely perform essential job tasks. Candidates with Category A medical conditions are not to be certified as having met the medical requirements of this standard. Candidates with Category B medical conditions can be certified as having met the medical requirements of this standard, only if they can perform the essential job tasks without posing a significant safety and health risk to themselves, other members, or civilians.

The fire department must also document, through job analysis, the essential job functions that are performed in a local jurisdiction and must also determine if that incumbent is expected to perform those tasks, based on assignment and even rank. **Again, there are no blanket prohibitions for incumbent fire fighters.**

Upon conducting an individual medical assessment, it is the responsibility of the physician to state if a member, because of a specific condition, cannot safely perform his/her job, as well as specific tasks that the individual cannot perform. The fire chief must then determine if there are positions within his/her department that the individual can perform, based on that fire departments job analysis for that position.

It is essential to recognize that this Standard was fundamentally developed for and intended for physician guidance. The Standard is to provide physicians with advice for an association or relationship between essential job functions of a fire fighter as an individual and his/her medical condition(s). This guidance should be utilized for the best approach towards an individual's risk assessment and management with respect to their medical issue(s) and particular job. Therefore, especially with incumbent fire fighters, it is always important to consider what exactly the fire fighter does while on the job and how those particular tasks will affect his/her performance on an individual basis. ■

CHAPTER 2 — Medical

Management and labor shall support the provision of the comprehensive mandatory annual medical exams as a component of the Wellness-Fitness Initiative (WFI) Program

This chapter highlights the following:

- **Introduction**
- **Physical Examination**
- **Body Composition**
- **Laboratory Analyses**
- **Vision Evaluation**
- **Hearing Evaluation**
- **Pulmonary Evaluation**
- **Aerobic/Cardiovascular Evaluation**
- **Cancer Screening**
- **Sleep Disturbance**
- **Immunizations**
- **Infectious Disease Screening**
- **Occupational Stress Awareness Consultation**
- **Referrals to Health Care Practitioners**
- **Written Feedback**
- **Data Collection and Reporting**

INTRODUCTION

The WFI is a progressive model for delivering a preventive and occupational health care services program for today's fire fighters and emergency medical workers (collectively referred to as "uniformed personnel"). The purpose of the WFI is to ensure that uniformed personnel are healthy enough to work safely and effectively during their careers and maintain good health during their retirement. The need for this type of program is based on the unique risks and adverse working environments that uniformed personnel face daily. The intent of the program is that it is implemented as a mandatory, non-punitive program where all uniformed personnel work to improve his or her health or wellness, competing only with themselves.

Due to the physical demands of the job, it is essential that all uniformed personnel maintain a high level of fitness-wellness. In addition, these individual's face unique psychosocial stressors that are a result of the constant exposure to tragic events and suffering. Therefore, the creation of a comprehensive health and wellness program is essential to provide the medical and psychological support needed for uniformed personnel.

Properly implemented, the clinical program outlined in this chapter will allow for an appropriate medical assessment, early detection of diseases and illnesses, as well as implementation of health promotional programs. The annual medical examination is an integral element that provides invaluable health status assessments of both the individual and the department. Moreover, collecting unidentifiable aggregated data during such exams allows for long-term analysis and the implementation of improved preventive programs.

Medical Evaluation and Assessment

The medical evaluation outlined in this chapter is intended to accomplish the following:

1. Identify whether an individual is physically and mentally able to perform essential job duties without undue risk of harm to self or others
2. Monitor the acute and long-term effects of the working environment on uniformed personnel, including exposure to chemical and biological agents and the effects of physical and psychosocial stressors in the fire department
3. Detect patterns of disease in the fire department that might indicate underlying work-related health concerns
4. Provide quantifiable medical information on the entire fire department
5. Inform uniformed personnel of their occupational hazards and health status
6. Provide a cost-effective investment in health promotion and disease prevention in the fire department
7. Comply with federal, state, provincial and local health and safety requirements

A comprehensive medical assessment shall be conducted annually. Individuals may use any designated fire department physician, or other providers, to conduct the medical assessment. Uniformed personnel may elect to have certain components of the medical evaluation (i.e. invasive genitourinary examinations) completed by their primary care physician. If this option is chosen, the exam must still be done within the prescribed schedule and the results reviewed by the fire department-designated medical provider and recorded in the member's confidential fire department medical record. Since many medical providers are not familiar with the increased health risks associated with uniformed personnel, the WFI recommends providing them with the "Fire Fighter Medical Examination" outlined in Appendix B. All medical assessment results, regardless of where they were obtained or performed, shall remain confidential.

Recently, there have been some varying recommendations on the intervals of medical assessments usually based on an individual's age. However, the value of providing annual medical assessments for uniformed personnel within a high-risk occupation has been determined by the WFI Task Force to be medically significant. It is a cost-effective program, based on a history of saving

members' lives through early intervention. The National Fire Protection Association (NFPA), within its health, safety, medical and fitness standards for fire departments has also recognized and specifically requires annual medical assessments.

While the WFI Medical Committee relied extensively on the U.S. Preventive Services Task Force (USPSTF), American Heart Association (AHA) and American Cancer Society (ACS) general population recommendations on health screening, it is important to note that these organizations do not routinely consider occupational risk in their recommendations. Therefore, to specifically address known occupational risks in fire fighters, such as cardiac events during fire suppression and certain cancers, the WFI Medical Committee made recommendations beyond the general population guidelines of these authoritative organizations.

Medical History Questionnaire

An initial pre-employment history questionnaire for establishing a medical baseline and a periodic medical history to provide follow-up information and to identify changes in health status must be completed during each medical assessment.

The Genetic Information Nondiscrimination Act (GINA) prohibits discrimination on the basis of genetic information (including family medical history). The definition of genetic information includes information about an employee's genetic tests, the genetic tests of an employee's family members, and the employee's family medical history. According to the Equal Employment Opportunity Commission (EEOC), family medical history is included in this definition because it is often used to determine whether an employee has an increased risk of getting a disease, disorder, or health condition in the future.

GINA prohibits employers from requesting, requiring, or purchasing genetic information with respect to an employee, subject to several exceptions. The EEOC's regulations state that this prohibition on requesting genetic information from employees applies to medical examinations related to employment, such as periodic or fit-for-duty exams. In order to avoid violating GINA, an employer could require participation in a mandatory wellness program with a mandatory medical exam that does not request family medical history or any other genetic information.

The EEOC has stated that collection of genetic information is only permitted in very limited circumstances, including "voluntary" wellness programs and then, only with prior, knowing, voluntary, and written authorization. Voluntary means that participation is not required and that employees may not be penalized for non-participation in providing genetic information and in the program itself.

Although a fire fighter may not be required to provide family medical history under this law, it may prove to be very useful to medical providers screening for potential medical conditions. Nevertheless, family medical history, when collected, must only be utilized as part of a voluntary wellness and fitness program. In cases where such history is collected, the employee must sign a statement confirming prior to any such disclosure that the information is being voluntarily disclosed. Additionally, the health care provider must maintain the individual's confidentiality and may only report such information to the employer in aggregate terms so that it cannot be tracked back to individual employees. Genetic information cannot be used by employers in making employment decisions.

Health Care Provider Responsibilities

The department will designate all examining physicians approved to evaluate patients for the WFI. This continuum of care includes:

- Candidate medical evaluations
- Annual medical/fitness evaluations
- Injury/illness care and rehabilitation
- Pre-retirement medical evaluations (post-retirement exams where provided)
- Return to work evaluations.

The physician must have a thorough understanding of the positions in the fire department, including:

- Essential job tasks
- Physical demands
- Psychosocial stressors
- Chemical, biological, and physical exposures
- The effects of medical conditions on essential job tasks.

It is important that the physician understand and participate as a member of a multidisciplinary WFI Team. The physician is a vital advisor/consultant to both labor and management on all medical issues.

Physicians must maintain complete adherence to medical confidentiality. Specific information regarding the medical examination, evaluation, laboratory results and medical diagnosis shall not be released unless written permission is obtained from the individual. Employees need to feel assured that the information provided to the physician will not be shared unless consent is granted.

Finally, the fire department physician must have knowledge of local, state, provincial, and federal laws related to health and safety.

WFI PHYSICIAN SELECTION

The physician plays a central role in all medical aspects of the WFI. The following parameters should be considered in selecting a physician for this program. Ensure that the provider:

1. Has experience in occupational medicine including wellness and fitness health components related to firefighting.
2. Is board eligible or certified in a relevant specialty such as emergency, family, internal, or occupational medicine.
3. Has experience coordinating referrals to a variety of medical specialties for care of occupational injuries, cardiac and pulmonary issues, cancer, behavioral and other health issues affecting firefighters.
4. Is familiar with data collection, risk management and environmental conditions relevant to Labor/Management Wellness Fitness Initiatives.

NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments, contains several options that fire departments can implement to increase physician knowledge regarding fire fighter occupational hazards and their management. These include:

- Providing the physician with an overview of all fire fighter essential job tasks and current job descriptions as well as an outline of the types and levels of service provided by the department.
- Assisting the physician to understand the physiological and psychological demands of fire fighters, their work conditions/environment, and their personal protective equipment (PPE) requirements. Options to increase knowledge in this regard include participating in ride-alongs and being present at fire and emergency scenes. This may be more difficult if the position is contracted out to a health care company.
- Ensuring that the physician has a thorough working knowledge of the NFPA 1582 and is actively engaged in the health and safety, behavioral health, rehabilitation, and wellness and fitness programs in their fire department. In addition, ensuring that the physician remains current in the medical literature pertaining to the fire service and consensus clinical practice with relevant CME.

PHYSICAL EXAMINATION

■ Vital Signs

A physical examination begins with the assessment of height, weight, blood pressure, temperature, heart rate, and respiratory rate. Blood pressure shall be a part of the baseline and annual examination, with any necessary follow-up as medically indicated. Uniformed personnel with known elevated blood pressure must be educated about the long-term health effects of ignoring this condition, including the possibility of stroke and coronary artery disease. They must be counseled to obtain treatment from their primary care provider.

■ Head, Eyes, Ears, Nose, and Throat (HEENT)

This examination offers an opportunity for the examiner to assess each person's ability to wear head protection, a respirator face piece, and other respiratory protection. The examiner should also review the importance of an uncompromised airway while wearing a respirator. Moreover, it allows for identification of possible chronic exposures that may place the individual at risk for long-term illnesses. The HEENT exam should emphasize early identification of treatable disease and prevention strategies through education. It is also important to note that the examiner has an opportunity to discuss the health hazards of tobacco use, including cancer, cardiovascular disease, lung diseases and premature aging. This is also an opportunity to discuss tobacco cessation strategies.

The HEENT exam includes a thorough evaluation of the:

- **Head —** Evaluate the shape of a member's face looking for evidence of previous trauma or other gross abnormality that may interfere with the use of self-contained breathing apparatus (SCBA) or other PPE
- **Eyes —** Assess extra ocular movements, pupillary light reflex and accommodation, conduct fundi/retinal exam, assess visual acuity, peripheral vision, and color vision
- **Ears —** Visualize the external ear canal and tympanic membrane, inspect the external ear helix particularly for evidence of sun damage or cancerous lesions. An audiometric exam, performed per standard procedures, is also required.
- **Nose —** Inspect for patency of nares, septal cartilage deviation, evidence of polyps (usually secondary to chronic inflammation), other mucosal changes (e.g., erythematous patches in smokers), and evidence of tenderness over the paranasal sinuses
- **Throat —** Evaluate the oropharyngeal cavity, gums, teeth, palate (hard and soft), tongue (dorsum and undersurface), tonsils and posterior pharyngeal wall, also direct observation for pre-cancerous changes (e.g., color changes-leukoplakia, plaques, nodules, and asymmetry) is important.

■ Neck

The exam should include evaluation of major vessels, lymph nodes, endocrine structures (salivary and thyroid glands), physiologic functioning (e.g., swallowing, saliva production), assess for abnormal masses, gland enlargement, or suspicious skin lesions. Range of motion of the cervical spine should also be noted.

Cardiovascular (CV)

The CV exam must include the following components:

- Assessments of pulse (rate, regularity, and volume)
- Seated blood pressure (with the patient's feet on the floor and the proper sized BP cuff)
- Auscultation of the heart (for heart sounds, extra sounds, clicks, and murmurs) and major arteries (carotid, abdominal aorta, femoral for bruits)
- If clinically indicated, examination for signs of decompensating heart function (CHF) such as jugular venous pulse and peripheral (ankle) edema.

In addition, a medical CV assessment must include a thorough history and physical exam. It is imperative to inquire if there are any recent changes in the patient's aerobic capacity, which could indicate pulmonary or cardiac disease. Typically, uniformed personnel suffering from early lung or heart disease will deny being more fatigued while fighting fires. More common is the complaint that during the past year or two the individual's tolerance for exercise has diminished.

The examiner must identify modifiable cardiac risk factors including:

- Smoking
- Dyslipidemias, including: high total cholesterol/HDL-cholesterol ratio, high LDL-C, high triglycerides, and low HDL-C
- Hypertension
- Diabetes
- Chronic kidney disease
- Metabolic (insulin resistance) syndrome
- Sedentary lifestyle and/or obesity
- Nutritional concerns and/or deficiencies.

Non-modifiable cardiac risk factors should also be noted. These include:

- Male gender
- Advanced age
- Positive family history of premature cardiovascular diseases or risks. Individuals with a family history of premature CAD in a first-degree relative are at an increased risk of cardiovascular events.

Pulmonary

A pertinent history includes any complaints of exercise intolerance, cough, symptoms of bronchospasm, and exposures (chemical or biological). The respiratory exam should include:

- Inspection for respiratory rate and effort
- Presence of coughing or sneezing
- Skin color and any clubbing of the digits (indicative of respiratory diseases)
- Auscultation for breath sounds and any abnormal sounds (expiratory wheezing, inspiratory crackles, or stridor). If clinically indicated, more specific exams for areas of consolidation or dullness (pneumonia, pleural effusions, etc.).

Spirometry is an effective screening and surveillance exam for pulmonary disease and shall be included in the exam. Any changes in the spirometric indices, such as reductions in the vital capacity and/or forced expiratory volumes should be subject to further evaluation by more formal pulmonary function testing and/or evaluation by a pulmonologist.

Gastrointestinal

Gastrointestinal exam shall include inspection, palpation, percussion, and auscultation. Abdominal obesity has been shown to be associated with increased inflammation in the body and concomitant increased risk for several chronic diseases. Palpation for tenderness, organ enlargement, other masses (tumors or hernias), and femoral lymph node enlargement is appropriate. Percussion and palpation of major arteries for bruits and pulse volume (specifically abdominal aortic aneurysms, or weak pulses indicative of arterial atherosclerosis) should also be performed. Generally, the right upper quadrant is palpated for evidence of liver, colon or gall bladder disease; and the left upper quadrant is palpated for spleen or colon pathology. Palpating the right and left lower quadrants is helpful for evaluation of colon disease.

Genitourinary

- *For Men* — this examination includes testicular, penis, and inguinal hernia evaluations, as well as previously mentioned palpation of femoral pulses and for lymphadenopathy. This part of the examination provides an opportunity for the examiner to discuss the merits of testicular and prostate cancer screening, and techniques for self-examination of the testicles. This exam may be deferred if the patient prefers to obtain these exams from his own primary care physician.

- *For Women* — this examination includes vaginal and bimanual pelvic exams, the Pap smear, breast exam, and mammography. This part of the examination provides an opportunity for the examiner to discuss the merits of breast and cervical cancer screening and techniques for self-examination of the breasts. This exam may be deferred if the patient prefers to obtain these exams from her own primary care physician or women's health care facility.

Lymph Nodes

An examination of the lymph nodes for enlargement, tenderness, and mobility in the cervical, supraclavicular, inguinal, and the axillary regions is to be conducted.

Neurological

The neurological examination for uniformed personnel shall include a general assessment of:

- Mental status
- Cranial nerve function
- Motor system
- Sensory system
- Cerebellar function/coordination (balance and gait)
- Reflexes

- ***Mental Status Exam*** — A general mental status exam focuses on orientation, memory (short and long term), and judgment. If clinically indicated, refer for psychiatric and/or psychological evaluation for additional assessment.

A focused cranial nerve examination includes an emphasis on the senses. The cranial nerve exam includes:

CN1 — smell (often omitted unless history of head trauma or toxic inhalation)

CN2 — vision

CN3 – pupillary constriction; elevation of the eyelid; extra ocular eye movements

CN4 – extraocular eye movement

CN5 – jaw movement

CN6 – extraocular eye movements

CN7 – muscles of the face

CN8 – hearing and balance

CN9 – taste and pharynx movements

CN10 – movement and sensation in the oropharynx

CN11 – movement of the neck muscles

CN12 – tongue movement. A more thorough evaluation may be necessary if clinically indicated (e.g., headaches, dizziness/vertigo, or syncope).

- ***Peripheral Nerve Exam*** — peripheral nerve function is assessed in the motor and sensory portions of the neurological exam. Decreases and imbalances in muscular power can predispose uniformed personnel to musculoskeletal injuries. Thus, a general (motor assessment as measured by a 0 to 5 subjective rating of power) is important as it pertains to safe and injury-free work performance. The peripheral neurological examination is usually continuous with the cranial nerve evaluation. However, such peripheral motor, sensory, and reflex examinations may be conducted in conjunction with the musculoskeletal exam.

  Motor — gait, heel-to-toe, and Rhomberg (feet together, arms outstretched, palms up and eyes closed) screening examinations for cerebellar function must be conducted. Muscle strength is tested in all major muscle groups. Because of the physical demands on fire fighters, any evidence of decreased muscle strength (as measured on the standard 0-5 scale) raises significant concerns regarding work performance and must be addressed.

  Sensory — the examination includes pain, thermal sensation, light touch, position, two point discrimination, and vibratory sensation testing. Thermal evaluations are generally omitted if the pain examination is normal.

  Reflexes — this examination includes the standard evaluation of reflexes on a 0-4+ scale, including the ankle, knee, bicep, tricep, and brachioradialis.

Musculoskeletal

In addition to the motor assessment, the examiner must inspect and palpate for the following conditions:

- Structural asymmetries (e.g. areas of muscular imbalance and atrophy)
- Active range of motion of all major joints (including the back)
- Sensation of pain with any of the above
- A complete joint specific examination where clinically indicated.

Any musculoskeletal limitations or areas of pain are important to note, not only for the timely provision of physical therapy, but to record those injuries that may be relevant to future workers' compensation, pension, or disability claims.

Skin

The examiner shall inspect the skin for color, vascularity, lesions, and edema. Careful examination of the skin for abnormal/atypical nevi (moles) or other suspicious lesions that could be cancerous (non-melanoma or melanoma types) is critical. The clinician should have a low threshold for referring a patient to a dermatologist when suspicious or atypical changes are present. Also note any rashes, scars, tattoos, or obvious evidence of trauma/injury (bruising, excoriations, scraps, cuts, swelling, erythema, warmth, or tenderness).

BODY COMPOSITION

Body composition differentiates between the relative amounts of adipose tissue (fat) and lean body mass. Lean body mass consists of muscle, bone, organs, nervous tissue, and skin. Historically, body fat was thought of as a passive tissue that served to insulate and protect the body and its organs and act as a reservoir for energy storage. Although some body fat is considered essential, excess body fat increases the workload and amplifies heat stress by preventing the efficient dissipation of heat when a person exercises. In addition, added body fat elevates the energy cost of weight-dependent tasks such as climbing ladders and walking up stairs, contributing to injuries and an increased risk of many chronic diseases. Obesity is overtaking smoking as the number one cause of preventable deaths and is associated with an increase in almost every chronic disease including but not limited to:

- Cardiovascular disease
- Hypertension
- Dyslipidemia
- Heart failure
- Diabetes
- Several types of cancer
- Asthma and chronic lung diseases
- Obstructive sleep apnea
- Dementia
- Arthritis
- Gastroesophageal reflux disease

■ Evaluation of Body Composition

Methods for evaluating body composition include:

- Circumferential measurements
- Hydrostatic weighing
- Bod Pod
- Bioelectrical impedance analysis (BIA)
- Skinfold measurement
- Body Mass Index (BMI)

The accuracy, reliability and practicality of these methods vary. There is ongoing research on the most accurate and consistent method for evaluating body composition. However, the WFI has selected the hip to waist circumference ratio as the preferred method of estimating body composition.

■ Distribution of Body Fat

Recent scientific research suggests that the distribution of body fat is an important predictor of negative health outcomes. Individuals with more intra-abdominal/visceral fat, which is fat around abdominal organs, are at an increased risk of hypertension, type 2 diabetes, dyslipidemia, coronary artery disease, and premature death. This visceral adipose tissue is metabolically different than subcutaneous fat. Excessive abdominal fat, as revealed by waist circumference measures, creates increased inflammation in the body. This occurs because fat cells release pro-inflammatory cytokines, cell signaling molecules that activate the immune system, which 'turns on' an inflammatory cascade at genetic and cellular levels, ultimately affecting the entire body. This is important because current scientific research links chronically increased inflammation to several chronic disease states such as cardiovascular disease, pre-diabetes/diabetes, cancer, and dementia, and others.

Thus, abdominal fat is no longer thought of as just a passive or inert reservoir for storing energy; it is an active endocrine organ, secreting many factors capable of increasing systemic inflammation within the body. Expert consensus indicates that a waist circumference measurement, measured at the level of the iliac crests, that is greater than 102cm (40 inches) in men, and 88cm (35 inches) in women imparts a significant increase in the risk of chronic disease, including cardiovascular disease. Obesity, and in particular abdominal obesity, is a health risk that must be managed aggressively.

LABORATORY ANALYSES

Blood and urine testing should be conducted at baseline and at a minimum of every three (3) years to the age of 40 and annually thereafter. Prior to age 40, this testing should be performed more frequently as a function of age, disease, risk factors and specific occupational exposures. Follow-up abnormal lab results as clinically appropriate.

Prior to reporting to a physician for an annual medical examination, uniformed personnel may have their blood drawn and urine sampled and analyzed at a designated laboratory site. Having the lab results available at the time of the physical exam will assist physicians in providing a more thorough examination and allow physicians to address any concerns based on the laboratory results. If blood is drawn and urine sampled during the annual examination, results are provided to physicians for a follow-up and/or addressed in the Health Risk Appraisal.

■ Blood Analysis

The following are components of the blood analysis. At a minimum, laboratory services must provide these components in their automated chemistry panel (CMP) and complete blood count (CBC) protocols. If laboratory tests are not done prior to the scheduled physical examination, laboratory tests will be drawn at the time of the medical examination.

Blood drawn for medical analysis *will not* be used for drug screening at any time.

The minimum blood analysis includes:

- White blood cell count (with differential)
- Platelet count
- Red blood cell count (hemoglobin and hematocrit)
- Liver enzymes and function tests (AST, ALT, LDH, alkaline phosphatase, bilirubin, albumin)
- Fasting glucose
- Creatinine and estimated glomerular filtration rate (eGFR)
- Blood urea nitrogen; sodium; potassium; carbon dioxide; total protein; calcium; lipids (cholesterol and triglycerides) – fasting

- ***White Blood Cell Count***
  White blood cells (WBC) are an important part of the body's immunologic system. The role of white blood cells is to help the body defend itself against infection.

  An elevated WBC count may suggest an acute bacterial or viral infection, various types of leukemia, acute blood loss, renal failure, pregnancy, or an inflammatory disorder (such as inflammatory bowel disease). It may also indicate the effects of acute severe emotional/physiological stress (e.g. burns, trauma) on an individual.

  Situations where the WBC count is low can include: chronic viral or bacterial infection, acute leukemias, immunosuppressive disorders (e.g., HIV), autoimmune diseases (e.g., lupus), chemical and heavy metal toxicities, drug effects (e.g. some antibiotics and analgesic medications), and perhaps chronic emotional stress (which could be construed as 'normal' depending on the circumstances of the individual). The WBC differential helps to determine the significance of an abnormal WBC count.

- ***WBC Differential***
  The WBC differential identifies relative amounts of different types of white blood cells and helps to identify different clinical problems. For instance, a high neutrophil count might indicate: an acute bacterial infection; presence of immature neutrophils (bands) could mean acute leukemia; excess eosinophils may indicate a parasitic infection or allergic reaction; or an increase in lymphocytes may indicate a chronic inflammatory condition, infection or chronic type of leukemia.

- ***Red Blood Cell Count***
  The purpose of red blood cells is to carry oxygen to the body's tissues. The routine measures of the blood's oxygen carrying capacity are hemoglobin and hematocrit. An increase in the number of RBC's may indicate dehydration, a myeloproliferative disorder called polycythemia, or conditions of hypoxia such as emphysema and smoking**.** Decreased levels may indicate anemia, acute blood loss, or hemodilution.

- ***Platelet Count***
  Platelets are essential to the bloods ability to properly clot. Abnormally low platelet counts, known as thrombocytopenia, may be caused by a decrease in production possibly stemming from bone marrow suppression, clumping or destruction of platelets from sequestration in the tiny capillaries of the spleen. High platelet counts are associated with myeloproliferative disorders such as polycythemia, essential thrombocytosis, or chronic myelogenous leukemia.

- ***Liver Enzymes and Function Tests***
  The following liver assessment tests are used primarily to detect and monitor liver disease. These tests measure either liver injury (enzymes, also referred to as liver transaminases) or liver function. An increasingly common cause of elevated liver enzymes is fatty infiltration of the liver, due to obesity, referred to as 'non-alcoholic fatty liver disease.' Abnormal results are caused by many other medical conditions or medical treatments.

  Aspartate aminotransferase (AST) — is distributed through many tissue types with high concentrations in liver, heart, skeletal muscle, and kidney. It is elevated in liver conditions of infection (hepatitis), obstruction (e.g., gall bladder stones), cirrhosis, fatty infiltration, myocardial stress (acute MI, infection, heart failure), skeletal muscle trauma or vigorous exercise, medication use (e.g., acetaminophen or isoniazid), or alcoholism. Low levels are due to vitamin B6 deficiency, renal failure, or protein deficiency/malabsorption.

  Alanine aminotransferase (ALT) — is typically elevated in liver disease, although there are small amounts of this enzyme in heart, kidney, and muscle tissues. It is more liver specific than is AST. Typically alcoholism, hepatitis, obstructive jaundice, liver cancers, cirrhosis, acute MI, trauma to skeletal muscle, and salicylate (ASA) toxicity can cause ALT elevation.
  Lactate dehydrogenase (LDH) — is an enzyme present in all cell types and is released when they are damaged. It is elevated in liver disease, malignancy, hemolytic anemia (rupture of red blood cells), pulmonary infarct, muscular or myocardial injury, or trauma.

  Alkaline phosphatase (Alk Phos) — is present in high concentrations in growing bone and in bile. It

is elevated in diseases involving the liver, especially any disease process that impairs bile formation or flow (e.g., hepatic duct blockage with stones, metastatic carcinoma of liver), thus it is a liver 'function' test. Diseases of the bone (e.g., bone metastases, Paget's disease, osteomalacia, rickets, hyperparathyroidism, healing fracture, or myositis ossificans) also increase this enzyme. Decreased levels might indicate hypothyroidism, very low fat/low protein diets, zinc deficiency, excessive vitamin D intake, or blood type A.

Bilirubin — is formed when RBC's break down and release their bilirubin (heme metabolism), which is then conjugated in the liver for excretion in the bile. High levels of bilirubin in the blood may be due to abnormalities of formation, transport, metabolism, and excretion. This makes bilirubin a liver 'function' test. Jaundice results from high bilirubin concentrations in the serum. Elevated bilirubin levels are classified as unconjugated or conjugated hyperbilirubinemias. Unconjugated (indirect) hyperbilirubinemias are caused by: increased bilirubin production (e.g., hemolytic anemias or reactions); impaired bilirubin uptake by the liver (due to certain drugs); or impaired conjugation (Gilbert's disease is a common cause of elevated bilirubin which is caused by a decreased level of a conjugation enzyme). Conjugated (direct) hyperbilirubinemias result from: impaired excretion of bilirubin from the liver due to hepatocellular disease (hepatitis, cirrhosis); intrahepatic cholestasis (blockages within the liver) from drugs, sepsis, and hereditary cholestatic syndromes; or extrahepatic biliary obstruction.

Albumin — is a protein made by the liver, thus it is a liver 'function' test. Decreased levels of albumin can be the result of: liver disease or dysfunction (e.g., hepatitis, cirrhosis, necrosis, fatty liver); malnutrition; malabsorption; alcoholism; some chemical and heavy metal toxicities; systemic infections; chronic inflammation; insulin resistance; obesity; autoimmune diseases; renal diseases (nephrotic syndrome, glomerulonephritis); congestive heart failure; overhydration; leukemia; or pregnancy. Albumin may be high with dehydration, shock, and prolonged tourniquet use during venipuncture, and with steroid therapy.

- ***Glucose***

Adequate levels of glucose are essential for all normal body functions. Cells use glucose as a fuel substrate to produce adenosine triphosphate (ATP), the basic source of energy used in all metabolic reactions, both anabolic (synthetic reactions that convert simple molecules into larger more complex molecules) and catabolic (reactions that breakdown or degrade larger molecules into simpler ones). Insulin is a hormone that regulates glucose metabolism. Diabetes results from a lack of insulin, a lack of sensitivity to insulin or both. Blood glucose may be tested in a multi-step process to determine if one has diabetes or is at risk of developing diabetes. Fasting blood glucose levels are easier to interpret than are random levels although both measurements may be useful in the diagnosis of diabetes.

- ***Creatinine (Cr)***

This is a measure of renal function. It is a product of muscle metabolism that is produced in the blood stream at a relatively constant rate and cleared by renal excretion. The kidney filters blood through millions of sieves, glomeruli, which retain essential components of the blood in the body followed by selectively reabsorbing anything that was missed by the glomeruli in the renal tubules. Creatinine is freely filtered by the kidney and not reabsorbed by the renal tubules. It is not a perfect indicator of renal function as other factors can alter serum creatinine measurement. Conditions causing elevation of creatinine include use of drugs, such as aspirin, cimetidinetrimethoprim, cephalothin, and cefoxitin, ketoacidosis, and increased protein intake or muscle mass. Conditions causing decrease of creatinine include advanced age due to physiological decrease in muscle mass; cachexia, due to pathological decrease in muscle mass caused by cancer and malnutrition; and liver disease, due to a decrease in hepatic creatinine synthesis and cachexia.

- ***Glomerular Filtration Rate (GFR)***

This is the best index of overall kidney function and is a more sensitive, and early, indicator of kidney dysfunction than creatinine alone. Creatinine clearance, done with 24 hours of urine collection, is the usual means of estimating GFR. Urine collection for a full 24 hours is impractical for patients and prone to error. Many laboratories now estimate GFR using the modified MDRD GFR equation which uses the patient's age, gender, race, and measured serum creatinine level. This estimate of GFR is often included with the serum creatinine on the laboratory results chart.

- ***Blood Urea Nitrogen (BUN)***

Urea is another useful index of renal function. It is synthesized mainly in the liver and is the end product of protein catabolism. The kidney excretes this nitrogenous waste product of protein catabolism. Kidney damage reduces its excretion and is a marker of renal failure and disease.

Urea is freely filtered by the kidney with approximately 30 to 70 percent being reabsorbed in the renal tubules, but is dependent upon the hydration status of the individual. The reabsorption of urea may be decreased in well-hydrated individuals, causing a low BUN level. Whereas, dehydration causes increased reabsorption causing a higher BUN level, as is often seen after a prolonged fast with little water intake.

A normal BUN creatinine ratio is 10:1. With dehydration, the ratio can increase to 20:1 or higher. There are conditions other than renal disease that affect BUN independently of GFR. Circumstances which could increase BUN include:

- Conditions that reduce the effective circulating blood volume (e.g. dehydration, congestive heart failure, or acute blood loss/shock)
- Catabolic states (e.g. gastrointestinal bleeding or corticosteroid use)
- High protein diets
- Drugs such as tetracycline, analgesics, or NSAIDs.

Circumstances which could decrease BUN include:

- Liver disease
- Malnutrition
- Low protein diet
- Cachexia
- Overhydration

- ***Sodium***

Sodium is an important electrolyte in the body. Abnormal serum sodium does not necessarily mean a problem with the sodium ion balance, but is most often due to abnormal water balance, generally associated with abnormal serum osmolality and shifts of water across the cell membrane.

The most common and complicated disturbance of sodium is hyponatremia, a low sodium concentration. Generally, it results from water imbalance, not sodium imbalance. Its differential diagnosis starts with measurement of the patient's serum osmolality as low, normal, or high, then determination of their extracellular fluid volume as low, normal, or high. The most common reasons for hyponatremia can include situations where the patient's serum osmolality is low and their volume status is low or normal. If their volume status is low, known as hypovolemia, it may be the result of: dehydration, vomiting, or diarrhea which causes extrarenal salt losses; certain medications such as diuretics and ACE inhibitors; or aldosterone deficiencies. If volume status is normal, hyponatremia is usually due to the syndrome of inappropriate antidiuretic hormone secretion (SIADH). Patients who are hypervolemic, in edematous states, with hyponatremia may have congestive heart failure, liver disease, nephritic/nephrotic syndrome, or advanced renal failure.

Hypernatremia, high sodium concentration, occurs most commonly when free water intake has been inadequate. This is not an exhaustive list of causes for hypo/hypernatremia and specialist consultation may be appropriate.

- ***Potassium***

Potassium is another important electrolyte in the body. Ninety-five (95) percent of potassium resides inside cells. The plasma potassium concentration is maintained in a narrow range through two main regulating mechanisms: potassium shift between intracellular and extracellular compartments and modulation of renal potassium excretion. Elevated potassium levels (hyperkalemia) may occur in patients taking certain medications that inhibit potassium excretion, including ACE inhibitors, angiotensin receptor blockers, potassium sparring diuretics, or a combination of them. Other medications that can cause hyperkalemia include NSAIDs, trimethoprim, tacrolimus and heparin. Otherwise, the causes of hyperkalemia involve clinical situations where there is decreased excretion of potassium, shift of potassium out of cell, spurious causes or if there is excessive intake of potassium.

Low potassium levels (hypokalemia) occur in situations where there is:

- Decreased potassium intake
- Potassium shift into the cell (alkalosis, excess insulin, or trauma)
- Renal potassium loss (aldosterone deficiency
- Therapy with diuretics, such as furosemide and thiazides
- Hypomagnesemia
- Renal tubular acidosis)
- Extrarenal potassium loss (vomiting, diarrhea, or laxative abuse).

This is not an exhaustive list of causes for hyper/hypokalemia and specialist consultation may be necessary.

- ***Carbon Dioxide (Bicarbonate)***

Carbon dioxide levels are an indicator of the acid-base status of the patient. The measurement of venous carbon dioxide is actually a direct determination of the bicarbonate anion concentration. Therefore, for clinical purposes the total carbon dioxide content is equivalent to the bicarbonate anion concentration. Disturbances in acid-base balance can be caused by a variety of primary metabolic and respiratory disorders (more acute situations), or they can be due to a combination of the two (in more chronic situations where there has been compensation for the primary disorder). Primary respiratory disorders affect blood acidity by causing changes in the arterial partial pressure of carbon dioxide, and primary metabolic disorders are indicated by changes in the bicarbonate anion concentration. The medical workup of the patient with an acid-base disorder is complicated and may require specialist consultation.

- ***Total Protein***

  Total protein is a measure of the total proteins in the serum (albumin and globulins). Plasma also contains fibrinogen protein so if the lab result is high, ensure that the serum was measured and not the plasma. Total protein levels can be elevated in:

  - Chronic infection
  - Chronic liver disease
  - Alcoholism
  - Dehydration
  - Multiple myeloma
  - Lymphoma
  - Some autoimmune diseases.

  Levels are low in malabsorption, malnutrition, severe liver disease, chronic renal failure, nephrotic syndrome, over-hydration, and protein losing states.

- ***Calcium***

  Calcium is measured in the serum or plasma and is required for normal muscle contraction and nerve function. It is the ionized calcium in blood that is usually measured, and any variation from the normal range is usually highly significant. Calcium is usually elevated, known as hypercalcemia, due to primary hyperparathyroidism or a malignancy (e.g., multiple myeloma, lymphoma, or tumors that secrete PTH). These two (2) reasons account for 90 percent of all cases of high calcium. Other causes of hypercalcemia include increased intake or absorption of antacids or excess vitamin D or A or other endocrine diseases such as adrenal insufficiency, or pheochromocytoma, sarcoidosis, Paget's disease of the bone, drugs such as thiazide diuretics or lithium, and conditions leading to immobilization.

  Ionized calcium may be low, referred to as hypocalcemia, in conditions where there is insufficient action of PTH (e.g., hypoparathyroidism) or active vitamin D. The most common cause for low total calcium is low albumin states. Correction, by the lab or with a formula, of the serum calcium concentration is needed to accurately reflect the ionized calcium concentration. The most common cause of hypocalcemia is renal failure due to decreased production of vitamin D. Other important causes include decreased intake from malabsorption or vitamin D deficit, increased loss resulting from diuretics or alcoholism, hyperphosphatemia, and sepsis. The medical workup of the patient with hyper/hypocalcemia can be complicated and may require specialist consultation.

- ***Lipid Tests***

  A full lipid panel is a critical component of the laboratory testing profile for the WFI. In the general population, a positive correlation between plasma cholesterol and coronary risk has been well documented. Fire fighters are at an even higher risk of cardiovascular events during their duty, especially during fire suppression. Almost half of fire fighter line-of-duty deaths can be attributed to cardiovascular events. Hypercholesterolemia is one of the major modifiable risk factors in efforts to prevent coronary artery disease and cardiovascular events.

  - *Total Cholesterol* — Cholesterol belongs to a larger family of biological chemicals called lipids (fats). Because it is such a critically important substance, a complex carrier system has developed to move cholesterol through the entire body. This system consists of several proteins that bind to cholesterol and transport it to where it is needed. Cholesterol, a lipid, when bound together with one of these carrier proteins, is called a lipoprotein. Both total cholesterol and carrier proteins can be measured in blood samples. When looking at total serum cholesterol levels, the risk of developing atherosclerotic coronary vascular disease increases as the total cholesterol level increases.

  - *Low Density Lipoprotein (LDL-C) level* — LDL-C is 45 percent cholesterol by weight and is the major carrier of cholesterol to the body's tissues. Since LDL-C can deliver too much cholesterol to the wrong places (like the heart arteries) resulting in cholesterol plaque build-up, people often refer to this as a bad cholesterol.

  - *High Density Lipoprotein (HDL-C) level* — HDL-C is 30 percent cholesterol by weight and is involved in reverse transport of cholesterol away from body tissues and out of the body. HDL-C cholesterol removes excess cholesterol from the arteries, helping to prevent the build-up of cholesterol plaques. Because this lipoprotein appears to remove excess cholesterol, it is often referred to as the good cholesterol.

  - *Total Cholesterol/HDL-C Ratio* — TC/HDL-C ratio gauges relative risk of cardiovascular disease. The importance of the protective effect of HDL cholesterol is emphasized by this ratio. The total cholesterol level may be within a normal range but combined with low HDL-C cholesterol level, the ratio indicates the individual is at a higher risk than someone with normal total cholesterol and a normal HDL-C level.

  - *Triglycerides* — Triglycerides are a type of lipid made by the body when calories from food are not immediately needed. Triglycerides are stored in fat cells and released later as needed for energy between meals. A high triglyceride level combined with low HDL or high LDL cholesterol is associated with plaques in artery walls that increase the risk for heart attack and stroke.

  While cholesterol tests are part of the medical examination, the WFI strongly recommends that a fasting lipid profile be conducted at least once every five

(5) years. Further, a non-fasting total cholesterol > 200 or HDL cholesterol < 40 indicates the need for a fasting lipid profile.

Risk factors for cardiovascular disease that need to be considered in the interpretation of results and in further determining additional fasting lipid profile testing include age > 45 years for males and > 55 years for women, current cigarette smoking, hypertension, HDL-C cholesterol below 40 and a family history of premature coronary heart disease defined by a definite myocardial infarction or sudden death before age 55 years in a male first-degree relative and before age 65 in a female first-degree relative. A desirable LDL-C level in individuals without identifiable coronary heart disease is < 160 mg/dl with zero risk factors and < 130 mg/dl for two or more risk factors. The desirable LDL-C cholesterol level for those individuals with known coronary artery disease or risk equivalents including symptomatic carotid artery disease, peripheral arterial disease, abdominal aortic aneurysm, and diabetes mellitus is < 70 mg/dl.

Given the increased risk for cardiovascular events in fire fighters during fire suppression activities and the increased physiological demand imposed by the fire service, cholesterol lowering therapy including lifestyle modification and medication when necessary is recommended for the achievement and maintenance of desired cholesterol levels.

Additionally, if a member's cholesterol level is elevated on multiple exams, the WFI health care provider should discuss these longitudinal results and their health implications with the member. The member should be encouraged to provide a copy of the results to his or her personal health care provider and seek treatment. Referral for nutritional counseling or other intervention as clinically indicated is recommended.

Metabolic Syndrome

Individuals with metabolic syndrome (also referred as syndrome X, insulin resistance syndrome, and pre-diabetes) are at increased risk for the development of coronary heart disease and other diseases related to plaque buildup in artery walls, such as stroke and peripheral vascular disease, as well as Type 2 diabetes mellitus.

Therefore, it is important to identify those with metabolic syndrome and refer for treatment. The metabolic syndrome is identified by the presence of three (3) or more of the following components:

- Abdominal obesity defined as a waist circumference >102 cm (>40 in) in men or >88cm (>35 in) in women
- Triglycerides ≥150 mg/dL; HDL cholesterol <40 mg/dL for men or <50 mg/dL for women
- Blood pressure: systolic ≥130 or diastolic ≥85 mmHg; and fasting glucose ≥110 mg/dL

Heavy Metal and Special Exposure Screening

Baseline testing for heavy metals and special exposures may be performed under special circumstances, such as hazardous materials exposures, recurrent exposures, other known exposures, or where under federal, state, or provincial regulations requires it, such as OSHA standards.

The following screenings may be utilized:

- Urine screening assesses exposure to arsenic, mercury and cadmium
- Blood screening for lead and zinc protoporphyrin assesses exposure to lead
- Testing and screening for specific exposures or other heavy metal screens may include aluminum, antimony, bismuth, chromium, copper, nickel and zinc
- Special blood testing may be ordered for organophosphates, plasma and/or RBC cholinesterase, or other toxic exposures such as blood screening for exposure to PCBs.

Urinalysis

Urinalysis will include both dip stick and/or laboratory microscopic evaluations. The urine sample received for this analysis is not intended to be and will not be used for drug or alcohol use screening at any time.
Dip Stick Urinalysis analyzes the following:

- pH — Is the relative acidic or basic state of the urine can be an indication of infection or chemical exposure.
- Glucose — Excess glucose is seen in diabetes and renal tubule disease.
- Ketones — Are abnormally elevated in uncontrolled diabetes, alcoholism, starvation, dehydration, and with some weight reducing diets.
- Protein — Protein levels in urine can be elevated in kidney or urinary tract diseases including cancers. The clinical significance of elevated protein on dipstick can be determined by performing a 24-hour urine test.
- Blood — Dip sticks detect hemoglobin, from lysed red blood cells, and myoglobin. Levels can be elevated with hemolytic anemias, infections, kidney stones, tumors, dehydration, muscle breakdown, and renal disease due to tuberculosis, trauma, glomerulonephritis, or cancer.
- Bilirubin — Dip sticks may be positive for bilirubin in liver disease, the breakdown of red blood cells, and gallbladder obstruction.

Microscopic urinalysis includes evaluation for white blood cells (WBC), red blood cells (RBC), WBC casts, RBC casts, and crystals. This testing helps to differentiate various kidney and urinary tract diseases or trauma.

VISION EVALUATION

Assessment of vision must include evaluation of distance, near, peripheral, and color vision. Near visual loss, known as presbyopia, is common in adults and increases in prevalence with increasing age usually from the mid to late 40s on. Common visual disorders affecting adults include cataracts, macular degeneration, glaucoma, and diabetic retinopathy.

The visual evaluation must include:

- Visual acuity screening for both far vision acuity and near vision acuity. Each eye must to be tested separately.
- Vision testing to determine both uncorrected and corrected visual acuity
- Color vision testing must be assessed using color plates, such as Ishihara plates

When peripheral vision evaluations are indicated, protocols specific to the test apparatus, not objects in the field, must be utilized.

HEARING EVALUATION

By nature of their occupation, uniformed personnel are at an increased risk for noise-induced hearing impairment at an earlier age than the public. Baseline and annual audiograms must be performed on all uniformed personnel. To establish trends in hearing acuity, the current audiogram must be compared with all previous audiograms, including the baseline. Testing must be done in an ANSI-approved soundproof booth. Pure tones are presented at various intensities until a threshold is established. For the purposes of database collection, the following frequencies are tested: 500 Hz, 1000 Hz, 2000 Hz, 3000 Hz, 4000 Hz, 6000 Hz and 8000 Hz.

In addition, pure tone threshold testing must be performed separately in both ears and participants must not use hearing aids during testing.

PULMONARY EVALUATION

■ Spirometry

A baseline spirometry must be established in all uniformed personnel who may be required to wear breathing apparatus. A baseline is useful in individuals who have a history of respiratory health problems to use for later comparison. Baselines can also be used in individuals without respiratory disease who later develop respiratory impairment again for comparison purposes. Since maximum effort is required, results can vary depending on the patient's effort and coaching proficiency of the test administrator. Please note the technician performing this test must be certified through NIOSH-approved courses in the testing procedure. The member's age, height, gender, and race/ethnicity is used by the technician to optimally calculate and interpret spirometry results. Significant deterioration, greater than 15 percent from the previous year's test, indicates further evaluations.

• ***Spirogram***

Only a spirogram that is technically acceptable and demonstrates the best effort by an individual should be used to calculate Forced Vital Capacity (FVC) or Forced Expiratory Volume (FEV_1).

Guidelines from the American Thoracic Society and the European Respiratory Society (ATS/ERS Task Force: Standardisation of Lung Function Testing: Standardisation of Spirometry http://www.thoracic.org/statements/resources/pft/PFT2.pdf) and the American College of Occupational and Environmental Medicine (Mary C. Townsend, DrPH, and the Occupational and Environmental Lung Disorders Committee, Spirometry in the Occupational Health Setting – 2011 Update; http://www.acoem.org/Guidelines.aspx) provide information on criteria for spirometry acceptability and reproducibility.

Interpretation of spirometry results is based on ATS/ERS Task Force: Standardisation of Lung Function Testing: Standardisation of Spirometry http://www.thoracic.org/statements/resources/pft/PFT5.pdf and UpToDate, Office Spirometry –

- FVC less than 80 percent of predicted (or below the 5th percentile of the predicted value [lower limit of normal]) in the presence of normal FEV1 and FEV1/FVC may indicate restrictive lung disease and should be followed up with lung volume testing.
- FEV1/FVC below the 5th percentile of the predicted value with an FEV1 < 70 percent of predicted (or below the 5th percentile of the predicted value) and a normal FVC indicates obstructive lung disease.
- FEV1/FVC below the 5th percentile of the predicted value with an FEV1 < 70 percent of predicted (or below the 5th percentile of the predicted value) and an FVC less than 80 percent of predicted (or below the 5th percentile of the predicted value) suggests combined obstructive and restrictive lung disease.

Longitudinal spirometry is the most effective screening test for the early identification of pulmonary dysfunction. The following respiratory tests are used when indicated to further evaluate suspected abnormal conditions; some may be performed in specialized laboratories.

• ***Peak Expiratory Flow Rate***

A low PEFR may indicate obstructive lung disease entities such as asthma or chronic obstructive pulmonary disease (COPD), but is most useful as a simple measurement to monitor asthmatic response to therapy. PEFR can be used at home or work to objectively document a patient's symptomatic complaints.

• ***Pre/Post Bronchodilator***
Obstructive disease and mixed obstructive/restrictive disease usually, but not always, respond to a bronchodilator. Restrictive diseases typically do not respond to a bronchodilator. Repeat spirometry after bronchodilator treatment may provide useful information, but is not required for data collection purposes.

• ***D_LCO***
A measurement of diffusing capacity of carbon monoxide. Low DLCO, less than 80 percent (or below the 5th percentile of the predicted value), is seen in interstitial restrictive lung diseases (e.g., asbestosis and sarcoidosis), chronic CO intoxication, and obstructive lung diseases such as emphysema. DLCO is not reduced in bronchitis or asthma.

• ***Lung Volumes***
Lung volumes are low in restrictive diseases, interstitial or chest wall, and are high in obstructive diseases especially with emphysema.

■ Chest X-Ray
A baseline chest X-ray is required. This baseline is useful for individuals with a history of respiratory problems or symptoms and for subsequent comparison in healthy individuals in whom symptoms, changes in spirometry, or pulmonary disease later develops. Since the routine use of chest x-rays in surveillance activities in the absence of significant exposures, symptoms, or medical findings has not been found to reduce respiratory or other health problems, chest X-rays as part of regular medical surveillance examinations are not indicated. Repeat chest X-rays should be obtained as clinically indicated i.e. when evaluating a symptomatic fire fighter or when there are changes in pulmonary function testing (PFT), as a recent chest x-ray for comparison is useful. Among uniformed personnel, chest X- ray abnormality may indicate pneumonia, tuberculosis, lung cancer, or other occupational lung disease.

AEROBIC/CARDIOVASCULAR EVALUATION

■ Resting ECG
A resting 12-lead ECG should be performed at baseline for all ages, annually starting at the age of 40, and when clinically indicated (e.g early development of risk factors or symptoms). It can be useful to diagnose disturbances in rhythm, presence of conduction defects (e.g. heart blocks), or indications of ischemic heart disease (e.g. ST segment depression or elevation, T-wave inversions, or Q-waves). Further investigation may be necessary if any abnormality is seen, or if there is a significant change in the ECG from the previous year(s).

Before the age of 40, annual resting ECG testing for coronary artery disease and other cardiovascular diseases is of limited value (AHA & USPSTF guidelines); however, when testing a symptomatic fire fighter, a recent ECG for comparison is useful.

■ Aerobic/Cardiopulmonary Testing
Asymptomatic fire fighters younger than 40 years of age known to be at high risk for ASCVD shall be assessed for coronary artery disease. Asymptomatic uniformed personnel > 40 years of age with no atherosclerotic cardiovascular disease (ASCVD) shall be assessed annually for both their 2-year and 10-year risks of ASCVD, defined as coronary death, nonfatal myocardial infarction, or fatal or nonfatal stroke.

The 10-year Heart Risk Calculator created by the American College of Cardiology/American Heart Association (ACC/AHA) (http://tools.acc.org/ascvd-risk-estimator/) is used to generate a 10-year risk of ASCVD, taking into consideration the individual's age, sex, race, total cholesterol, high density lipoprotein (HDL) cholesterol, systolic blood pressure, blood pressure lowering medication use, diabetes status, and smoking status.

Those uniformed personnel assessed as being at high risk defined as ≥ 20 percent risk of ASCVD over the next 10 years should be referred to a cardiologist for further evaluation and treatment. Those personnel assessed as having intermediate risk defined as 10 to < 20% risks of ASCVD over the next 10 years should be evaluated with symptom-limiting exercise stress testing with or without imaging.

Cardiac exercise stress testing should be done to achieve 12 METS and a validated 12 MET exercise testing protocol must be used. Cardiopulmonary testing should be performed in a medical facility with proper monitoring by a physician and available resuscitation equipment. Testing may be done with or without imaging as determined by the physician. When selecting imaging options, physicians should be aware of the large prevalence of left ventricular hypertrophy in fire fighters who experience on-duty cardiovascular deaths (Yang, Teehan Farioli et al. Sudden Cardiac death among firefighters ≤ 45 years of age in the United States Am J Cardiol, 2013) Given that left ventricular hypertrophy is of greater concern in younger fire fighters and ischemic heart disease is of greater concern in older fire fighters, when stress imaging is ordered, consideration should be given to echocardiography stress testing in younger fire fighters and nuclear stress testing in older fire fighters. Uniformed personnel with positive stress tests shall be referred to a cardiologist for further evaluation and treatment.

Uniformed personnel whose stress test results are negative but who are unable to meet the 12 MET criteria should be referred to a fitness program, counseled on risk factor modification, and retested in 6 months. Uniformed personnel with negative stress tests reaching the 12 MET criteria should be retested after two (2) to five (5) years or as indicated depending on clinical assessment and risk factors.

The 2-year Framingham Heart Risk Calculator (https://www.framinghamheartstudy.org/risk-functions/coronary-heart-disease/2-year-risk.php) will be used annually to generate a 2-year risk of ASCVD taking into consideration the individual's age, sex, total cholesterol, high density lipoprotein (HDL) cholesterol, systolic blood pressure, blood pressure lowering medication use, diabetes status, and smoking status. The 2-year risk assessment will not consider race as a factor for consideration. Those assessed as being at intermediate risk defined as 2 to < 4 percent risk of ASCVD over the next 2 years, shall be further evaluated using symptom-limiting exercise stress testing (EST) with or without imaging to at least 12 METs. This is the same recommendation as the 10yr risk of ASCVD.

Those assessed as being at high risk defined as ≥4 percent risk of ASCVD over the next 2 years, shall be referred to a cardiologist for further evaluation and treatment. This is the same recommendation as for individuals with a high 10-year risk of ASCVD (Table 2.1).

Table 2.1 Annual ASCVD Risk Assessment Levels

Annual ASCVD Risk Assessment	Low	Intermediate	High
2yr-ASCVD Risk	No action needed	2-<4% risk requires a stress test with or without imaging to 12 METs	> 4% requires cardiologist for further evaluation and treatment
10yr-ASCVD Risk	No action needed	10-<20% risk requires stress test with or without imaging to 12 METs	> 20% requires cardiologist for further evaluation and treatment

CANCER SCREENING

While the WFI Medical Committee relied extensively on the U.S. Preventive Services Task Force (USPSTF) recommendations on general population health screening, it is important to note that the USPSTF did not consider occupational risk in their recommendations. Given the known occupational risk of exposure to carcinogens and the excess number of certain cancers in the fire service, the WFI Medical Committee, in some cases, made recommendations beyond those made for the general population. Examples here include lowering the age at which screening begins or repeating screening more frequently than would be done for the general, non-occupationally exposed population.

Appropriate screening examinations of the lungs, skin, breast, cervix, testes, prostate, thyroid, oral mucosa, bladder and colon must be conducted with the annual examination or as indicated below. When such examinations are carried out on a member of the opposite sex or if the member requests, a second health care worker/chaperone should be in the room for patient support and medico-legal reasons. Uniformed personnel may, however, choose to have such exams performed by an outside physician. When uniformed personnel use their own physicians for cancer screening examinations, results need to be forwarded to the fire department physician for inclusion in the fire department confidential medical file.

■ Lung Cancer

The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults ages 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

■ Skin Cancer

Some studies have found elevated risk of both melanoma and non-melanoma skin cancers in fire fighters. Skin cancer must be diagnosed in a timely manner to ensure successful treatment and maximize cure rates. Comprehensive inspection of the skin, especially in sun-exposed areas, is recommended. Inform the patient that taking a photograph of their own skin (especially their back) can help when comparing specific nevi (moles) or assessing for new or atypical lesions over time. Any suspicious lesions shall be referred for dermatological assessment.

■ Breast Cancer

Breast cancer is the most common type of cancer in women and the second leading cause of cancer death in women, after lung cancer. Breast cancer incidence and mortality rates increase with age. An annual clinical breast examination is required. Self-examination should be encouraged, and educational information should be made available to interested patients.

Mammography screening shall be performed on all women uniformed personnel beginning at age 40 and continue every other year until age 50, at which point annual mammography is indicated. Annual mammography should be obtained before age 50 if clinically indicated. Uniformed women personnel with a family history of breast cancer or other personal risks shall be referred for appropriate individualized recommendations for breast cancer screening, such as genetic screening or breast MRI. Uniformed women personnel may wish to have an ongoing clinical association with a women's health provider.

Cervical Cancer

The WFI technical representatives recommend using the USPSTF guidelines, now pending further research, on female fire fighters. The USPSTF recommends screening for cervical cancer in women ages 21 to 65 years with cytology (Pap smear) every three (3) years or, for women ages 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every five (5) years.

Testicular Cancer

Testicular cancer represents one (1) percent of all cancers in men. It remains the most common cancer in Caucasian men 20 to 34 years old. In general, an excellent prognosis exists with early detection and treatment. A baseline examination by a healthcare provider followed by routine self-examination is recommended, and educational materials should be made available to interested patients.

Prostate Cancer

Prostate cancer is the second most common type of cancer in men, after skin cancer. In addition, some studies have observed an elevated risk of prostate cancer in fire fighters. The prostate-specific antigen (PSA) test is a blood test that has been used for prostate cancer screening. However, recommendations for its use have been recently changed to a recommendation that medical providers discuss the benefits and risks of PSA testing to allow patients to decide whether they want PSA testing.

Uniformed male personnel shall be offered a discussion regarding PSA testing at age 50 and annually thereafter. Uniformed male personnel who are considered to be at an increased risk for prostate cancer, such as those who have a family history of prostate cancer or are of African-American heritage shall be offered a discussion regarding PSA testing starting at age 40 and annually thereafter.

After this discussion, those men who want to be screened should be tested with the PSA blood test. The digital rectal exam (DRE) may also be done as a part of the screening. Several non-cancerous conditions might result in elevated PSA levels including benign prostatic hypertrophy (BPH) and inflammation, or recent prostate gland stimulation resulting from a DRE or ejaculation. Current consensus also highlights the importance of measuring and comparing PSA results over time, known as PSA velocity. Where an increase over time would indicate higher risk for prostate cancer, the magnitude of this increased risk should be in accordance with current national urological association guidelines.

Digital Rectal Examination (DRE)

The DRE is no longer the preferred method of screening for prostate or colorectal cancer, however, if PSA is obtained, DRE can be performed as well.

Colorectal Cancer Screening

Uniformed personnel are exposed to a variety of particulate materials, chemicals and asbestos which can increase the risk for colon cancer. Current research suggests that fire fighters are at increased risk of colorectal cancer. WFI recommends that health care providers discuss the possible increased risk of colorectal cancer resulting from occupational exposures along with the risks and benefits of initiating screening at age 40 in fire fighters. If the fire fighter decides to start screening at age 40, fecal occult blood testing (FOBT) is the method recommended for use as it has the lowest risk for adverse patient events and is the most cost effective.

The USPSTF recommended screening methods for colorectal cancer include fecal occult blood testing, sigmoidoscopy, or colonoscopy beginning at age 50 and continuing until age 75. The risks and benefits of these screening methods vary. The USPSTF concludes that there is insufficient evidence to assess the benefits and harms of computed tomographic colonography and fecal DNA testing as screening modalities for colorectal cancer.

The USPSTF concluded that screening programs incorporating fecal occult blood testing, sigmoidoscopy, or colonoscopy will all be effective in reducing mortality using any of the following 3 regimens, assuming 100% adherence to the same regimen for that period:

- Annual screening with high-sensitivity fecal occult blood testing
- Sigmoidoscopy every five (5) years, with high-sensitivity fecal occult blood testing every three (3) years
- Screening colonoscopy every ten (10) years

Fecal occult blood testing uses stool specimens applied to guaiac cards by the patient at home that are sent to a laboratory for later analysis. Multiple different stool samples, usually three (3), from different days can increase the sensitivity of this colorectal cancer screening test. Diet restrictions apply to this test.

A colonoscopy is used to examine the full lining of the colon and rectum. During the colonoscopy, polyp removal or excising a small piece of tissue for biopsy may be performed if indicated. Colonoscopy should start at an earlier age (40 years) and/or be conducted more frequently if clinically indicated. A colonoscopy shall also be performed, regardless of age or schedule, when FOBT results are positive or when there is a consistent change in bowel habits.

Bladder Cancer Test

As the body absorbs cancer-causing chemicals, they are transferred to the blood, filtered out by the kidneys, and expelled from the body in urine. High concentrations of

chemicals in urine can damage the endothelial lining of the bladder and increase the risk of cancer. Because fire fighters are regularly exposed to smoke and chemical fumes, they may be at an increased risk for bladder cancer. Urine shall be evaluated for blood (hematuria) during scheduled wellness examinations. Positive dipstick for hematuria requires follow-up and referral may involve upper tract imaging, cystoscopy and/or urine cytology.

■ Oral Cancer Screening

Regular dental checkups that include an exam of the entire mouth are important in finding oral and oropharyngeal cancers and pre-cancers early. The American Cancer Society recommends that doctors examine the mouth and throat as part of a routine cancer-related checkup.

■ Thyroid Cancer Screening

A physical exam for palpable nodules should be part of the routine exam.

■ Ovarian Cancer Screening

There are currently no approved screening modalities for this cancer.

■ Uterine Cancer Screening

There are currently no approved screening modalities for this cancer.

■ Brain Cancer Screening

There are currently no approved screening modalities for this cancer.

SLEEP DISTURBANCE

There are significant and emerging concerns regarding the health and behavioral consequences related to sleep disturbance. Several contemporary reports in the medical literature have suggested that night-shift or swing-shift work may negatively impact situational awareness, decision making, hypertension, cardiovascular disease and malignancies (i.e. breast and ovarian cancers). The extent to which these findings may apply to the sleep disruption that occurs in the fire service is uncertain at this time. Furthermore, multiple studies of fire fighters have shown biochemical evidence of a stress response to the disruptions of circadian rhythms that occur in some fire stations. Insomnia may be a symptom of depression, anxiety, or another mental health disorder. Excessive daytime somnolence may indicate sleep disruptions. Adverse health effects may result in cases of sleep apnea where it is undiagnosed and untreated.

It is important to include screening for sleep disorders in the fire fighters' annual medical evaluation using a validated questionnaire such as the Berlin sleep questionnaire, Epworth Sleepiness Scale or BMI. Fire fighters with a high index of suspicion should be referred to a specialist for diagnostic sleep studies.

IMMUNIZATIONS

Uniformed personnel must receive, or provide documentation of having received the following vaccinations (http://www.cdc.gov/vaccines/adults/rec-vac/hcw.html):

- Hepatitis A
- Hepatitis B
- Tetanus/Diphtheria
- Pertussis
- Influenza
- MMR
- Polio
- Varicella (if not already immune)
- Human Papillomavirus (HPV)
- Pneumovax should be considered for individuals with appropriate risk factors.

■ Hepatitis A Virus (HAV)

Formalin inactivated vaccines made from attenuated HAV strains have been shown to be immunogenic, safe, and highly effective in preventing Hepatitis A. Previous recommendations were consistent with CDC guidelines and only included vaccinations for "high risk" uniformed personnel (e.g. Haz Mat, USAR, and SCUBA personnel) and those uniformed personnel who are Hepatitis C positive or have exposure to contaminated water. However, since all uniformed personnel are potentially exposed to contaminated water via floods or accumulated water from fire suppression, all uniformed personnel shall be vaccinated. The vaccine is 99-100 percent effective, so serum titers after vaccination are not recommended.

A combined Hepatitis A and B vaccination is now available. Immune globulin (IG) contains anti-HAV antibody concentration sufficient to be protective. It is to be administered to uniformed personnel who have not been previously vaccinated before exposure or during the early incubation period. Immune globulin may not prevent infection, but will weaken the effects and may render the infection unapparent.

Appropriate post exposure prophylaxis is the responsibility of the department and should be in accordance with current CDC guidelines for healthcare providers.

■ Hepatitis B Virus (HBV)

Uniformed personnel, by the nature of their occupation, are considered high risk and are therefore required to have this vaccine. The vaccine is effective in preventing HBV infection. Among the greater than 90 percent who develop adequate antibody levels after the third dose, vaccine effectiveness is virtually 100 percent. Laboratory

confirmation of immunity shall be done for all public safety workers and first responders one (1) to two (2) months after completion of the three (3) dose vaccination series. Although antibody levels decrease with time, people with normal immune systems continue to be protected from infection and do not require a periodic booster dose.

If initial vaccine doses do not result in immunity, up to three (3) additional doses can be administered. The following factors — male, over 40 years old, smoker and obesity — are associated with difficulty in HBV antibody conversion following vaccination.

Appropriate post exposure prophylaxis is the responsibility of the department and should be in accordance with current CDC guidelines for healthcare providers.

■ Tetanus/Diphtheria

Tetanus and diphtheria occur almost entirely in unimmunized or incompletely immunized persons. Case fatality rates for tetanus are as high as 30 percent and as high as 5 to 10 percent for diphtheria. Immunization records of prior vaccinations are required. Uniformed personnel shall be given tetanus/diphtheria (Td) boosters every ten (10) years. For certain high risk wounds, a booster shall be given if five (5) years have elapsed since the last vaccine. Epidemiological studies have indicated that adult immunity to pertussis, whooping cough, is waning. A convenient way to prevent outbreaks of pertussis is to administer a combination Tetanus/Diphtheria/Pertussis vaccine (TDAP) which can be given once to replace the 10-year Td booster or the 5-year wound management Td dose. Tdap should not be administered less than two (2) years following a Td vaccine dose.

■ Influenza

The influenza vaccine is 30 to 40 percent effective in preventing clinical illness and 80 percent effective in preventing death in older adults. Uniformed personnel are in close contact with the public and live in close quarters while on duty. Therefore, the vaccine is required for all uniformed personnel, unless contraindicated, and must be administered annually, early fall through early winter.

■ Measles, Mumps, Rubella (MMR)

Measles remains a significant health problem with recent outbreaks attributed to vaccine failure, waning immunity, and erroneous documentation of previous vaccination. Mumps has been increasing in incidence. Use of the rubella vaccine has led to a significant decrease in the incidence of rubella. Rubella is usually a mild illness. However, in pregnant women particularly in the first trimester, it can lead to miscarriage, stillbirth, and congenital rubella syndrome (CRS).

The MMR vaccine is required for all uniformed personnel if there is no medical contraindication and no laboratory evidence of immunity. Two (2) doses of the MMR vaccine shall be administered per current immunization guidelines. Women who receive the vaccine should not become pregnant for three (3) months after the vaccination is administered.

■ Polio

The polio vaccine has dramatically reduced the annual number of reported cases of paralytic poliomyelitis. The vaccine series is usually given in childhood. It shall be given to uniformed personnel if the vaccination or disease is not documented and there is no medical contraindication for use.

■ Human Papillomavirus (HPV)

The quadrivalent HPV vaccine shall be provided to all uniformed personnel up to 26 years old, if previous vaccination is not documented.

■ Varicella

Varicella disease, or chickenpox, is a highly contagious childhood disease caused by varicella virus (VZV). A vaccine is now available. As recommended by the American Committee on Immunization Practices (ACIP), susceptible persons 13 years old and older who encounter those at high risk for serious complications from VZV disease (e.g., health care workers and those in contact with immunocompromised individuals) should be vaccinated with two (2) doses at least one (1) month apart. Uniformed personnel who have not had varicella are considered high risk due to their occupational exposures.

Uniformed personnel shall be screened for immunity levels and vaccine shall be administered to all non-immune personnel. If immunity to VZV is not documented and a member is exposed, then the vaccination series shall be initiated. If vaccination is contraindicated and the member is at increased risk for severe disease i.e. pregnant or immune compromised, then gamma globulin shall be used after exposure.

■ Vaccination Adverse Event Reporting

All adverse reactions to vaccine administration shall be recorded in the member's medical record and reported to the Vaccine Adverse Events Reporting System (VAERS) at https://vaers.hhs.gov. Their phone contact is 800-822-7967.

INFECTIOUS DISEASE SCREENING

■ Hepatitis C Virus

Hepatitis C is a major health concern for employees in the fire service. It is very important to screen for the antibody to the Hepatitis C virus because it can be clinically silent for decades while causing ongoing damage to the liver. Historically, the clear majority of Hepatitis C infections were caused by blood transfusions or IV drug use.

The prevalence of Hepatitis C infections in the fire service has varied considerably where it has been measured. Medical studies have suggested that new infection

(seroconversion) with HCV in fire service employees is almost always caused by percutaneous injury events such as with contaminated needle sticks. Baseline antibody tests shall be done on all uniformed personnel to check for previous infection or to establish the absence of infection. Be aware that false positive and false negative results may occur. If conversion from negative to positive occurs, additional testing to verify infection and expert consultation for specialized treatment protocols is required.

■ Tuberculosis (TB)

Tuberculosis (TB) control depends upon screening high-risk populations and providing preventive therapy to those most likely to develop active disease. Uniformed personnel, by nature of their occupation, are at increased risk and an annual PPD is required. A measles, mumps, rubella (MMR) vaccination may depress tuberculin skin sensitivity so PPD testing should be done prior to, simultaneously with, or four (4) to six (6) weeks after MMR vaccination dosing. A serum test (IGRA, interferon-gamma release assay) is available and may be considered as an alternative to PPD particularly if the member has had prior BCG vaccine or is not able to return for a read of the PPD result in 48 to 72 hours.

Tuberculosis (TB) screening, by either tuberculin skin testing using the tuberculin purified protein derivative (PPD) or the tuberculin blood test (interferon gamma release assay); shall be performed at baseline.

Subsequent tuberculosis screening shall to be performed annually or at a frequency according to CDC guidelines unless the member has a history of positive tuberculin screening test, in which case CDC guidelines for management and subsequent chest radiographic surveillance shall be followed.

If annual conversion rates are high in a given work group, then testing is recommended every six (6) months. A conversion indicates recent exposure to or infection by mycobacterium tuberculosis. These personnel will require appropriate follow-up and contact investigation as medically indicated. Chest X-rays and isoniazid prophylaxis may be needed as recommended by the American Thoracic Society and Centers for Disease Control and Prevention.

■ Human Immune Deficiency Virus (HIV)

Human immune deficiency virus (HIV) testing is not a part of baseline or annual physicals. However, the test should be offered on a confidential basis as part of post-exposure protocols and as requested by a physician and patient. All results from HIV tests are provided directly to the patient and will not be maintained in any local or international database.

OCCUPATIONAL STRESS AWARENESS CONSULTATION

As fire fighters face more disturbing and devastating incidents, their job-related stress and the potential for behavioral health issues have increased. Left unaddressed, these issues can interfere with day-to-day life and affect work, sleep, and relationships; ultimately, they can develop into diagnosable mental illnesses, such as post-traumatic stress disorder, major depressive disorder, generalized anxiety disorder, and substance use disorders.

Fire fighters should be assessed for the heightened risks of stress associated with occupational exposures related to fire fighting and emergency medical services work. It is important for the physician conducting the fire fighter's annual medical evaluation to use a validated questionnaire to assess for occupational stress such as the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) for post-traumatic stress, the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD PHQ2 and PHQ 9) for depressive disorders, and the CAGE-AID questionnaire to capture symptoms of potential alcohol and substance abuse. Fire fighters with a high index of suspicion must be referred to a licensed behavioral health specialist trained to recognize and treat stress-related and/or behavioral health disorders in fire fighters and first responders as indicated.

REFERRAL TO HEALTH CARE PRACTITIONERS

The following situations/conditions warrant referrals to health care practitioners:

- Abnormal findings on the annual medical exam must be addressed by a medical practitioner follow-up or referral
- Revaccination or intervention following exposures must be managed by a medical practitioner follow-up or referral
- Managed care or other provider referrals as appropriate for non-work related medical issues

Follow-up on findings from annual examinations must be reviewed by the fire department physician and return to work determinations require clearance by the fire department physician in conjunction with other specialty evaluations, as needed. The fire department physician will normally function as the "gatekeeper" for medical certification, retaining final authority for return to work/fitness for duty decisions.

WRITTEN FEEDBACK

Written feedback to uniformed personnel concerning health risks and health status is required following the annual examination. Reporting findings and risks and suggesting plans for modifying risks improves the physician-patient relationship and helps uniformed personnel claim ownership of their health.

■ Individualized Health Risk Appraisal

Individualized health risk appraisals must also include questions that attempt to accurately measure the uniformed personnel's perception of their health. Health perception can be a useful indicator of potential problems.

DATE COLLECTION AND REPORTING

Comprehensive, confidential, aggregated medical and health information will be collected for the purposes of this initiative. The complete data protocol is found in Chapter Seven of this report. The following is an overview of the different categories of data to be compiled:

- Demographics
- Employment status
- Illness and injury experience
- Tobacco and alcohol use
- Current health status
- Cancer screening
- Physical activity
- Physical measurements
- Lab data
- Immunizations
- Fitness testing

■ Occupational Exposure

An integrated exposure database that provides the fire department physician timely information on uniformed personnel aids in tracking diseases in individuals and risks in the population. The physician must educate uniformed personnel on the importance of documenting exposures and follow-up care to ensure that the employee gets necessary medical care. The central departmental database on uniformed personnel must include the following:

- Chemical exposures
- Physical exposures
- Biological exposures
- All safety and health related incidents

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CHAPTER 3 — Fitness

Management and Labor shall work together to provide a comprehensive fitness and injury prevention program. This program should include access to resources supporting on-duty exercise in order to prepare members to meet the demands on and off the job.

This chapter highlights the following:

- **Introduction**
- **Medical Clearance**
- **On-Duty Time for Exercise**
- **Equipment and Facilities**
- **Models of Access to Equipment**
- **Exercise Specialists and Peer Fitness Trainers**
- **Incorporating Fitness Throughout the Fire Service**
- **Fitness Assessment**
- **Exercise Programs**
- **Nutrition**
- **Summary**
- **Endnotes**

INTRODUCTION

Throughout the history of the fire service, the proper implementation of fitness programs in fire departments has been extensively debated. The risk of coronary heart disease events during fire suppression may be increased because many firefighters lack adequate physical fitness, the presence of cardiovascular risk factors, and existing medical conditions.[1] Research has demonstrated the need for high levels of aerobic capacity, power, muscular strength and endurance, mobility and flexibility, and favorable body composition in order to perform safely and effectively in the fire service. Physical fitness is critical to maintaining the wellness of our uniformed personnel. Fitness must be incorporated into the overall fire service philosophy.

To be prepared for life's demands, on and off the job, physical fitness and quality movement patterns are critical to maintaining wellness. Both must be incorporated into the overall fire service philosophy.

While assessing uniformed personnel's current fitness level is an important part of developing an individualized fitness program, assessment is not, in itself, a fitness program. An effective physical fitness program also requires access to equipment and facilities, and guidance from certified exercise professionals (e.g. Peer Fitness Trainers). The elements necessary for a successful and comprehensive physical fitness program are discussed throughout this chapter. Specific recommendations for the fitness assessment protocols are described in Appendix A.

MEDICAL CLEARANCE

All exercise carries some risk of sudden cardiac events, especially in individuals who are unaccustomed to exercise, therefore, prior to involvement in any exercise regimen, including the WFI fitness assessment, all uniformed personnel must be medically cleared in order to participate.

ON-DUTY TIME FOR EXERCISE

It is necessary to provide dedicated on-duty time for exercise to assist in promoting physical fitness. While scheduling on-duty time may vary due to emergency calls, training, and other duties, it is recommended that 60-90 minutes be allotted during every shift. Uniformed personnel working administrative shifts, 40-hours or otherwise, shall also be provided the opportunity to exercise. The health, fitness, and wellness of all uniformed personnel must be viewed as a priority. The Wellness-Fitness Initiative holds forth the idea that labor and management should work together to ensure full participation by all uniformed personnel.

EQUIPMENT/FACILITIES

Many models exist to guide departments through the process of providing access to and/or maintaining exercise equipment, whether in every fire station or in regional fitness centers. The following steps detail strategies that have proven successful to secure equipment for departments:

- ***Step 1***

Evaluate equipment for utilization, reliability, durability, available space, safety, and cost. This evaluation should be conducted by personnel who will be using the equipment and the Peer Fitness Trainers who will instruct the membership on its correct use.

- ***Step 2***

Allocate funds to purchase the equipment in the budget process. Other sources are also available to raise funds independent of the traditional budget process, such as FEMA's Assistance to Fire Fighters Grant (AFG) program, and other federal, state or provincial grants. Several locals have bargained for a matching system in which each employee contributes a dollar every month and the city or county matches it on a one-to-one or one-to-two ratio. This encourages ownership of the fitness program by both labor and management.

- ***Step 3***

Initiate the bid process to purchase the selected equipment. If possible, small orders should be avoided because larger orders usually provide a reduced cost per unit. Requests

for Proposals (RFPs) must be written specifically for the equipment that was chosen by the above process. Ideally, the same equipment is available in all work locations. When purchasing cardio equipment consider purchasing the same equipment as that used to conduct the fitness assessment.

MODELS OF PROVIDING ACCESS TO EQUIPMENT

Traditionally, equipment access has been provided in one of the following ways: exercise equipment placed directly into each fire station; centralized fire department locations where personnel can exercise; contracted fitness center locations where personnel can exercise; and use of outdoor facilities such as track, high school, park or local college/university.

The following section summarizes the benefits and considerations of these four models:

■ Equipment in every station

- ***Benefits***
  1. Personnel can use equipment at their convenience, between emergency calls.
  2. Personnel are in quarters where they are strategically located within their first due response area.
  3. Personnel can use equipment at various times during the shift.

- ***Considerations***
  1. Initial investment in equipment.
  2. Equipment maintenance.
  3. Number of Peer Fitness Trainers to support exercise program instruction.

■ Centralized fire department fitness center

- ***Benefits***
  1. Personnel can use equipment any time.
  2. Lower equipment expense.
  3. Availability of Peer Fitness Trainers on site.

- ***Considerations***
  1. Designated workout times.
  2. Crews may have to leave first-due response area.
  3. Crews responding to emergency calls may be less likely to return to their workout.
  4. Limits the time that personnel have access to Peer Fitness Trainers for individual attention.

■ Contracted fitness center

- ***Benefits***
  1. Outfitted with a greater selection of equipment.
  2. Fitness professionals on site.
  3. Can accommodate large groups.

- ***Considerations***
  1. Designated workout times.
  2. Crews may have to leave first-due response area.
  3. Crews responding to emergency calls may be less likely to return to their workout.
  4. Recurring membership cost.
  5. Possible public perception of fire fighters recreating instead of working.

■ Outdoor Space (park, track)

- ***Benefits***
  1. Low cost.
  2. Readily available.

- ***Considerations***
  1. Inclement weather.
  2. Lack of equipment.
  3. Proximity of personnel to apparatus.

■ Maintenance of Equipment

Equipment must be maintained as recommended by the equipment manufacturer. Poorly maintained equipment is unsafe and less likely to be used. Frequent inventories and inspections must be done so that equipment can be accounted for, maintained, repaired, and replaced when necessary. Designate personnel to ensure that all fitness equipment is maintained.

■ Types of Equipment

There are two basic types of fitness equipment that are necessary for an effective fitness program:

- ***Resistance Equipment***
  This can include the following:
  - Cage/squat rack with pull-up bar
  - Olympic bar(s) and an assortment of weight plates (it is recommended that there is a minimum of 300 pounds),
  - Medicine Balls
  - Adjustable pulley machine,
  - Adjustable bench,
  - Dumbbells (pairs from 5 pounds to 80 pounds are recommended),

- Kettlebells (pairs from 25 pounds to 50 pounds are recommended)
- Floor mats for mobility and flexibility training,
- Burst-resistant stability ball(s),
- Assortment of resistance bands (various band tensions)

• ***Cardiovascular Equipment***
This can include the following:
- Treadmill,
- Stationary bike (upright or recumbent),
- StepMill,
- Elliptical cross trainer,
- Rowing ergometer.

EXERCISE SPECIALIST, PEER FITNESS TRAINERS, and REFERRAL NETWORK

A broad-based Fitness Committee involving labor, management, a fire department physician, and an exercise specialist should be established. An exercise specialist and the Peer Fitness Trainers can disseminate the work of the Fitness Committee, while guiding the fitness efforts of all uniformed personnel. Peer Fitness Trainers should reflect the demographics of the department.

■ Qualifications of the Exercise Specialist

The exercise specialist should be chosen with care. They may come from inside or outside the department. Ideally they should have a degree in exercise physiology, kinesiology, or a related field. A thorough knowledge of the job of firefighting is essential. If the exercise specialist comes from outside the department, the individual must be able to ride along, conduct job analyses, and remain current on literature pertaining to fitness and firefighting. The individual's ability to conduct ongoing research related to personal fitness and injury is another desirable asset. In addition, excellent communication and interpersonal skills are necessary.

■ Peer Fitness Trainers

The Peer Fitness Trainers (PFTs) should encourage safety and participation in the Wellness Fitness Initiative. An integrated multi-level approach is recommended, in which the exercise specialist and /or lead PFT trains and oversees multiple PFTs. All fire department PFTs should be certified through the IAFF/IAFC/ACE Peer Fitness Trainer certification program. They must maintain their certification through continuing education. In addition, they should be encouraged to supplement their professional certification with further advanced training.

Some recommended non-profit certification agencies that provide advanced training include:

- The International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC)
- The American Council on Exercise (ACE)
- The National Strength and Conditioning Association (NSCA) and its accompanying Tactical Strength and Conditioning (TSAC) division
- The American College of Sports Medicine (ACSM)
- The National Academy of Sports Medicine (NASM)
- The Canadian Society of Exercise Physiology (CSEP).

Certified PFTs have the knowledge and skills required to design and implement fitness programs, and assist in the physical training of candidates, incumbents, and recruits. They should also be able to influence the broader community in achieving wellness and fitness. PFTs understand proper exercise techniques and have a broad scientific knowledge of exercise. The PFT Certification improves the credibility and effectiveness of departmental fitness programs. Certified PFTs can be utilized in many ways, including:

- Administering annual fitness assessments and movement screens
- Designing and implementing personalized exercise programs,
- Evaluating the utility of exercise sessions and the department's wellness and fitness initiative
- Conducting station visits and delivering wellness and fitness education to members regarding the application to work, life and play
- Implementing hands-on workshops to highlight the application of wellness to work, life and play
- Promoting wellness and fitness and helping to shape the wellness and fitness culture
- Assisting with healthy meal planning
- Maintaining fitness equipment,
- Candidate mentoring and orientation,
- CPAT administration and proctoring,
- Training recruits and new hires regarding the importance of wellness and fitness throughout their career and long into retirement.

■ Referral Network

It is important for health professionals in the referral network to understand the unique demands of the fire service (e.g. job tasks and shift work). This includes physical therapists, athletic trainers, and nutritionists/dieticians. Addressing the wellness and fitness needs of all members may require input from other specialists. A referral network is a good way to provide access to specialists.

- ***Physical Therapist (PT)***

PTs are licensed health care professionals that use various treatment techniques to rehabilitate injury, reduce pain, restore function, and prevent disability. PTs work in a variety of settings (e.g. in and outpatient hospital, private practices, sports/fitness facilities, etc.). They may have additional pertinent certifications in exercise training and ergonomics. A department may wish to consult, contract or hire a PT in order to better facilitate job-related neuromuscular and cardiopulmonary readiness of their members who are returning to work after an injury or medical condition, including neurologic, musculoskeletal, cardiac, postnatal and/or post cancer issues.

Hiring a PT who has an awareness of the tasks that fire service personnel perform provides additional benefits, including:

- The ability to educate other community-based PTs on the specific needs of fire fighters,
- Implementation of specific fire service injury prevention strategies,
- Collaboration with PFTs and recruit staff to provide evidence-based injury prevention fitness/wellness exercise strategies,
- Ergonomic education such as body mechanics for safe and efficient material and patient handling,
- Ergonomic consultation for equipment design, usage, and storage.

- ***Nutritionist/Dietician***

A nutrition counselor, dietitian, or sports nutritionist is a valuable asset to any wellness program. The field of nutrition is plagued with fads and misinformation. Members, company officers, and PFTs may wish to consult a qualified professional. Such experts can be hired, contracted, or involved as volunteers. Benefits of a qualified expert include:

- The development of weight management programs;
- Analysis of individual dietary logs; design of customized nutritional programs for specific conditions such as pregnancy, weight gain, or illness;
- Education of PFTs, company officers, members, and recruits;
- Discouraging potentially harmful dietary practices;
- Developing specialized menus for post-incident replenishment.

INCORPORATING FITNESS THROUGHOUT THE FIRE SERVICE

There are many pieces involved with incorporating fitness concepts and practices into the fire service. The following individuals have important roles in establishing a successful program in any fire service agency and throughout the fire service.

PFTs

The PFT can address the specific needs of uniformed personnel through personalized exercise program design and implementation. PFTs should conduct themselves as role models and ambassadors for the Wellness Fitness Initiative.

Responsibilities of a PFT may include:

- Administering annual fitness assessments and movement screens
- Designing and implementing personalized exercise programs,
- Evaluating the utility of exercise sessions and the department's wellness and fitness initiative
- Conducting station visits and delivering wellness and fitness education to members regarding the application to work, life and play
- Implementing hands-on workshops to highlight the application of wellness to work, life and play
- Promoting wellness and fitness and helping to shape the wellness and fitness culture
- Conducting special projects or serving on committees that pertain to the department's wellness and fitness initiative (e.g. helping to establish the vision with the Wellness Committee)
- Assisting with healthy meal planning
- Maintaining fitness equipment,

PFTs must also pursue additional continuing education each year to maintain certification.

Company Officers

The company officer is the formal leader responsible for the health, safety, and training of the crew. Their influence on the attitudes of the crew cannot be overstated. By seeking out wellness education, the officer can become an instrumental advocate for wellness within the department. Educating the company officer will ensure that he/she understands the purpose, scope, and components of the wellness program.

Chief Officers

Chief officers also play a vital role in the implementation of fitness initiatives into the fire department. First, they should serve as roles models and participate in the program themselves. This is an important aspect of being a leader. They should ensure that policies are in place that allow members to participate in fitness activities while they are on duty. They should also ensure that the necessary resources to conduct fitness training are obtained and maintained.

Recruits

PFTs assigned to the academy can help incorporate fitness into the culture of the fire department. They can design exercise programs based on the physical demands and workload of the training academy environment.

Responsibilities of PFTs at the academy can include the following:

- Overseeing and implementing a fitness program for recruits;
- Educating recruits on of the importance of maintaining wellness during their careers;
- Monitoring the recruits for signs of overtraining;
- Adapting training programs to prevent exercise-related injuries;
- Designing post-academy exercise programs for the recruits;
- Serving as a resource for the recruit training officers to improve poor performance that may be related to low levels of fitness.

Candidates

The Fire Service Joint Labor Management Wellness-Fitness Task Force has developed a comprehensive Candidate Physical Ability Test (CPAT) program that includes a physical ability preparation guide. This program will ensure that fire fighter candidates are more physically capable of performing the challenging job of a fire fighter, while making it possible to improve the diversity of the fire service. Peer Fitness Trainers can familiarize candidates with each task and test apparatus, and advise them about specific conditioning regimens and techniques to help prepare for the CPAT or specific CPAT events.

FITNESS ASSESSMENT

All uniformed personnel shall participate in a mandatory, annual, non-punitive, and confidential fitness assessment comprising the following components: body composition, aerobic capacity, power, muscular strength and endurance, and mobility and flexibility. Health screening and medical clearance must be obtained prior to participating in the fitness assessment.

Participants will be provided with the results of the fitness assessment. Personalized feedback should also be provided. This may include the individual's current fitness level, comparisons with previous assessment results, possible areas for improvement, and exercise recommendations. All data must be stored in a confidential database.

To ensure maximum safety, uniformed personnel must be screened for any medical contraindications and instructed in proper technique prior to performing any of the fitness assessment protocols. All department fitness assessments should be administered by trained exercise specialists to ensure that they are being conducted using the standardized protocols and with proper form.

As mentioned previously, the fitness assessment addresses five specific components:

- Body composition
- Aerobic capacity
- Power
- Muscular strength and endurance
- Mobility and flexibility

A detailed description of each assessment protocol is outlined in Appendix A. The fitness assessment recording forms are located in Appendix A1.

Body Composition

Obesity is associated with an elevated risk of many adverse health conditions including cardiovascular disease, hypertension, dyslipidemia, heart failure, diabetes, several types of cancer, asthma and chronic lung diseases, obstructive sleep apnea, dementia, arthritis, and gastro-esophageal reflux disease. The accumulation of fat specific to the abdominal area is also highly correlated with cardiac events.

- ***Evaluation of Body Composition***

The WFI recommends that waist and hip circumference be used to assess body composition. Each measurement is simple to collect, reliable, and can provide valuable insight for the exercise specialist/PFT and member regarding their specific needs. In contrast to skinfolds, the accuracy of each measurement will not depend on the magnitude of adipose tissue and the ability of the assessor to identify specific anatomical landmarks.

To reduce the risk of adverse health conditions, the World Health Organization recommends a waist circumference less than 102 cm and 88 cm for men and women respectively.[2] A waist to hip circumference ratio less than or equal to 0.90 for men and 0.85 for women has also been shown to reduce the risk of metabolic complications. The waist and hip circumference assessment is described in Appendix A.

Aerobic Capacity

Aerobic fitness is fundamental to the health, safety and performance of all uniformed personnel. Occupation-related heart and lung disease cause premature departures from the fire service. An exercise program comprising aerobic activity will reduce an individual's risk of heart and lung disease, improve cardiovascular fitness, and assist to maintain normal body composition, blood pressure, blood lipids, and blood sugar.[3]

Numerous studies have demonstrated the importance of having a moderate to high aerobic capacity to perform the duties of a firefighter. The heart rate response during normal firefighting tasks is consistently near maximal levels.[4] In addition, the oxygen requirements associated with live fire rescues and suppression typically fall within 60-80 percent of an individual's maximum aerobic capacity.[5] Several groups have confirmed that heart rates increase dramatically following the initial alarm and reach maximal or near-maximal predicted values during simulated or actual fire emergencies.[6]

• ***Evaluation of Aerobic Capacity***
Accurate estimates of VO2 max are needed to educate personnel on their current level of fitness as it relates to the demands of their job. This information can be used to assist with the design of an appropriate exercise program, and will help the exercise specialist, PFT, and member gauge its effectiveness. The WFI Treadmill Protocol and the WFI StepMill Protocol were adopted as submaximal field tests for fire service personnel. Details pertaining to both assessment protocols are outlined in Appendix A.

• ***Submaximal versus Maximal***
Aerobic capacity can be assessed with submaximal or maximal protocols. Well validated submaximal tests have been shown to accurately estimate aerobic capacity. These tests can be less expensive and easier to administer than maximal tests, and can be performed in a fitness setting by a qualified exercise specialist.

The submaximal aerobic assessments developed for the WFI (i.e. StepMill and Treadmill protocol) are based on the heart rate response to graded exercise. It is important to note that all submaximal tests use regression equations to estimate aerobic capacity and are, therefore, subject to error. Potential sources of error include:

- Age-predicted estimation of maximal heart rate;
- Resulting test termination heart rate; and
- Potential idiosyncratic heart rate responses due to dehydration, anxiety, and certain medications.

The magnitude and frequency of these prediction errors are reduced by using a well-validated sub-maximal test and appropriate medical prescreening.

Programs that have an on-site physician and ECG monitoring may choose to use a maximal aerobic capacity test; this will produce a more accurate estimate of VO2 max. The WFI Treadmill or StepMill protocol can be extended to the point of maximum effort. The test terminates at maximum volitional fatigue, which is consistent with the effort put forth in an arduous emergency situation or a competitive athletic event, rather than at a percentage of the age-predicted maximal heart rate.

Maximal testing must be conducted under medical supervision with ECG monitoring, and resuscitation and defibrillation equipment on site.

■ Power

Power reflects the ability to generate high forces while moving the body quickly through a range of motion. The ability to contract a muscle or group of muscles very quickly is a function of power. Job tasks such as a forcible entry require the speedy transfer of power from the body to a tool, as in swinging a sledgehammer.

• ***Evaluation of Power***
Lower body power is required for many essential emergency service tasks including lifting and carrying equipment, forcing entry, climbing ladders and stairs, pulling and operating hose lines, and lifting patients. The ability to generate power with the lower extremities, rather than the back, will improve performance and reduce the risk of injury. Lower body power will be evaluated with the vertical jump. Please refer to Appendix A for the vertical jump protocol.

■ Muscular Strength and Endurance

Muscular strength is defined as the maximal force that a specific muscle or group of muscles can generate. The demands of firefighting require above-average strength. Job task analyses have shown that the weight of equipment used by a single fire fighter on the job can be in excess of 100 pounds.[4,7] Further, these loads must often be carried for extended periods of time (i.e. submaximal strength and endurance). Insufficient muscular strength may contribute to the high incidence of sprains, strains and back injuries among uniformed personnel.

Muscular endurance reflects the ability of a specific muscle or group of muscles to contract repeatedly or continuously for an extended duration. Job analyses have shown a strong correlation between muscular endurance and the essential job tasks of first responders. [4]

Insufficient muscular endurance will limit the amount of time that a firefighter can continue to work effectively. Poor endurance can also precipitate injury, because fatigue causes movement patterns to degrade. The muscles of the trunk help to support the low back during sustained exertions, which implies that endurance of these muscles is critical. Because many back injuries occur when the spine is flexed, extended and/or rotated, the ability to resist these movements under load and over extended periods is also essential to the prevention of low back pain and injury.

• ***Evaluation of Muscular Strength and Endurance***
Although strength is sometimes evaluated using single repetition tests, whereby an attempt is made to lift the heaviest load possible (i.e. 1RM), these single maximal effort tests have an inherent risk of injury. Further, many essential emergency service tasks including lifting and carrying equipment, packaging and moving patients, holding and operating hose lines, raising extension ladders, and removing victims require that firefighters exhibit submaximal levels of strength over extended periods of time (strength and endurance). For this reason, three assessments are recommended to assess muscular strength and endurance.

The push-up assessment can be used to evaluate upper body pushing strength endurance and coordination and control of the trunk. The alternate grip push-up is an alternative assessment that may be better suited for individuals with a

history of hand, wrist or shoulder injuries. Please refer to Appendix A for the push-up protocol.

The horizontal pull-up assessment can be used to evaluate upper body pulling strength and endurance (including grip strength), and coordination and control of the trunk and hips. Please refer to Appendix A for the horizontal pull-up protocol.

The static side plank assessment can be used to evaluate firefighters' trunk muscle strength and endurance such as the ability to resist lateral flexion and rotation of the spine. Both right and left side assessments are performed so that potential asymmetries can be addressed through exercise interventions. Please refer to Appendix A for the static side plank protocol.

■ Mobility and Flexibility

The mobility of a joint and the flexibility of the muscles that cross that joint influence the range of motion that a firefighter could achieve. Range of motion of the hips and shoulders can influence firefighters' safety and effectiveness while performing many essential job tasks (e.g. lifting patients, raising ladders, operating hose lines). Range of motion restrictions can also influence the performance of many activities of daily living. When a joint lacks mobility and flexibility, the surrounding joints must compensate to perform essential tasks, which can result in cumulative "micro trauma" or a musculoskeletal injury over the long-term.

The leading types of on-duty injuries in the fire service are sprains and strains affecting the low back, shoulders and knees. In fact, the most prevalent injury leading to premature retirement from the fire service is back injury. Limited hip and shoulder mobility can contribute to the rate and severity of these injuries.

• ***Evaluation of Mobility and Flexibility***

Mobility and flexibility of the hips and shoulders will be evaluated with an active straight leg raise and shoulder flexion and extension assessments, respectively. Each assessment protocol is described in Appendix A.

■ Data Collection

The data collected from the fitness assessments will provide insight into members' body composition, aerobic capacity, power, muscular strength and endurance, and mobility and flexibility. This data can be used to examine changes in fitness levels of personnel over the course of their careers. This can include the strength, endurance, flexibility asymmetries or deficits in neuromuscular coordination and control that may predispose an individual to injury.

The data can also measure the effectiveness of the fitness/wellness program and identify possible factors related to musculoskeletal injuries within the fire department.

■ The WFI is not a Standard — Norms vs Standards

A *norm* is an informal guideline derived from the average or median performance of a large group. A *standard* is a definite rule, principle, formal guideline, or measure established by an authority. Norms are often used during fitness setting as a frame of reference to assist with the interpretation of personalized results, such as assisting individuals in understanding how their results compare to a population of similar age and gender. While fire departments may provide information regarding norms for their members, under no circumstances does the IAFF/IAFC Joint Labor Management WFI Task Force Committee endorse the use of norms to establish standards that, if not met, might result in punitive action. All uniformed personnel should understand that the goal of the WFI fitness assessment is solely to inform improvements in personal fitness. The Wellness-Fitness Initiative has set no standards. Every individual is expected to attain or maintain physical fitness through a personalized exercise program, education, and healthy lifestyle choices.

EXERCISE PROGRAMS

The development of an exercise program based on the specific needs of each individual is a major component of the Wellness-Fitness Initiative. The exercise program should be progressive and account for an individual's current level of fitness, job duties, time restrictions, physical capabilities, dietary habits, and self-improvement efforts. Although the specifics of exercise program design are beyond the scope of this document, it is important to highlight a few considerations.

■ Considerations for Designing Exercise Programs

Because the benefits of personalized fitness programs cannot be overstated, the customer service aspect of exercise programming is critical. The fitness assessment is only the first step in educating uniformed personnel regarding their fitness level, and in guiding them through the process of establishing personal goals. Assessments must be followed by a one-on-one consultation in which the firefighter can address concerns and learn about recommended exercises and equipment use.

Personalized exercise programs should consider the following individual characteristics: age, weight, motivation level, goals, current physical abilities (e.g. aerobic capacity, power, strength and endurance, mobility and flexibility, coordination and control), body awareness, exercise experience, physical work requirements, previous injuries, personal lifestyle, time constraints, available equipment, preferred activities and sociological preference (e.g. individual vs. group participation). These programs should identify and balance the fire fighter's work, life style, and recreational needs. Identifying these individual needs and developing an individualized exercise program stand to impact the lives of fire fighters in all aspects of life.

The program should focus on encouraging positive choices relating to nutrition, time management, health, and overall quality of life. The program should also be balanced to address the fitness components included in the WFI assessment (i.e. body composition, aerobic capacity, power, muscular strength and endurance, and mobility and flexibility).

In some cases, exercise programs centering on job task performance may be appropriate.

Exercise can be a form of stress. The body will adapt and respond as long as the stress is not too great. All exercise programs should be progressive in nature. Attention should be paid to allow time for the body to recover. Programs that advance too quickly over-stress the body and may lead to injury. Job specific allowances must be made for sleep deprivation, high stress shifts, and the intense workload associated with working fires, long incidents, heavy rescues, or high call volume.

NUTRITION

Few lifestyle factors have as strong of an influence on an individual's overall health and physical performance as included in their habitual eating pattern. The working environment of uniformed personnel presents unique challenges to the maintenance of healthy eating habits. Proper nutrition enhances the performance and quality of life of uniformed personnel.

Nutrition for Performance

Nutrition plays a significant role in exercise performance and recovery. Some benefits of a well-balanced diet include optimal energy delivery, enhanced recovery, and strengthened immune function.

Obesity increases an individual's risk for injury, reduces performance, and adversely affects the ability to dissipate heat while working. A well balanced diet, combined with a regular exercise program, is the best way to maintain a healthy body composition.

Nutrition for Health

The high levels of stress, extreme physical demands, long-term exposures to chemicals and disease, and poor dietary habits contribute to elevated risks of heart disease and cancer within the fire service.

- ***Heart disease***

Several risk factors for heart disease - including high cholesterol, obesity, hypertension, and diabetes — can be reduced by dietary intervention. A diet low in total fats, saturated fats, cholesterol and salt, but high in fruits, vegetables, and fiber has been shown to reduce the risk of heart disease.

- ***Cancer***

Poor diet has also been associated with the development of cancer. A diet high in animal fats, and obesity in general, have been linked to the colorectal, breast and prostate cancer. A diet high in fruits, vegetables, and high-fiber whole grains may have a protective effect against cancer.

A Balanced Diet

A well-balanced diet fuels the body for exercise, strenuous work, and resistance to disease. Paramount to the success of a department's wellness program is the promotion of healthy dietary habits. By educating company officers and making them a part of the wellness program, healthy eating should become an expectation within the fire station.

Most experts agree that a balanced and varied diet can meet all of the required daily nutrition needs. The exact quantity of protein, fats, and carbohydrates has long been subject for debate. The widely accepted contribution to the total daily caloric intake is as follows:

- carbohydrates should be 45-65 percent;
- proteins consist of 10-35 percent;
- fats should be 20-35 percent of the total daily intake.

In addition, the following USDA guidelines will help lead to a healthy diet:

- eat five or more servings of fruits and vegetables;
- reduce the amount of cholesterol, salt, and fats, particularly saturated fat;
- replace high fat meats with lean cuts;
- reduce the amount of processed foods, which are high in salt and hydrogenated oils;
- increase the amount of fiber;
- drink plenty of non-caffeinated and alcohol-free beverages.

Planning can reduce the potential for unhealthy eating behaviors.

Nutritional Counseling

A nutritional counselor, dietitian, or sports nutritionist is a valuable asset to any wellness program. The field of nutrition is plagued with fads and misinformation. Members, company officers, and Peer Fitness Trainers may wish to consult a qualified nutritionist. Such experts can be hired, contracted, or involved as volunteers. Benefits of a qualified nutritional expert include: development of weight loss management programs; analysis of individual dietary logs; custom nutritional programs for specific conditions such as pregnancy, weight gain, or illness; education of Peer Fitness Trainers, company officers, members, and recruits; discouragement of potentially harmful dietary practices; and development of specialized menus for post-incident replenishment.

■ Hydration

Working fire fighters can lose more than 2.6 liters of body fluid per hour. Sweat loss in excess of 2 percent of body weight can significantly impair performance, elevate body temperature and decrease cardiac output. It is critical to address proper hydration throughout the shift and during rehabilitation.

During prolonged work, the body loses water via perspiration and respiration. This produces a gradual decrease in stroke volume and the body's cooling capacity. The result is an elevated heart rate and the accumulation of body heat. These effects amplify the sense of exertion and accelerate the rate of fatigue. Dehydration and hyperthermia further predispose an individual to arrhythmias, myocardial infarction, and loss of consciousness, stroke, and sudden death. Adequate hydration helps prevent these ill effects, making it easier to sustain physical performance and enhance recovery. Uniformed personnel can improve their efficiency and capacity for evaporative cooling (sweating) by maintaining a high level of fitness, acclimatizing the body to working in a hot environment, decreasing body fat, and staying hydrated.

INJURY PREVENTION PROGRAM

An emphasis on injury prevention is needed to reduce risks in the fire service. Preventing injuries requires a comprehensive physical fitness program that begins with an assessment and appreciation for the needs and wants of the firefighter, a strong commitment to safety from both labor and management, a designated safety officer, and an understanding of the job demands, beginning in the fire academy and continuing throughout the entire career. Any injury prevention program should also have an educational component that addresses the fitness, wellness, and behavioral elements. Attempts to improve fitness or performance without consideration for the prevention of musculoskeletal injuries in the short- and long-term will leave any firefighter unprepared for the demands of the job, and could have a negative impact on overall quality of life.

■ Injury Prevention Committee

A comprehensive injury prevention program requires an injury prevention committee, as an extension of the safety and fitness committee. The committee should consist of an equal number of members from the fire department administration and the union. The injury prevention committee may also wish to consult with the department's physician, an industrial hygienist, an ergonomist, a physical or occupational therapist, and the departments PFTs. A near-miss program is another powerful tool in the prevention of injuries.

SUMMARY

In summary, this document provides a model for proper implementation of fitness programs in the fire service. Research has shown the need for high levels of aerobic capacity, power, muscular strength and endurance, mobility and flexibility, whole-body coordination and control, and favorable body composition to perform safely and effectively on the fire ground. High levels of physical capacity and body awareness are essential in maintaining the wellness of our uniformed personnel. Fitness must be incorporated into the overall fire service philosophy.

While assessing uniformed personnel's current fitness level is an important part of developing an individualized fitness program, assessment is not, in itself, a fitness program. An effective physical fitness program has several components. The elements necessary for a successful and comprehensive physical fitness program have been highlighted throughout this chapter. All recommended protocols are referenced in Appendix A. The fitness assessment recording forms are located in Appendix A1.

ENDNOTES

[1] Kales NS, Soteriades ES, Christophi CA,Christiani CD: Emergency Duties and Deaths from Heart Disease among Firefighters in the United States. New England Journal of Medicine Volume 356; Number 12; Page 1207; March 22, 2007

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CHAPTER 4 — Injury and Medical Rehabilitation

Management and Labor shall work together to provide a comprehensive individualized injury management /medical recovery and fitness program that ensures effective rehabilitation of any affected uniformed personnel to a safe return to full duty status.

This chapter highlights the following:

- **Definition of Rehabilitation**
- **The Need for Rehabilitation**
- **Components of a Comprehensive Rehabilitation Program**
- **The WFI Rehabilitation Continuum**
- **Stages of Rehabilitation**
  - **Early Healing/Recovery**
  - **Functional/Performance**
  - **PFT Involvement in Rehabilitation**

INTRODUCTION

As noted in Chapter 3, fitness programs have been incorporated numerous ways within the fire service. Peer fitness trainers have utilized various protocols to assess the specific functional fitness categories of aerobic conditioning, muscular strength and endurance, power, flexibility, and body composition in order to facilitate successful performance of job duties. Fitness and rehabilitation research continue to advance with a more recent fitness focus on functional skills needed for safe performance and more movement-based strategies to prevent injuries. It is then a natural progression to view rehabilitation as a continuum of a fire fighter's fitness program, now with the goal of assisting in the return to physical fitness/conditioning and performing quality movement patterns to prevent re-injury.

The diagram in Figure 4.1 outlines the continuum that exists between fitness and rehabilitation.

It is extremely important that rehabilitation providers for fire fighters take into consideration this unique continuity between fitness and rehabilitation. Communication between rehabilitation providers and peer fitness trainers is strongly encouraged. The different stages of rehabilitation with respective goals are described and components of collaborative and effective rehabilitation for fire fighters are presented in this chapter.

DEFINITION OF REHABILITATION

Rehabilitation is the sequence of services that restores a patient's physical function and wellness following an injury or medical condition. Rehabilitative care starts at the moment of injury or recovery from a medical condition and includes a continuum of services to restore the firefighter to full duty. Rehabilitation involves numerous professionals, including:

- The physician(s)
- Licensed healthcare professionals
- Physical or occupational therapists
- Exercise physiologists/specialists
- Fire department's peer fitness trainers
- Nurses
- Athletic Trainers

The successful rehabilitation of injured uniformed personnel, regardless of the cause or nature of the injury or medical condition, must address both physical and psychological factors which impact the recovery process. It is anticipated that there will be psychological needs associated with physical injuries.

THE NEED FOR REHABILITATION

Every year, statistics show that firefighting is one of the most dangerous occupations in the world. According to the National Fire Protection Association (NFPA), injuries are a problem and can place substantial strain on a department. In addition, when personnel are re-injured after inadequate rehabilitation of previous injury, the costs are even higher. Therefore, the comprehensive rehabilitation of our uniformed personnel must be a priority.

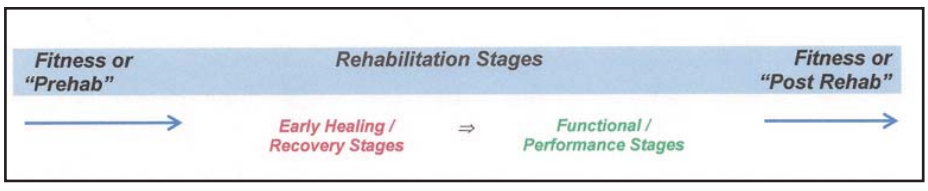

Figure 4.1 The Fitness/Rehabilitation Continuum.

COMPONENTS OF A COMPREHENSIVE REHABILITATION PROGRAM

The rehabilitation program should be comprehensive in scope to include medical treatment, rehabilitation, and fitness services. Medical treatment is provided by a treating physician (orthopedist or other specialty) and/or occupational health physician. The outpatient rehabilitation services are primarily provided by physical and/or occupational therapists (PT/OT), with some facilities providing additional health care providers, such as exercise physiologists, kinesiologists or athletic trainers (AT). Some fire departments provide in-house rehabilitation services and include AT and/or PT providers. Fitness assessments and/or training can be provided by rehabilitation or fitness professionals, including the individual fire department's peer fitness trainers (PFTs) or department ATs. In some instances, additional support from behavioral therapy and psychological support services may be indicated.

Rehabilitation programs must not be punitive in nature. The fire department must take the lead in ensuring that uniformed personnel are properly rehabilitated. The opportunity for light duty work during the rehabilitation process is encouraged. Light duty work should fall within the medical restrictions provided by the physician. This light duty work provides temporary, purposeful work to assist in the recovery process. It is a means to reduce injury costs and to keep the individual involved with the department by utilizing that individual's expertise. During rehabilitation, clinicians familiar with firefighting job requirements, or the essential job functions, should be the ones making the informed decisions regarding the functional capacities of uniformed personnel and their readiness to return to full duty upon recovery from an injury or medical condition. In short, the fire department must facilitate the process from beginning to end.

THE WFI REHABILITATION CONTINUUM

Rehabilitation is a critical component of the WFI. Figure 4.2 demonstrates the stages from point of injury/medical condition requiring medical evaluation/treatment, until return to full duty. If rehabilitation is recommended, additional medical re-evaluation(s), with changes in duty status, may occur as recovery progresses. It is recommended that the WFI fitness components are integrated into the rehabilitation process to facilitate firefighter performance readiness. WFI fitness components are integral in the post return to work stage, as well as the maintenance of firefighter fitness to reduce injuries/illnesses.

The department should use care when choosing medical and rehabilitation providers. It is highly recommended that these professionals review the individual's job tasks and the department's performance testing, if present. It is encouraged that medical and rehabilitation providers support behavioral/psychological interventions should a fire fighter's rehabilitation be impeded during this recovery period.

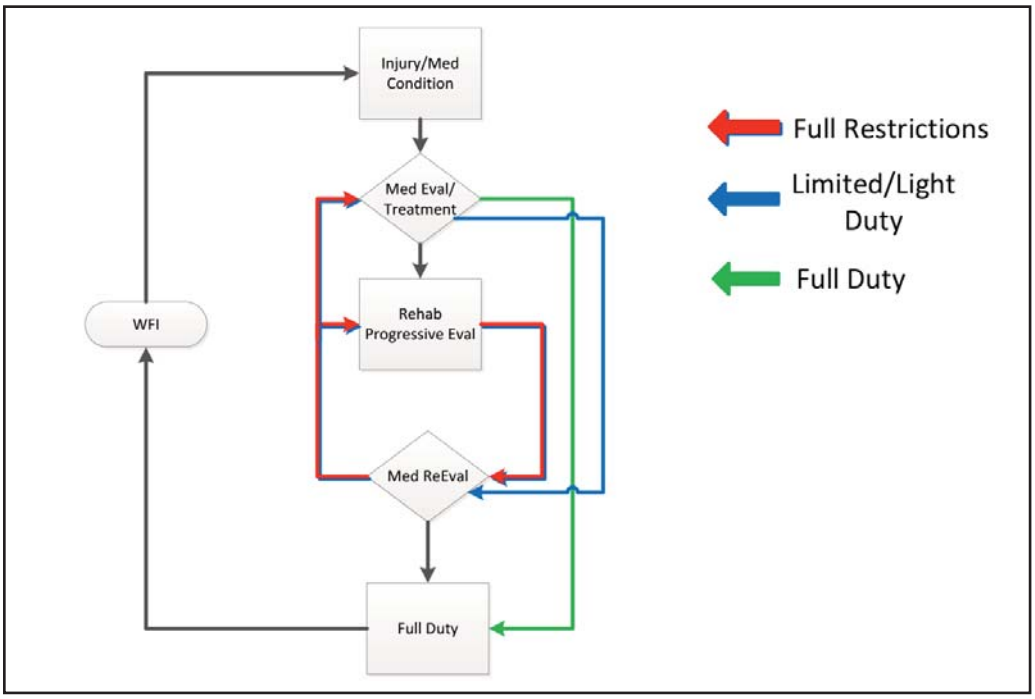

Figure 4.2 – The WFI Rehabilitation Continuum Diagram

Communication between medical professionals and the fire department is essential. However, Health Insurance Portability and Accountability Act (HIPPA) laws must be followed to maintain confidentiality. Rehabilitation providers relay the job readiness information and projected rehabilitation timelines to the physician. The physician makes the determination if personnel are on full restrictions, or are ready to be assigned to limited/light or full duty.

STAGES OF REHABILITATION

■ Medical Evaluation and Treatment

After an injury and after each medical appointment, the physician should provide the department with an update in work status (full restriction, light duty or full duty) and recommendations to the impaired person for recovery, which may include specific medical intervention or rehabilitation.

It is recommended that uniformed personnel on extended leave as a result of a medical condition for a continuous period, undergo a medical and fitness assessment. Extended leave status includes:

- alternate assignment
- leave of absence
- leave due to illness, injury, maternity
- other qualifying situations.

Such a policy will help identify loss of conditioning which may put uniformed personnel at risk for future injuries. The department physician or designated clinician shall evaluate individual for recommendation on re-entry into the workforce. See Chapter 2 for fire department physician guidelines.

■ Rehabilitation

Most commonly, rehabilitation services are provided in outside medical/rehabilitation facilities. However, it is recommended fire departments, in collaboration with Risk Management and/or the department's insurance provider, locate rehabilitation providers either outside of the department that provide quality services or consider bringing a rehabilitation provider into the department. This internal program could possibly be located within department's fitness setting and/or a location where there is access to firefighting equipment for progressive performance practice. There also may be facilities within the department's geographic region which provide advanced, functional skills for specific return to work needs. These "Industrial or Occupational Rehab Facilities" are designed, and the staff is likewise trained, to progressively simulate job tasks and demands so that a worker is prepared to return to his/her job. In addition, these facilities may have providers certified in ergonomics to address gear fit and function needs during the rehabilitation process, better preparing the fire fighter for return to full work demands.

Athletic trainers, Physical or occupational therapy providers should provide evidence-based services, making clinical decisions and choosing interventions which have a strong correlation with recovery and return to function. Clinicians should also base progression on physiologic indicators of readiness for increasing physical and functional demands.

- ***Early Healing/Recovery Stage of Rehabilitation***

Rehabilitation should start as soon as medically appropriate, as referred/directed by the physician. The early stages in the rehabilitation continuum facilitate tissue healing, prevent adverse impacts of the injury or medical condition, and facilitate the primary injured joint/tissue recovery. If possible, it is recommended that the rehabilitation provider guide the fire fighter on safe options for cardiopulmonary conditioning so that healing is facilitated and a base level of fitness is maintained. The goal of these early rehabilitation stages is individual joint recovery and tissue tolerance for everyday activities.

- ***Functional and Performance Readiness Stage of Rehabilitation***

Medical and rehabilitation providers need to coordinate the readiness for a fire fighter to advance his/her rehabilitation intensity. The progression to more demanding rehabilitation approach should begin once the tissue healing/recovery allows additional loading and demands to be placed on the fire fighter. The clinician should use an "industrial/tactical athlete" approach to rehabilitation and reconditioning during these stages.

Functional strength components and simulated job specific tasks should be incorporated into individual rehabilitation programs. Performance requirements including the aerobic and anaerobic needs for wearing progressive gear, handling progressive weights, demonstrating safe patterns of motion and demonstrating speed-related, impact tasks are encouraged. Cardiopulmonary demands should reach near, if not 100%, of a fire fighter's calculated maximum heart rate.[1]

Wearing the gear reduces the body's ability to sweat and will require a period of re-acclimatization to reduce the likelihood of heat stress. Depending on the time off full duty work, gear fit and function needs to be assessed making sure it allows functional joint motion to protect the injured area. The goal of these later rehabilitation stages is to prepare the total fire fighter for the physical, functional and cardiopulmonary demands of his/her job.

- ***Relationship Building – PFT Involvement in the Rehabilitation Process***

Early in the rehabilitation process, it is recommended that a department peer fitness trainer be assigned and communicate with the rehabilitation provider(s). The purpose of this communication is two-fold: it facilitates the rehabilitation provider's awareness of fitness and performance requirements for return to safe job performance and it supports the firefighter in their recovery process.

The WFI peer fitness trainers are trained to assess the following fitness components of fire fighter fitness (also see Chapter 3):

- Aerobic / Anaerobic Capabilities
- Muscular Strength and Endurance
- Flexibility
- Power
- Body Composition

It is these categories of expected performance that rehabilitation providers should be addressing, both from an individual joint/medical system perspective during the early stages of recovery and progressing to a total body readiness during the later stages in rehabilitation The earlier general fitness skills can be incorporated safely back into the rehabilitation process, the more prepared the firefighter will be to progress to more demanding stages of rehab and ultimately the high performance demands of the job. Additional balance, proprioception and sensory integration skills must be evaluated and retrained, as needed, by the rehabilitation provider.

It is strongly suggested that the department provide information to the rehabilitation provider that details a fire fighter's performance demands for full duty. They should also note the in-house fitness resources provided by peer fitness trainers. See Appendix C for information that can be forwarded to the rehabilitation provider. This should prompt the physical/occupational therapist to consider the broader needs of the fire fighter and to collaborate with the department's peer fitness trainers.

SUMMARY

A consistent approach to medical evaluation/intervention, light duty opportunities, rehabilitation services and peer fitness trainer involvement is encouraged in addressing the recovery and return to work of personnel following injury or medical condition. A high level of readiness for full duty requires a collaborative effort between medical professionals, rehabilitation providers and peer fitness trainers to help prepare the total body of a fire fighter for the full duty physiologic demands of firefighting.

END NOTES

[1] Physiological Stress Associated with Structural Firefighting Observed in Professional Firefighters, Indiana University Firefighter Health & Safety Research, School of Health, Physical Education & Recreation, Department of Kinesiology, http://www.indiana.edu/~firefit/pdf/Final%20Report.pdf

CHAPTER 5 — Behavioral Health

Management and Labor shall support the provision of a behavioral health plan, which may be delivered either through internal or external sources, based on specific elements.

- **Introduction**
- **Behavioral Health Stressors in the Fire Service**
- **Common Behavioral Health Conditions**
- **Comprehensive Behavioral Health Program**
- **Summary**

INTRODUCTION

Wellness is defined as a balance between the various fitness modalities — medical, physical, emotional and behavioral. Traditionally, medical and physical fitness took precedence over emotional or behavioral fitness in the fire service. However, there's growing realization that imbalance in any of the fitness domains can impact a fire fighter's health and ability to perform the job. Uniformed personnel who are mentally and emotionally fit are essential building blocks that form the foundation of the fire service.

There is widening recognition that behavioral wellness must be prioritized and integrated into a department's overall fitness and safety culture. A successful behavioral health initiative is a non-punitive program that provides access to mental health services, builds awareness about behavioral health issues, educates, and works to dismantle the stigma associated with behavioral health and those who seek services. The most successful behavioral health programs are cooperative efforts between labor and management and often have a "champion." This behavioral health champion collaborates with others to implement the program, assess effectiveness, provide leadership and ensure sustainability.

This chapter provides a thorough overview of behavioral health within the fire service, including common stressors and behavioral health conditions. The chapter also provides guidance on how to implement a comprehensive behavioral health program that assists all uniformed personnel with maximizing their behavioral wellness.

Behavioral Wellness

Physical fitness is a balance between good health, strength, fitness and durability, while behavioral wellness involves a person's thoughts, feelings and behavior. Fighters who balance their physical, behavioral and emotional fitness tend to fare better in life. They are equipped to cope with life events (including transitions like retirement), achieve higher career satisfaction and look after their family's well-being. To perform at a high level on the job, uniformed personnel must balance the emotional, physical, and mental stresses of work and personal life and be able to cope effectively. Challenges such as substance abuse, death of a loved one, financial distress, marital and family problems affect personnel both on and off the job. If their ability to cope with these challenges is compromised, fire fighters and paramedics are less able to deal with these stresses and their mental and emotional health suffer. A comprehensive wellness program teaches individuals how to engage in daily practices that help them cope with the stressors within the fire service and while also maximizing their body and mind wellness.

Investment

Although departments invest heavily in fire service equipment, greater focus must be given to the individuals who operate the equipment. When departments invest in their members, they increase their capacity to provide high quality service to communities and enhance the quality of life of their employees.

Numerous cost-effectiveness studies have demonstrated that employers who have high-quality and well-utilized health promotion programs, such as an Employee Assistance Program (EAP), gain a meaningful return on their investment. One comprehensive study underscores that point. Dr. Pelletier[1] at the Stanford University School of Medicine launched a series of reviews on workplace health promotion programs, including EAPs. He concluded that the cost-offset for these programs made a solid case for their continued support. The Pelletier review indicated the return of dollars invested to dollars saved ranged from $1.81 to as high as $8.81 saved for every dollar spent. Another study found that the expected return on investment for EAPs was between $5.17 and $6.47 per dollar spent.[2] A post-hoc analysis of closed EAP cases from twenty US employers indicated that level of functioning at home and at work improved significantly when employees used EAP services.[3]

Without attention to and an investment in the behavioral health of their employees, the fire service and other employers risk having employees who are absent more often, less productive on the job, involved in more accidents, incur more injuries, utilize more sickness benefits, and poorly perform required duties.[4] Uniformed personnel run the risk of being a liability to the department, rather than an asset. In a profession that requires the utmost skill and reliability, an emotionally, physically, or medically unfit member may jeopardize not only their safety, but that of their co-workers.

In addition to helping their individual employees, departments that promote good communication and positive emotional interactions can enhance daily operations, teamwork and personnel satisfaction.[5] When behavioral health disorders are unaddressed, they can impact the work setting and contribute to low morale and higher turnover rate.[6] A behavioral health program can provide educational seminars and information on topics of interest to uniformed personnel and their families, such as: positive versus destructive coping strategies, shift work and sleep disturbances, balancing the stressors of emergency services work and families, weight control, nutrition, cholesterol control, tobacco use cessation, fitness, hypertension awareness, preventive medicine, infection control, substance abuse, retirement planning, career/vocational guidance, job associated grief counseling, and other specific work-related issues. These topics mirror and complement the themes found elsewhere in the Wellness-Fitness Initiative. Equally important, programs that promote behavioral health wellness help reduce the stigma associated with using behavioral health resources.

BEHAVIORAL HEALTH STRESSORS IN THE FIRE SERVICE

■ Stress

Stress is defined by the National Institute of Mental Health as the brain's response to any demand.[7] Events that trigger this response may be short-term, long-term and/or recurring stressors. Not all stress is bad – it can also be triggered by positive events - and some level of stress is a normal part of life. However, stress can also be triggered by negative experiences, like a serious illness, divorce, or exposure to traumatic events.

Chronic stress can have negative physiological and psychological consequences ranging from digestive symptoms, headaches, depressed mood, anger, and irritability. Stress can also exacerbate certain health conditions like high blood pressure and diabetes, as well as increase susceptibility to viral infections such as the common cold and flu virus. When a person's ability to cope with stressors is overwhelmed, it can result in diagnosable psychological conditions such as anxiety disorders, mood disorders, or post-traumatic stress disorder.[8]

The following section reviews the common stressors experienced by uniformed personnel – job-related stress, hazardous exposures and family relations – and suggests ways departments and individuals can manage that stress.

■ Job Stress

The work of fire service personnel is characterized by long hours, shift work, disruptions in sleep patterns, sporadic high intensity situations, strong emotional involvement, life and death decisions, and exposure to extreme human suffering. Eventually, this type of work can impose excessive stress upon an individual and his or her family. Uniformed personnel also experience small day-to-day stressors — old or lack of equipment, high call volume, condition of station living quarters, or disagreements with coworkers —– which can build up over time and result in unhealthy stress reactions.[9]

Disasters and other large-scale emergency responses are also a major source of job stress. Disasters affect whole neighborhoods, towns, cities and/or counties. An entire city's resources may be mobilized to help restore order and assist the hundreds or thousands of people affected. Without fail, uniformed personnel are on the frontline, the first to respond to any such disaster. Keep in mind, firefighters also live in the communities affected by national disasters, so they're coping with personal loss at the same time they are addressing increased job-related stress. If a lengthy recovery operation is necessary, uniformed personnel may stay on the scene of the disaster for days and even weeks, further elevating stress and leaving little time to recover. Spending hours and days on the scene of a disaster can have significant emotional consequences.

In the aftermath of a disaster, fire fighters often take shortcuts with sleep and nutrition and may be away from their families for a period of time. These shortcuts can short-circuit the individual's physical and psychological health. Uniformed personnel who work disaster scenes should take more time to care for themselves, not less, to make sure that they and their families are physically and emotionally safe.

■ Hazardous Exposures

Uniformed personnel risk exposure to a variety of hazards during their course of their jobs, and these exposures can become a significant source of stress. On the job, they interact with individuals who have been exposed to or have been infected with contagious diseases such as hepatitis B, tuberculosis, viral meningitis, meningococcal, pneumococcal diseases and HIV/AIDS.[10] Wearing proper personal protective equipment (PPE) can help prevent transmission and reduce stress.

While fighting a fire or in the fire station, uniformed personnel also can be exposed to high levels of hazardous chemicals, including known and suspected human carcinogens. Fire smoke contains many hazardous combustion byproducts such as benzene, formaldehyde, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs), many of these are known to cause cancer in humans. Fire fighters can be exposed to these hazards when they do not wear their Self-Contained Breathing Apparatus (SCBA) and full protective gear during all phases of firefighting (including overhaul). Exposure can occur if protective gear is faulty,

does not fit properly, or if certain contaminants pass through turnout coats and are absorbed through the skin. At the fire station, uniformed personnel can also be exposed to diesel exhaust if source capture devices are not used or used incorrectly.

Several recent research studies show that fire fighters are at an increased risk of developing cancer and dying from cancer when compared to members of the public. Some of these cancers include mesothelioma, non-Hodgkin's lymphoma and cancers of the lung, colon and prostate.[11, 12]

Family Relations

The demands of the fire service can take their toll upon marriages and families. Extended shifts keep many uniformed personnel away from home for long periods of time, and work may cause them to miss holidays, birthdays, school functions and other family obligations. One study of fire service personnel found that more time at work plus less uninterrupted time at home were associated with higher work-family conflict and emotional exhaustion.[13] In addition, family members worry about the health and safety risks that their loved one faces on the job, which creates additional stress for the family.[14] Stress from family problems coupled with the job's high demands can intensify stress for uniformed personnel.

Managing Stress

At an individual-level, the negative effects of stress can be managed by adopting healthy behaviors. A varied and healthy diet, physical activity and exercise, consistent sleep schedule, and supportive social network of friends and family can help people cope with both acute and chronic stressors. Using alcohol or other substances to cope with stress is not a healthy coping behavior and can lead to dependence and addiction.

At the department-level, an effective stress management program can significantly enhance overall job performance. Stress management programs educate personnel on healthy methods for dealing with job-related and personal stressors and deliver information through written materials, educational workshops, peer-based programs, and/or behavioral health professionals. For example, a multi-faceted stress management program can help support fire fighters and their families if there is a hazardous exposure or someone is diagnosed with an occupational cancer or other illness. Programs also may want to target retirees who are dealing with the transition of retirement and no longer have regular contact with co-workers around the kitchen table and may struggle without that supportive network. Departments can establish these programs using external or internal behavioral health resources.

Finally, a stress management initiative should focus on prevention and use a proactive approach for recognizing, managing and reducing the effects of stress on fire fighters' emotional and physical health. A comprehensive behavioral health program might educate new hires about how to recognize reactions to stress during recruit training. Incumbent uniformed personnel could visit the academy to provide recruits with realistic insights on job-related stresses they can expect throughout their careers. These prevention efforts can be developed and delivered by the department's behavior health specialist, peers or community behavioral health providers.

Personnel training, promotional and/or paramedic training can incorporate information about stress and review stress management techniques. Stress prevention education activities could include highlighting how exercise is a tool to reduce stress; sharing assessment tools so personnel may self-monitor their own stress levels; and providing information on how to access support and resources. Examples of stress management programs and interventions can be found on the National Registry of Evidence-Based Programs and Practices available at https://nrepp-learning.samhsa.gov/.

Resiliency

Resiliency is the process of coping with stressful or challenging life events in a manner that provides the individual with additional protective and coping skills.[15]

One study found that career professional fire fighters cited acceptance, humor, religion and positive reframing as among their top coping strategies.[16] Resilient individuals learn from and integrate their experiences. They create a sense of meaning and eventually accept the "new normal" of their lives following a traumatic event.

Researchers increasingly view resilience not as a fixed attribute but as an alterable set of processes that can be fostered and cultivated.[17] When fire fighters increase their capacity to adapt and overcome traumatic events, they increase their resiliency. Key factors that enhance resiliency include caring and supportive relationships, a realistic plan of action for dealing with the event, and a positive sense of spirituality and mindfulness.[18, 19] Resilience increases when uniformed personnel are committed to their own behavioral health and well-being, and departments can reinforce that commitment by providing helpful wellness programs and resources.[20]

COMMON BEHAVIORAL HEALTH CONDITIONS

While there's been limited discussion about behavioral health within the fire service over the years, these conditions have long affected uniformed personnel. This section provides an overview of some of the behavioral health conditions that fire fighters and paramedics experience more frequently.

Substance Use Disorders

There are many reasons why individuals become dependent upon or abuse alcohol and drugs, including an attempt to reduce stress or escape traumatic memories. However, substance abuse poses significant risks to members' physical and emotional health. Problems that result from alcohol and drug abuse are not confined to the user; people closest to or dependent upon the individual (e.g., family, friends and coworkers) are also significantly impacted.

It is important that department policies reflect a strong commitment to a workforce that is free of substance abuse. Each department should establish a policy that explicitly states that neither the use of illegal substances nor the abuse of legal and/or controlled substances will be tolerated. The department's policy regarding substance abuse should be made clear to applicants for all positions within the department

While a strong policy against substance abuse is important, drug testing does not belong within the context of the Wellness-Fitness Initiative. Given the WFI's explicit non-punitive approach, drug testing should not be included in the annual medical examination or blood/urine tests. If drug testing was incorporated into the Wellness-Fitness Initiative, it would create resistance to medical evaluations and physical examinations.

Most departments have new-hire and for-cause drug testing policies, while others have a random, mandatory testing policy. When drug misuse is identified, either through reasonable suspicion or random testing, any follow-up action should include a referral to treatment. Treatment is most effective when it specialized and readily accessible. The Wellness-Fitness Initiative emphasizes rehabilitation of the affected individual, not termination. Rehabilitation is the most effective and compassionate means of retaining a valuable member of the department. The department should foster an environment in which fire fighters can come forward to request help and receive support when they enter and return from treatment. Confidentiality is paramount throughout the process of assisting individuals with substance use disorders.

Alcohol

Alcohol use is highly prevalent among fire personnel.[21] Alcoholism (now called Alcohol Use Disorder) has been recognized as a treatable disease by the American Medical Association since 1956. People who abuse alcohol frequently have a difficult time knowing when their use has crossed the line and becomes a health and safety risk. Alcohol Use Disorder may be diagnosed after 12-months or more use that interferes with job, family, school responsibilities; results in problems with family and friends; occurs despite being in hazardous situations; requires heavier drinking to achieve the same effect, and a few additional criteria.[22]

Alcohol Use Disorder is a progressive illness, and it may take time before a person performs poorly on the job and develops a chronic problem. Whenever possible, affected workers should receive early intervention and a referral to a credible substance abuse program. Early intervention benefits the member, the member's family, and the fire department. In addition, research has demonstrated that alcohol treatment programs reduce the long-term health care costs for patients.[23]

Tobacco

Tobacco is another commonly used substance within the fire service. Smoking is the number-one cause of premature death and a significant contributor to heart disease, lung disease and cancer. Smoking is also the leading cause of fires, including fires that have claimed the lives of IAFF members. Medical data clearly show that tobacco use is damaging to one's health and not compatible with healthy uniformed personnel. The use of tobacco, whether through smoking or smoke-free products, is contrary to the philosophy of the Wellness-Fitness Initiative and the goals of a comprehensive wellness program. Tobacco use also undermines the benefits secured by existing presumptive heart and lung laws.

The Wellness-Fitness Initiative includes the following Tobacco Cessation Policy:

- All new fire department candidates shall be tobacco free upon appointment and throughout their length of service to the department.
- Current fire department uniformed personnel shall not use tobacco products (cigarettes, cigars, and/or chewing tobacco) inside the worksite, within or on fire department apparatus, or inside training facilities.
- A fire department sanctioned tobacco cessation program shall be made available to incumbent tobacco users. Tobacco cessation programs must be non-punitive and must include both short and long term goals.

The IAFF and the pharmaceutical company Pfizer started a campaign to help the IAFF become the first smoke-free union in the North America. The program materials, found on the IAFF's Fit to Survive website, include information on the health risks of smoking, benefits of quitting, tips on how friends and family can help a smoker quit, and ideas on how to encourage health insurance plans to cover smoking cessation. The website can be accessed at http://www.iaff.org/smokefree/ \

Several tobacco cessation programs have been well-studied and found to be safe and effective. Success rates appear to improve when other tobacco users in the person's life -- family members, close friends, or co-workers -- stop smoking at the same time. Cessation programs may include the use of hypnosis, acupuncture, nicotine

chewing gum, nicotine patch, and medications such as clonidine and varenicline (Chantix). These programs are far more effective when coupled with counseling for behavioral modification. The best tobacco cessation programs represent a joint effort between the physician, other health care providers, trained counselors, and supportive family and friends.[24] All tobacco cessation programs should be coupled with formal nutrition and exercise programs using the same goals and protocols discussed in other WFI chapters.

■ Post-Traumatic Stress Disorder (PTSD)

Traumatic events -- unexpectedly gruesome sights, mass causalities or loss of friends or family during a call – are a daily reality for fire fighters and paramedics. These potentially traumatic events (PTEs) can be experienced directly, witnessed, or occur to someone that is very close to the individual.

While fire fighters are exposed to PTEs as a normal part of their job, they may respond to these incidents differently. Two people who experience the same traumatic event can have very different reactions to it. Certain calls may hit closer to home or have a greater impact on some responders.

Stress reactions can occur after exposure to a single potentially traumatic incident, or after cumulative incidents as the stress builds up over time. These stress reactions may include nightmares or intrusive thoughts (re-experiencing), avoidance or numbing (avoiding people or places associated with the event), and increased arousal (irritability, difficulty concentrating and sleeping). Individuals may experience some, but not all, of these symptoms. When these symptoms persist or intensify, or if there's a delayed stress reaction months or years after an event, fire fighters need to be concerned about whether Post-Traumatic Stress Disorder (PTSD) has developed.

PTSD is a psychiatric diagnosis made after an individual is exposed to a potentially traumatic event and experiences an array of symptoms that last more than a month and create distress or functional impairment. These symptoms include nightmares and flashbacks, avoidance behaviors, increased arousal and reactivity, and negative thoughts/feelings.[25] The prevalence of PTSD in uniformed personnel is higher because of the greater exposure to trauma and critical incidents they experience.[26] The risk for PTSD increases when there is longer critical incident duration; intensity, unpredictability, uncontrollability and real or perceived responsibility or betrayal associated with the potentially traumatic event; and perceived threat, terror or horror in reaction to the incident. On an individual-level, family history of psychiatric illness; ongoing stressful life events at the time of the event; lack of social support; and a social environment that promotes shame, guilt, stigmatization, or self-hatred can increase the risk for PTSD.

It's preferable to intervene before waiting for all of the PTSD symptoms to appear and progress into an illness. Individuals can minimize their own suffering and that of their family and co-workers by addressing symptoms during the early stages. At the same time, individuals who have suffered from PTSD for years, or even decades, can get relief and resolution with appropriate treatment. It is critical that fire personnel become better at understanding trauma and PTSD, recognizing and talking about the signs, and encouraging treatment.

■ Depression

Depression is a serious but common health condition. The World Health Organization reports that more than 300 million people suffer from depression around the world.[27] Feeling sad on occasion is a normal part of life, but depression is more than just sadness. Depression is associated with unrelenting feelings of helplessness, hopelessness, and worthlessness and interferes with day to day life, affecting work, sleep, recreation, and diet.

People who suffer from depression experience a variety of symptoms lasting for at least two weeks, including loss of interest and enjoyment in pleasurable activities; reduced energy levels; insomnia or oversleeping; appetite or weight changes; irritability; loss of energy; self-loathing; concentration problems; and physical aches and pains.[28] It is generally agreed that depression is the result of biological, psychological and social factors and can be triggered by a range of factors or events. Depression is related to other mental health issues like PTSD and substance use, and to physical health problems like diabetes and cardiovascular disease. At its worst, depression can lead to suicide.

In the fire service, recent studies suggest between 7%[29] and 11%[30] of fire fighters suffer from clinical levels of depressive symptoms. Depression levels seem to rise over the course of a career in fire service, with new recruits having the lowest levels of symptoms, and experienced fire fighters having the highest.[31] The good news is that effective treatments are available for depression. Effective treatments for mild depression include evidence-based psychotherapy like Cognitive Behavioral Therapy, Activation treatment and Interpersonal psychotherapy. Moderate to Severe depression responds to those psychological interventions, as well as antidepressant medications. Fire fighters suffering from depression, even moderate to severe depression, can engage in treatment (both psychological or talk therapy and medication treatment) with appropriate medical clearances.

■ Suicide

Suicide is the 10th leading cause of the death in the United States, accounting for 13 deaths for every 100,000. Over 44,000 Americans commit suicide each year.[32]

One must understand suicide's warning signs to identify at-risk fire fighters and paramedics in need of help. These signs include talking or writing about death; threatening to hurt or kill oneself; feeling rage or uncontrolled anger and hopelessness; withdrawing from friends and family; feeling anxious or agitated; experiencing significant changes in mood; and engaging in risky and reckless activities. A person's risk is higher if there's history of past suicide attempts, mental health disorders such as depression or PTSD, alcohol and substance abuse, access to firearms or other lethal means, and stressful life events like legal problems, abusive behaviors, and family conflicts.

If there is concern that a fellow fire fighter, family member or friend is in danger, the next step is to be direct and ask if they are considering suicide. Anyone who is planning to kill themselves should not be left alone and should be brought to the nearest hospital or emergency room for evaluation and treatment. For less acute situations, the individual will need assistance finding a knowledgeable mental health professional or reputable treatment facility.

While suicide may not always be avoidable, it is preventable. Research has shown that there are specific ways to improve the odds of preventing a suicide. These include 1) reducing the stigma around mental illness and help-seeking, 2) enhancing social support through social networks, 3) making help-seeking easier through departmental or policy changes, 4) screening for depression, substance abuse, and suicidal ideation or suicide attempts, 5) restriction of lethal means, and 6) media education.[33, 34, 35] A comprehensive behavioral health program can address many of these factors through education, programming and individualized support.

The unfortunate reality is that departments also should develop guidelines that outline protocol for the department following a suicide death. These SOPs can include notification procedures and guidelines for responding to family and department members. The IAFF web site has a model SOP for suicide postvention that can be reviewed and tailored. Departments also must provide resources and counseling to assist those coping with the suicide of a member.

COMPREHENSIVE BEHAVIORAL HEALTH PROGRAM

Few departments have a comprehensive behavioral health program. Most have a patchwork of ineffective services and often must scramble when behavioral health concerns arise. The current system is characterized by ineffective and underutilized EAPs; few protocol or resources for responding to behavioral health needs; and pervasive stigma that discourages discussion about behavioral health and hinders access to services. Fire departments that implement a comprehensive behavioral health program are able to move out of this reactionary mode and become more proactive and preventive.

Since behavioral health programs deal with sensitive issues, confidentiality must be the cornerstone of every fire department's program. Individuals who seek assessments and counseling must be assured that services are both non-punitive and confidential. Trust in the behavioral health program is essential for services to be utilized and effective.

A comprehensive behavioral health program could address the following issues through education and services: substance abuse issues; addictive behaviors; medical issues; occupational diseases; disabilities; veteran concerns; stress management; communication skills; marital concerns; family and child issues; domestic violence; anger management; legal and financial problems; critical incident stress (including post-traumatic stress disorder); cumulative stress; workplace violence; and death/grief counseling. Once these behavioral health topics are addressed, programs may evolve further to address career/vocational concerns; organizational problems; and lay off/suspension/termination.

A comprehensive behavioral health program can be configured in various ways, but typically encompasses a core set of services and supports. These components include an Employee Assistance Program; Behavioral Health Standing Committee; Behavioral Health Specialist; Periodic Behavioral Health Evaluations; Peer Support; Chaplain Services; Post-Incident Response; Family Support and Education. The following section describes these essential elements in more detail. A bulleted list of these fundamental components can be found in Appendix D.

■ Employee Assistance Programs

An Employee Assistance Program (EAP) -- or Labor/Employee Assistance Program (L/EAP) -- is a cost effective, humanitarian, job-based intervention to help individuals whose personal problems or occupational concerns impact their work performance.[36]

Fire fighters and paramedics need an EAP that can address their concerns specific to the fire service and promote total wellness. An effective EAP can restore uniformed personnel to a healthy and fully productive life, along with improving employee morale and increasing the productivity of the entire department. It can be an internal program within the department or union, sponsored by a jurisdiction and/or contracted to an outside organization. Regardless of how it's structured, it is helpful to periodically review EAP utilization and member satisfaction to ensure accountability.

Employees should have direct access to EAP services without going through departmental personnel. EAP providers must have a good understanding of how life in

the fire service can adversely affect a member's wellbeing and ability to perform their jobs safely and effectively. EAPs should refer individuals who require specialized or longer-term counseling to licensed mental health professionals who have experience with traumatic stress, use best practice evidenced-based treatment strategies, and have been vetted.

The guarantee of complete confidentiality is fundamental to any EAP, as well at the assurance that job security or future promotional opportunities is not jeopardized by the employee's need for or use of services.[37] If the perception is that confidentiality is not maintained or there's a conflict of interest, the EAP will not be utilized. Both employer and employee should be informed of and able to review relevant privacy rules, including federal regulations that govern privacy of health records and employee records. In addition, many states have specific laws that address provider-patient privilege for licensed health care providers.

■ Behavioral Health Standing Committee

Establishing and maintaining a comprehensive behavioral health program requires ongoing communication and collaboration. This is not a one-person job. A Behavioral Health Standing Committee should be created to provide leadership and address behavioral health concerns within the department. This joint labor-management Standing Committee ensures that all aspects of behavioral health are being discussed: What is the impact of SOPs (or lack thereof) on access to behavioral health treatment? Member privacy? What are the unmet needs? Committee members work collaboratively to systematically address gaps, identify behavioral health resources, and create a culture where behavioral health is viewed as a critical component of the Wellness-Fitness Initiative. A comprehensive behavioral health program is strengthened when the Committee obtains funding sources to improve the program.

■ Behavioral Health Specialist

Individual fire departments can hire or contract with a behavioral health specialist to help develop and coordinate a department's comprehensive behavioral health program. The behavioral health specialist also can provide direct short-term counseling, refer individuals to services in the community, and provide clinical guidance to a peer support team.

Ideally, the behavior health specialist should be a licensed mental health professional with a Ph.D. or Master's degree in the field of psychology or related and relevant fields (e.g., social work, nursing, counseling, mental health counseling, or psychiatry). Regardless of the professional field, it is essential that the behavioral health specialist is familiar with the unique stressors and culture of the fire service to be effective.

A behavioral health specialist should have (or obtain) training in: crisis intervention; general stress; group processes; human communication skills; direct intervention strategies; PTSD and depression; managing retiree transition; suicide awareness and postvention; addressing stigma; and understanding barriers to care. Additional training in substance abuse; family therapy and physiological basis of behavior is beneficial. The specialist must also have working relationships with behavioral health providers in the community – inpatient facilities, intensive outpatient programs and psychiatrists who evaluate and prescribe medication – and more general resources that fire fighters might need, such as financial counseling and/or debt consolidation; tobacco use cessation programs and parenting classes.

Another key role for the behavioral health specialist is coordination of services. Behavioral health services are typically provided through the individual's health insurance plan or through the department's EAP. The behavioral health specialist can facilitate access to treatment and provide follow-up support. If necessary, the specialist can work with management to ensure leave time is handled in the same manner as it would be with any medical problem or issue. Treating behavioral health care like other forms of health care is critical to reduce the stigma that persists in the fire service.

■ Periodic Behavioral Health Evaluations

The annual medical examination should include a confidential behavioral health evaluation. The confidential behavioral health evaluation should include questions that address stress management; alcohol use; financial and family problems; substance abuse; departmental problems; weight management; tobacco abuse; and assistance with any concerns about immediate family members. The department's behavioral health specialist should review each survey, and then meet individually with each participant to review their survey and offer specific resources or counseling for identified problems. This step is a preventive and proactive way to address problems before they progress into life-altering, career-ending behavior. As with the other components of a comprehensive behavioral health program, periodic evaluations are only effective if privacy is ensured.

■ The IAFF Center for Excellence in Behavioral Health Treatment and Recovery

Occasionally fire fighters and paramedics will experience acute behavioral health problems that cannot be addressed through outpatient services and will require inpatient or residential care for symptom stabilization. In such cases, departments are encouraged to seek treatment facilities that are equipped to deliver culturally competent and evidence-based care for the treatment of substance use disorders, PTSD, major depression and related behavioral health concerns. The importance of group cohesion, the

degree to which members feel positively bonded towards one another, is strongly correlated with positive treatment outcomes in psychotherapeutic settings. This has been demonstrated in the inpatient treatment of active duty military personnel coping with PTSD . Thus to enhance treatment efficacy, it is preferred that fire fighters and paramedics have an opportunity to seek treatment with other peers who understand the challenges and rewards of their occupation.

The IAFF Center for Excellence in Behavioral Health Treatment and Recovery is a 64-bed residential treatment facility located in Upper Marlboro, MD, designed specifically for members of the fire service. The Center for Excellence is dually licensed to treat substance use disorders and PTSD, as well as other cooccurring mental health disorders. Services are delivered through four levels of care including detox, inpatient, partial hospitalization, and intensive outpatient treatment, with continued aftercare support and monitoring, provide by multipdisclinplary treatment team of doctors, nurses, clinicians, and technicians that have received specialized training to work with members of the fire service. Program curricula are designed to stabilize symptoms, address underlying mental health problems, and equip the member with the necessary recovery tools for healthy occupational and social functioning after discharge.

Peer Support Programs

Peer support is an effective method for providing services and assistance in various occupational groups, including law enforcement,[39] military,[40] fire fighters,[41] and nurses.[42] Trained Peer Supporters provide education, individualized support, short-term crisis intervention and necessary referrals. The peer support program is not meant to replace professional assistance, but to provide short-term support and serve as a bridge to appropriate professionals. It is imperative that peers build a network of resources, including local offices of 24-hour hotlines, so they can provide the necessary referrals.
Trained Peer Supporters are trusted members of the fire service who are selected from all ranks and positions. Trained Peer Supporters must be trained in active listening skills, assessment, action planning and referrals to community resources. Newly trained peers who are developing their skills should be mentored by experienced peers. Finally, as confidentiality is the backbone of a peer support program, each peer team must develop its own policies and procedures to ensure member privacy.

Peer programs may be operated by the department or the union. A peer support program should have a coordinator to oversee training, organize deployment of peers, and act as a resource for fellow peers. The coordinator should have meaningful experience as a peer provider and regularly consult with a behavioral health professional for additional program support. The coordinator should stress the importance of self-care for the peer providers, encouraging them to take care of themselves so they can be a resource for others. Finally, it is up to each jurisdiction to determine compensation for peer team members.

Chaplain Services

Fire department chaplains are an important component of a comprehensive behavioral health program as they provide valuable guidance to individuals who need emotional or spiritual support. Effective chaplains use a non-denominational approach and promote a culture of religious tolerance and acceptance.

Fire department chaplains often assist fire service personnel and their families in times of crisis. The chaplain — a local clergy person or a retired fire fighter trained as a chaplain — handles emergency situations within the fire department, such as serious injury to fire department members; line of duty deaths; notification of family members for serious injuries or fatalities; and suicides involving fire department members and their families. The chaplain may comfort the bereaved, and visit and provide support to injured personnel. The services of a chaplain can greatly enhance an individual's or family's emotional response when a traumatic incident occurs.[43] Given their role, chaplains must be aware of signs of stress, effective coping methods for daily and life pressures, and available resources, including peer support services.

Post-Incident Response

A post-incident response is different than an after-action critique following a traumatic event. The former focuses on helping members deal with the potential emotional fall-out after an event, while the latter encourages personnel to review and analyze their actions with a goal of improving performance, policies and training.

Critical Incident Stress Management (CISM) is a widely-used model in the fire service to respond to traumatic events; however, there is disagreement on its effectiveness and some departments are beginning to move away from the CISM model.[44, 45] There is agreement in the literature that participation in any post-incident response should be voluntary and structured to meet the specific needs of the individual or group involved.

Response teams may provide pre-incident education and preparation; on-scene support services; large group interventions; small group intervention; individual crisis intervention; pastoral crisis intervention; family support services; organizational and staff consultation; post-incident education; and follow-up and referral. An effective crisis response program may include behavioral health professionals, peers, and chaplains who go through a rigorous process of selection, training, on-going evaluation, and continuing education.

Family Support

A comprehensive behavioral health program should provide support to spouses, children and other family members. Family support and education should start during the recruitment stage and continue through retirement. In addition, a comprehensive program can help uniformed personnel better handle their family relationships by providing educational material (such as how to deal with teenagers) and referrals to marriage counselors, elder care and other family supports.

Families also can be important allies when a member is struggling and needs support. They are often the first ones to notice symptoms such as mood changes, sleep disturbances, changes in diet, or increased use of alcohol. Spouses and other family members can help members realize they need treatment or support for their behavioral health issues.

Education

Behavioral health education should be integrated into a department's regular training schedule. By providing trainings and educational materials on behavioral health topics, departments can help reduce stigma and ultimately impact the overall safety culture. Electronic education can reach wide audiences and may take the form of email newsletters, website articles or web-based trainings. Web-based trainings can be as effective as in-person trainings, and can be completed at the user's convenience.[46, 47] IAFF has developed a self-paced online Behavioral Health Awareness course tailored for the fire service that is available on its website. (See www.iaff.org/bhonlinecourse.) In addition, the federal Substance Abuse and Mental Health Services Administration (SAMHSA) offers behavioral health training resources and can be accessed at https://www.samhsa.gov/dtac/education-training.

Awareness and Access

Regardless of the type of services offered through a comprehensive behavioral health program, the program is only successful if members are aware of the services and services are easily accessible.

To raise awareness and increase use of the behavioral health program, education activities should describe the program's components, availability, effectiveness and confidentiality policies. Information about the comprehensive behavioral health program should be shared throughout the members' career. Probationary members, active duty personnel, retirees and their family members should receive a comprehensive introduction to the behavioral health program, be encouraged to utilize the services and resources, and informed how to access each component. Regular notices, distribution of literature, social media, website resources, posters, and announcements at training academies can all be used to spread awareness. In addition, department supervisors should receive on-going training so they are fully knowledgeable about the program and how individuals can access services.

Finally, once people become aware of available services, they should not encounter barriers when they ask for help. Medical leave and alternate duty polices should facilitate – not hinder – access to behavioral health services, as they do for members seeking other types of medical treatment.

SUMMARY

A comprehensive behavioral health program is a vital part of the Wellness-Fitness Initiative should be integrated into a department's wellness efforts. Comprehensive wellness is only achieved through a holistic approach that includes the well-being of individuals' physical, medical, and behavioral health. Fire fighters and paramedics experience some of the most tragic aspects of life and have limited control over the events they witness. Exposure to potentially traumatic events can generate stress responses that trigger psychological and behavioral problems, which ultimately can contribute to negative job performance.

A comprehensive behavioral health program ensures that all uniformed personnel have access to resources to deal with the job's stressors. A successful program depends on labor-management cooperation and effective education, support, and treatment. Fire departments must view the investment in a comprehensive behavioral health program as more than its financial costs. The cost for NOT addressing behavioral health results in personnel suffering emotional or behavioral problems that negatively impact their life and the overall effectiveness of a department. An employee who is physically and emotionally fit is critical to the fire service and its ability to deliver the service that the public demands and deserves. A comprehensive behavioral health program summary outline is provided in Appendix D.

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CHAPTER 6 — Cost Justification

Management and labor shall work together to reduce injuries to uniformed personnel, and the associated costs, by fully implementing the Fire Service Joint Labor Management Wellness Fitness Initiative.

This chapter highlights the following:

- **Introduction**
- **Return on Investment**
- **WFI vs. Non-WFI Cost Justification Research**
- **2017 Research on Economic Impact and Cost Justification of the WFI**
- **Return on Investment of FD Wellness Programs**
- **Summary**

INTRODUCTION

As the world becomes increasingly "data-driven," being able to demonstrate the value of the Wellness-Fitness Initiative (WFI) often requires convincing decision makers to look past the initial cost of the program and to identify the economic value, along with the altruism, of keeping our population of firefighters healthier. While we dedicated Chapter 7 of this manual to data collection, this chapter focuses on data useful to justify WFI implementation costs.

Moreover, this chapter highlights some recent scientific studies that have captured the cost benefit relationship. It allows us to generalize their findings and support WFI with economics underpinning an investment in the WFI program. Summarily, they tell us what many have known for years: these programs save money and prevent firefighter injuries – and it doesn't take years to see the cost savings.

It's a fact of reality that today the public safety community must compete for funding, often when lean budgets compel other city departments to fight for the same funds. In short, to get funding for a meaningful wellness and fitness program, organizations need more than ideas and promises to get the money they need to implement the WFI. They need data and quantification of return on investment (ROI). A dollar spent on prevention often only appears a cost to budget people, and without a clear ROI, getting the necessary money might be difficult or impossible.

RETURN ON INVESTMENT

Some parts of WFI can be implemented without spending money, however to create a sustainable program that maximizes the value for everybody, organizations will need to invest. The intention of this chapter is to assist in highlighting the value of these programs. The goal of this chapter is to answer the question of why invest in a WFI program. This is accomplished with data from scientific studies and examples of how to measure the return on such an important investment.

Ultimately, the true ROI is the change in total cost of injuries after accounting for total program costs. Capturing total cost can be challenging. Qualitative cost such as social and emotional cost are difficult to quantify. However, organizations can capture the quantitative costs, such as direct medical costs, lost time, and backfilling of position with some simple data gathering of normally collected data. A good place to start is understanding what types of injuries are common across the industry.

INJURIES AND JOB-RELATED DISEASE IN THE FIREFIGHTING OCCUPATION

Firefighting and emergency medical service (EMS) work has an increased the risk of musculoskeletal injuries and cardiorespiratory illness compared to other occupations.[1,2] Occupational injuries remain the leading cause of disability and/or early retirement for uniformed personnel. Cardiovascular disease and cancer are the leading causes of causes of firefighter deaths. Occupational injuries and early deaths from cardiovascular disease and cancer have devastating physical and financial cost for the injured member. All these costs impact workers, their families and friends, and the community they serve.

Bearing significant financial/economic costs of injuries impacts both the fire departments and the citizens of the community. A body of research has emerged indicating these costs massively outweigh the cost of funding prevention programs, such as the ones recommended in this document. However, it will take some number crunching to convince your organization's financial leadership of this fact. They need to see clear data and ROI information.

The Work Environment

Fire fighters perform physically intense work in extraordinary environments including high heat, low oxygen, high carbon monoxide, high levels of toxic contaminants, and other combustible products. In addition to these job-related hazards, cardiac and cancer risk factors are higher among fire fighters than other comparable worker groups.[7]

■ Age

As uniformed personnel age, on average activity decreases and they experience higher rates of hypertension, low fitness level, and obesity. It doesn't take a scientific study to know this is the case, but scientific research reveals this as well.[8]

Consequentially, fire fighters' experience injuries at much higher rates than other comparable jobs. For example, fire fighters have an annual injury rate 8.6 times higher than miners.[9] This, coupled with the cardiac and cancer risk factors of fire fighters represents a population poised to benefit from WFI recommended programs.

■ Scientific Support

Previous studies have shown a 200%-600% cost savings (ROI) for each dollar invested in a wellness and fitness program. Researchers discovered that over a five-year period, departments using WFI programs spent only **1/3 the costs** for injuries and illnesses than departments that did not have such a program.

A recent 2016 joint study of the Tucson Fire Department, conducted by researchers at the University of Arizona and Boston College, quantified the immediate benefit at 2.4%. This means they saved 2.4% more money than it cost for the program, in the first year. It may not initially appear that 2.4% isn't massive, however understand this is the tip of the iceberg.

Data scientists estimate annual firefighting injury costs as high as $7.9 billion nationally. Even using pessimistic initial cost savings estimates (2.4%) we could project net savings at $189,000,000 across the industry in a single year. The aggregate effect over a 10-year period, given the pessimistic assumptions, is still billions of dollars in money saved.

Researchers from outside of the fire service have well-documented rationale for worksite health promotion. Several studies have addressed the question and have shown a favorable return on investment (ROI) for comprehensive health promotion programs[13-17]. In fact, over 143 studies that were reviewed demonstrate positive ROI associated with worksite health promotion. Examination of this peer-reviewed literature concludes that the financial benefits of well-designed, well-implemented health promotion programs substantially exceed their costs and have a positive ROI and benefit/cost ratio.[18-20] Note that most of the programs studied were in white collar or management industries; thus, the favorable outcomes were in the reduction of medical costs for chronic illnesses, rather than musculoskeletal injuries that are common in firefighting.[3-6]

WFI DEPARTMENTS versus NON-WFI DEPARTMENTS COST JUSTICATION RESEARCH

In 2006 and 2007, Human Resources and Risk Management Sections of the original 10 WFI fire departments were contacted to acquire aggregated data on workers' compensation claims, lost work hours, and total incurred costs, prior to and after implementation of the WFI. Eight (8) of the fire departments had sufficient data to be included in this report, but only four (4) had adopted tracking cost information prior to and after implementation (Fairfax County, Virginia; Indianapolis, Indiana; Los Angeles County, California; and Phoenix, Arizona).

The other four (4) fire departments for various reasons, did not advance in the adoption of policies, procedures, and practices recommended in the WFI. However, they did track occupational injury and illness claims and cost information to act as comparison or control sites (Austin, Texas; Calgary, Alberta; Miami-Dade, Florida; and Seattle, Washington).

The WFI fire departments have a mandatory, non-punitive policy for individual participation and the participation rates increased steadily over the course of implementation from an average of 54 percent in the first year to 79 percent in 2004. By working with each department, researchers were able to gather occupational injury/illness claims, disability costs, lost work hours, and total incurred costs annually for a period of at least five (5) years prior to (as a baseline) and after implementation of the WFI.

■ Measurement and Outcomes

All fire departments aggregated claims data were combined and are summarized in the following tables and graphs. Total number of occupational claims, number of lost days, total incurred costs, and cost per claim, were assessed between the four (4) WFI fire departments and the (4) non-WFI departments.

Participating fire department sites for seven years prior to and after implementation of WFI among WFI and non-WFI fire departments. Data from each department was totaled, then combined and averaged between the four (4) WFI participating and four (4) non-WFI fire departments. In doing so, this removed any ability to identify an individual fire department's cost data, therefore allowing each participating department to maintain financial confidentiality. The numbers presented, represent the mean number of claims and costs for one fire department (mean of the four (4) departments) over an annual time period.

The numbers of lost days from claims were available from some of the departments. Lost work hour data was also extrapolated and averaged from just those fire departments and adjusted for all the departments to get the estimated average number of lost days and hours per site. The mean total claims, lost hours, and total incurred costs represent service or occupational benefits paid, per fiscal year, for a department.

Data from these fire departments do not include any non-occupational claims and costs because of the difficulty in tracking this type of information through private insurance and individual medical providers. This exclusion of non-occupational injuries in the cost table below will logically cause the numbers to underestimate the cost savings and potential impact of the WFI intervention.

■ Costs and Claims

In Table 6.1, the summary data shows the WFI and non-WFI beginning with pre-implementation (1991-1997) to post implementation (1998 – 2004). Pre-implementation figures for the WFI sites showed there were a total of 3,033 claims, with a total of 40,611 days lost, and an incurred cost totaling $21,695,644. The average cost per claim over the seven (7) years was $56,845 per department. For the seven (7) years post WFI implementation, there was a five (5) percent increase in claims, a 28 percent reduction in days lost, a three (3) percent increase in total incurred costs totaling $22,276,143, and a 23 percent decrease in the average cost per claim.

By contrast, in the non-WFI departments there was a 22 percent increase in claims between the two (2) periods, a 55 percent increase in days lost, a 58 percent increase in total incurred costs, and a 35 percent increase in average cost per claim per fire department. Figure 6.1 is a graphical representation of Table 6.1. It shows the percentage change in claims, lost workdays, total costs, and average cost per claim for a WFI department versus a non-WFI department.

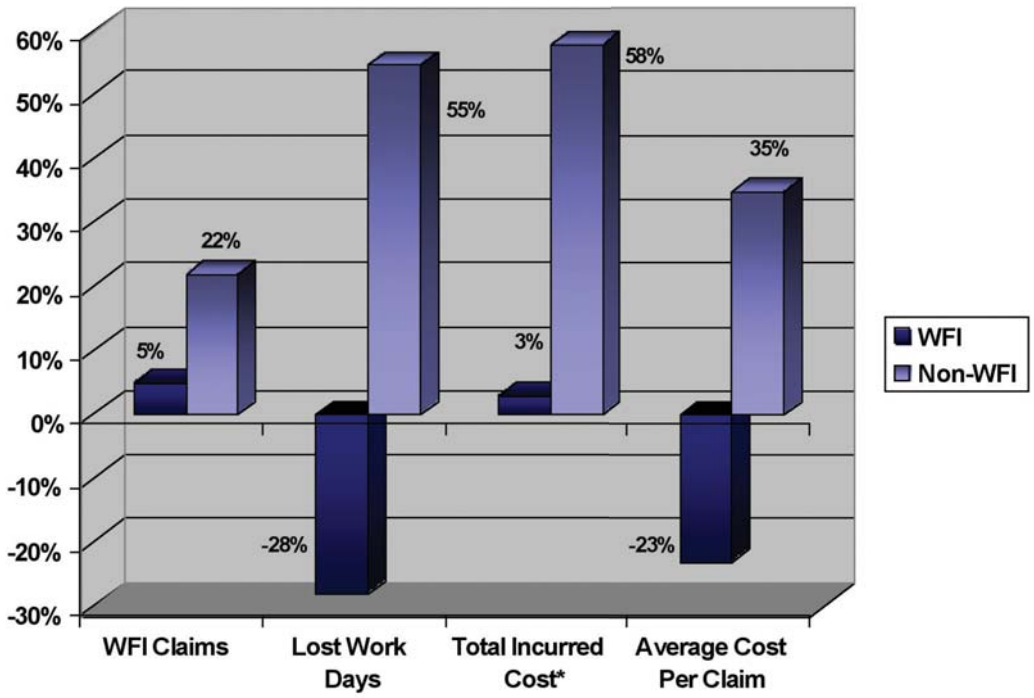
Statistically, there was a significant difference ($p < .026$) for occupational claims and costs between the fire departments that implemented the WFI and those sites that did not. Regarding occupational claims, there was a five (5) percent increase over the seven (7) years for a WFI department versus a 22 percent increase for a non-WFI department over the seven (7) years. For a non-WFI fire department, this represented an increase of 81 claims per year when compared to 25 claims per year for a WFI fire department. When comparing lost hours, there was a 28 percent reduction in lost hours for the WFI departments compared to a 55 percent increase in non-WFI departments. When assessing total incurred costs, there

Table 6-1: Mean Occupational Claims, Loss Work Days, Total Incurred Costs, and Average Cost Per Claim For WFI and Non-WFI departments.

	Claim Date	WFI Claims	Lost Work Days	Total Incurred Cost*	Average Cost Per Claim	Non-WFI Claims	Lost Work Days	Total Incurred Cost*	Average Cost Per Claim
PRE	1991	401	4213	$1,582,424	$7,645	344	3689	$2,243,993	$6,699
	1992	407	4753	$1,951,752	$7,571	339	3899	$2,155,654	$6,553
	1993	429	5759	$2,418,216	$7,626	347	3431	$2,402,384	$6,900
	1994	436	6085	$3,576,916	$8,146	359	3220	$2,385,562	$6,697
	1995	438	6326	$3,600,762	8,247	342	4441	$2,702,118	$7,279
	1996	434	6895	$4,236,084	$8,321	372	4189	$2,764,044	$6,724
	1997	488	6580	$4,329,490	$9,299	356	3878	$2,401,968	$7,060
	Totals	*3033*	*40,611*	*$21,695,644*	*$56,845*	*2,459*	*26747*	*$17,055,723*	*$47,912*
POST	1998	386	3351	$2,458,116	$6,233	371	3515	$2,536,780	$7,278
	1999	400	3834	$2,627,379	$6,177	387	4672	$3,104,697	$8,167
	2000	435	4716	$2,891,569	$6,391	442	5823	$3,476,799	$8,517
	2001	452	4847	$3,075,236	$6,115	464	6404	$3,806,243	$8,856
	2002	498	4725	$3,688,405	$7,175	428	6335	$4,080,519	$10,054
	2003	531	4702	$3,871,945	$7,061	449	7208	$4,919,355	$11,146
	2004	508	5496	$3,663,493	$7,073	482	7431	$5,067,383	$10,590
	Totals	*3210*	*31671*	*$22,276,143*	*$46,225*	*3,023*	*41388*	*$26,991,766*	*$64,608*
	Percent Change	*5%**	*-28%*	*3%**	*-23%*	*22%*	*55%*	*58%*	*35%*

****All Costs are Adjusted in 2001 dollars**

Figure 6-1: Percent change in Claims, Lost hours, Costs and Average claim cost between WFI and Non WFI departments 7 years pre and post implementation.



was a three percent (3%) increase in costs over the seven (7) years for the pre- and post-implementation WFI departments and a 58 percent increase in total costs for the non-WFI fire departments for both pre- and post-implementation.

In actual dollar amounts, this equates to a total incurred cost increase of $82,900 per year, per WFI department and a total incurred cost increase of $1,419,435 per non-WFI fire department, per year. This represents a difference of $1,336,535. This indicates that non-WFI departments spent over $1.33 million dollars more per year, per department, when compared to WFI departments. The results also indicate a similar cost benefit for the WFI sites as the average cost per claim was reduced by 23 percent (-$1,518 per claim) over the seven (7) year period for WFI sites, as compared to an increase of 35 percent (+$2,386 per claim) for non-WFI departments.

When these two (2) figures are combined, there was a savings of $3,904 per annual occupational claim per WFI fire department as compared to the non-WFI sites. In other words, a fire department with 500 occupational claims could save $1,952,000 per year. This potential savings, nearly $2,000,000 annually, per WFI department is from occupational claims alone and probably underestimates the potential longer-term savings from other wellness interventions including non-service related injuries, early screening and detection of disease, and behavioral health program components.

Conclusion

The information from this research suggests an interval reduction of occupational injury and illness claims and costs among fire departments that implemented the IAFF/IAFC Wellness Fitness Initiative when compared to fire departments that had only partially implemented the WFI.

The results also demonstrate that the WFI fire departments have a lower rate of increasing claims and costs, while simultaneously decreasing lost hours and average cost per claim. The fact that lost hours and average cost per claim is reduced suggests that injury and illness severity is reduced, especially in the face of rising health care costs that are greater than the rate of inflation.

The four (4) WFI fire departments sites averaged 1,665 fire fighters per department and had first year estimated implementation costs of $1,550,000 per site (~$931 per head), due to startup costs and capital expenditures. This was followed by an average annual cost of $865,930 (~$520 per head) for maintenance of the WFI program.

These results demonstrate that the WFI departments had a total cost savings of $1,336,535 the first year of implementation per site (due to startup costs) and $1,952,000 annually per site thereafter. This appears to be a positive return on investment with getting most of the initial costs back the first year and then receiving a positive return on investment of at least 1:2 for Year 2. Therefore, for every dollar spent on uniformed personnel wellness, via implementation of the WFI, results in an almost immediate return of over two (2) dollars in occupational injury and illness costs. Another positive consideration is that these numbers underestimate the true cost savings, since this does not consider non-occupational injuries and the long-term medical costs of premature morbidity and mortality. Substantial long-term cost savings are expected from preventing cardiovascular disease, certain cancers, and reducing early disability from musculoskeletal and back injury.

Therefore, adoption of the WFI provides a savings in the short term. It may be concluded that the long-term economic benefit could be much greater by preventing and reducing premature fire fighter musculoskeletal injuries and cardiovascular or cancer disease through a comprehensive health risk screening and health promotion program which also avoids the passive impacts of reducing off-duty injury and illness costs.

2017 RESEARCH ON THE ECONOMIC IMPACT AND COST JUSTIFICATION OF THE WFI

In 2015 and 2016, twenty eight fire department administrative staff in the United States and Canada were contacted to inquire about occupational wellness and the status of adoption and implementation of the WFI within their department. The initial survey was able to determine the level of partial or comprehensive adoption and implementation of the WFI. Of the initial twenty eight fire departments, fourteen fire departments had sufficient data collection to be included in this report. Table 6.2 shows the fire departments that participated in this project.

After establishing the 14 fire departments for this project, the researchers worked with each department to establish a liason who worked with the risk management and human resources department to review and compile the data. They de-identified worker's compensation claims, injury and illness costs including the type, location, and severity of injury. Additionally, they assessed wellness program costs among the 14 fire departments that partially or fully implemented the WFI since 2004.

Table 6-2: Participating Fire Departments in Cost Justification Study

FIRE DEPARTMENT	PERSONNEL 2014	Calls/Incidents	Fire-Related	Non-fire
Austin, TX	1049	88,612	3917	84,695
Calgary, ALB	1064	60,154	15,148	45,006
Charlotte, NC	1402	103,478	2084	101,394
El Paso, TX	881	76,338	1397	74,941
Fairfax County, VA	1340	91,308	18,256	73,052
Indianapolis, IN	1154	117,686	22,770	94,916
Los Angeles County, CA	2749	368,339	38,133	330,206
Miami-Dade County, FL	1839	246,408	23,412	222,996
Milwaukee, WI	802	82,030	14,291	67,739
Oklahoma City, OK	949	68,681	2872	65,809
Ottawa, ON	989	20,590	2784	17,806
Phoenix, AZ	1576	177,858	14,268	163,590
Portland, OR	671	72,023	2038	69,985
Seattle, WA	968	89,980	14,260	75,720

Results

A retrospective analysis of worker compensation claims firefighter and costs among the 14 large urban fire departments in the United States was conducted from 2004-2014. The fire departments were categorized into how much if any of the total WFI was adopted and implemented and for what period of time. The departments were categorized into low, partial, or high WFI implementation based which of the seven WFI categories were being implemented and when it started (comprehensive medical evaluation and screening, fitness program, nutrition, peer fitness trainers, injury prevention and rehabilitation, behavioral health, and data collection).

The definition to meet the criteria of low WFI implementation was data collection and behavioral health. Every fire department had an Employee Assistance Program (which included some behavioral treatment options) and every fire department had to collect data to be included in the study. The definition of partial WFI implementation was to offer the other wellness components without the comprehensive medical and physicals. These departments offered nutrition, peer fitness trainer, injury rehab and mandatory exercise but did not offer comprehensive medical and physicals. The high WFI implementation sites were those fire departments that offered and implemented all categories of the WFI including annual comprehensive medical/physicals. The total number of claims, total incurred costs, rate of claims per firefighter, and cost of claim per firefighter for each fire department were assessed among fire departments before, during, and after implementation of the WFI

For a fire department that had low implementation of the WFI, there were 0.36 claims per firefighter per year or 36 claims per 100 firefighters per year. For a fire department that had high implementation of the WFI, there were 0.22 claims per firefighter per year or 22 claims per 100 firefighters per year. For fire departments with high WFI implementation, there was a 40% reduction in annual firefighter occupational worker compensation claims as compared to fire departments with low WFI.

Regarding the cost of injury and illness claims, the fire departments with a low WFI incurred a cost of $76,895 as compared to $32,538 per 100 firefighters for fire departments with high WFI implementation. For a fire department with low WFI, the total incurred injury and illness costs were nearly 2.5 times higher as compared to those departments with full WFI. Fire departments with full WFI implementation including comprehensive medicals, fitness, nutrition, behavioral health, and injury rehabilitation realized an annual cost savings of $563,334 higher than the low WFI sites.

This annual cost savings of $563,334 represents only the tip of the iceberg for injury and illness costs from reduced claims and does not include any personnel backfill or overtime costs. The $563,334 is only the short term and immediate annual cost savings from full WFI implementation and does not include any of the long term expected cost savings from reducing the medical, hospitalization, disability, and legal costs associated with preventing and reducing heart disease, cancer, musculoskeletal injury, obesity, diabetes, depression, PTSD, sleep apnea and disorders, and pulmonary disease.

The data suggests there is a significant and substantial reduction in occupational injury/illness claims and costs among fire departments that implemented the full WFI as compared to fire departments that had no or low WFI implementation. Additionally, the severity of injury was reduced by almost 50% in the full WFI as compared to the low WFI sites. Implementation of the WFI confers a significant cost justification savings in the short term and we expect that the long-term economic benefit to be much greater by preventing and reducing premature firefighter musculoskeletal injuries, cardiovascular disease, cancer rates, metabolic syndrome, and fatigue and stress related mental health disorders.

Conclusion

Implementing the WFI makes good economic sense to reduce occupational injury and illness claims and costs. The annual cost savings of $563,334 realized by fire departments that implemented the WFI provides strong cost justification for fire departments to adopt and implement the WFI program. This data suggests that a fire department fully implementing the WFI should expect a significant reduction in fire department injury and illness claims and costs while simultaneously improving the long term health and safety of firefighters.

RETURN ON INVESTMENT OF FIRE DEPARTMENT WELLNESS PROGRAMS

This retrospective evaluation of firefighter injury and illness costs conducted among large urban fire departments assessed the cost justification of the WFI and the results suggest there is a substantial reduction in occupational injury/illness costs among fire departments that fully implemented the WFI. In other industries, research supports the cost-effectiveness of work site wellness programs having a positive cost benefit ratio on medical illness and injury, as well as costs by providing preventive care.[12-21]

The impact and cost justification, however, of firefighter wellness programs has been less obvious. A large-scale study examining the relationships among the cause, nature, and costs of firefighter injury found that overexertion accounted for a significant portion of injuries

(35% of all injuries) at a cost of $9,715 per claim.[45] Overexertion injury occurs when a physical task exceeds the capabilities of a particular fire fighter (lifting, pushing, pulling, etc), which can cause an injury to occur. Some of the contributing factors to overexertion injuries are improper staffing and training, unsafe environmental conditions, poor posture or unsafe positions, and fatigue. These activities are a part of firefighter's daily duties ranging from medical calls, rescuing and carrying patients, to fire suppression with maximal physical exertion under extreme heat and environmental conditions including wet and slippery surfaces. Walton calculated that eliminating injuries caused by overexertion saved, on average, $545,000 per year for a large city fire bureau.

Although firefighter injuries have been well documented, the data on costs associated with these injuries is limited and, more importantly, the costs associated with preventing injury are not well documented. In the TriData Corporation's final report to the National Institute of Standards and Technology (NIST) and the U.S. Department of Commerce on, "The Economic Consequences of Firefighter Injuries and Their Prevention" [9] it states on page 36, "while wellness and fitness programs are designed to improve overall firefighter health and reduce occurrence of injury, it is difficult to determine the annual cost of these programs". The report emphasizes that wellness programs appear to be the exception and not the rule among fire departments in the United States. The TriData report presents a general idea of what fire departments across the country pay annually for a wellness-fitness program ranging from $ 0 - $420,000 (this represented only eight departments with a wide range of services offered). The fire departments represented in this report were much larger than the fire departments assessed in the TriData report. Another positive consideration is that these numbers underestimate the true cost savings since this does not take into account non-occupational injuries and the long term medical costs of premature morbidity and mortality. It is expected that there would be a substantial cost savings in the long term from preventing cardiovascular disease, certain cancers, metabolic syndrome, fatigue related illness and injury, and reducing early disability.

Recent research over the past five years suggest that firefighter wellness programs are cost effective. Kuehl and colleagues demonstrated the a worksite behavioral health program tailored to firefighters conducted at the fire station over a 12 session program realized a cost savings of over $1000 per firefighter per year in worker compensation claims.[46] Baur et al conducted a cross-sectional study of 968 male career firefighters assessing the impact of fitness on cardiovascular disease.[47] Higher cardiorespiratory fitness level was significantly associated with lower diastolic blood pressure, body fat, serum triglycerides, low-density lipoprotein cholesterol and total/high-density cholesterol ratio, and higher high-density lipoprotein. This study demonstrated that increasing fitness has beneficial independent effects on CVD risk factor profiles among firefighters.

In 2016, Patterson and colleagues studied the impact of wellness-fitness programs to reduce cardiovascular events (CVE) and showed that a wellness fitness program prevented 10% of CVE that for an event rate of 0.9% at $1440 over 10-years, or an incremental cost-effectiveness ratio of $1.44 million per CVE prevented compared to no program.[48] In another recent study Seyedmehdi showed that firefighters with greater aerobic fitness had lower cardiovascular disease risk factors and may efforts to increase fitness may reduce cardiovascular disease and fatalities.[49]

In a study by Poston et al on the benefits of health promotion programs in the fire service, firefighters in a wellness program had less tobacco use, less anxiety, and greater job satisfaction as compared to firefighters without a wellness program.[50] Lastly, research has documented that obese firefighters with a BMI > 30 have a 3 fold increase in worker compensation claims,[51] and increased back injuries.[52] Firefighters in departments with documented wellness programs have less obesity than firefighters in departments without a wellness program.[53]

Uniformed personnel and administration officials are concerned that not enough is being done in terms of prevention (prefab) versus treatment (rehab). For instance, researchers in Oregon compared dollars spent on fire fighter health to dollars spent on apparatus maintenance and repair (Table 6.3). If maintenance is thought of as prevention, and repair is thought of as treatment, we can see how much a fire department spends on prevention versus treatment when comparing fire fighters to apparatus.

	Apparatus	Fire Fighter
Maintenance/Prevention	70%	3%
Repair/Treatment	30%	97%
Total	100%	100%

Table 6.3: Percent Cost of Maintenance (Prevention) and Repair (Treatment)

The example department's annual costs are 70 percent for apparatus preventative maintenance, with approximately 30 percent allocated to repair. In contrast, 97 percent of fire fighter expenditures are for work related injury and disability costs, and only three (3) percent is budgeted for prevention (fire fighter wellness). The interesting element in this scenario is that the apparatus depreciates over a 12- to 15-year life span with no return on investment (ROI) outside of functioning properly during its lifetime of use.

The observed trend in reducing occupational claims and costs from implementing the WFI is also supported by the ongoing PHLAME research study.[8] This demonstrates for every dollar spent on the fire fighter health promotion program, a substantial cost savings can be realized after the short-term.[30-31] In addition, the health promotion activities were also associated with significant reductions in work-related injury and illness. Table 6.4 shows the cost savings of the PHLAME health promotion program.

SUMMARY

This chapter advocates that fire department wellness programs do make economic sense and that adopting and implementing an occupational wellness program, such as the WFI, alone can reduce occupational claims and costs by while simultaneously improving the quality and longevity of a fire fighter's life. In addition, adoption of the WFI is an important first step in setting up a medical screening and wellness program for fire departments.[42-44] Adding additional behavioral health promotion programs will only enhance and improve cost savings. Summarily, organizations should invest in WFI programs because they save money, prevent harm, and improve quality of life for firefighters.

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Table 6.4: Return on Investment: PHLAME Program

Costs per Fire Fighter	Before PHLAME	After PHLAME
Prevention	$150	$585
Treatment	$5,175	$2,025
Total Costs Per Claim	$5,325	$2,610

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CHAPTER 7 — Data Collection

Management and Labor shall support systems that confidentially collect medical, health and fitness data and provide analysis to improve the wellness of all fire department members.

This chapter highlights the following:

- **Introduction**
- **The WFI Health Information Registry**
- **Minimum Data Set Elements**
- **The File Transfer Process**
- **The Future of the MDS and Data Collection**

INTRODUCTION

The Wellness Fitness Initiative (WFI) provides a comprehensive plan for the implementation of a fire service occupational health-wellness program. Where fully implemented, this program has provided a template for standardization of care and integration of various elements into a cohesive "best practices" clinical program. Without question, WFI clinical programs have saved lives and improved the quality of life for uniformed personnel in participating municipalities.

Separate and distinct from these clinical program elements, an overarching goal of the WFI has been to collect and analyze clinical and health outcome data generated in the ten (10) member jurisdictions which may be generalized to the wider uniformed personnel population. Since the inception of the WFI, there have been ongoing efforts to develop a centralized database which would be a repository for the collected data and information. Several prototype software efforts have made significant progress toward defining and understanding the system and software requirements of such an effort.

To that end, a pilot program involving the Fairfax County (VA) Fire Department and Indianapolis (IN) Fire Departments, in collaboration with the University of Maryland and the International Association of Fire Fighters (IAFF), has been underway since 2007. This program utilizes a web interface to upload data from the two (2) participating municipalities into a Structured Query Language (SQL) relational database housed at the headquarters of the IAFF in Washington, D.C.

THE WFI HEALTH INFORMATION REGISTRY

As the name implies, the goal for the WFI Health Information Registry (HIR) is a centralized database of medical and demographic data that will be generated by the clinical programs in all ten (10) member municipalities. This database will provide exposure and health outcomes data for thousands of uniformed personnel across North America and will be a unique resource for medical researchers who will ultimately use the HIR to conduct studies relevant to uniformed personnel health and wellness.

Registries are well known public health tools that have several useful applications. The formal definition of a public health registry is "…a data base of identifiable persons containing a clearly defined set of health and demographic data collected for a specific public health purpose."

Registries provide an organized system of data collection, storage, and retrieval that allow subsequent analysis and the ability to query the information in a structured manner, based on categories of interest. In this way, large data sets from the contributing WFI departments can be merged in an ordered manner, analyzed and retrieved to create meaningful reports on specific health conditions from the individual cases that have been entered into the data base.

The ability for the fire service to have robust and validated registry data will assist in future legislative agendas. It also offers several valuable uses in public health and medicine, including:

- Estimating the magnitude of specific health problems.
- Determining the incidence of disease.
- Examining trends of disease over time.
- Identifying high risk groups.
- Estimating health service needs.
- Conducting research.

Registries collect data on individuals who share certain characteristics, typically a specific disease or condition. This information includes demographic and medical information. Registries often seek validation of the data by collecting detailed test results, such as a pathology report from a biopsy or a specific blood test result. To read more about registries, please see FAQ on Public Health Registries at the following web address: www.ncvhs.hhs.gov/9701138b.htm.

In addition to following people with specific diseases, the registry concept has recently been applied to follow groups of people who share a common exposure history. An example of this concept is the National Exposure Registry

which is operated by the Agency for Toxic Substances and Disease Registries (ATSDR), a part of the Centers for Disease Control and Prevention (CDC). This registry identifies and enrolls persons likely to have been exposed to hazardous environmental toxicants, usually due to the location of the person's residence near a contaminated Superfund site. The registry establishes a pool of persons, potentially at increased risk of health harm, and allows tracking of this group. Health authorities can track and subsequently contact registered persons, and can offer pertinent health information, opportunities for participation in a study, or care recommendations. The course of the registrant's health may also be followed over time through periodic surveys performed by the registry.

ATSDR, in collaboration with the New York City Department of Health and Mental Hygiene, also operates a registry to track the health effects of 9/11. The persons enrolled in this registry not only include responders and clean-up workers, but also residents, students, workers and others within a prescribed geographic region in proximity to the event. For more information on this registry please visit www.nyc.gov/html/doh/wtc/html/registry/about5.shtml#2. These latter registry examples, of Superfund exposure or the 9/11 event provide an example of registries that are based on a shared exposure history. The IAFF registry is built on the shared exposure history model as well.

The WFI data collection effort is not a research program, per se. A formal research initiative would be beyond the scope and budget of the WFI participants. What the HIR does allow is systematic collection of high quality, validated medical data that will enable academic researchers to complete credible scientific studies regarding the health and fitness status of uniformed personnel. This team approach will enable the millions of dollars spent by WFI member jurisdictions, and the large amount of data collected during the WFI clinical operations, to be leveraged by a larger community of academic medical researchers whose analyses will in turn, inform and benefit the entire fire service membership.

MINIMUM DATA SET ELEMENTS

The two (2) participants in the current pilot program (Fairfax County (VA) FRD and Indianapolis (IN) FD) have been collecting demographic and medical data known as the "Minimum Data Set", or MDS. This set of 93 variables is collected during the annual medical evaluation. The goal of keeping the collection process feasible in a clinical setting has informed the data elements that were included in the registry. The data collected must be consistent throughout a longitudinal collection process over a period of years. In addition, the definitions of data items should conform to other similar registries and the confidentiality of the information must always be safeguarded.

This edition of the WFI includes an updated version of the data elements which will be collected and stored in the HIR. This version of data elements, compared to the initial data- base, has been significantly shortened and simplified. The revision of the data items was undertaken by a WFI Technical Committee when initial efforts to implement the original data dictionary revealed that the time, effort and resources required to complete the data collection were problematic for the members of the WFI. This minimum data set also allows for the collection of data in a reasonable amount of time in a clinical setting.

The MDS will consist of 93 data elements obtained from the WFI questionnaire and physical examination. Thirty-five (35) of the 93 data points are from the questionnaire and 58 from the physical examination.

Uniformed personnel, as part of the annual WFI examination will complete a health, wellness, and fitness questionnaire that will provide 35 data elements to the MDS. Information collected will include questions in the following areas:

■ MDS Questionnaire Data Elements N=35

Category *(number of questions):*

- ***Demographic information*** — such as gender, race, ethnicity and education level (5)
- ***Current and past fire service employment*** — including time and usual duties (6)
- ***Illness and injury experience*** — in the past year as measured by time off work (4)
- ***Tobacco and alcohol*** — use including estimates of quantity (10)
- ***Health history current and past*** — including diagnoses, medication use, screening tests, and surgeries (5)
- ***Physical activity*** — both aerobic and strength training (5)

The physical examination will produce 58 clinical data points for the MDS. The test results included in the MDS provide information as to the overall health and fitness of the uniformed personnel. The data points are separated into the 5 categories described below:

MDS Physical Assessment Data Elements N=58

Category *(number of data points)*

- ***Physical measurements*** — such as blood pressure (SBP, DBP), height, weight, and pulmonary function (FVC, FEV1, FVC/FEV) (10)
- ***Laboratory data*** — including blood counts, liver and renal function and cholesterol (15)
- ***Audiometry testing*** (14)
- ***Immunizations and testing for specific disease*** (7)
- ***Fitness testing*** (12)

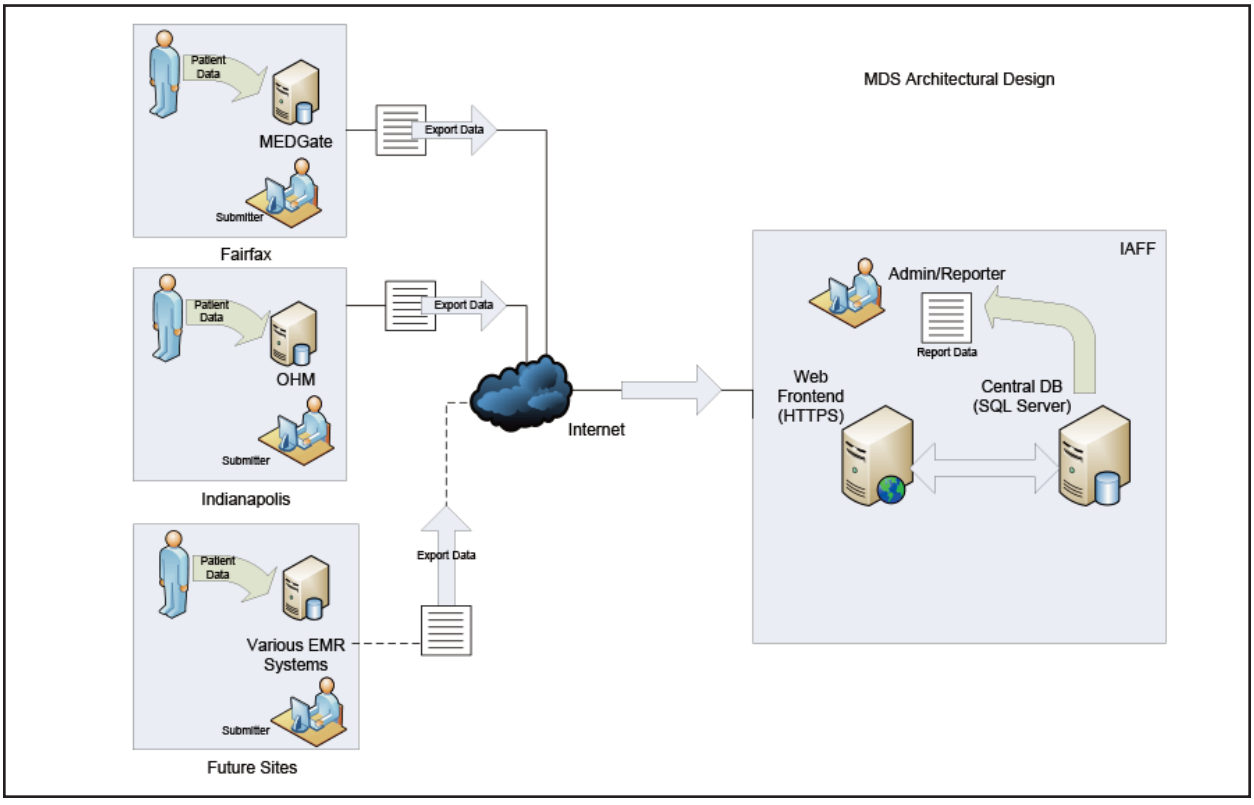
Collection and transmission of the MDS data elements to the IAFF health information registry has been refined throughout the implementation and execution process. The program has revealed the challenges to each local municipality of grafting data collection into established clinical practice. The challenge in accurately collecting and overcoming the technical issues transmitting data to the database has proved to be the biggest challenge. These challenges take place in a collaborative environment where both Fairfax County and Indianapolis have different medical information systems (MIS) and different levels of technical support. The MDS database requires standardized parameters for coding and allowable ranges for test results to be accepted for data entry. These standard parameters promote accuracy and assure data quality. Throughout deployment, there has been a re-evaluation of the required parameters for the MDS. Currently, there are fewer fields required than there were at the initiation of data collection

THE FILE TRANSFER PROCESS

The IAFF health information registry contains the MDS data on the members whose departments participate in the pilot program and is housed on a Microsoft SQL server. The SQL database uses a 4GL relational data model and stores case-related information on a calendar year. The interfaces to this data base is through web portals that allow jurisdictions to upload data files through secure links to the IAFF database. Specific tasks related to the data transfer design include:

- Development of core collection requirements and data import rules and integrations.
- Design of server database model and schema, processes for importing and web based entry.
- Assurance of secure site provisions for confidential health data transfer and storage.
- Data validation rules.
- Creations of security control SOPs.
- Testing and audit task methods trials development.

The following diagram depicts the original architectural design of the MDS system.



THE FUTURE OF THE MDS AND DATA COLLECTION

As discussed elsewhere in this document, there are several important health issues and concerns that are related to the very nature of employment in the fire service. In addition, the medical literature does not provide clear and definitive answers to most of these job-related medical concerns. Therefore, the WFI data collection effort may play an important role in supporting the medical researchers and academicians who are dedicated to addressing these medical concerns. While the implementation of a data collection effort by all members of the WFI has not been feasible up to this point to this point in time, the knowledge and experience gained in the pilot program identified opportunities to facilitate the eventual adoption of a data collection program involving all members of the WFI.

Specifically, these opportunity areas focused on ways/methods to improve the solution for occupational health centers (OHC) practitioners and researchers. Additionally, there was an emphasis on increasing the number of OHC program participants.

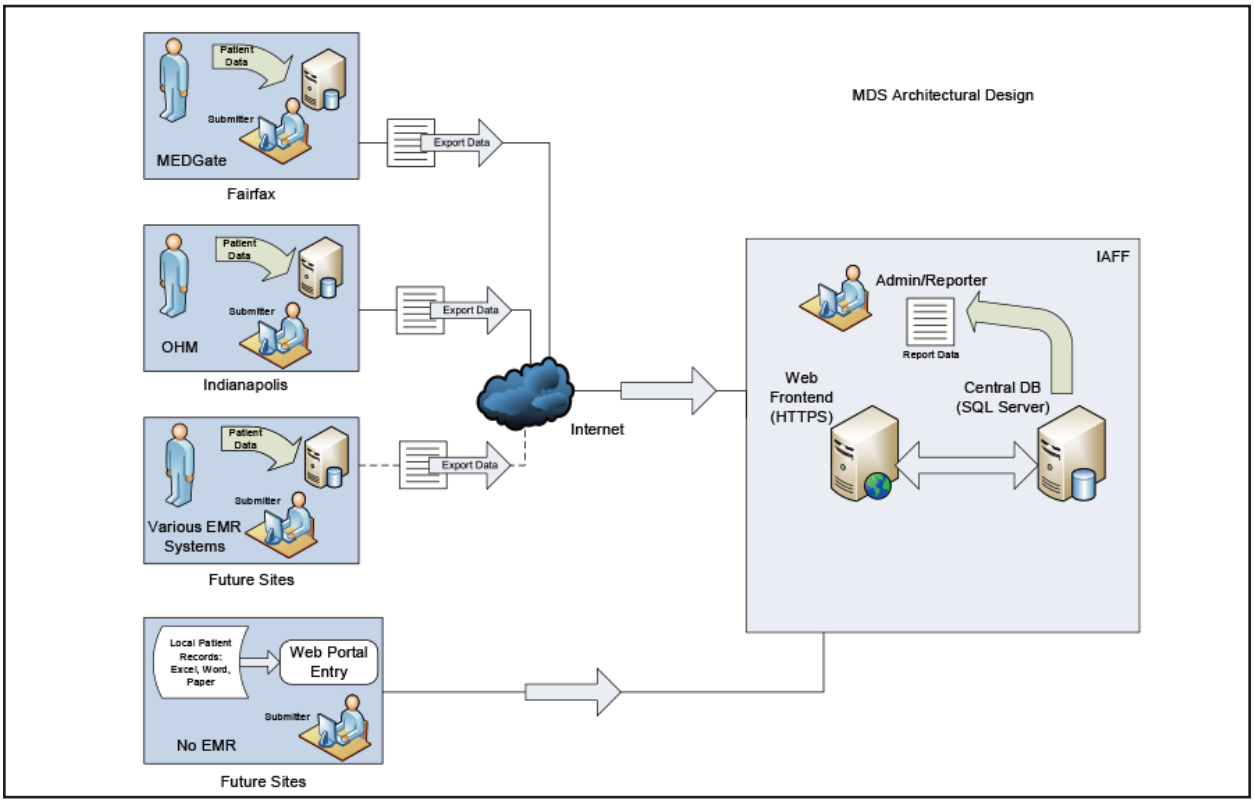
One of the key findings was tied to the fact that many OHCs, for various reasons including budgetary constraints, do not use source MIS systems in house. As such, The IAFF determined alternate methods of data transfer needed to be investigated to streamline the process and level the playing field for all participants. As part of the secondary development effort, the IAFF designed and developed a secure web based portal module to the original MDS solution that allowed OHCs to either manually enter data or upload data files directly to the central system. The second wave of development activity also included the development and implementation of tools and resources aimed at improving the messaging and error handling available in the system. This was done in order to facilitate the ability for OHC participants to successfully and consistently upload targeted patient data to the central system.

Technical resources designed, developed, and implemented targeted functional features and improvements to the existing MDS application allowing for increased participation by WFI jurisdictions.

Specifically, technical resources worked to design, develop, and implement the following key enhancements.

- Enhanced import/upload mechanism for previously defined CSV files.
- Web based form that allows manual entry of MDS data as an alternative to the CSV upload mechanism.
- Procedures/features that enhance file upload user workflows, and improve overall data acceptance.
- Improved feedback mechanism/messages to users during upload/data entry to include more specific data related to pass/fail results during validation.
- Automated guidance to users to facilitate the identification and remediation of data entry/submission errors.
- Improved the validation process to allow for upload/import of single csv upload file rows, in order to eliminate the all/or none validation requirement that rejects the entire file if any entries are incomplete or invalid.
- Changes required to the business logic, storage model, and database code, to support the functionality defined above.

The following diagram depicts the current architectural design of the updated MDS system.



It is intended that the web-based health information registry hosted by the IAFF will be more than a repository of medical and health outcomes data. Ultimately, it is anticipated that it will permit the generation of robust and validated epidemiologic data on the health outcomes of fire service members.

To achieve this, the HIR must be able to receive uploaded data from the participating WFI jurisdictions (one [1] functional interface) and can download results of queries made to it, such as report generation on frequency of a specific diagnosis, i.e. tuberculosis, in fire service members (the second functional interface).

This could document health risks (i.e. cancer excesses) in the fire service that could advance legislative or improvement in working conditions initiatives. The grouped data could also be used for health education purposes and to show return on investment for the WFI and other health promoting interventions.

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CHAPTER 8 — Implementation

Management and Labor shall work together to fully implement all components of the WFI.

This chapter highlights the following:

- **Introduction**
- **Step-by-Step Process for WFI Implementation**
- **Sample Documents and Checklists for WFI Implementation**
- **Agreement Phase**
- **Implementation and Maintenance**
- **Considerations for WFI Implementation**

INTRODUCTION

This chapter offers a step-by-step approach to implementing the Joint Labor-Management Wellness-Fitness Initiative (WFI). Any fire department can use this process to evaluate a current wellness-fitness program or to design and implement a new program. While various elements and methods of a wellness-fitness program vary from department to department, the program development process will be similar.

To assist in this process, sample worksheets are available at the IAFF WFI Resource webpage: http://www.iaff.org/hs/wfiresource/default.html

The greatest assets of any fire department are the firefighters.[1] It is a demanding job, and fire fighters suffer more preventable disease such as cardiovascular issues and cancer than the general population.[2] Uniformed personnel who respond to emergency incidents are required to put forth a high level of physical effort. This effort, over time, affects the long-term health and response-readiness of our first responders. To respond to emergencies safely and effectively and to avoid injuries and recover rapidly, uniformed personnel must possess a high level of physical fitness. This includes aerobic fitness, muscular strength, flexibility and endurance, as well as sound behavioral habits. If significant progress is to be made in the reduction of health-related fire fighter deaths and serious injuries, it is imperative that fire service organizations embrace a comprehensive wellness-fitness program.

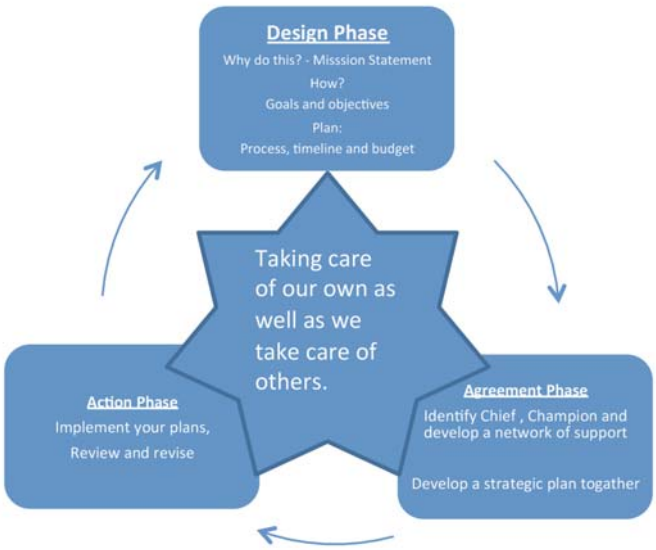
Prevention is known to be better than cure, both personally for the individual and economically for the department and community. $2.7 trillion is spent in the USA on healthcare, but an effective wellness plan can save lives, as well as saving almost four times as much as is spent.[3]

For the program to be effective, it needs to be well implemented so the firefighters, leadership, and other stakeholders are engaged and committed to improving their own health.

STEP-BY-STEP PROCESS FOR WFI IMPLEMENTATION — DESIGN PHASE

The following section overviews the steps for designing and implementing a WFI program (Figure 8.1). There may be slight variation in how individual agencies approach this goal, but the following process has generally been found to result in a successful outcome.

Figure 8.1



DESIGN PHASE

■ Obtain the Wellness-Fitness Initiative (WFI)

Those involved in the implementation of this program must take the time to review all chapters carefully to become familiar with the general program approach and objectives.

Additional Resources:

- WFI Checklist

■ Establish a Project Team

A project team should be established to develop and implement the program. Equal representation from both labor and management will help foster a non-punitive, cooperative environment and equality among department personnel.

One of the primary responsibilities of the team members will be to communicate with members throughout the organization about the development and implementation of the WFI. The use of a chief and a champion – for example the Peer Fitness Trainer PFT, or the physician, or wellness coordinator, as well as the fire chief and any other personnel committed to the cause[4] must foster a positive image about the program and provide the communications to the members.

Develop Mission Statement, Goals, and Objectives

Know where you are, where you are going and how you are going to get there.

- ***Mission statement:***

A summary description of an entity's purpose that is clear, direct and keeps the fire department and uniformed personnel focused within the scope of the WFI.

For example: VISION / MISSION:
Taking care of our own as well as we take care of others.

The best mission and goal statements come when EVERYONE is involved, contributes and owns them.

- ***Goal:***

An aim or end result of the proposed action, something to be accomplished that will assist the program in moving forward. Goals should be:

- Specific
- Measurable
- Attainable
- Realistic
- Time-bound

For example:
All participants will receive an annual physical and fitness assessment within the first 12 months of WFI program implementation.

- ***Objective:***

A specific, measurable statement which specifies the desired immediate or direct outcomes of the proposed program. Remember that your objectives should support your goal (i.e., the accomplishment of objectives leads to the overall accomplishment of goals).

For example:
To provide the services necessary to support and maintain fit, healthy, and capable fire fighters throughout their career.

To be successful you must know the following before you start:

- Target: What is the target population?
- How: Outline programs or needs required meeting the established goals (e.g., committees, consortiums, contracts, etc)?
- What: A clear statement of the behavior changes/results expected.
- When: Under what circumstances and what time will the task(s) be completed?
- Action: Move on to defining the tasks associated with each objective.
- Benchmarks: Use baseline measurements to start, and realistic benchmarks for progress. How and when will you check in and see how the program is going, good things, bad things and possible changes for the future.
- Measures: In what way will you measure the program's progress (e.g., via surveys, statistics measured against available baseline data)?
- Reports: When and how will you report the changes which are happening, and the areas for improvement? How will this be spread, and to whom? To your crews? To other fire departments? National office holders? Published?

Additional Resources:

- Sample Wellness — Fitness Considerations
- Department contribution with an equal or greater match. The account pays for items such as certification of Peer Fitness Trainers (PFTs), seminars, and exercise equipment.
- Seek out additional information and approaches used by other departments that have successfully reduced or contained implementation costs.
- Grant Funding — For information on fire service grants, visit the following website: www.firegrantsupport.com.

Identify Alternative Approaches for each Objective

Alternative approaches for each objective should be identified. For example developing a joint program with other public safety agencies, either in the same or adjacent jurisdictions, such as police and fire in the same jurisdiction or a regional fire- based program. There may also be other entities, either public or private, in the area that already have a similar program in place due to federal regulations. Nevertheless, the approach chosen by one fire department might not be feasible for another.

Develop a Budget

Develop a budget that is based on your long-term goals and objectives. The budget should divide costs into WFI program components or areas and delineate personnel, operating and capital costs per fiscal year. Developing the budget will assist in the planning process and should not be left to the last step. The budget can be divided and implemented in phases.

Additional Resources:

- Blank Time-Line Budget Worksheet.
- Determine Available Funding.
- At this time, a determination of available and/or additional funding should be made.
- Work with partners who can provide or share their resources or expertise.
- Consider teaming up with other fire service organizations or a local school or college athletic program.
- Negotiate a group rate with a commercial fitness center that could provide or share services or equipment. Such partnerships can benefit all parties.
- Work with the city, county council or other local governing bodies to secure funding for the program. Many fire departments and cities have established a "matching fund" account in which the city matches each.

Develop a Budget Justification

One of the major roadblocks in preventing fire departments from implementing the WFI is the perceived cost and concerns about economic benefit. The objective of budget justification is to determine the economic impact by calculating all costs related to disabilities in your organization. For more information on this topic see Chapter 6 on Cost Justification.

Prepare a Strategic Plan

The strategic plan must identify how the department intends to meet the objectives of the program. The plan must also present a timeline for phasing in components that will lead to full implementation.

Additional Resources:

- Sample Strategic Agenda

AGREEMENT PHASE

The following actions occur during the agreement phase of the process.

Review of the Strategic Plan

At this point, it is appropriate to conduct a comprehensive review of the drafted strategic plan, obtaining comments and suggestions from all stakeholders. This includes labor and management groups as well as groups from the legal, risk management, finance divisions, and any and others deemed necessary to ensure success of the program. Most importantly your members are stakeholders, and it would be great to get support from local government heads as well. Good relationships are the key to success.

Submit the Strategic Plan for Adoption

After the plan has been finalized, it should be submitted to the authority having jurisdiction for review and discussion. The anticipated benefits to the individual members, the fire department, and the community at large should be thoroughly documented.

Implement the Strategic Plan

After the concept of the plan has been accepted and approved, the plan should be officially adopted.

This may be accomplished through an administrative process, such as a general order signed by the fire chief, union contract negotiations, memorandum of understanding, or it may require formal adoption through a statute, law, or ordinance. This adoption process should establish a commitment to follow through with the programs, practices, and procedures identified in the strategic plan.

Additional Resources:

- Sample MOU
- Sample Request for Proposal (RFP)

Internal Education/Marketing

Educating all parties involved in the process regarding all aspects of the plan is crucial to the success of the program. The information needs to emphasize the benefits and safeguards for uniformed personnel and explain how the program will bring the fire department into compliance with accepted national fire service standards and federal regulations.

Additional Resources:

- Sample Communication Plan

ACTION PHASE

When implementing the Action Phase, it is important to remember your mission statement, such as: Taking care of our own as well as we take care of others. Keep this mind as you continue through the implementation and maintenance process.

Organize Implementation Teams

Once adopted, one or more implementation teams needs to be established to carry out the objectives of the plan. Each team shall be responsible and accountable for implementing specific sections of the plan. The process

cannot begin until the teams have been formed, briefed, and given a clear sense of direction and goals.

Additional Resources
- Sample Team Meeting Agenda

Develop an Implementation Strategy

The implementation strategy should consider the specific circumstances of the individual fire department. After the implementation strategy has been established, the plan should be implemented. The implementation should follow the step-by-step sequence identified.

Additional Resources:
- Sample Action Plan Worksheet

Monitor Progress

After implementation, progress should be regularly reviewed and periodically assessed for possible changes. Standard project management practices should be employed to maintain steady progress toward completing implementation.

Additional Resources:
- Sample Pre-Program Survey

Collect Data

It must be emphasized that baseline data collection is essential to future benchmark and comparison data. Often fire departments are quick to implement a program without setting clear baseline data points. The value of future cost-benefit support needs good baseline data. See Chapter 7, Data Collection, for further details.

Review and Update the Plan Regularly

It is essential that the plan be reviewed periodically to measure progress, evaluate effectiveness, and ensure that the objectives and assumptions are still valid. The information from program evaluations will help identify program strengths as well as needed improvements.

Additional Resources:
- Sample 1-Year Post Survey

CONSIDERATIONS FOR WFI IMPLEMENTATION

1. Identify the purpose.

2. Identify the key stakeholders.

3. Hold a meeting to create a strategic plan.

a. Describe the reasons for developing the wellness-fitness program (or enhancing an existing program), including regulatory issues, wellness-fitness needs of fire fighters, and roles/responsibilities of the department.
b. Describe the components and goals of the wellness-fitness program (e.g., use the IAFF/IAFC Joint Labor Management WFI materials for specifics and guidance; inquire about successful programs or strategies at other departments for additional ideas).
c. Identify action items and steps needed to come into compliance, and determine what can be accomplished in the short-term versus long-term (see step 4 below on completing a needs assessment).
d. Develop a process and timeline for each step or goal. Break down this process into manageable tasks.
e. Develop an action plan and make assignments (depending on department size and resources, working committees or subcommittees may be formed).
f. Identify a process for approval or consensus by the key stakeholders, as needed.

4. Complete a needs assessment.

a. Identify and review existing plans/programs?
b. Identify existing equipment and resources.
c. Identify gaps and needs (equipment, staff, funding).
d. What is needed to comply with key regulations and standards (NIOSH, OSHA, NFPA)?
e. Identify and address obstacles.
f. Identify and address any liability and insurance issues associated with the program.
g. Identify existing and potential funding sources.

5. Market the effort, identifying the benefits to program participants and stakeholders.

a. Publicize and inform (e.g., emails, newsletters, periodic meetings).
b. Use of data to justify expense (workers comp statistics, lost time injury tracking, etc.)
c. Identify and recruit advocates from each stakeholder group to help promote the program.

6. Program development.

a. Describe the purpose, rationale, and primary/shared goal(s) of the program.

b. Key elements and concepts to build a plan:

i. Scope of plan — Include components identified in the WFI; identify components to be offered through the department and externally (e.g., commercial or other local fitness facilities); and any testing, evaluation, and/or follow-up measures to track wellness-fitness improvements and program progress and successes.

ii. Identify partners and their role in the program.

iii. Identify funding mechanism(s); develop a funding plan.

7. Circulate the proposed plan to the stakeholders and finalize.

8. Roll out/implement program.

a. Publicize, inform, and educate.

b. Collect initial feedback.

c. Continue to inform, educate, and motivate through a variety of media (e.g., newsletters, emails, in-station classes. Consider rotating activities and training options available to participants.

9. Periodically review, evaluate, and update the program.

a. Develop a method and timetable for program review and revision.

b. Collect feedback from participants and other stakeholders (informal and/or formal commentary as needed or planned).

c. Collect data per recommended guidelines.

d. Revise and update the program as needed.

e. In seeking to achieve full compliance, re-assess resources and program/department infrastructure and support to incorporate additional components of the WFI.

END NOTES

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The Fire Service Joint Labor Management Wellness-Fitness Initiative

4th Edition

APPENDIXES

Appendix A	Fitness Protocols
Appendix A1	Fitness Assessment Recording Forms
Appendix B	Fire Fighter Medical Exam
Appendix C	Information For Rehabilitation Providers
Appendix D	Comprehensive Behavioral Health Program

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APPENDIX A — Fitness Protocols

WFI FITNESS Assessments

OVERVIEW

Five components of fitness are being evaluated to determine a baseline level of fitness for fire service personnel, measure progress from year to year, and provide personalized exercise recommendations. The five components are: Body Composition, Aerobic Capacity, Power, Muscular Strength and Endurance, and Mobility and Flexibility. The assessment is also structured so that observations can be made regarding a performer's control of shoulder, knee and low back motion, and coordination of the upper- and lower-body. Fitness assessments may be conducted by the designated fire department's certified fitness personnel. All data collected by the evaluator shall be maintained in a secure location and adhere to strict levels of confidentiality.

1. BODY COMPOSITION: WAIST AND HIP CIRCUMFERENCE

There are many techniques available to estimate body composition. The WFI recommends a waist to hip circumference ratio. This measurement is simple to compute, reliable, accurate, and cost-effective.

2. AEROBIC CAPACITY: WFI TREADMILL/WFI STEPMILL

There are many assessments currently available to evaluate aerobic capacity. The WFI recommends two submaximal tests to predict maximum aerobic capacity, the WFI Treadmill Protocol and the WFI Stepmill protocol. A maximal aerobic capacity test can also be used to obtain maximal VO2 values. This protocol shall only be conducted in a medical facility under the supervision of a physician, including, ECG monitoring and resuscitation equipment. Certified fitness professional may also choose to document observations regarding a performer's control of knee and low back motion at different stages of the test.

3. SPEED AND POWER: VERTICAL JUMP

There are many assessments currently available to evaluate speed and power output. The WFI recommends a vertical jump because it is reliable, valid, cost-effective, portable, easy to administer and safe. As with all forms of exercise there are inherent risks for injury; however, with comprehensive pre-screening, appropriate instruction, supervision, and proper execution, the risks are minimized. The vertical jump employs a formula to calculate the power produced to propel the body upward. Certified fitness professional may also choose to document observations regarding a performer's control of knee and low back motion during the take-off and landing portion of the test.

4. MUSCULAR STRENGTH AND ENDURANCE: PUSH-UP, HORIZONTAL PULL-UP AND SIDE PLANK

There are many assessments currently available to evaluate muscular strength and endurance. The WFI recommends three submaximal tests that each provide a unique challenge. Two of the three submaximal tests are dynamic movements (i.e. push-up and horizontal pull-up) and the third is static (i.e. side plank). Certified fitness professional may also choose to document observations regarding a performer's control of low back and shoulder motion during these tests.

ALTERNATE GRIP PUSH-UP (ALTERNATIVE)

The alternate grip push-up (with stands) is an optional test for participants who experience muscular/skeletal discomfort in the performance of the standard WFI push-up. When utilizing the push-up handles, the height of the standard 5-inch range-of-motion prop must be adjusted to five inches, plus the height of the handles.

5. MOBILITY AND FLEXIBILITY: STRAIGHT LEG RAISE AND SHOULDER REACH

There are many protocols currently available to measure mobility and flexibility. The WFI recommends an active straight leg raise and shoulder reach test to assess range of motion of the hips and shoulders. Both tests accommodate different limb lengths among participants. Certified fitness professional may also choose to document observations regarding a performer's control of low back and shoulder motion during each test.

EQUIPMENT

All evaluation equipment must be as specified in these protocols. Equipment must not be substituted unless otherwise indicated. All equipment must be maintained and properly calibrated in accordance with the manufacturer's instructions. Failure to do so may result in inaccurate or invalid data.

The WFI fitness protocols, and the equipment needed to perform them are described below.

The WFI fitness protocols, and the equipment needed to perform them are described below.

1. BODY COMPOSITION

- Flexible tape measure

2. AEROBIC CAPACITY

TREADMILL

- Commercial treadmill capable of obtaining a minimum of 15% grade and 10mph.

- Heart rate monitor
- Calculator
- Stopwatch
- Height scale
- Weight scale

STEPMILL

- Commercial Stepmill (model StairMaster 7000PT). Because the steps/min rate may vary from model to model, it is imperative that the administrator ensures that the unit is calibrated to the same steps-per-minute rate for each level indicated in the testing protocol.
- Heart rate monitor
- Calculator
- Stopwatch
- Height scale
- Weight scale

3. SPEED AND POWER

VERTICAL JUMP

- The vertical jump shall be evaluated using one of two pieces of equipment: 1) a timing mat to measure flight time, or 2) a Vertec to measure jump height. The timing mat shall be the "Just Jump" mat from Probotics or another commercial timing mat. If an alternative device is used, the test administrator must verify that the device is equivalent to the Probotics "Just jump"mat. The Vertec should be the device from Jump USA or a manufacturer with an equivalent product.
- Safety tape or something equivalent to serve as a target.
- Calculator

4. MUSCULAR STRENGTH AND ENDURANCE

PUSH-UP

- Five-inch prop (e.g., cup, sponge)
- Metronome
- Stopwatch
- Exercise mat (optional)

ALTERNATE GRIP PUSH-UP

- Push-up stands or two 40 lb. hex dumbbells.
- Range-of-motion prop (e.g., cup, sponge). The range of motion prop shall be modified to ensure that the height is five inches, plus the height of the stands (e.g. a pair of five inch push-up stands will require a ten-inch prop).
- Metronome
- Stopwatch
- Exercise mat (optional)

HORIZONTAL PULL-UP

- Horizontal pull-up bar or equivalent (i.e. fixed bar)
- Five inch prop (e.g. cup, sponge)
- Metronome
- Stopwatch

SIDE PLANK

- Stopwatch
- Exercise mat

5. MOBILITY AND FLEXIBILITY

STRAIGHT LEG RAISE

- Plastic goniometer
- Dowel
- Exercise mat

SHOULDER REACH

- Measuring tape

MANDATORY PRE-EVALUATION PROCEDURE

All personnel shall be medically cleared within the last 12 months prior to participating in the WFI assessments. All personnel shall be health screened prior to conducting the WFI assessments (e.g., Par-Q, Health History).

Assessments shall be deferred if the following medical conditions exist:

- Chest pain, during or in the absence of physical activity
- Recent unexplained loss of consciousness
- Loss of balance due to dizziness (ataxia)
- Recent injury resulting in bone, joint or muscle problems that may be exacerbated by exercise
- Current prescribed drug that inhibits physical activity

- Chronic infectious disease (e.g., hepatitis)
- Pregnancy
- Any other reason the participant believes that he or she should not be physically evaluated

The following pre-evaluation procedure shall be conducted for all personnel prior to conducting fitness assessments:

- Obtain a resting heart rate and blood pressure. If resting heart rate is equal to or greater than 110 beats per minute and/or resting blood pressure is equal to or greater than 160/100 mm Hg, instruct the participant to rest for five minutes and re-evaluate. If the heart rate and/or blood pressure remain at these levels, cancel the fitness evaluation and refer the participant to the fire department physician. If the heart rate and/or blood pressure fall within the acceptable range, the assessment may continue.

The assessor shall:

Instruct the participant to refrain from eating, drinking, smoking and any physical activity that may influence performance prior to the assessment. Activities that affect heart rate and/or blood pressure measurements may adversely impact performance.

- Assure that participant is wearing appropriate attire.
- Record participant's age.
- Inform participant of the appropriate execution for each protocol.

ASSESSMENT SEQUENCE

The assessments are sequenced to minimize the effect of fatigue on subsequent performance, mitigate injury risk and standardize the protocol so progress can be monitored over time. The WFI requires that assessments be performed in the sequence outlined below. To ensure that personnel have the opportunity to recover from one assessment before proceeding to the next, minimum rest times are recommended between each test (i.e. at a minimum, performers must rest for the time listed; if necessary, they can choose to rest for additional time).

1. BODY COMPOSITION

(minimum of 1 minute rest before proceeding to straight leg raise)

2. MOBILITY AND FLEXIBILITY

a. Straight leg raise (minimum of 30s rest between right and left leg; minimum of 1 minute before proceeding to shoulder reach)

b. Shoulder reach (minimum of 30s rest between right and left arm; minimum of 1 minute before proceeding to vertical jump)

3. SPEED AND POWER

a. Vertical jump (minimum of 30s rest between trials, minimum of 2 minutes before proceeding to aerobic capacity)

4. AEROBIC CAPACITY

(minimum of 10 minutes before proceeding to push-up)

5. MUSCULAR STRENGTH AND ENDURANCE

a. Push-up (minimum of 2 minutes before proceeding to horizontal pull-up)

b. Horizontal pull-up (minimum of 2 minutes before proceeding to side plank)

c. Side plank (minimum of 2 minutes between right and left side)

INDICATIONS FOR STOPPING EVALUATION

- Onset of angina or angina-like symptoms
- Signs of poor perfusion: light-headedness, confusion, ataxia, poor pallor, cyanosis, nausea, or cold, clammy skin
- Failure of heart rate to increase with increase in exercise intensity
- Participant requests evaluation to stop
- Physical or verbal manifestations of severe fatigue
- Joint or muscle pain that becomes aggravated with exercise
- Failure of the testing equipment

ASSESSMENT PROTOCOLS:

BODY COMPOSITION

Objectives: Waist and hip circumference, and waist to hip circumference ratio

EQUIPMENT

- Flexible tape measure



ASSESSMENT GUIDELINES

1. Conduct pre-evaluation procedures.
2. Using the flexible tape measure, measure the participant's waist circumference (in centimeters). The measurement should be made at the approximate midpoint between the lower margin of the last palpable rib and the top of the iliac crest (hip bone).
3. Measure the participant's hip circumference (in centimeters). The measurement should be taken around the widest portion of the buttocks.
4. For both measurements:

- The tape should be snug around the body, but not pulled so tight that it is constricting
- The tape should be placed at a level parallel to the floor.
- The participant should stand with their feet close together, arms at side, and body weight evenly distributed.
- The participant should be relaxed, and the measurements should be taken at the end of normal expiration.

5. Take two measurements at each site (waist and hips). If the two values are within 1 cm of each other then calculate the average of the two measurements. If the difference between the two measurements is greater than 1 cm, the two measurements should be repeated.
6. Compute the waist to hip circumference ratio by dividing the waist measurement by the hip measurement (waist-hip ratio = waist circumference / hip circumference)

EVALUATION CRITERIA

- Waist circumference (cm)
- Waist-hip circumference ratio

WFI ASSESSMENT PROTOCOLS:

AEROBIC CAPACITY

There are two submaximal assessments that can be used to determine a fire fighter's aerobic capacity: the WFI submaximal treadmill and the WFI sub-maximal Stepmill assessment. Using the calculations provided in the respective section, both assessments estimate a fire fighter's maximal aerobic capacity, expressed as VO2 max. Either the treadmill or Stepmill can be used as long as the results are calculated using the appropriate assessment formula. All aerobic capacity evaluation results must be recorded in milliliters (ml) of oxygen per kilogram (kg) of body weight per minute (VO2 max). These aerobic assessments are submaximal and are based on the heart rate response during graded exercise. Accurate estimation of maximal heart rate (MHR) is critical to the submaximal prediction used in these assessments. Be aware that the heart rate can be affected by variables such as body temperature, hydration state, anxiety, stress and medications. In addition to heart rate, body mass (height-to-weight ratio), is also a significant variable in both prediction equations. The relationship between height and weight is recorded as Body Mass Index (BMI). It is important to note that BMI is not being used in these aerobic protocols to estimate body composition; but rather, is used to represent the stature of each participant.

Pre-Evaluation Procedures

Choose the aerobic capacity protocol and worksheet. Measure the participant's:

- Resting heart rate and blood pressure
- Age, height and weight
- Gender

In addition:

- Determine the participants Body Mass Index (BMI) and Target Heart Rate (THR) by referring to the tables below.
- Record the target exercise heart rate on the protocol worksheet.
- Inform the participant of all evaluation components. Ensure that the participant is in proper clothing and footwear.
- Review all indicators for stopping the evaluation with the participant.

Secure the heart rate monitor transmitter around the participant's chest in accordance with the manufacturer's instructions. The evaluator shall hold or wear the heart rate monitor wrist receiver.

Table 1. Body Mass Index (BMI) Conversion Table. BMI = Weight (kg) / Height $(m)^2$ or BMI = 703 x Weight (lbs) / Height $(inches)^2$

BMI	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
HEIGHT	BODYWEIGHT (Pounds)																														
58" (4'10)	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239
59" (4'11)	99	104	109	114	119	124	128	133	138	143	148	153	158	163	268	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247
60" (5'0)	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255
61" (5'1)	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264
62" (5'2)	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273
63" (5'3)	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282
64" (5'4)	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291
65" (5'5)	120	126	132	136	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300
66" (5'6)	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309
67" (5'7)	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287	293	299	308	312	319
68" (5'8)	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328
69" (5'9)	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338
70" (5'10)	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348
71" (5'11)	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	350	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358
72" (6'0)	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368
73" (6'1)	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378
74" (6'2)	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350	358	365	373	281	389
75" (6'3)	160	168	176	184	192	200	206	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359	367	375	383	291	399
76" (6'4)	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	285	394	402	410
77" (6'5)	169	177	186	194	202	211	219	228	236	245	253	261	270	278	287	295	304	312	320	329	337	346	354	363	371	380	388	396	405	413	422
78" (6'6)	173	182	190	199	208	216	225	234	242	251	260	268	277	286	294	303	312	320	329	338	346	355	363	372	381	389	398	407	415	424	433
79" (6'7)	177	186	195	204	213	222	231	240	249	258	266	275	284	293	302	311	320	328	337	346	355	364	373	382	391	399	408	417	426	435	444
80" (6'8)	182	191	200	209	219	228	237	246	255	264	273	282	291	300	310	319	328	337	346	355	364	373	382	391	401	410	419	428	437	446	455
BMI	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

Table 2. Target Heart Rate (THR) for Respective Age. THR = [208-(0.7*Age)]*0.85

AGE	THR	AGE	THR	AGE	THR	AGE	THR	AGE	THR
18	166	27	161	37	155	47	149	57	143
19	165	28	160	38	154	48	148	58	142
20	165	29	160	39	154	49	148	59	142
21	164	30	159	40	153	50	147	60	141
22	164	31	158	41	152	51	146	61	141
23	163	32	158	42	152	52	146	62	140
24	163	33	157	43	151	53	145	63	139
25	162	34	157	44	151	54	145	64	139
26	161	35	156	45	150	55	144	65	138
27	161	36	155	46	149	56	143	66	138

TREADMILL

Objective: Aerobic capacity, heart rate recovery; control of knees and lower back with extended duration.

Equipment

- Commercial grade treadmill
- Calculator
- Stopwatch
- Heart rate monitor
- Height scale
- Weight scale



Assessment Guidelines

1. Conduct Pre-Evaluation Procedures.
2. Monitor the participant's heart rate continuously throughout the assessment. The participant straddles the treadmill belt until it begins to move. When the treadmill reaches approximately 1mph, instruct the participant to step on to the belt. Then increase the speed to 3mph at 0% grade.
3. Start the stopwatch when the treadmill reaches 3 mph at 0% grade. Continue with this speed and grade for 3 minutes (steady state).
4. After completing the 3-minute steady state interval, inform the participant that the speed will increase to 4.5 mph. OPTIONAL: Record the participant's rating of perceived exertion (RPE) during the last 5 seconds of each subsequent stage.
5. Advise the participant that the assessment is a series of 1-minute intervals, alternating between speed and percent grade. All subsequent speed increases occur at 0.5mph.
6. At 4:01 minutes, increase the grade from 0% to 2%. At this time, inform the participant that all subsequent grade increases occur at 2% intervals.
7. The assessment will continue until the participant's heart rate exceeds the THR rate for 15 seconds, or the subject exhibits the medical criteria for early termination.
8. Once the heart rate exceeds the Target Heart Rate (THR), note the time and continue the assessment for an additional 15 seconds. Do not make any changes to the assessment speed or grade during this time. If the participant's heart rate remains above the THR for the full 15 seconds, then stop the assessment and proceed to the cool-down phase. Record the total time, including the 3-minute warm-up, at which point the participant exceeds the THR. If the participant's heart rate exceeds the target, but then drops back to the THR or below within 15 seconds, then the assessment should continue. The assessment is not complete until the participant's heart rate exceeds the THR for 15 seconds. If this does not occur within 18 minutes, then terminate the assessment and record the time.
9. Once the assessment is completed, the time is recorded. The participant should perform a cool-down for a minimum of 3 minutes at 3 mph, 0% grade. Continue to monitor the heart rate during the cool-down. Record the recovery heart rate after each minute of the cool-down.

Submaximal Treadmill Test VO2 Estimation

10. Use the formula provided below with the treadmill time in minutes (TT), and body mass index (BMI) to estimate VO2.[1]

VO2 max (ml/kg/min) = 56.981 + (1.242 x TT) – (0.805 x BMI)

Time	Speed	Grade
0:00 - 0:00	0.0	0
0:00 - 3:00	3.0	0
3:01 - 4:00	4.5	0
4:01 - 5:00	4.5	2
5:01 - 6:00	5.0	2
6:01 - 7:00	5.0	4
7:01 - 8:00	5.5	4
8:01 - 9:00	5.5	6
9:01 - 10:00	6.0	6
10:01 - 11:00	6.0	8
11:01 - 12:00	6.5	8
12:01 - 13:00	6.5	10
13:01 - 14:00	7.0	10
14:00 - 15:00	7.0	12
15:01 - 16:00	7.5	12
16:01 - 17:00	7.5	14
17:01 - 18:00	8.0	14
0:00 - 1:00	3.0	0
1:01 - 2:00	3.0	0
2:01 - 3:00	3.0	0

Evaluation Criteria

- Test time (use to estimate VO2 max)
- RPE at specific speed/grade
- Heart rate recovery

Notable Observations (KNEES / BACK)

- Knee alignment (during each test stage)
- Low back curvature (during each test stage)

Reasons to Stop the Test

- The THR is exceeded for 15 seconds
- The THR has not been met after 18 minutes
- The participant asks to terminate the exercise
- The equipment malfunctions
- Medical conditions arise that prohibit completing the assessment

Table 3. Seconds converted to decimal

Time (s)	Decimal Equivalent	Time (s)	Decimal Equivalent	Time (s)	Decimal Equivalent	Time (s)	Decimal Equivalent	Time (s)	Decimal Equivalent
1	0.02	13	0.22	25	0.42	37	0.62	49	0.82
2	0.03	14	0.23	26	0.43	38	0.63	50	0.83
3	0.05	15	0.25	27	0.45	39	0.65	51	0.85
4	0.07	16	0.27	28	0.47	40	0.67	52	0.87
5	0.08	17	0.28	29	0.48	41	0.68	53	0.88
6	0.10	18	0.30	30	0.50	42	0.70	54	0.90
7	0.12	19	0.32	31	0.52	43	0.72	55	0.92
8	0.13	20	0.33	32	0.53	44	0.73	56	0.93
9	0.15	21	0.35	33	0.55	45	0.75	57	0.95
10	0.17	22	0.37	34	0.57	46	0.77	58	0.97
11	0.18	23	0.38	35	0.58	47	0.78	59	0.98
12	0.20	24	0.40	36	0.60	48	0.80	60	1.00

STEPMILL

Objective: Aerobic capacity, heart rate recovery; control of knees and lower back with extended duration.

Equipment

- Stairmaster 7000PT Stepmill
- Calculator
- Stopwatch
- Heart rate monitor
- Height scale
- Weight scale



Assessment Guidelines

1. Conduct Pre-Evaluation Procedures.
2. Monitor the participant's heart rate continuously throughout the assessment.
3. Instruct the participant to temporarily grasp the handrails to reduce the possibility of losing balance when the stairs begin to move.
4. The starting position is approximately two-thirds of the way up the stairs.
5. The assessment starts at level 4 for 2 minutes, then level 5 for 1 minute (warm-up period). Start the stopwatch once the Stepmill begins. Inform the participant that the evaluation is a series of 1-minute intervals with increasing work loads on each subsequent minute.
6. Once the assessment commences, do not allow the participant to hold or lean on the handrails; this will result in overestimation of aerobic capacity.
7. At the completion of the 3 minute-warm-up, proceed to level 7 for 1 minute (this is marked by an increase in workload from level 5 to level 7). OPTIONAL: Record the participant's rating of perceived exertion (RPE) during the last 5 seconds of each subsequent stage.
8. The assessment will continue until the participant's heart rate exceeds the THR rate for 15 seconds, or the subject exhibits the medical criteria for early termination.
9. Once the heart rate exceeds the Target Heart Rate (THR), note the time and continue the assessment for an additional 15 seconds. Do not make any changes to the assessment intensity level during this time. If the participant's heart rate remains above the THR for the full 15 seconds, then stop the assessment and proceed to the cool-down phase. Record the total time, including the 3-minute warm-up, at which point the participant exceeds the THR. The total Test Time (TT) begins from the time the participant starts on the Stepmill, to the point at which the participant exceeds their THR. It does not include the final 15 second monitoring period that the heart rate was above the THR. If the participant's heart rate exceeds the target, but then drops back to the THR or below within 15 seconds, then the assessment should continue. The assessment is not complete until the participant's heart rate exceeds the THR for 15 seconds.
10. Once the assessment is complete, the participant will cool down for 3 minutes at level 3. Continue to monitor the heart rate during the cool-down. Record the recovery heart rate after each minute of the cool-down. The participant may grasp the handrails during the cool-down phase.
11. Upon completion of the cool-down, instruct the participant to grasp the handrails. Stop the Stepmill and assist the participant off the apparatus.

Time	Level	Steps
0:00 - 0:00	0	0
0:00 - 1:00	4	46
1:01 - 2:00	4	46
2:01 - 3:00	5	53
3:01 - 4:00	7	65
4:01 - 5:00	8	75
5:01 - 6:00	9	82
6:01 - 7:00	10	89
7:01 - 8:00	11	97
8:01 - 9:00	12	104
9:01 - 10:00	13	111
10:01 - 11:00	14	118
11:01 - 12:00	15	126
12:00 - 13:00	16	133
13:01 - 14:00	17	140
14:01 - 15:00	18	147
15:01 - 16:00	19	155
0:00 - 1:00	3	39
1:01 - 2:00	3	39
2:01 - 3:00	3	39

Submaximal Stepmill Test VO2 Estimation

12. Use the formula provided below with the stepmill time in minutes (ST), and body mass index (BMI) to estimate VO2.[2]

VO2 max (ml/kg/min) = 57.774 + (1.757 x ST) – (0.904 x BMI)

Evaluation Criteria

- Test time (use to estimate VO2 max)
- RPE at specific speed/grade
- Heart rate recovery

Notable Observations (KNEES / BACK)

- Knee alignment (during each test stage)
- Low back curvature (during each test stage)

Reasons to Stop the Test

- The THR is exceeded for 15 seconds
- The THR has not been met after 16 minutes
- The participant asks to terminate the exercise
- The equipment malfunctions
- Medical conditions arise that prohibit completing the assessment

VERTICAL JUMP

Objectives: Lower-body power; control of the knees and lower back with elevated speed.

Equipment

- Jump Mat or Vertec
- Calculator



Assessment Guidelines

1. Record the participant's body weight in kilograms (# lbs ÷ 2.2 = kg).
2. Conduct pre-evaluation procedures.

Jump Mat Protocol

3. Place the jump mat on a level surface. Connect the cord attached to the jumping mat to the handheld computer port.
4. With the participant off the mat, turn the computer on.
5. Choose "One Jump" on the computer menu. The display should read "Step on Mat". Have the participant squat to a position where the knees are at a 90° angle and the hands by the sides (momentary pause @ 90°).
6. Instruct the participant to jump straight up as high as he/she can, reach toward the ceiling (or a target object) without tucking the legs, and land with both feet on the mat.
7. When the participant has completed the jump, the display will read the hang time and vertical jump in inches. The vertical jump mode resets automatically.
8. Have the participant perform a series of 3 jumps and record the highest distance in inches.

Vertec Protocol

3. Measure the participant's standing reach height using the following procedures:

- Adjust the Vertec height so the participant is able to touch the rungs of the device.
- Have the participant reach overhead with both arms and hands together (fingers pointed up).
- From behind, the assessor should hold the participant's arms at the elbows to assist them in reaching as high as possible.
- Have the participant walk beneath the Vertec, touching as many rungs on the device as possible. Continue until no additional rungs can be touched. Record the standing reach height.

4. Adjust the Vertec height so the participant must jump to touch the rungs of the device.
5. Have the participant stand directly beneath the rungs, and squat to a position where the knees are at a 90° angle and the hands by the sides (momentary pause @ 90°).
6. Instruct the participant to jump straight up as high as he/she can, touch as many rungs on the Vertec as possible, and land with both feet.

7. Clear all rungs touched and have the participant prepare to complete their next trial.
8. Have the participant perform a series of 3 jumps and record the highest distance in inches. Jump height will be computed by subtracting the standing reach height from the max jump height (jump height = max jump height (in) — standing reach height (in))

Both Protocols

9. Convert the highest jump achieved in inches to centimeters (# inches × 2.54 = cm).
10. Use the power formula provided below with the jump height (cm) and body weight (kg) to estimate leg power.[3]

Power (watts) = [(60.7×jump height (cm)) + (45.3×body weight (kg))] – 2055

Evaluation Criteria

- Jump height
- Power (using body mass)

Notable Observations (KNEES / BACK)

- Knee alignment (landing and take-off)
- Low back curvature (landing and take-off)

Reasons to Stop the Test

- The participant fails to land with both feet on the mat
- The participant tucks the legs instead of extending them while jumping
- Joint or muscular pain

Note: Administrators can minimize the tendency of participants to tuck the legs by suspending a target object above the mat for the participant to attempt to touch.

PUSH UP

Objectives: Lower-body power; control of the knees and lower back with elevated speed.

Equipment

- Five inch prop (e.g. cup; sponge)
- Metronome
- Stopwatch



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Advise the participant that the evaluation is a series of push-ups performed in a 2-minute time period, for a maximum of 80 push-ups. The evaluation is initiated from the "up" position (hands are shoulder width apart, back is straight, and head is in neutral position).
3. Prior to beginning, inform the participant of the following:

- The feet cannot be propped against a wall or other stationary object.
- The back must be straight at all times (neutral position).
- The arms must be fully extended during the up-phase.
- Cadence with the metronome must be maintained (one beat up and one beat down).

4. Position the 5-inch prop on the ground beneath the participants chin.
5. Set the metronome at a speed of 80 bpm, allowing for 40 push-ups per minute, and a maximum of 80 push-ups in 2 minutes.
6. The participant must lower the body toward the floor until the chin touches the prop.

Evaluation Criteria
- Repetitions

Notable Observations (KNEES / BACK)
- Low back curvature
- Shoulder position

Reasons to Stop the Test
- Reaches 80 push-ups
- Performs 3 incorrect push-ups (i.e. receives 3 verbal warnings)
- Fails to maintain continuous motion with the metronome cadence
- Joint or muscular pain.

ALTERNATE GRIP PUSH-UP

Objective: Pushing strength/ endurance; control of lower back and shoulders with extended duration.

Equipment
- Push-up handles
- Range of motion prop (e.g. cup; sponge)
- Metronome
- Stopwatch



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Advise the participant that the evaluation is a series of push-ups performed in a 2-minute time period, for a maximum of 80 push-ups. The evaluation is initiated from the "up" position (hands are shoulder width apart, back is straight, and head is in neutral position).
3. Prior to beginning, inform the participant of the following:
   - The feet cannot be propped against a wall or other stationary object.
   - The back must be straight at all times (neutral position).
   - The arms must be fully extended during the up-phase.
   - Cadence with the metronome must be maintained (one beat up and one beat down).
4. Instruct the participant to grasp the push up stands, and assume the "up" position. (Caution: hex dumbbells may roll).
5. Place the modified prop so that the chin of the participant will contact the prop during the lowering phase. (Prop height = 5" plus the height of stands).
6. Set the metronome at a speed of 80 bpm, allowing for 40 push-ups per minute, and a maximum of 80 push-ups in 2 minutes.
7. The participant must lower the body toward the floor until the chin touches the prop.

Evaluation Criteria
- Repetitions

Notable Observations (KNEES / BACK)
- Low back curvature
- Shoulder position

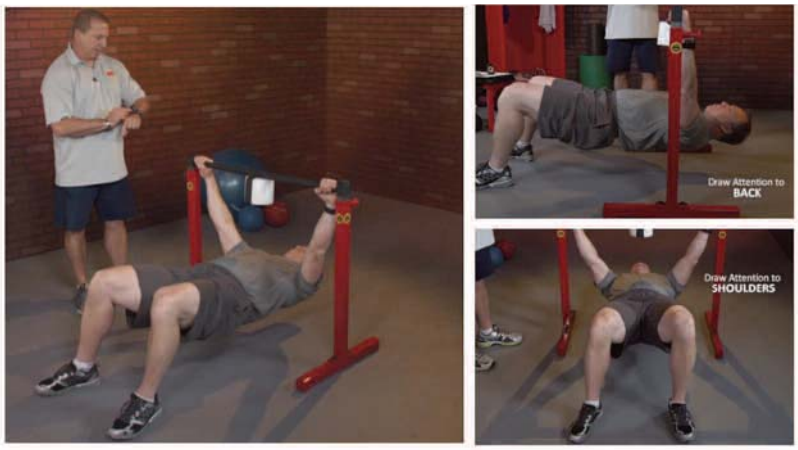
Reasons to Stop the Test
- Reaches 80 push-ups
- Performs 3 incorrect push-ups (i.e. receives 3 verbal warnings)
- Fails to maintain continuous motion with the metronome cadence
- Joint or muscular pain.

HORIZONTAL PULL-UP

Objective: Pulling strength/ endurance; control of lower back and shoulders with extended duration.

Equipment

- Horizontal pull-up bar
- Five inch prop (e.g. cup; sponge)
- Metronome
- Stopwatch



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Advise the participant that the evaluation is a series of horizontal pull-ups (i.e. inverted row) performed in a 2-minute time period, for a maximum of 80 pull-ups. The evaluation is initiated from the "down" position (knees are bent, feet and hands are shoulder width apart, back is straight, and head is in neutral position).
3. Instruct the participant to hang from the bar with his or her arms straight, grip the bar firmly with an overhand grip and position the hands shoulder width apart.
4. With their knees bent and feet flat on the floor, the participant's foot position should be adjusted so the bar will touch the chest when the body is raised.
5. Adjust the height of the bar so that when the participant is in the "bottom" position with their arms straight, their torso is approximately 1" above the floor.
6. Prior to beginning, inform the participant of the following:
   - The feet cannot be propped against a wall or other stationary object.
   - The body from the knees to the head must be straight at all times (i.e. hips must stay raised).
   - The arms must be fully extended at the bottom of each repetition.
   - Cadence with the metronome must be maintained (one beat up and one beat down).
7. Secure the 5-inch prop to the bottom of the bar above the participant's chest.
8. Set the metronome at a speed of 80 bpm, allowing for 40 pull-ups per minute, and a maximum of 80 pull-ups in 2 minutes.
9. The participant must raise the body toward the bar until the chest touches the prop.

Evaluation Criteria

- Repetitions

Notable Observations (KNEES / BACK)

- Low back curvature
- Shoulder position

Reasons to Stop the Test

- Reaches 80 pull-ups
- Performs 3 incorrect pull-ups (i.e. receives 3 verbal warnings)
- Fails to maintain continuous motion with the metronome cadence
- Joint or muscular pain.

SIDE PLANK

Objective: Trunk muscle endurance; control of lower back and shoulders with extended duration.

Equipment

- Stopwatch
- Exercise mat



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Instruct the participant to lie on their right side, supporting themselves with one forearm and both feet. The foot of the top leg should be placed front (i.e. heel of front feet just in front of rear foot's toes). The elbow of the support arm should be placed directly below the shoulder, and kept in this position throughout the assessment. The free hand should be placed on the top hip.
3. The ankles should maintain a 90° angle and the sides of both feet must remain in contact with the floor at all times.
4. Once the feet and forearm are in position, the participant must raise their body off the floor so that a straight line can be drawn through the head, hips and feet. The stopwatch can be started at this time.
5. Prior to beginning, inform the participant of the following:

- The feet cannot be propped against a wall or other stationary object.
- The body must be straight at all times (i.e. hips must stay raised and shoulders cannot be rotated forwards).

6. Any deviations from the above posture will warrant 2 verbal warnings. If a 3rd infraction occurs, the test will be terminated.
7. Perform for a maximum of 4 minutes. Repeat on left side.

Evaluation Criteria

- Time

Notable Observations (KNEES / BACK)

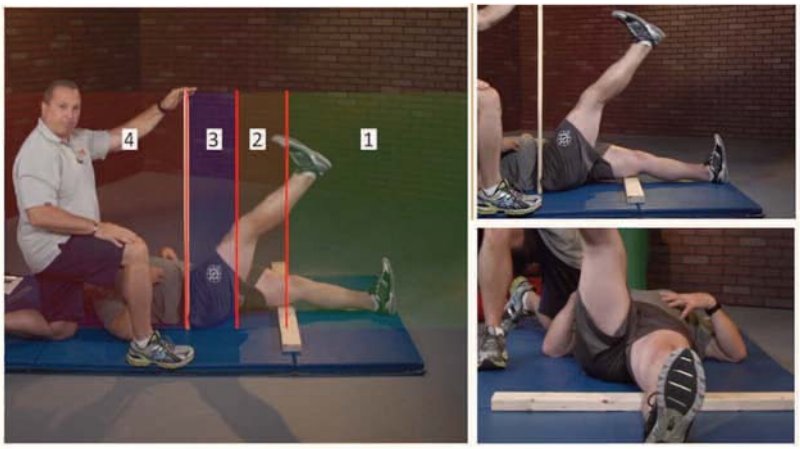
- Low back curvature
- Shoulder position

Reasons to Stop the Test

- Reaches 4 minutes
- Receives three verbal warnings regarding posture
- Joint or muscular pain

STRAIGHT LEG RAISE

Objective: Active hip flexion range of motion; control of low back motion.



Equipment

- Plastic goniometer
- Dowel
- Exercise Mat

Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Instruct the participant to lie flat on the floor with the back of their thighs in contact with the floor and toes pointing up. Both arms should be placed next to the body with the palms facing up.
3. While keeping the left leg in contact with the floor, have the participant pull the toes of the right foot towards the shin, and raise the right foot as high as possible in a slow controlled motion.
4. Prior to beginning, inform the participant of the following:
   - The toes of the left leg must point up.
   - The left thigh and calf must remain in contact with the floor.
   - The right knee must be kept straight.
   - The toes of the right foot must be pulled towards the shin (e.g. ankle angle of 90°).
5. The top position must be held for a count of 2s before lowering the foot the floor.
6. Record one or both of the following measurements:
   - Hip flexion range of motion: using a goniometer measure the angle between the floor and the raised leg. Align the axis of the goniometer with the greater trochanter of the right hip (i.e. hip joint), and the arms of the goniometer with the floor and the right thigh. Hip flexion range of motion is the angle (in degrees) between the two arms of the goniometer.
   - Hip flexion score (1 to 4): document the position of the ankle joint with the respect to one of the following locations: a) below the knee (score of 1); b) between the knee and mid-thigh (score of 2); c) between the hip and mid-thigh (score of 3); and d) above the hip (score of 4).
7. Have the participant perform 3 trials on the right side and record the best measurement. Repeat with the left leg.

Evaluation Criteria

- Hip flexion range of motion (angle)
- Hip flexion score (1 to 4)

Notable Observations (KNEES / BACK)

- Low back curvature

Reasons to Stop the Test

- Joint or muscular pain

SHOULDER REACH

Objective: Active shoulder range of motion; control of low back and shoulder motion.

Equipment

- Measuring tape



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Measure the length of the right hand in centimeters (# inches × 2.54 = # cm).

Shoulder Flexion and External Rotation

3. Instruct the participant to stand tall with their feet together and arms hanging comfortably.
4. Have the participant make a fist with their right hand so the fingers wrap around the thumb.
5. In one motion, have the participant place their right fist overhead and down their back as far as possible in one slow and controlled motion. The participant should not be allowed to "wiggle" the hand after the initial fist placement.
6. Record one or both of the following measurements:

- Shoulder flexion range of motion: measure the shortest distance in centimeters between the fist and the neck line (i.e. 7th cervical vertebrae). Shoulder flexion range will be estimated by the distance in centimeters between these two points.
- Shoulder flexion score (1 to 4): document the fist with the respect to one of the following locations: a) more than ½ hand lengths above the neck line (score of 1); b) between 0 and ½ hand lengths above the neck line (score of 2); c) between 0 and ½ hand lengths below the neck line (score of 3); and d) more than ½ hand lengths below the neck line (score of 4).

7. Have the participant perform 3 trials on the right side and record the best measurement. Repeat with the left hand.

Shoulder Extension and Internal Rotation

8. Instruct the participant to stand tall with their feet together and arms hanging comfortably.
9. Have the participant make a fist with their right hand so the fingers wrap around the thumb.
10. In one motion, have the participant place their right fist up their back as far as possible in one slow and controlled motion. The participant should not be allowed to "wiggle" the hand after the initial fist placement.
11. Record one or both of the following measurements:

- Shoulder extension range of motion: measure the shortest distance in centimeters between the fist and the neck line (i.e. 7th cervical vertebrae). Shoulder extension range will be estimated by the distance in centimeters between these two points.
- Shoulder extension score (1 to 4): document the fist with the respect to one of the following locations: a) more than 1½ hand lengths below the neck line (score of 1); b) between 1½ and 1 hand lengths below the neck line (score of 2); c) between 1 and ½ hand lengths below the neck line (score of 3); and d) less than ½ hand lengths below the neck line (score of 4).

12. Have the participant perform 3 trials on the right side and record the best measurement. Repeat with the left hand.

Evaluation Criteria

- Shoulder flexion RoM (distance)
- Shoulder extension RoM (distance)
- Shoulder flexion score (1 to 4)
- Shoulder extension score (1 to 4)

Notable Observations (KNEES / BACK)

- Low back curvature
- Shoulder position

Reasons to Stop the Test

- Joint or muscular pain

OPTIONAL ASSESSMENTS

In addition to the tests outlined above, the WFI has previously recommended 4 additional protocols that can be used to evaluate various aspects of a firefighter's fitness. These additional assessments are: Skin-folds (Body Composition), Hand grip (Strength), Leg Dynamometer (Strength), Arm Dynamometer (Strength). Although each assessment does provide relevant information, the equipment needed has proven to be cost-prohibitive to many departments. For this reason, the 4th edition of the WFI now includes alternative assessments that capture similar information (see Appendix above). Departments with access to the necessary equipment who have been collecting this information may wish to continue doing so such that progress can still be monitored. The protocols for each of these four assessments are outlined below.

SKIN-FOLDS

Objectives: Body fat percentage

Equipment

- Lange Skinfold Calipers (or equivalent)
- Flexible tape measure
- Water-soluble marker



Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Obtain the participant's age.
3. Note the gender-specific skinfold sites. Men are measured at the triceps, subscapular and pectoral sites; women are measured at the triceps, abdominal and supra iliac sites.
4. All measurements should be made on the right side of the body, with the subject standing upright.
5. Use the tape measure to mark the site to be measured with a water-soluble marker.
6. Place calipers directly on the skin surface, 1 cm away from the thumb and finger; perpendicular to the skinfold; and halfway between the crest and base of the fold.
7. Maintain pinch while reading the caliper. Wait 1 – 2 seconds (not longer,) before reading caliper.
8. Rotate through all three sites or allow time for skin to regain normal texture and thickness.
9. Take two measurements at each site. If the values are less than 1 millimeter of each other then calculate the average of the two measurements. If the difference between the two measurements is greater than or equal to 1millimeter, then a third measurement must be taken.

- If the differences between the three skinfold measurements are equal, then calculate the average of all three measurements [e.g., (1) 6 mm, (2) 9mm, (3) 12 mm the average of all three measurements is 9 mm].
- If the three measurements are not equal distance apart then calculate the average of the two closest measurements [e.g., (1) 7 mm, (2) 4 mm, (3) 5 mm the average is calculated for measurement #2 and #3 only. The average of the two measurements is 4.5 mm].

Evaluation Criteria

- Once the skinfolds are collected for all three sites, calculate the sum of the average skinfold measurement for each site. (Note: Sites are specific to gender.)
- To determine body fat percentage, cross-reference the sum of skin folds with the subject's age on the appropriate chart provided in this section (male: table 5.1; female : table 5.2).

MALE SKINFOLD SITES

- **Triceps** — located at the midpoint between the acromio-clavicular (AC) joint and the olecranon process (center of the elbow) on the posterior aspect of the upper arm.

Figure 5.0



Figure 5.1



- **Subscapular** — located on the same diagonal line as the inferior border of the scapula, 2cm beyond the inferior angle.

Figure 5.2



Figure 5.3



- **Pectoral** — Located on a diagonal line, midway between the axillary fold and the right nipple.

Figure 5.4



Figure 5.5



FEMALE SKINFOLD SITES

- **Triceps** – located at the midpoint between the acromio-clavicular (AC) joint and the olecranon process (center of the elbow) on the posterior aspect of the upper arm.

Figure 5.6



Figure 5.7



- **Abdominal** — located at the right of the umbilicus, on a vertical fold, 2cm from the right lateral border.

Figure 5.8



Figure 5.9



- **Suprailiac** — located on a diagonal line, 1-2 cm anterior to the crest of the pelvis (ASIS). Grasp a diagonal skin-fold just above and slightly forward of the crest of the Ilium.

Figure 5.10



Figure 5.11



Table 5.1
Percentage of Body Fat estimate for MEN
Based on the Sum of Triceps, Subscapular, and Pectoral Skinfolds

Skinfolds	Age up to Last Complete Year								
Sum (mm)	Under 22	23 - 27	28 - 32	33 - 37	38 - 42	43 - 47	48 - 52	53 - 57	Over 57
8 - 10	1.5	2.0	2.5	3.1	3.6	4.1	4.6	5.1	5.6
11 - 13	3.0	3.5	4.0	4.5	5.1	5.6	6.1	6.6	7.1
14 - 16	4.5	5.0	5.5	6.0	6.5	7.0	7.6	8.1	8.6
17 - 19	5.9	6.4	6.9	7.4	8.0	8.5	9.0	9.5	10.0
20 - 22	7.3	7.8	8.3	8.8	9.4	9.9	10.4	10.9	11.4
23 - 25	8.6	9.2	9.7	10.2	10.7	11.2	11.8	12.3	12.8
26 - 28	10.0	10.5	11.0	11.5	12.1	12.6	13.1	13.6	14.2
29 -31	11.2	11.8	12.3	12.8	13.4	13.9	14.4	14.9	15.5
32 - 34	12.5	13.0	13.5	14.1	14.6	15.1	15.7	16.2	16.7
35 - 37	13.7	14.2	14.8	15.3	15.8	16.4	16.9	17.4	18.0
38 - 40	14.9	15.4	15.9	16.5	17.0	17.6	18.1	18.6	19.2
41 - 43	16.0	16.6	17.1	17.6	18.2	18.7	19.3	19.8	20.3
44 - 46	17.1	17.7	18.2	18.7	19.3	19.8	20.4	20.9	21.5
47 - 49	18.2	18.7	19.3	19.8	20.4	20.9	21.4	22.0	22.5
50 - 52	19.2	19.7	20.3	20.8	21.4	21.9	22.5	23.0	23.6
53 - 55	20.2	20.7	21.3	21.8	22.4	22.9	23.5	24.0	24.6
56 - 58	21.1	21.7	22.2	22.8	23.3	23.9	24.4	25.0	25.5
59 - 61	22.0	22.6	23.1	23.7	24.2	24.8	25.3	25.9	26.5
62 - 64	22.9	23.4	24.0	24.5	25.1	25.7	26.2	26.8	27.3
64 - 67	23.7	24.3	24.8	25.4	25.9	26.5	27.1	27.6	28.2
68 - 70	24.5	25.0	25.6	26.2	26.7	27.3	27.8	28.4	29.0
71 - 73	25.2	25.8	26.3	26.9	27.5	28.0	28.6	29.1	29.7
74 - 76	25.9	26.5	27.0	27.6	28.2	28.7	29.3	29.9	30.4
77 - 79	26.6	27.1	27.7	28.2	28.8	29.4	29.9	30.5	31.1
80 - 82	27.2	27.7	28.3	28.9	29.4	30.0	30.6	31.1	31.7
83 - 85	27.7	28.3	28.8	29.4	30.0	30.5	31.1	31.7	32.3
86 - 88	28.2	28.8	29.4	29.9	30.5	31.1	31.6	32.2	32.8
89 - 91	28.7	29.3	29.8	30.4	31.0	31.5	32.1	32.7	33.3
92 -94	29.1	29.7	30.3	30.8	31.4	32.0	32.6	33.1	33.4
95 - 97	29.5	30.1	30.6	31.2	31.8	32.4	32.9	33.5	34.1
98 - 100	29.8	30.4	31.0	31.6	32.1	32.7	33.3	33.9	34.4
101 - 103	30.1	30.7	31.3	31.8	32.4	33.0	33.6	34.1	34.7
104 - 106	30.4	30.9	31.5	32.1	32.7	33.2	33.8	34.4	35.0
107 - 109	30.6	31.1	31.7	32.3	32.9	33.4	34.0	34.6	35.2
110 - 112	30.7	31.3	31.9	32.4	33.0	33.6	34.2	34.7	35.3
113 - 115	30.8	31.4	32.0	32.5	33.1	33.7	34.3	34.9	35.4
116 - 118	30.9	31.5	32.0	32.6	33.2	33.8	34.3	34.9	35.5

Table 5.2
Percentage of Body Fat estimates for WOMEN
Based on the Sum of Triceps, Abdominal, and Suprailiac Skinfolds

Skinfolds	Age up to Last Complete Year								
Sum (mm)	18 - 22	23 - 27	28 - 32	33 - 37	38 - 42	43 - 47	48 - 52	53 - 57	Over 57
8 - 12	8.8	9.0	9.2	9.4	9.5	9.7	9.9	10.1	10.3
13 - 37	10.8	10.9	11.0	11.3	11.5	11.7	11.8	12.0	12.2
18 - 22	12.6	12.8	13.0	13.2	13.4	13.5	13.7	13.9	14.1
23 - 27	14.5	14.6	14.8	15.0	15.2	15.4	15.6	15.7	15.9
28 - 32	16.2	16.4	16.6	16.8	17.0	17.1	17.3	17.5	17.7
33 - 37	17.9	18.1	18.3	18.5	18.7	18.9	19.0	19.2	19.4
38 - 42	19.6	19.8	20.0	20.2	20.3	20.5	20.7	20.9	21.1
43 - 47	21.2	21.4	21.6	21.8	21.9	22.1	22.3	22.5	22.7
48 - 52	22.8	22.9	23.1	23.3	23.5	23.7	23.8	24.0	24.2
53 - 57	24.2	24.4	24.6	24.8	25.0	25.2	25.3	25.5	25.7
58 - 62	25.7	25.9	26.0	26.2	26.4	26.6	26.8	27.0	27.1
63 - 67	27.1	27.2	27.4	27.6	27.8	28.0	28.2	28.3	28.5
68 - 72	28.4	28.6	28.7	28.9	29.1	29.3	29.5	29.7	29.8
73 - 77	29.6	29.8	30.0	30.2	30.4	30.6	30.7	30.9	31.1
78 - 82	30.9	31.0	31.2	31.4	31.6	31.8	31.9	32.1	32.3
83 - 87	32.0	32.2	32.4	32.6	32.7	32.9	33.1	33.3	33.5
88 - 92	33.1	33.3	33.5	33.7	33.8	34.0	34.2	34.4	34.6
93 - 97	34.1	34.3	34.5	34.7	34.9	35.1	35.2	35.4	35.6
98 - 102	35.1	35.3	35.5	35.7	35.9	36.0	36.2	36.4	36.6
103 - 107	36.1	36.2	36.4	36.6	36.8	37.0	37.2	37.3	37.5
108 - 112	36.9	37.1	37.3	37.5	37.7	37.9	38.0	38.2	38.4
113 - 117	37.8	37.9	38.1	38.3	39.2	39.4	39.6	39.8	39.2
118 - 122	38.5	38.7	38.9	39.1	39.4	39.6	39.8	40.0	40.0
123 - 127	39.2	39.4	39.6	39.8	40.0	40.1	40.3	40.5	40.7
128 - 132	39.9	40.1	40.2	40.4	40.6	40.8	41.0	41.2	41.3
133 - 137	40.5	40.7	40.8	41.0	41.2	41.4	41.6	41.7	41.9
138 - 142	41.0	41.2	41.4	41.6	41.7	41.9	42.1	42.3	42.5
143 - 147	41.5	41.7	41.9	42.0	42.2	42.4	42.6	42.8	43.0
148 - 152	41.9	42.1	42.3	42.8	42.6	42.8	43.0	43.2	43.4
153 - 157	43.3	42.5	42.6	42.8	43.0	43.2	43.4	43.6	43.7
158 - 162	42.6	42.8	43.0	43.1	43.3	43.5	43.7	43.9	44.1
163 - 167	42.9	43.0	43.2	43.4	43.6	43.8	44.0	44.1	44.3
168 - 172	43.1	43.2	43.4	43.6	43.8	44.0	44.2	44.3	44.5
173 - 177	43.2	43.4	43.6	43.8	43.9	44.1	44.3	44.5	44.7
178 - 182	43.3	43.5	43.7	43.8	44.0	44.2	44.4	44.6	44.8

HAND GRIP

Objectives: Maximum isometric strength of the flexor muscles of the hands.

Equipment

- Hand dynamometer
- Towel



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Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Instruct the participant to towel dry his or her hands.
3. Place the dynamometer in the participant's hand to be sized for assessment. Ensure that the hand grip is adjusted to fit snugly in the first proximal interphalangeal joint. Prior to commencing the assessment, set the dynamometer to "zero" by rotating the red peak force indicator counter clockwise.
4. Advise the participant that the evaluation is a series of 6 trials, 3 for each hand, alternating hands with each attempt.
5. The participant will maintain the following positions for the duration of the assessment:

- Stand upright with spine in neutral alignment.
- Flex elbow at a 90° angle.
- Adduct shoulder and place hand in neutral grip position (hand shake position).

6. The participant will squeeze the device with maximum force for 3 seconds while exhaling. Instruct to slowly increase the strength of the squeeze (i.e. do not squeeze maximally right away).
7. The participant will slowly release grip. The needle will automatically record the highest force exerted.
8. Measure both hands, alternating between right and left, completing three trials per hand.
9. Reset the peak-hold needle to zero before obtaining new readings.
10. Record the scores for each trial in each hand to the nearest kilogram.
11. Record the highest score for each hand.

Evaluation Criteria

- Grip strength

ARM STRENGTH

Objectives: Maximum isometric strength of the flexor muscles of the arms.

Equipment

- Jackson Strength Evaluation System
- Straight handlebar
- Towel



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Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Instruct the participant to towel dry his or her hands.
3. Advise the participant that the evaluation is a series of 3 trials in which the he will "ease into" the isometric arm contraction and release slowly, without moving the arms or jerking hands.
4. Place the dynamometer base plate on a level and secure surface.
5. Have the participant stand upon the dynamometer base plate, with feet shoulder width apart and equal distance from the chain. The chain should travel vertically from the base to the hands.
6. The participant will stand erect with knees straight and arms flexed at 90° in the sagittal plane.
7. The participant will hold the bar with a wide grip and bend elbows at 90°.
8. Participants must stand erect without arching back.
9. Adjust the chain so that the bar can be held in the hands while the arms are flexed at 90° in the sagittal plane.
10. Ensure that the shoulders remain adducted.
11. Verify this position and ensure the chain is taut.
12. The participant must not shrug shoulders, bend back, or perform any other motion other than elbow flexion in an attempt to move the handlebar in a vertical direction.
13. The participant will contract maximally for 3 seconds.
14. After 3 seconds, the participant will slowly relax arms, and rest while standing for 30 seconds.
15. Once the participant has completed the 30-second recovery period, begin the 2nd trial.
16. Repeat evaluation for the 3rd trial using the same procedure.
17. Record the three trials to the nearest kilogram.
18. Record the highest trial.

Evaluation Criteria

- Arm strength

Note: Digital readout will display the peak force ("p") and the average force ("a") achieved during the three trials.

Reasons to Stop the Test

- Joint or muscular pain

LEG STRENGTH

Objectives: Maximum isometric strength of the back extensors and lower body.

Equipment

- Jackson Strength Evaluation System
- V-Grip handlebar
- Towel
- Weightlifting belt (optional)



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Assessment Guidelines

1. Conduct pre-evaluation procedures.
2. Instruct the participant to towel dry his or her hands.
3. The participant may use a weightlifting belt for support.
4. Advise the participant that the evaluation is a series of 3 trials.
5. Place the dynamometer base plate on a level and secure surface. Have the participant stand upon the dynamometer base plate with his or her feet spread shoulder width apart and equal distance from the lifting chain. Inform the participant to notify the assessor if he/she experiences any pain or discomfort, especially around the spine. If notified, terminate the assessment.
6. Instruct the participant to stand erect with the knees straight.
7. Adjust the chain so the upper (inside) edge of the bottom cross- member of the V-grip handlebar is at the top of the participant's patella (legs are straight). Verify this position.
8. Instruct the participant to:
   - Flex at knees and hips until he/she can reach the handle.
   - Hold the bar and look straight ahead with neck in the neutral position.
   - Fully extend arms and maintain a straight (neutral) back.
9. Ensure the participant maintains the following positions:
   - The hips are directly over the feet, with trunk and knees slightly bent.
   - The shoulders are "set" or retracted to ensure that the spine is neutral (cervical, thoracic and lumbar).
   - The elbows are extended.
10. Advise the participant to "ease into" the isometric leg extension and release it slowly, without bending at the waist, flexing the arms, or jerking the hand.
11. Instruct the participant to extend legs, using proper form and technique. Encourage the participant to limit the first trial to approximately 50% of maximal effort.
12. Participant will apply approximately 50% force for a maximum of 3 seconds while exhaling.
13. After 3 seconds, instruct the participant to slowly relax arms and legs, and to remain at a standing rest for 30 seconds. The device will record the peak force exerted.
14. Once the participant has completed the 30-second recovery period, begin the 2nd trial.
15. The participant should use maximum effort during the 2nd and 3rd trials.
16. Record the two trials to the nearest kilogram.
17. Record the highest trial.

Evaluation Criteria

- Leg strength

Note: Digital readout will display the peak force ("p") and the average force ("a") achieved during the three trials.

Reasons to Stop the Test

- Joint or muscular pain

[1] Tierney MT1, Lenar D, Stanforth PR, Craig JN, Farrar RP. Prediction of Aerobic Capacity in Firefighters using Submaximal Treadmill and Stairmill Protocols. J Strength Cond Res. 2010 Mar;24(3):75

[2] Tierney MT1, Lenar D, Stanforth PR, Craig JN, Farrar RP. Prediction of Aerobic Capacity in Firefighters using Submaximal Treadmill and Stairmill Protocols. J Strength Cond Res. 2010 Mar;24(3):75

[3] Sayers SP, Harackiewicz DV, Harman EA, Frykman PN, Rosenstein MT. Cross-validation of three jump power equations. Med Sci Sport Exer. 1999;31:572–577.

APPENDIX A1

WFI FITNESS PROTOCOLS

WFI FITNESS ASSESSMENT
– Treadmill Recording Form –

BODY COMPOSITION

1. BODY MASS INDEX (Height, Weight)

Height		BMI
Mass		

2. WAIST/HIP RATIO (Circumference)

Waist		W/H Ratio
Hips		

AEROBIC CAPACITY AND RECOVERY

7. TREADMILL (Time, Heart Rate, RPE)

(✓)	Time	Speed	Grade	HR	RPE	Knee	Back
✓	0:00 - 0:00	0.0	0			✓	✓
	0:00 - 3:00	3.0	0				
	3:01 - 4:00	4.5	0				
	4:01 - 5:00	4.5	2				
	5:01 - 6:00	5.0	2				
	6:01 - 7:00	5.0	4				
	7:01 - 8:00	5.5	4				
	8:01 - 9:00	5.5	6				
	9:01 - 10:00	6.0	6				
	10:01 - 11:00	6.0	8				
	11:01 - 12:00	6.5	8				
	12:01 - 13:00	6.5	10				
	13:01 - 14:00	7.0	10				
	14:00 - 15:00	7.0	12				
	15:01 - 16:00	7.5	12				
	16:01 - 17:00	7.5	14				
	17:01 - 18:00	8.0	14				
	0:00 - 1:00	3.0	0				
	1:01 - 2:00	3.0	0				
	2:01 - 3:00	3.0	0				

MOBILITY AND FLEXIBILITY

3. STRAIGHT LEG RAISE (Hip Flexion Angle OR SLR Score)

Best of 3 Trials	Angle	Score	Back
Left			
Right			

4. SHOULDER FLEXION+ (Reach Distance OR SF Score)

Best of 3 Trials	Distance	Score	Back	Shld
Left				
Right				

5. SHOULDER EXTENSION+ (Reach Distance OR SE Score)

Best of 3 Trials	Distance	Score	Back	Shld
Left				
Right				

SPEED AND POWER

6. VERTICAL JUMP (Height, Power)

Standing Height	Reach Height	Jump Height	Knee	Back

STRENGTH AND ENDURANCE

8. PUSH-UP (Reps)

Max Reps	Back	Shld

9. PULL-UP (Reps)

Max Reps	Back	Shld

Push – Pull Symmetry _____

10. SIDE PLANK (Time)

Right Side	Back	Shld

Left Side	Back	Shld

Left – Right Symmetry _____

APPENDIX A1

WFI FITNESS PROTOCOLS

WFI FITNESS ASSESSMENT – Treadmill Recording Form Instructions

BODY COMPOSITION

1. BODY MASS INDEX (Height, Weight)

- Record mass in kilograms (1 lb = 0.454 kg)
- Record height in meters (1 inch = 2.54 cm)
- BMI = mass / (height * height)

TARGET: Waist Circumference
Men < 102 cm
Women < 88 cm

2. WAIST/HIP RATIO (Circumference)

- Record waist circumference (ribs-iliac crest)
- Record hip circumference (widest point)
- Ratio = waist / hip circumference

TARGET: Waist:Hip Circumference Ratio
Men < 0.90
Women < 0.85

SPEED AND POWER

6. VERTICAL JUMP (Height, Power)

- Record the participant's standing height (from the floor to the top of the fingers)
- Record the participant's reach height (from the floor to height touched)
- Vertical jump height = reach height – standing height
- Note the alignment of the knees and curvature of the low back during take-off and landing by placing a check (✓) or (×) in the corresponding box
- Power can be estimated using the following equation:

Power = [(60.7 x height (cm)) + (45.3 x body mass (kg))] – 2055

AEROBIC CAPACITY AND RECOVERY

7. TREADMILL (Time, Heart Rate, RPE)

- Record the participant's resting heart rate and their perceived exertion (scale of 1-10)
- During the last 10s of each 1-minute interval, record the participant's heart rate (HR) and ask them to rate their perceived exertion (RPE) on a scale of 1-10 (10 is hardest thing ever done)
- During the last 10s of each 1-minute interval, note the alignment of the knees and curvature of the low back by placing a check (✓) or (×) in the corresponding box
- As each interval is completed, place a check (✓) in the box at the left hand side of the page (if incomplete, record the time that the test was terminated)
- When test is terminated (submaximal test only), the participant's VO_2 can be estimated using the following equation: $VO_2 = 56.981 + (1.242 \times \text{treadmill time}) – (0.805 \times \text{BMI})$
- During the last 10s of each minute of the recovery, record the participant's heart rate and perceived exertion, and note the alignment of the knees and curvature of the low back.

TARGET: Treadmill Time
Test Time > 12:30 min

TARGET: Recovery Heart Rate
2-min HR < Max HR - 15 bpm

MOBILITY AND FLEXIBILITY

3. STRAIGHT LEG RAISE (Hip Flexion Angle OR SLR Score)

- Record the angle between the raised thigh and the floor (0° is start position), OR
- Record the straight leg raise (SLR) score (4: ankle past ASIS; 3: ankle past mid-thigh; 2 ankle past knee; 1: ankle not past knee)
- Note the curvature of the low back by placing a check (✓) or (×) in the corresponding box

TARGET: SLR Score > 2

4. SHOULDER FLEXION+ (Reach Distance OR SF Score)

- Record the distance between the lowest point of the first and C7 (positive is past C7), OR
- Record the shoulder flexion (SF) score (4: fist > half hand length past C7; 3: fist is past C7; 2 fist > half hand length above C7; 1: fist > half hand length above C7)
- Note the curvature of the low back and position of the shoulders with a (✓) or (×)

TARGET: SF Score > 2

5. SHOULDER EXTENSION+ (Reach Distance OR SE Score)

- Record the distance between the highest point of the first and C7 (smaller = better), OR
- Record the shoulder extension (SE) score (4: fist < 0.5 hand length from C7; 3: fist is < 1 hand length from C7; 2 fist is < 1.5 hand length from C7 C7; 1: fist is > 1.5 hand length from C7)
- Note the curvature of the low back and position of the shoulders with a (✓) or (×)

TARGET: SE Score > 2

STRENGTH AND ENDURANCE

8. PUSH-UP (Reps)

- Record the number of reps performed
- Note the curvature of the low back and position of the shoulders with a (✓) or (×)

9. PULL-UP (Reps)

- Record the number of reps performed
- Note the curvature of the low back and position of the shoulders with a (✓) or (×)

TARGET: Push – Pull Symmetry
0.90 < Ratio < 1.10

10. SIDE PLANK (Time)

- Record the time to completion on the left and right side
- Note the curvature of the low back and position of the shoulders with a (✓) or (×)

TARGET: Left – Right Symmetry
0.90 < Ratio < 1.10

APPENDIX A1

WFI FITNESS PROTOCOLS

WFI FITNESS ASSESSMENT – Stepmill Recording Form –

BODY COMPOSITION

1. BODY MASS INDEX (Height, Weight)

Height _____ Mass _____

BMI

2. WAIST/HIP RATIO (Circumference)

Waist _____ Hips _____

W/H Ratio

AEROBIC CAPACITY AND RECOVERY

7. STEPMILL (Time, Heart Rate, RPE)

(✓)	Time	Level	Steps	HR	RPE	Knee	Back
✓	0:00 - 0:00	0	0			✓	✓
	0:00 - 1:00	4	46				
	1:01 - 2:00	4	46				
	2:01 - 3:00	5	53				
	3:01 - 4:00	7	65				
	4:01 - 5:00	8	75				
	5:01 - 6:00	9	82				
	6:01 - 7:00	10	89				
	7:01 - 8:00	11	97				
	8:01 - 9:00	12	104				
	9:01 - 10:00	13	111				
	10:01 - 11:00	14	118				
	11:01 - 12:00	15	126				
	12:00 - 13:00	16	133				
	13:01 - 14:00	17	140				
	14:01 - 15:00	18	147				
	15:01 - 16:00	19	155				
	0:00 - 1:00	3	39				
	1:01 - 2:00	3	39				
	2:01 - 3:00	3	39				

MOBILITY AND FLEXIBILITY

3. STRAIGHT LEG RAISE (Hip Flexion Angle OR SLR Score)

Best of 3 Trials	Angle	Score	Back
Left			
Right			

4. SHOULDER FLEXION+ (Reach Distance OR SF Score)

Best of 3 Trials	Distance	Score	Back	Shld
Left				
Right				

5. SHOULDER EXTENSION+ (Reach Distance OR SE Score)

Best of 3 Trials	Distance	Score	Back	Shld
Left				
Right				

SPEED AND POWER

6. VERTICAL JUMP (Height, Power)

Standing Height	Reach Height	Jump Height	Knee	Back

STRENGTH AND ENDURANCE

8. PUSH-UP (Reps)

Max Reps	Back	Shld

9. PULL-UP (Reps)

Max Reps	Back	Shld

Push – Pull Symmetry _____

10. SIDE PLANK (Time)

Right Side	Back	Shld

Left Side	Back	Shld

Left – Right Symmetry _____

APPENDIX A1

WFI FITNESS PROTOCOLS

WFI FITNESS ASSESSMENT
– Stepmill Recording Form Instructions –

BODY COMPOSITION

–1. BODMASS INOEY X(Height WHeigh,

- PHrnCou daaef sekniCdu aX–kl b=1040si,
- PHrnCoghéighef u HHCaX–efrgb)140ru,
- .MIbu daa2XgHéigh5gHéigh,

TAPpETGWdeahReCrcu rnhCHfrH
MHf : –=) ru
Wnu Hf : << ru

)1WAIST2(I/ PATIB XReCrcu rnhCHfrH,

- PHrnCo*deahreCrcu rnhCHfrHXCdawkedrrCHah,
- PHrnCogeˉreCrcu rnhCHfrHX*eoHah-nefh,
- Pdhenb*deah2geˉreCrcu rnhCHfrH

TAPpETGWdeahC;eˉReCrcu rnhCHfrHPdhen
MHf : =18=
Wnu Hf : =1<4

SPEED AND POWER

61VEPTIRA3J>M/ X(Héight/n*HC,

- PHrnCoghH-dCherˉedfk'aahdfoefigHéighXnGnu hgHrnknnCrn hgHrn-nrnhgHrnefiHCa,
- PHrnCoghH-dCherˉedfk'aCHdrghéighXnGnu hgHrnknnCrn ghéighrnCrgHo,
- VHCherdkjcu-gHéighbCHdrghéigh7ahdfoefigHéigh
- NnhHhgHdkeifu Hfhnrnhgrn Hsf HHadforcC;dhcCHnrnhgHkn*ldrsocCefihdsHwrnrndfokdfoefilv -kdrefidrgHrsXv)nCX×,efhgHrnCCHa-nfoefilnL
- /n*HCrdflHHaheudhHocaefihgHrnkkn*efiHqcdhenfG

/n*HCb[X6=1+LgHéighXru,,UX0419Llnovudaa Xsi,,]7)=44

AEROBIC CAPACITY AND RECOVERY

+1STE/MI33XTeu Ht(HdCh PdhHt P/E,

- PHrnCoghH-dCherˉedfk'aCHahefigHdCh CdhHdfohgHeC-HCrHe,HoHLHChenf XardkHnrn-w+=,
- OcCefihgHkdah–=annHdrg–wuefchHefhHC;dktCHrnCohgH-dCherˉedfk'agHdCh CdhHX(P,dfodas hgHu hn CdhHhgHeC-HCrHe,HoHLHChenf XP/E,nfdardkHnrn-w+=X–=eagdCoHahhgefiH;HConfH,
- OcCefihgHkdah–=annHdrg–wuefchHefhHC;dktfnhHhgHdkeifuHfhnrnhgHsfHHadforcC;dhcCH nrnhgHkn*ldrslv-kdrefidrgHrsXv)nCX×,efhgHrnCCHa-nfoefilnL
- AaHdrgefhHC;dkearnu-kHhHot-kdrHdrgHrsXv)efhgHlnL dhhgHkHnrgdfoaeoHnrnhgH-diHXem efrnu-kHhHtCHrnCohgHheuHhgdhhgHkHah*dahHCuefdHHo,
- WghHfhHaheahHCuefdHHoXacludLeudkHHahnfkv,thgH-dCherˉedfk'aVB)rdflHHaheudhHocaefi hgHrnkkn*efiHqcdhenfGVB)b4+1++0UX–1+4+LahH-uekkheuH,7X=18=0L.MI,
- OcCefihgHkdah–=annHdrguefchHnrnhgHCHrn;HGvtCHrnCohgH-dCherˉedfk'agHdCh CdhHdfo -HCrHe,HoHLHChenftdfofnhHhgHdkeifuHfhnrnhgHsfHHadforcC;dhcCHnrnhgHkn*ldrs1

TAPpETGShH-uekkTeuH
THahTeuHy–=G=uef

TAPpETGPHrn;HGv(HdCh PdhH
)wuef(P:MdL(Pw–4l-u

MOBILITY AND FLEXIBILITY

91STPAIp(T3Ep PAISEX(e FkHLenf AfikHBP S3P SrnCH,

- PHrnCohgHdfikHlHH*HHfhgHCdeaHohgeigdfohgHrnknnCX=xeaahdCh-naehenf,tBP
- PHrnCohgHahCdéighkHiCdeaHXS3P,arnCHX0Gdfskh-dahASIS°9Gdfskh-dahuaowgeig°)dfskH -dahsfHH°–Gdfskhfnh-dahsfHH,
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrslv-kdrefidrgHrsXv)nCX×,efhgHrnCCHa-nfoefilnL

TAPpETGS3PSrnCHy)

01S(B>3OEP F3EYIBNUXPHdrg Oeahdfrh BP SF SrnCH,

- PHrnCohgHoeahdfrHlHh*HHfhgHkn*Hah-nefhnrnhgHrneCahdfoR+X-naehe,Hea-dahR+,tBP
- PHrnCohgHagncloHCrnkHLenf XSF,arnCHX0Gmaahy gdkmgdfokHfihg-dahR+°9Gmaahea-dahR+°) maahy gdkmgdfokHfihgdln;HR+°–Gmaahy gdkmgdfokHfihgdln;HR+,
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrsdfo-naehenf nrnhgHagncloHCa*ehgdXv)nCX×,

TAPpETGSFSrnCHy)

41S(B>3OEP EYTENSIBNUXPHdrg Oeahdfrh BP SE SrnCH,

- PHrnCohgHoeahdfrHlHh*HHfhgHgeighah-nefhnrnhgHrneCahdfoR+Xaudkk-HCblHHHC;tBP
- PHrnCohgHagncloHCHLHHfaenf XSE,arnCHX0Gmaah:=14gdfokHfihgrnGnu R+°9Gmaaheea:–gdfo kHfihgrnGnu R+°) maaheea:–14gdfokHfihgrnGnu R+R+°–Gmaaheay–14gdfokHfihgrnGnu R+,
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrsdfo-naehenf nrnhgHagncloHCa*ehgdXv)nCX×,

TAPpETGSESrnCHy)

STRENGTH AND ENDURANCE

<1/>S(w+/XPH-a,

- PHrnCohgHfculHCnrnCH-a-HCrnCuHo
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrsdfo -naehenf nrnhgHagncloHCa*ehgdXv)nCX×,

81/>33w+/XPH-a,

- PHrnCohgHfculHCnrnCH-a-HCrnCuHo
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrsdfo -naehenf nrnhgHagncloHCa*ehgdXv)nCX×,

TAPpETG/cag7/ckkSvuuHhCv
=18=:Pdhen:–1–=

–=1SIOE/3ANKXTeuH,

- PHrnCohgHheuHhrnrnu-kHhenf nfhgHkHrnhdfoCeighaeoH
- NnhHhgHrcC;dhcCHnrnhgHkn*ldrsdfo-naehenf nrnhgHagncloHCa*ehgdXv)nCX×,

TAPpETG3Hnr7PeighSvuuHhCv
=18=:Pdhen:–1–=

APPENDIX B

FIRE FIGHTER MEDICAL EXAMINATION

Dear Medical Provider,

The following medical examination is based on the unique risks and adverse working environments that fire fighters face daily. It allows for early detection of diseases and illnesses associated with the occupation of firefighting. There have been varying recommendations on the intervals of medical assessments usually based on an individual's age. However, the value of providing annual medical assessments for uniformed personnel within a high-risk occupation has been determined to be medically significant. It is cost-effective based on a history of saving members' lives through early intervention. An appropriate annual medical assessment for a fire fighter should include:

MEDICAL HISTORY QUESTIONNAIRE

A medical history questionnaire to establish a baseline before starting work as a fire fighter and/or a periodic medical history to provide follow-up information and identify changes in health status must be completed during each medical assessment.

HANDS-ON PHYSICAL EXAMINATION

❑ **Vital Signs** — Height, weight, blood pressure, temperature, heart rate and respiratory rate

❑ **HEENT** — Head, Eyes, Ears, Nose, and Throat

❑ **Neck** — Major vessels, lymph nodes, abnormal masses, gland enlargement

❑ **Cardiovascular** — Inspection, auscultation

❑ **Pulmonary** — Inspection, auscultation

❑ **Gastrointestinal** — Inspection, auscultation, percussion and palpation

❑ **Genitourinary** — Hernia exam and, as indicated, testicular or gyn exam

❑ **Lymph Nodes**

❑ **Neurological** — General mental status, cranial nerve, peripheral nerves, motor, sensory, reflexes

❑ **Mental Status Exam** – orientation, memory and judgement

❑ **Musculoskeletal** — Overall assessment of range of motion (ROM) of all joints

❑ **Skin** — Inspect for color, vascularity, lesions, and edema

BODY COMPOSITION

Excess body fat increases the workload and amplifies heat stress by preventing the efficient dissipation of heat when a person exercises. In addition, added body fat elevates the energy cost of weight-dependent tasks such as climbing ladders and walking up stairs, also contributing to injuries and an increased risk of many chronic diseases.

❑ **Body Fat Percentage— skinfold measurement**

❑ **Body Fat Distribution— waist circumference**

BLOOD ANALYSIS

Blood and urine testing should be conducted at baseline and at a minimum of every three years to the age of 40 and annually thereafter. Prior to age 40, this testing should be performed more frequently as a function of age, disease, risk factors and specific occupational exposures. Follow—up abnormal lab results as clinically appropriate. The following are components of the blood analysis. At a minimum, laboratory services must provide these components in their automated chemistry panel (aka SMAC 20) and complete blood count (CBC) protocols.

❑ **CBC with Differential**

❑ **Liver Enzymes and Function Tests**

- ○ SGOT/AST
- ○ SGPT/ALT
- ○ LDH
- ○ Alkaline Phosphatase
- ○ Bilirubin
- ○ Albumin

❑ **Glucose**

❑ **Creatinine**

❑ **Glomerular Filtration Rate (eGFR)**

❑ **Blood Urea Nitrogen**

❑ **Sodium**

❑ **Potassium**

❑ **Carbon Dioxide (bicarbonate)**

❑ **Total Protein**

❑ **Calcium**

❑ **Cholesterol**

- ○ Total Cholesterol
- ○ Low Density Lipoprotein (LDL—C)
- ○ High Density Lipoprotein (HDL—C)
- ○ Total Cholesterol/HDL Ratio
- ○ Triglycerides

HEAVY METAL AND SPECIAL EXPOSURE SCREENING

Baseline testing for heavy metals and special exposures may be performed under special circumstances and as indicated by regulations and OSHA standards. Examples include:

- ❑ Urine screen for arsenic, mercury and cadmium
- ❑ Blood screen for lead and zinc protoporphyrin

URINALYSIS

- ❑ Dip stick and microscopic

VISION TESTS

Assessment of vision must include evaluation of distance, near, peripheral, and color vision using color plates. Evaluate both corrected and uncorrected vision and each eye separately. Evaluate for common visual disorders.

HEARING EVALUATION

Uniformed personnel are at increased risk for noise—induced hearing impairment at an earlier age. A pure tone audiometric exam should be performed; hearing aids cannot be worn during the exam. For the purposes of data collection, the following frequencies are tested: 500 Hz, 1000 Hz, 2000 Hz, 3000 Hz, 4000 Hz, 6000 Hz and 8000 Hz.

PULMONARY EVALUATION (SPIROMETRY)

FVC, FEV_1, FEV_1/FVC Ratio

CHEST X—RAY

A baseline chest X—ray is required.

AEROBIC/CARDIOVASCULAR EVALUATION

A resting **12—lead ECG** shall be performed at baseline, annually starting at age forty, and when clinically indicated. Before the age of 40, annual resting ECG testing for coronary artery disease and other cardiovascular diseases is of limited value (AHA & USPSTF guidelines); however, when evaluating a symptomatic fire fighter, a recent ECG for comparison is useful.

Asymptomatic uniformed personnel ≥ 40 years of age with no atherosclerotic cardiovascular disease (ASCVD) shall be assessed annually using the 10-year Heart Risk Calculator created by the American College of Cardiology/American Heart Association (ACC/AHA) (http://tools.acc.org/ascvd—risk—estimator/) and the Framingham heart risk table for 2 year risk (https://www.framinghamheartstudy.org/risk—functions/coronary—heart—disease/2—year—risk.php).

Those personnel assessed as having intermediate risk (defined as 2 to < 4 percent risk of ASCVD over the next 2 years or 10 < 20% risk of ASCVD over the next 10 years) should be evaluated with **symptom—limiting exercise stress testing to at least 12 METs, with or without imaging, using a validated exercise testing protocol**.

Asymptomatic fire fighters younger than 40 years of age known to be at high risk for ASCVD should also be assessed for coronary artery disease.

Testing may be done with or without imaging. When selecting imaging options, physicians should be aware of the large prevalence of left ventricular hypertrophy in fire fighters who experience on—duty cardiovascular deaths. Given that left ventricular hypertrophy is of greater concern in younger fire fighters and ischemic heart disease is of greater concern in older fire fighters, when stress imaging is ordered, consideration should be given to **echocardiography stress testing in younger fire fighters and nuclear stress testing in older fire fighters**.

Negative stress tests should be repeated at least every 2 to 5 years or as clinically indicated.

Those uniformed personnel assessed as being at high risk (defined as ≥4 percent risk over the next 2 years or ≥ 20 percent risk over the next 10 years) should be referred to a cardiologist for further evaluation and treatment.

ONCOLOGY SCREENING ELEMENTS

- ❑ Lung cancer— low—dose computed tomography (LDCT) annually on fire fighters over the age of 55 who have a 30-pack-year smoking history and currently smoke or have quit within the past 15 years.
- ❑ Skin cancer— skin exam
- ❑ Breast cancer— mammogram every two years after age 40 and annually after age 50

- ❑ Cervical Cancer – pap smear every 3 years for ages 21 to 65 or, in those ages 30 to 65 who want to lengthen the screening interval, a pap smear with HPV testing every 5 years
- ❑ Testicular cancer — testicular exam at baseline by a healthcare provider followed by routine self — examination
- ❑ Prostate cancer— male uniformed personnel shall be offered a discussion regarding Prostate Specific Antigen (PSA) testing at age 50. Male uniformed personnel who are considered to be at increased risk for prostate cancer shall be offered a discussion regarding PSA testing starting at age 40.
- ❑ Colorectal cancer — health care providers should discuss the possible increased risk of colorectal cancer resulting from occupational exposures along with the risks and benefits of initiating screening at age 40 in fire fighters. If the fire fighter decides to start screening at age 40, fecal occult blood testing (FOBT) is the method recommended for use as it has the lowest risk for adverse patient events and is the most cost effective. For ages 50—75, any of the following may be used:
  - ❑ Annual screening with high-sensitivity fecal occult blood testing
  - ❑ Sigmoidoscopy every 5 years, with high-sensitivity fecal occult blood testing every 3 years
  - ❑ Screening colonoscopy every 10 years
- ❑ Bladder Cancer — monitor for hematuria during annual urine testing
- ❑ Thyroid cancer — annual exam for palpable nodules
- ❑ Oral Cancer — annual mouth and throat exam

SLEEP DISTURBANCE

Screening for sleep disorders in the fire fighters' annual medical evaluation using a validated questionnaire such as the Berlin sleep questionnaire, Epworth Sleepiness Scale or BMI. Fire fighters with a high index of suspicion should be referred to a specialist for diagnostic sleep studies.

IMMUNIZATIONS AND INFECTIOUS DISEASE SCREENING

- ❑ Uniformed personnel should receive or have documentation of having received the following vaccinations:
- ❑ Hepatitis A Virus (HAV)
- ❑ Hepatitis B Virus (HBV)
- ❑ Tetanus/Diphtheria/Pertussis (Tdap)/ Tetanus/Diphtheria (Td) — Substitute Tdap for Td once, then Td booster every 10 years
- ❑ Influenza (annual)
- ❑ Measles, Mumps, Rubella (MMR) — two doses if serum titers are negative
- ❑ Polio
- ❑ Human Papilloma Virus (HPV) — up to age 26
- ❑ Varicella

■ Screenings

- ❑ Hepatitis C Virus
- ❑ Tuberculosis (TB)
- ❑ Human Immune Deficiency Virus (HIV)

OCCUPATIONAL STRESS AWARENESS CONSULTATION

An assessment for the heightened risks of stress associated with occupational exposures related to fire fighting and emergency medical services work using a validated questionnaire to assess for occupational stress such as the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) for post-traumatic stress, the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD PHQ2 and PHQ 9) for depressive disorders, and the CAGE-AID questionnaire to capture symptoms of potential alcohol and substance abuse. Fire fighters with a high index of suspicion must be referred to a licensed behavioral health specialist trained to recognize and treat stress-related and/or behavioral health disorders in fire fighters and first responders as indicated.

INDIVIDUALIZED HEALTH RISK APPRAISAL

Written feedback to uniformed personnel concerning health risks and health status is required following the annual examination. Reporting findings and risks and suggesting plans for modifying risks improves the physician—patient relationship and helps uniformed personnel claim ownership of their health status. Individualized health risk appraisals also must include questions that attempt to accurately measure the uniformed personnel's perception of their health. Health perception can be a useful indicator of potential problems.

APPENDIX C

INFORMATION FOR REHABILITATION PROVIDERS

Firefighting tasks require a broad base of physiologic and functional skills for safe performance of the essential job functions. During the entire recovery process, from early healing/recovery to the functional/performance stages of rehabilitation, these broad skills need to be considered.

NFPA 1582 ***Standard on Comprehensive Occupational Medical Program for Fire Departments*** Chapter 9 section 9.1 outlines the fourteen (14) essential job tasks for members. However, of those fourteen tasks only eight are physical tasks which fall within the rehabilitation provider's scope of practice and are included below:

1. While wearing personal protective ensembles and self-contained breathing apparatus (SCBA), performing firefighting tasks (e.g., hose line operations, extensive crawling, lifting and carrying heavy objects, ventilating roofs or walls using power or hand tools forcible entry), rescue operations, and other emergency response actions under stressful conditions including working in extremely hot or cold environments for prolonged time periods.

2. Wearing an SCBA, which includes a demand valve-type positive-pressure face piece or HEPA filter masks, which requires the ability to tolerate increased respiratory workloads.

3. Depending on the local jurisdiction, climbing six or more flights of stairs while wearing fire protective ensemble, including SCBA, weighing at least 50 lb. (22.6 kg) or more and carrying equipment /tools weighing an additional 20 to 40 lb. (9 to 18 kg).

4. While wearing personal protective ensembles and SCBA, searching, finding, and rescue-dragging or carrying victims ranging from newborns to adults weighing over 200 lb. (90 kg) to safety despite hazardous conditions and low visibility.

5. While wearing personal protective ensembles and SCBA, advancing water-filled hose lines up to 2 ½" (65 mm) in diameter from fire apparatus to occupancy [approximately 150 ft. (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles.

6. While wearing personal protective ensembles and SCBA, climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces that might be wet or icy, and operating in the proximity to electrical power lines or other hazards.

7. Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication (s), or hydration.

8. Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces that is further aggravated by fatigue flashing lights, sirens, and other distractions.

Early in the rehabilitation timeline, it is advantageous for the rehabilitation provider to contact the respective fire department of the fire fighters they are working with in order to achieve the following;

- ❑ Establish a working relationship with a department peer fitness trainer, if available.
- ❑ Review loaner functional equipment availability such as hose packs and SCBA frame/tank.
- ❑ Review the policy on having the fire fighter bring turnout gear (jacket, pants, boots, gloves, hood, and helmet) to the rehabilitation facility.

Fire service peer fitness trainers are trained to assess **aerobic capabilities**, **muscular strength and endurance**, **mobility and flexibility**, **power,** and **body composition**. The peer fitness trainer emphasis on firefighter fitness is focused on neutral joint postures and the respective muscular control and joint flexibility to safely perform tasks. Baseline fitness data may be available for comparison.

For advanced performance skills, the rehabilitation provider is encouraged to:

- ❑ Progressively add gear to simulate the joint/spine/soft tissue compression, distraction and shear forces.
- ❑ Assess impact task tolerance initially assessing speed without impact, modified impact (example: tire) and full impact, as able.
- ❑ Assess lower extremity weight acceptance skills with one/two feet, level and uneven surfaces.
- ❑ Train aerobic/anaerobic capabilities using partial and then full gear to assess heat acclimation skills.
- ❑ Review the ergonomics of clothing fit and function in relation to the joint and area of injury or medical condition

APPENDIX D

A COMPREHENSIVE BEHAVIORAL HEALTH PROGRAM

OVERALL CHARACTERISTICS

Within the fire service, a comprehensive behavioral health program can be configured in multiple ways. However, the programs follow similar principles:

- ❑ Adopt a holistic approach and integrate behavioral health into overall wellness
- ❑ Are a labor-management initiative
- ❑ Stress the importance of non-punitive programs
- ❑ Address a wide range of issues pertaining to behavioral health (e.g., substance abuse, stress management, marital concerns, post-traumatic stress, death/grief counseling)
- ❑ Work to reduce stigma associated with behavioral health issues and access to services
- ❑ Target active and retired uniformed personnel, as well as their families
- ❑ Provide short-term behavioral health counseling through an EAP, Behavioral Health Specialist, or other mechanism
- ❑ Arrange for ongoing behavioral health education as part of the regular training schedule and through multiple platforms, including web-based training and electronic communication (e.g., Facebook and Twitter).
- ❑ Refer to an extensive network of behavioral health professionals and other supports in the community
- ❑ Facilitate follow-up care and periodic maintenance visits to individual and their families
- ❑ Access a wide variety of 24-hour help sources (e.g., local offices of 24-hour hotlines and referral networks)
- ❑ Are proactive promote resiliency
- ❑ Make use of trained peers to provide support and serve as a bridge to services
- ❑ Utilize evidence-based interventions
- ❑ Rely upon dedicated funding source(s).

COMPREHENSIVE SERVICES

A comprehensive behavioral health program can offer counseling and supports through a variety of ways: (1) Employee Assistance Program, (2) Behavioral Health Standing Committee, (3) Behavioral Health Specialist, (4) Periodic Behavioral Health Evaluations, (5) Peer Support Team, (6) Chaplain Services, (7) Post-Incident Response, (8) Family Support and (9) Education. The following outlines the key elements of each of these components.

1. Employee Assistance Program

- ❑ May be internal or external organization run by the union, fire department or jurisdiction
- ❑ Guarantees complete confidentiality and assurance that job security or future promotional opportunities are not jeopardized
- ❑ Permits employees to have direct access to EAP services
- ❑ Utilizes mental health professionals who are trained in traumatic stress and behavioral health concerns specific to the fire service
- ❑ Provides follow-up care.

2. Behavioral Health Standing Committee

- ❑ Is a joint labor-management Standing Committee that provides leadership and continued focus on behavioral health concerns (e.g., policies that facilitate access to behavioral health treatment and protect privacy)
- ❑ Works collaboratively to address systemic gaps
- ❑ Obtains resources to support the development of a comprehensive behavioral health program.

3. Behavioral Health Specialist

Responsible for:

- ❑ Developing and coordinating the department's behavioral health program
- ❑ Providing direct counseling and/or refer individual to behavioral health care services
- ❑ Coordinating professional assistance from EAPs, contracted agencies and/or through individual's health plan
- ❑ Overseeing follow-up care and referrals, as needed
- ❑ Consulting with and helping direct the peer program

- ❑ Providing education on topics on stress management, suicide prevention, and resiliency.
- ❑ Licensed mental health professional with a Ph.D. or Master's degree
- ❑ Familiar with the unique stressors and culture of uniformed personnel
- ❑ Trained in crisis intervention; general stress; group processes; human communication skills; direct intervention strategies; Post-Traumatic Stress Disorder (PTSD); depression; managing retiree transition; suicide awareness and postvention; substance abuse; alcoholism; family therapy and physiological bases of behavior.

4. Periodic Behavioral Health Evaluations

- ❑ Incorporate into annual medical examination
- ❑ Ask about behavioral health concerns on a regular basis (e.g., questions about stress management, substance use, and family issues)
- ❑ Provide follow-up information and support to address any concerns raised
- ❑ Ensure that evaluations, records and any follow-up support are confidential.

5. Peer Support Program

- ❑ Train members to provide support to their peers and offer behavioral health education
- ❑ Seek guidance and training regularly from designated behavioral health clinician
- ❑ Develop a robust list of community resources
- ❑ Arrange for continuing education for peers.

6. Chaplain Services

- ❑ Select local clergy person or internal chaplain to provide emotional and spiritual support to members
- ❑ Help members and their families deal with crisis situations and refer to available resources
- ❑ Use a non-denominational approach.

7. Post-Incident Response

- ❑ Have a system in place to respond to potentially traumatic events
- ❑ To be effective, response must be voluntary and tailored
- ❑ May provide pre-incident education and preparation; on-scene support services; large group interventions; small group intervention; individual crisis intervention; pastoral crisis intervention; family support services; organizational and staff consultation; post-incident education; and follow-up and referral.

8. Family Support

- ❑ Provide support and education to spouses, children and other family members
- ❑ Begin at the recruitment stage and continue through retirement
- ❑ Provide uniformed personnel with education and referrals to help with family well-being

9. Education

- ❑ Is integrated into department's regular training schedule
- ❑ Utilizes electronic education, including web-based trainings
- ❑ Helps to reduce stigma.



International Association of Fire Fighters
Division of Occupational Health, Safety, and Medicine
1750 New York Avenue, NW
Washington, DC 20006
202.737.8484
202.737.8418 (Fax)
www.iaff.org

International Association of Fire Chiefs
4025 Fair Ridge Drive, #300
Fairfax, VA 22033-2868
703.273.0911
202.273.9363 (Fax)
www.iafc.org

San Diego Fire-Rescue Department
Health and Safety Office
Medical Examiner Completion Form

PROOF OF DMV PHYSICAL COMPLETION

This form is designed to document successful completion of a Department of Motor Vehicles Physical examination. Completion of this examination is required to operate a class "A " or "B" vehicle in accordance with the Motor Carrier Safety Regulations (49 CFR 391.41-391.49).

EMPLOYEE lNSTRUCTIONS - READ CAREFULLY

Fill in the top portion of the form below and the highlighted sections in the MCSA-5875. In your wellness binder you will receive your MCSA-5875 Medical Examiners Certificate. Upon completion the Wellness Officer will mail the completed form to the DMV and deliver to the appropriate departments in the city. If your Medical Examiners Certificate expires within 60 days you will need to take the Medical Examiners Certificate to the DMV.

EMPLOYEE COMPLETES THIS SECTION

Drivers Name (Print Clearly) _____ Station/Division _____

Drivers Signature _____ Drivers License Number _____

License Class _____ Endorsements _____ License Expiration Date _____

License Restrictions _____

PHYSICIAN COMPLETES THIS SECTION

Examination Date _____ Did employee pass physical? Y N

Examination Facility _____

Restrictions? _____ New Medical Certificate Expiration Date _____

Physician Name _____ Physician Signature _____

ATTACHMENT C

San Diego Fire-Rescue Department Medical Hazardous Waste and/or Emergency Response Surveillance Examination Report

Name: _____

Employer: _____

Employer's Address: _____

A Licensed physician has examined the above named individual with the following results:

☐ The results of this examination **have not** detected any medical condition, which would place this individual at an increased risk of material health impairment from working in hazardous waste operations and/or emergency response.

☐ The results of this examination **have** detected a medical condition, which would place this individual at an increased risk of material health impairment for an emergency response.

☐ Employee has no restrictions on use of respirators.

☐ Facial hair may impair good fit of mask to face.

☐ Employee has restrictions on use of respirators.

Comments to employer including any limitations upon the employee:

Comments to employee:

Normal Exam: _____

Other: _____

The individual named above has been informed of the results of their medical examination and of any medical condition, which requires further examination or treatment. This report is based on information provided to us by the employee and employer.

Physician Signature: _____ Date: _____

Print Physician Name: _____

Physician Address & Phone Number: _____

_____

U.S. Department of Justice

Federal Bureau of Investigation

Hazardous Devices School
August 1, 2018

Hazardous Devices School Student Physical Health Standards

Applicant has applied to attend the Federal Bureau of Investigation, Hazardous Devices School (HDS). Prior to attending training, applicant must meet the below:

- Completed Standard Physical examination that complies with the requirements set forth in 29 CFR, Section 1910.120.

- Completed OSHA 29CFR, Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire.

- Physical Standards - The Federal Bureau of Investigation, Hazardous Devices School is located at Redstone Arsenal, Alabama. This training is physically demanding. Training will require students to wear heavy (70 pounds or more) protective equipment in potentially high environmental temperatures, while simultaneously performing focused tasks in time-sensitive and high pressure scenarios that require precision and attention to visually small and/or color-coded details. The combination chemical suit (level B) and WMD bomb suit (40 pounds) also requires the wearing of a self-contained breathing apparatus (SCBA) with respirator. The micro-environment within this equipment can expose the wearer to temperatures in excess of 100 degrees Fahrenheit as well as humidity of 100% for periods of up to 30 minutes. Other tasks the applicant must perform while training at HDS include carrying a portable X-Ray (25 pounds) and disrupter (40 pounds) for a distance of at least 600 feet. During these tasks, the student must kneel, position the tools, and stand without assistance.

- Distant Vision - At least 20/20 in one eye and 20/40 in the opposite eye, as measured by the 20 foot Snellen chart or equivalent, with or without corrective lenses or surgery, and with a normal visual field (peripheral vision).

- Near Vision – At least 20/40 in each eye, as measured by the Snellen chart or equivalent, with or without corrective lenses or surgery, and with a normal visual field (peripheral vision).

- Eye Disorders – Please note any diagnosis, symptoms, high-risk factors, or treatments (including surgeries) for: Pre-glaucoma, Glaucoma, Glaucoma suspect, or Cataract. Please note any other eye disorder that may cause central or periphery vision loss.

- Color Perception – This test is only required for the Certification course. Normal color perception as measured by Pseudoisochromatic Plates (PIP) or Farnsworth F-15.

- Hearing – Average (mean) hearing level of 25dB at the 500, 1000, 2000 and 3000 Hz audiometer test frequencies with or without a hearing aid.

- Seizure Disorders – Should any history of seizure disorders exist, a currently licensed and board-certified neurologist must certify that the applicant is: 1) safe to perform the stated HDS requirements; and 2) the patient has been free from seizures for at least 365 days prior to the date of certification.

- Cardiovascular Disease - Should any history of cardiac issues exist, a currently licensed and board-certified physician must certify that the applicant is: 1) safe to perform the stated HDS requirements; and 2) specifically note any related issue that this course may affect.

- Anticoagulants - Should any history of anticoagulant use exist, a currently licensed and board-certified physician must certify that the applicant is: 1) safe to perform the stated HDS requirements; and 2) specifically note any related issue that this course may affect.

- Physician, please enter height _____ (feet) _____ (inches).

- Physician, please enter weight _____ (pounds).

Please check all of the following restrictions that may apply to the applicant, any one of which may disqualify the applicant from HDS entry:

- Restricted from lifting more than 50 pounds;
- Restricted from kneeling, bending or twisting;
- Restricted from working in a respirator (including negative pressure or SCBA types); or
- Restricted from wearing protective chemical clothing and/or bomb suits.

Disclosure of this information is voluntary. However, failure to disclose this information or provide false or misleading information may result in termination of the applicant from this program, or the student from any HDS course, or the possible revocation of any issued HDS certification.

All provided information for FBI employees is subject to review by the FBI's Chief Medical Officer.

HDS may request supplemental information from any applicant as deemed necessary.

I, _____,certify the below listed candidate meets or exceeds all of the physical health standards as defined in the HDS Student Physical Health Standards unless otherwise noted below.

Candidate's Name	
Rank or Title	
Agency	
Agency Address	
(Street, City, State, ZIP)	
Business Telephone	

Comments/Notes/Concerns/Other

_____ _____

Signature of Physician Date

_____

Name and Title (Print or Type)

_____

Address (Street, City, State, ZIP)

_____

Business Telephone

ATTACHMENT E

Urban Search and Rescue
California Task Force 8

Name: _____

Employer: _____

Employer's Address: _____

A Licensed physician has examined the above named individual with the following results:

☐ The results of this examination **have not** detected any medical condition, which would place this individual at an increased risk of material health impairment for an emergency response.

☐ The results of this examination **have** detected a medical condition, which would place this individual at an increased risk of material health impairment for an emergency response.

☐ Employee has no restrictions on use of respirators.

☐ Facial hair may impair good fit of mask to face.

☐ Employee has restrictions on use of respirators.

Comments to employer including any limitations upon the employee:

Comments to employee:

Normal Exam: _____

Other: _____

The individual named above has been informed of the results of their medical examination and of any medical condition, which requires further examination or treatment. This report is based on information provided to us by the employee and employer.

Physician Signature: _____ Date: _____

Print Physician Name: _____

Physician Address & Phone Number: _____

_____

ATTACHMENT F

MEDICAL EVALUATION OF FITNESS FOR PUBLIC SAFETY DIVING REPORT

_____ _____

Name of Diver /Diver Applicant **Date**

To The PHYSICIAN:
This person is an applicant for training or is presently certified to engage in diving with self-contained underwater breathing apparatus (SCUBA). This is an activity that puts unusual stress on the individual in several ways. Your opinion on the applicant's medical fitness is requested. SCUBA diving can require heavy exertion. The diver must be free of cardiovascular and respiratory disease. An absolute requirement is the ability of the lungs, middle ear and sinuses to equalize pressure. Any condition that risks the loss of consciousness should also disqualify the applicant.

TESTS: Please initial that the following (tests) were completed.

[ ] Initial Examination [ ] Bi-Annual Re-examination

_____General Medical History
_____Diving-related Medical History
_____Basic Physical Examination
_____Audiogram/ Hearing Test
_____Visual Acuity
_____Color Blindness
_____Chest X-Ray (every two years)
_____12 Lead EKG
_____**Master's Step Test (or equivalent)** (if reexamination, only required if applicant or diver is 35 or more years old)
_____Pulmonary function, flow loop
_____Complete blood count (CBC) include sickle cell index
_____Blood chemistry / Heavy Metals Analysis
_____Urinalysis

PHYSICIAN RECOMMENDATION: (please check one)

[ ] APPROVAL	**I find no medical condition(s) which I consider incompatible with diving.**
[ ] RESTRICTED	**The applicant may dive in certain circumstances as described in REMARKS.**
[ ] FURTHER TESTING	**I have encountered a potential contraindication to diving. Further tests will be performed before a final recommendation can be made. See the REMARKS section.**

MEDICAL EVALUATION OF FITNESS FOR PUBLIC SAFETY DIVING REPORT

[ ] REJECTED **The diver / applicant has medical condition(s) which are not compatible with SCUBA diving activities.**

REMARKS:

_____
_____
_____
_____

_____ _____

Physician Signature **Date:**

_____ _____

Address Office Phone No.

I HAVE READ AND UNDERSTAND THE PHYSICIANS RECOMMENDATIONS

_____

Name of Diver/ Signature **Date**

Subchapter 7. General Industry Safety Orders
Group 26. Diving Operations
Article 152. Diving Operations

§6053. Medical Requirements of Dive Team.

(1) Medical examinations conducted initially and annually shall consist of the following:

(A) General medical history; **PROVIDED BY WELLNESS**

(B) Diving-related medical history; **See attached document as a guide**

(C) Basic physical examination; **PROVIDED BY WELLNESS**

(D) The tests required by Table I; and

(E) Any additional tests the physician considers necessary.

(2) Medical examinations conducted after an injury or illness requiring hospitalization of more than 24 hours or after an episode of unconsciousness related to diving activity shall be appropriate to the nature and extent of the injury or illness as determined by the examining physician.

Table I. Tests for Diving Medical Examination Initial Annual

Test	Initial Examination	Annual Reexamination
Chest X-Ray	X	(b)
Visual acuity	X	X
Color blindness	X	
Master's Step Test (or equivalent)	X	X(a)
Hearing Test	X	X
Hematocrit or hemoglobin	X	X
Sickle cell index	X	
White cell count	X	X
Urinalysis	X	X

(a) for those age 35 or older
(b) every 2 years

(e) Physician's Written Report.

(1) After any medical examination required by this standard, the employer shall obtain a written report prepared by the examining physician which shall contain the examining physician's opinion of the employee's fitness to dive, including any recommended restrictions or limitations (See Appendix A). The report shall not include diagnosis or details unrelated to diving.

(2) The employer shall provide the employee with a copy of the physician's written report.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

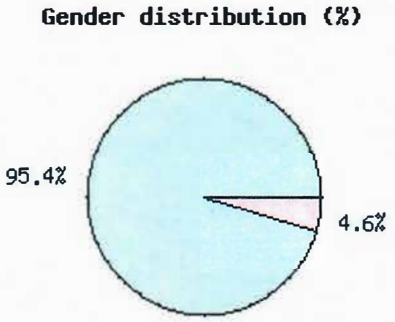
2018 DATA REPORT

.. Demographics

1.1 GENERAL

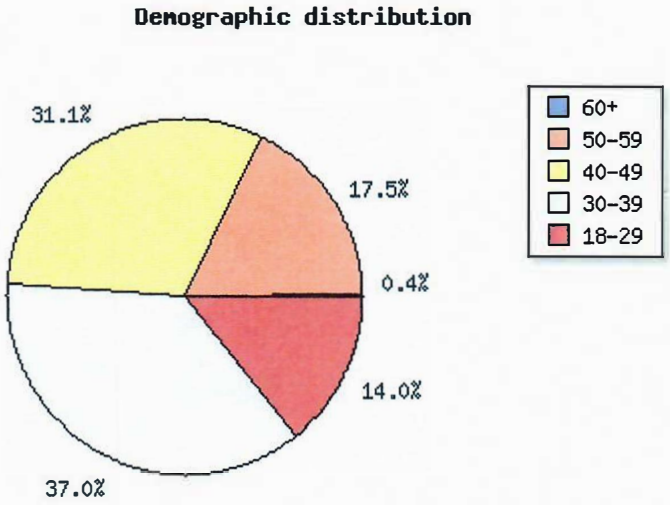
848 fitness exams
809 males,39 females

Age (yr)
Avg: 39.8
Min: 20
Max: 68



1.2 AGE DISTRIBUTION

[Age]	Number of subjects
[18-29]	119
[30-39]	314
[40-49]	264
[50-59]	148
[60+]	3



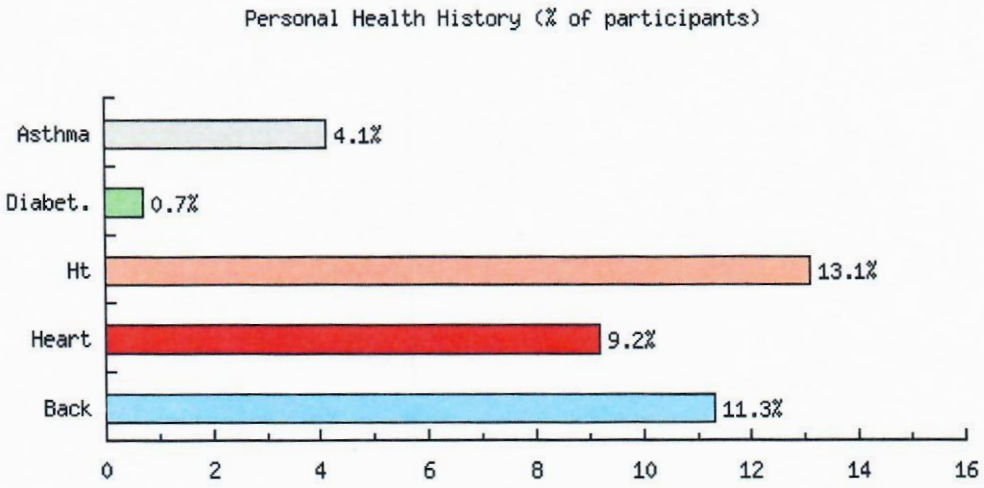
2. Current Diagnosis and Current Habits

2.1 Diagnosis

No.(%) of subjects with

Asthma
(4.13 %)
Diabetes
6 (0.71 %)
Hypertension
111 (13.09 %)
Heart disease
78 (9.20 %)
Lower Back
96 (11.32 %)

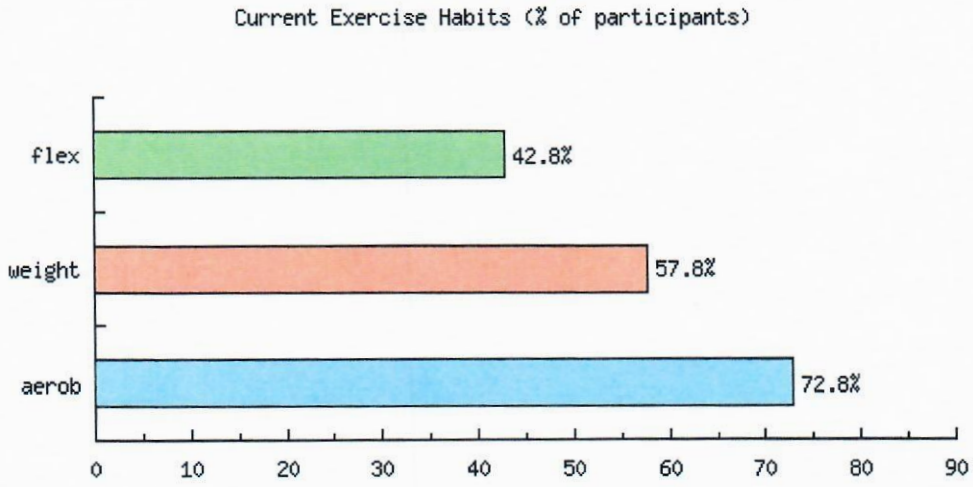
out of 848 total subjects



2.2 EXERCISE

Number of subjects who currently perform exercise at least 3 times per week

Flexibility 363
Weight lifting 490
Aerobic Exercise 617



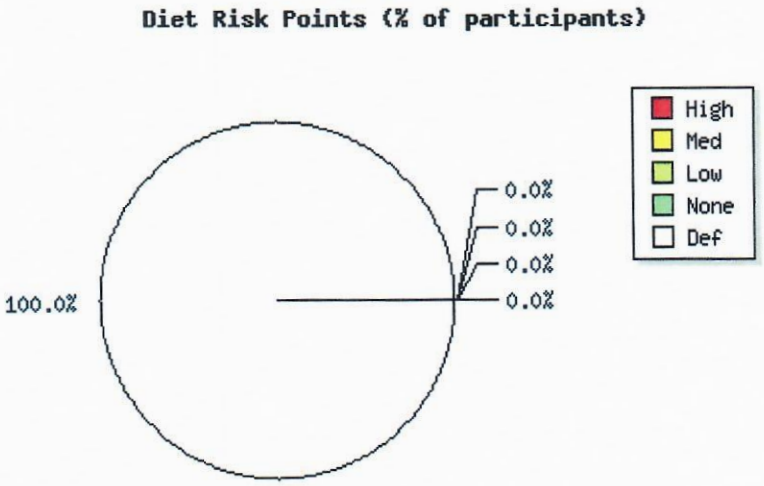
2.3 NUTRITION

Risk: Number of subjects

None: 0 <=3 points
Low : 0 4-5 points
Med : 0 6-9 points
High: 0 >10 points

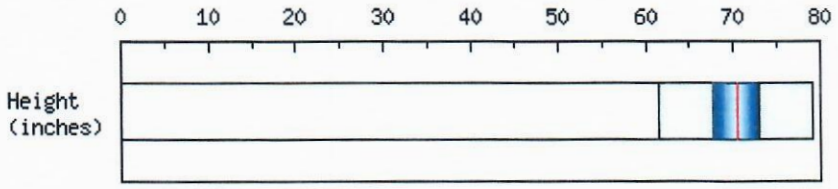
Total 0
Defer 848 no data submitted

Study 848

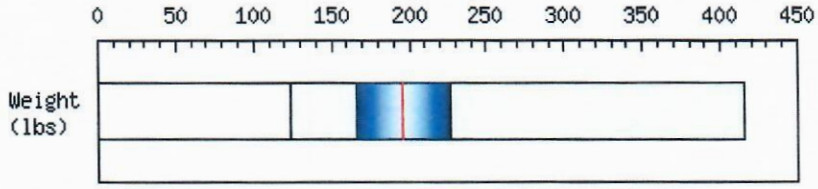


3. Medical

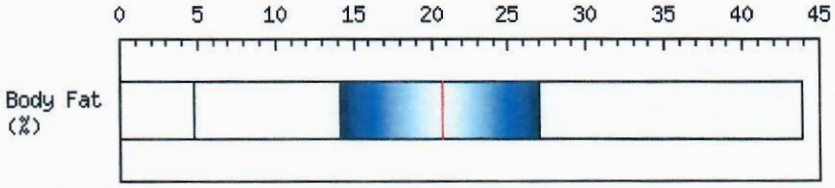
Height (in)
Avg: 70.3
Low: 61.5
High: 79
StdDev: 2.7



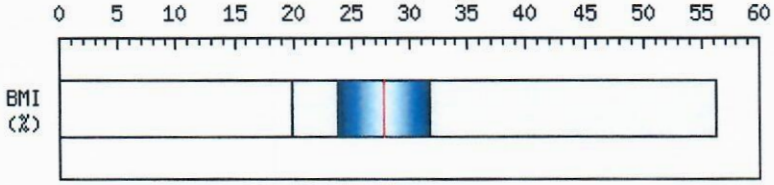
Weight (lbs)
Avg: 195.8
Low: 123.4
High: 415.2
StdDev:30.5



Body Fat (%)
Avg: 20.7
Low: 4.7
High: 43.8
StdDev:6.3



BMI
Avg: 27.8
Low: 19.9
High: 56.3
StdDev: 3.8



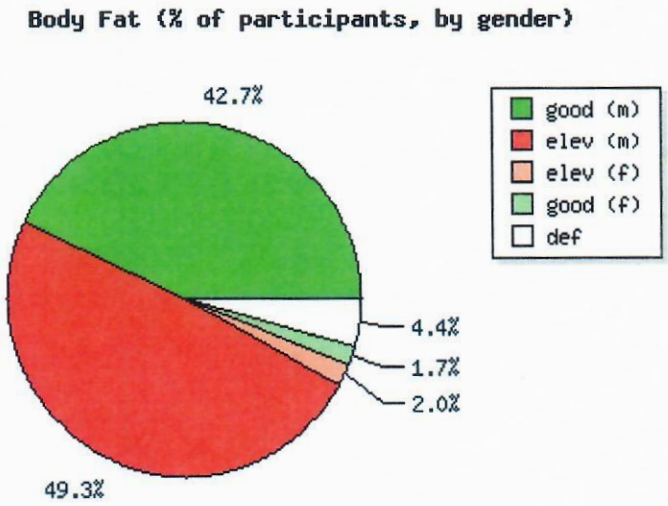
BODY FAT
number of subjects

Males
good 362 | elevated 418

Females
good 14 | elevated 17

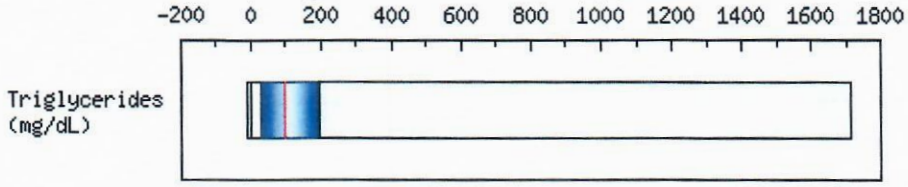
Deferred 37

Good body fat
M:<20% F:<25%
Elevated body fat
M:≥20% F:≥25%

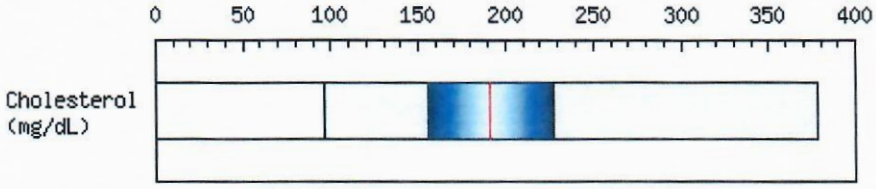


4. Blood Lab

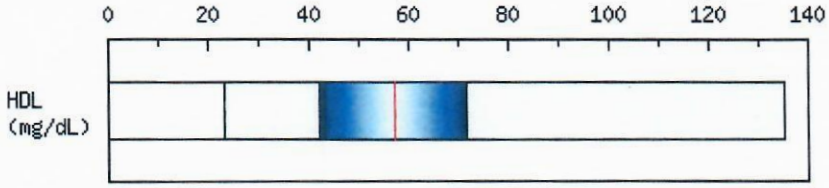
Triglycerides (mg/dL)
Avg: 99.6
Low: 28
High: 1701
StdDev:83.4



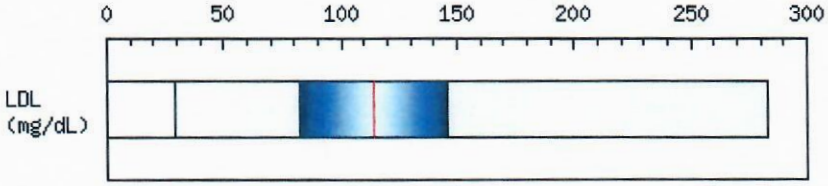
Cholesterol (mg/dL)
Avg: 191.0
Low: 96
High: 378
StdDev: 36.1



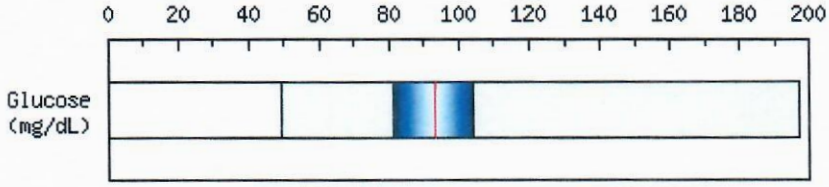
HDL (mg/dL)
Avg: 57.1
Low: 23
High: 135
StdDev: 14.4



LDL (mg/dL)
Avg: 113.9
Low: 29
High: 283
StdDev:31.7

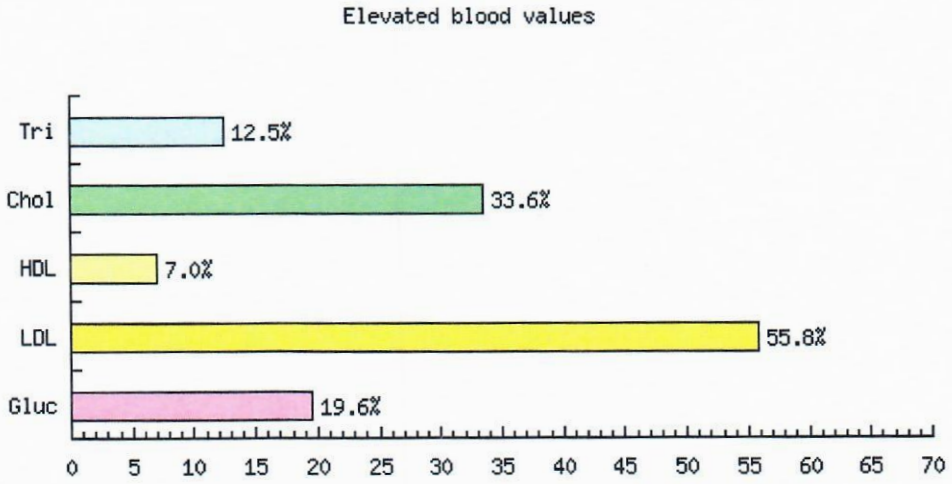


Glucose (mg/dL)
Avg: 93.1
Low: 49
High: 197
StdDev:11.1



Elevated blood values

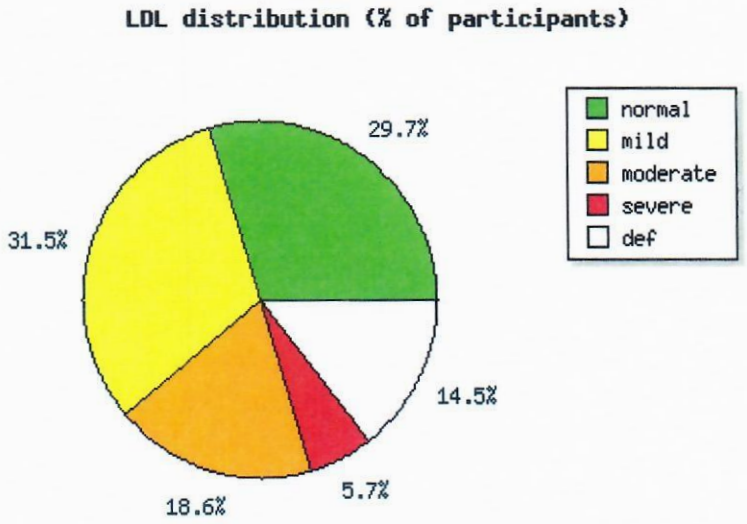
Number (%) of subjects
Triglycerides >150mg/dl
106 (12.5 %)
Cholesterol >200mg/dl
285 (33.6 %)
HDL <40mg/dl
59 (7.0 %)
LDL >100mg/dl
473 (55.8 %)
Glucose >100mg/dl
166 (19.6 %)



LDL DISTRIBUTION

Number of subjects
NORMAL 252
(<100 mg/dl)
MILD 267
(100-130 mg/dl)
MODERATE 158
(131-160 mg/dl)
SEVERE 48
(>160 mg/dl)

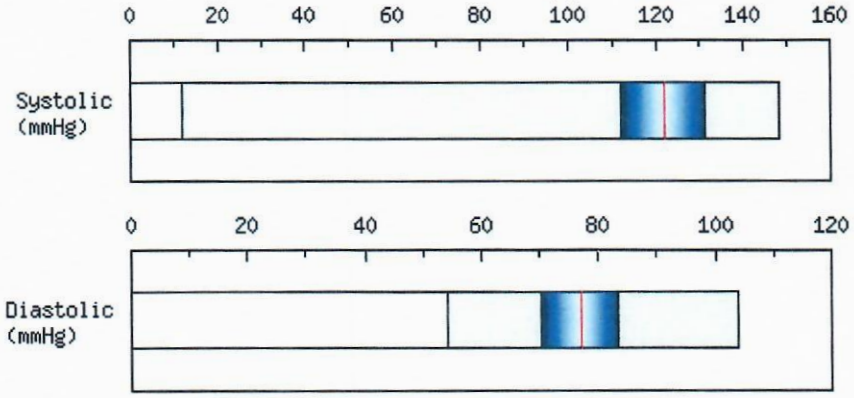
TOTAL 725
Defer 123



BLOOD PRESSURE

Systolic (mmHg)
Avg: 121.8
Low: 12
High: 148
SdtDev:9.2

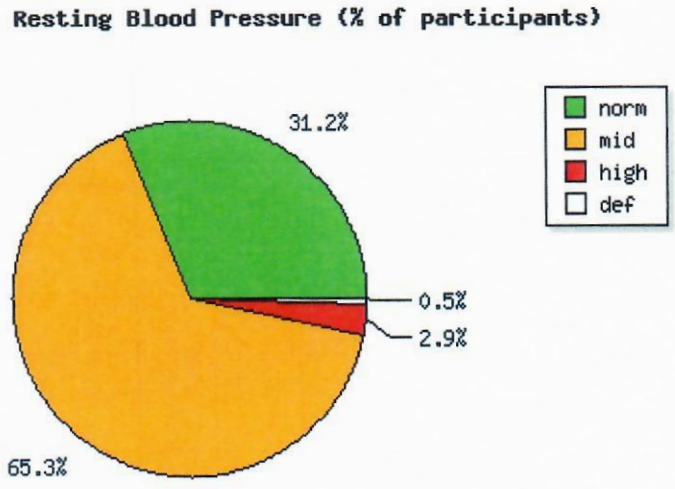
Diastolic (mmHg)
Avg: 77.0
Low: 54
High: 104
SdtDev:6.2



RESTING BLOOD PRESSURE

Number of subjects
NORMAL 265
(<120|80)
HIGH-NORMAL 554
(120-139)|(80-90)
HIGH 25
(>140|90)
Deferred 4

Number of subjects
<120 <80 :: 265
<120 [80-90] :: 62
<120 >90 :: 0
[120-139] <80 :: 260
[120-139] [80-90] :: 232
[120-139] <80 :: 5
>140 <90 :: 18
>140 <90 :: 2



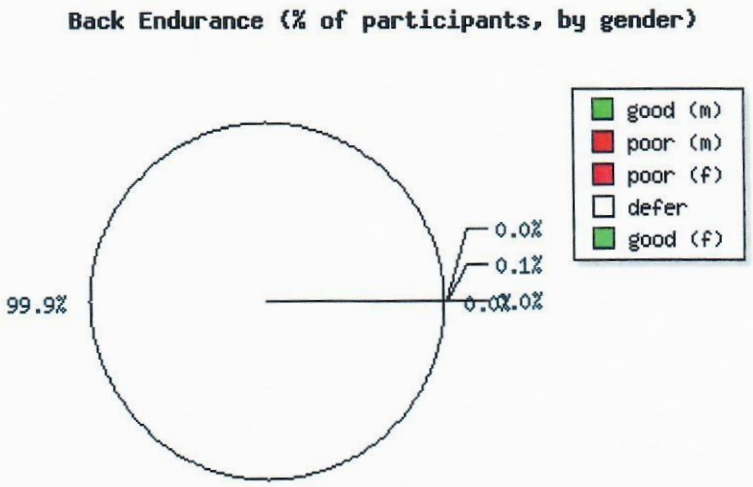
5. Fitness

	Average	Standard Deviation	HIGH
shUps (# reps)	32.2	20.45	100
Sit & Reach Flexibility (in)	14.0	4.57	23.00
Cardiovascular fitness (ml/kg/min) VO2max	48.9	8.84	73.0

BACK ENDURANCE

Number of subjects
Males
good 0 | poor 1
defer 808
Females
good 0 | poor 0
defer 39

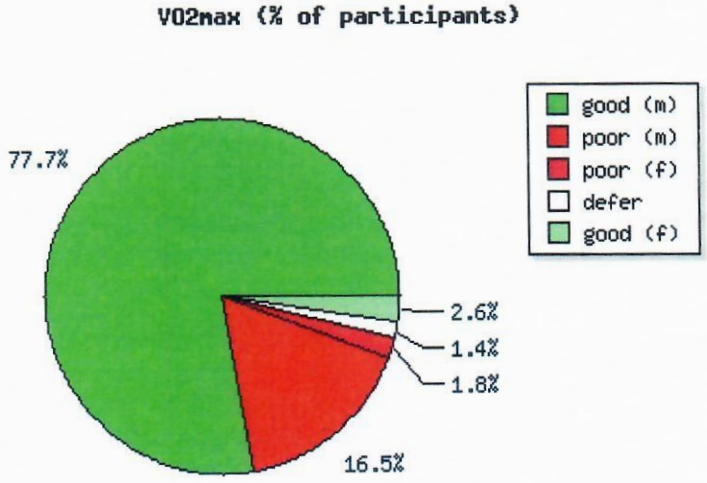
Good back endurance score
M:>95sec F:>129sec
Poor back endurance score
M:<95sec F:<129sec

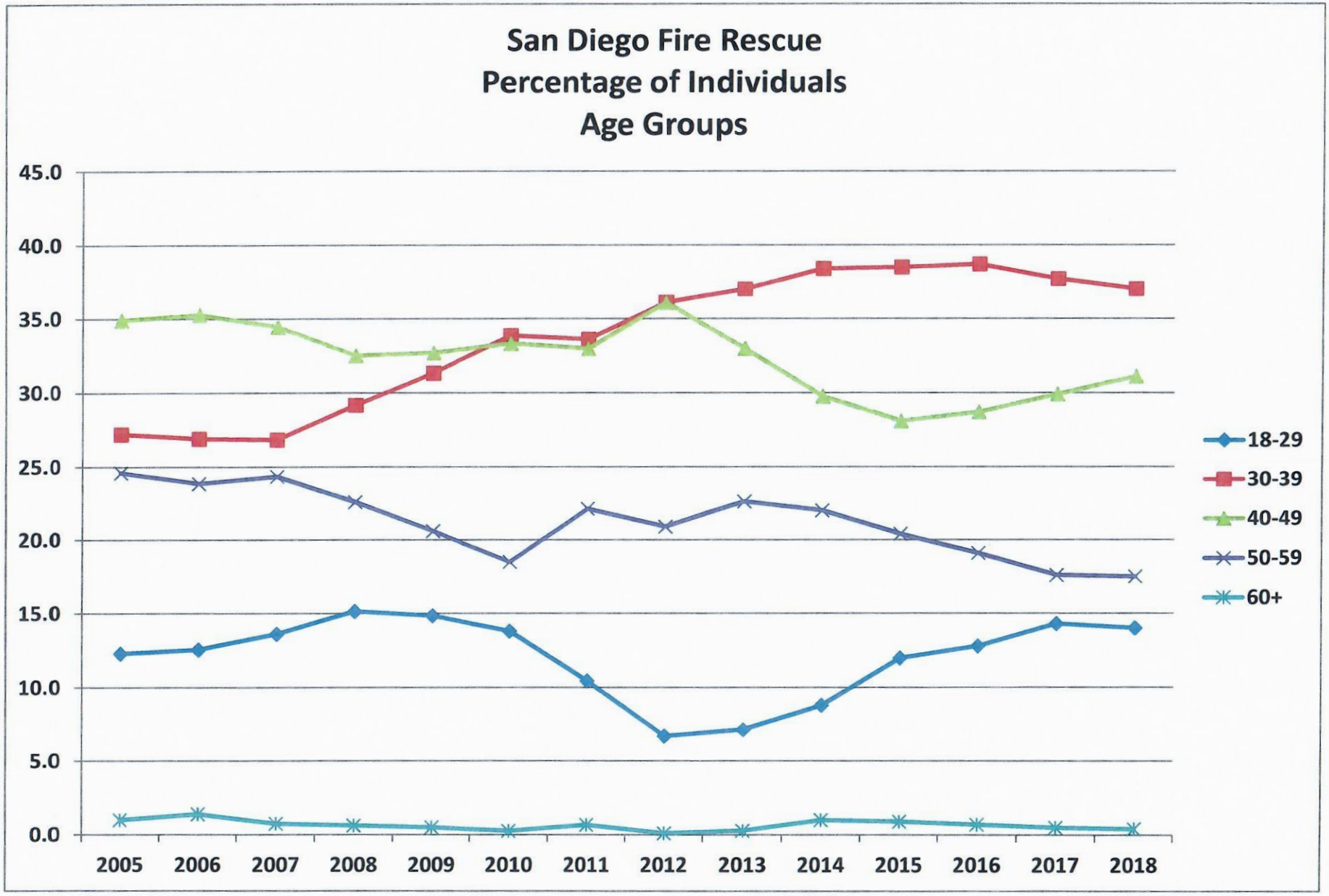


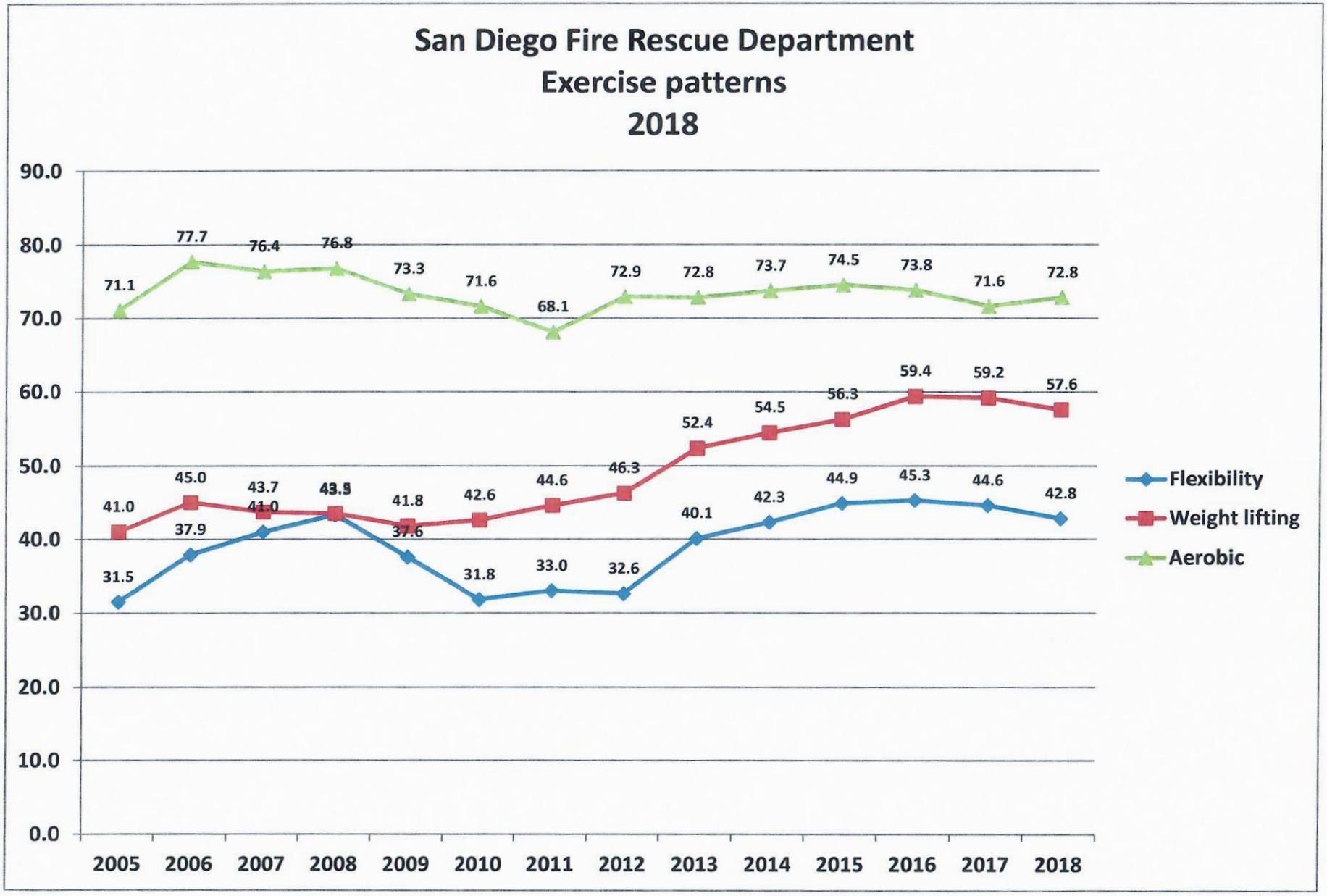
CARDIOVASCULAR FITNESS

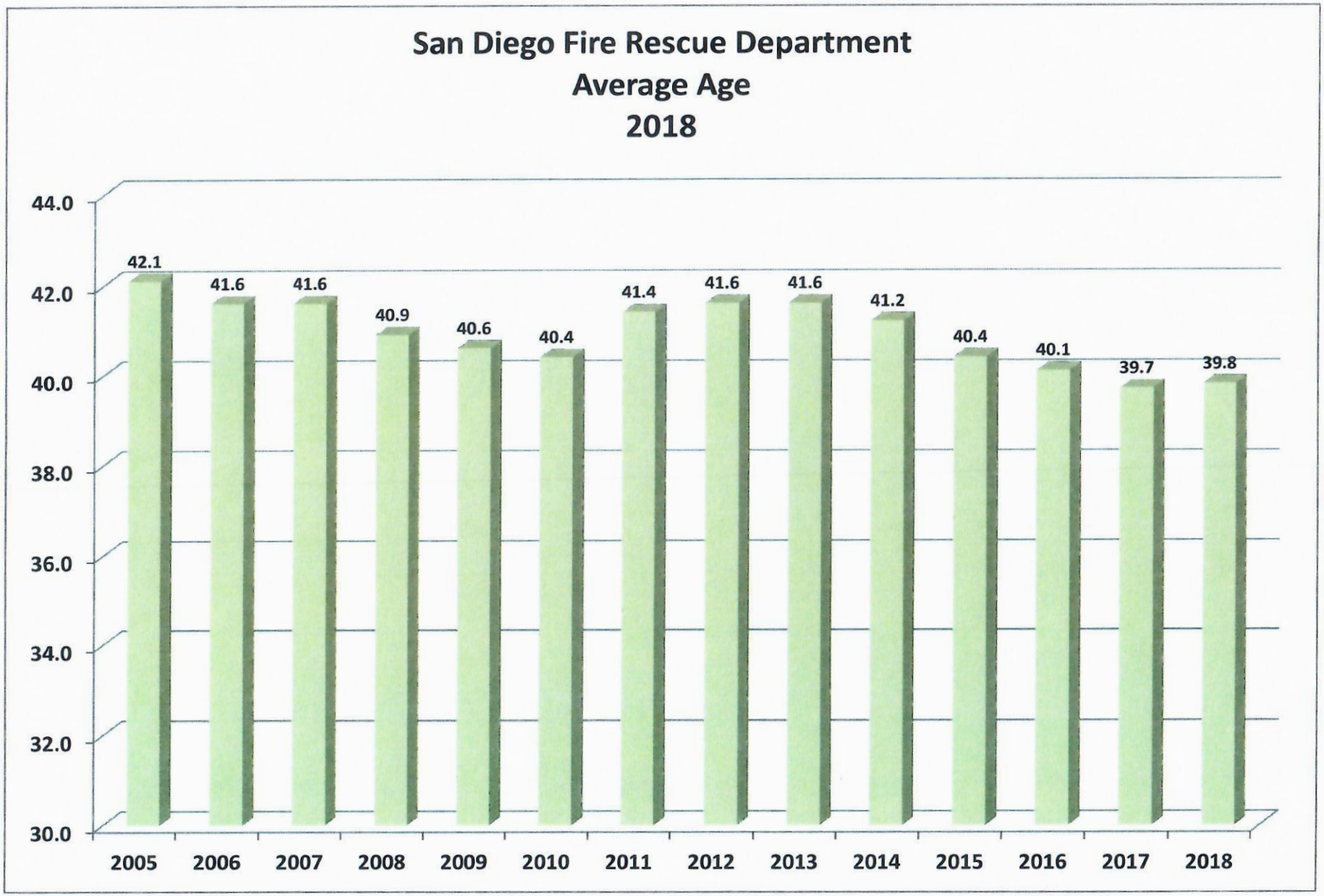
Number of subjects
Males
good 659 | poor 140
defer 10
Females
good 22 | poor 15
defer 2

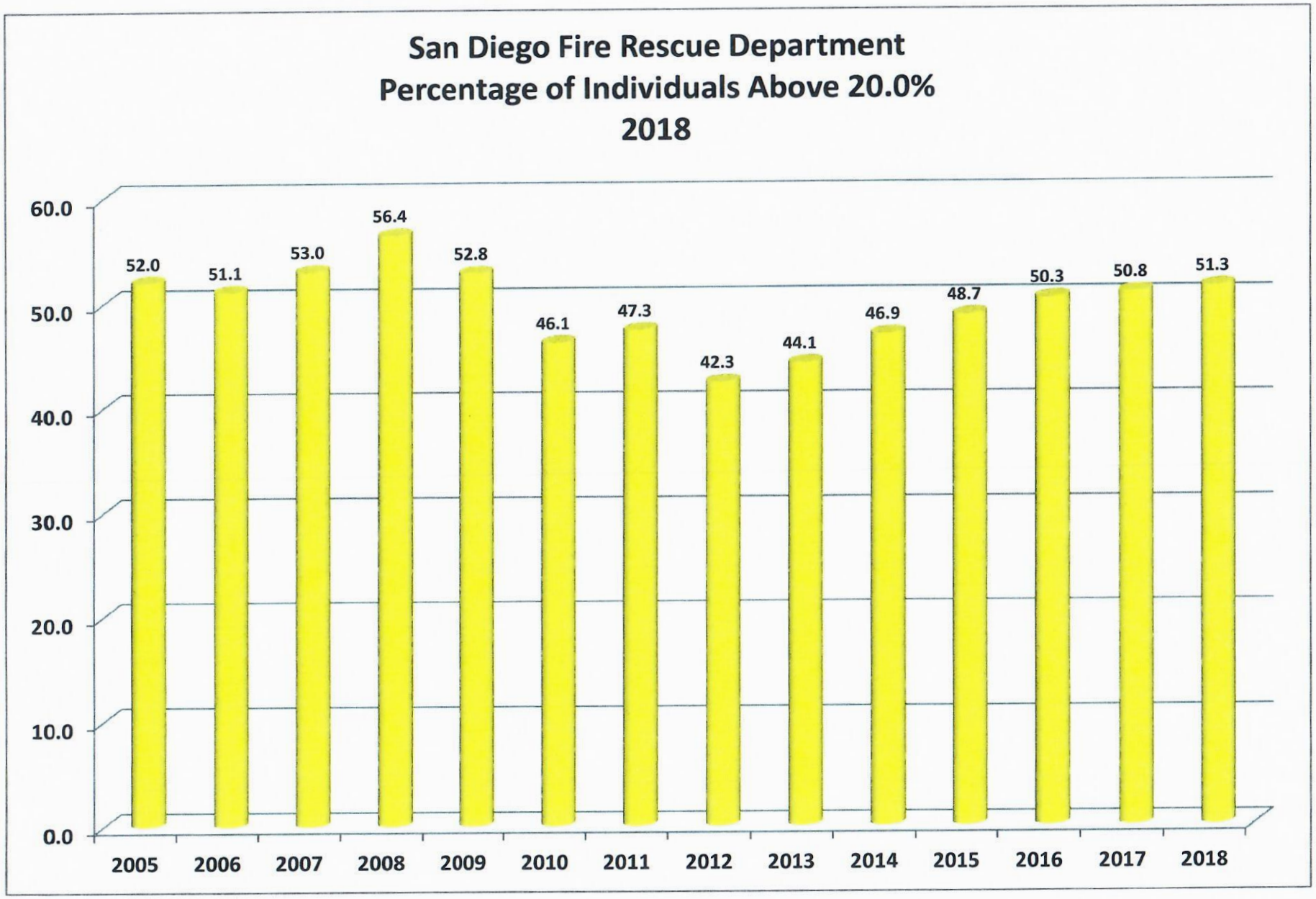
The Fire Service Joint Labor Management Wellness/Fitness Initiative 2nd edition recomends a maximal oxygen uptake of at least 42 ml/kg/min in order to meet the aerobic demands required for necessary firefighter duties

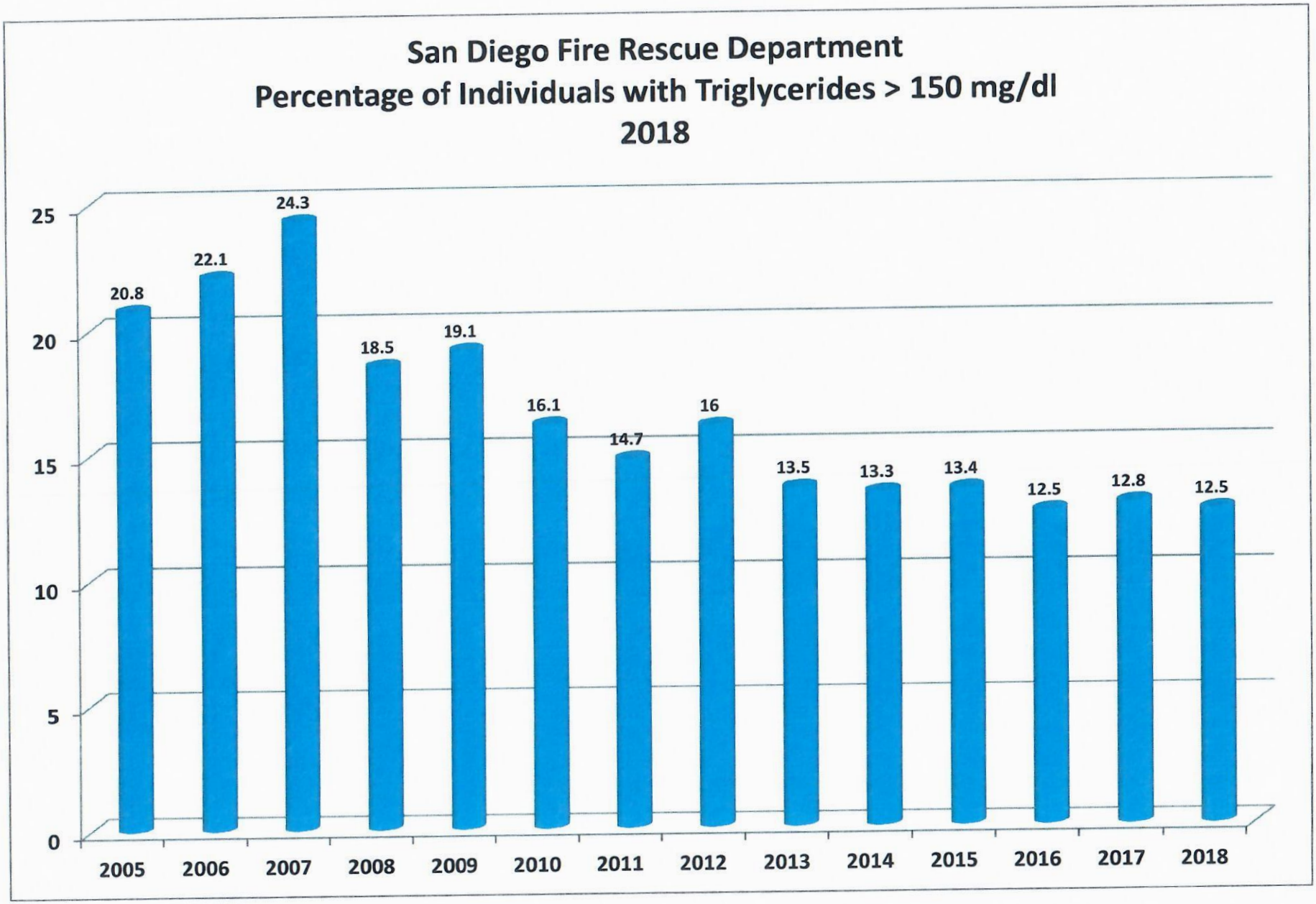


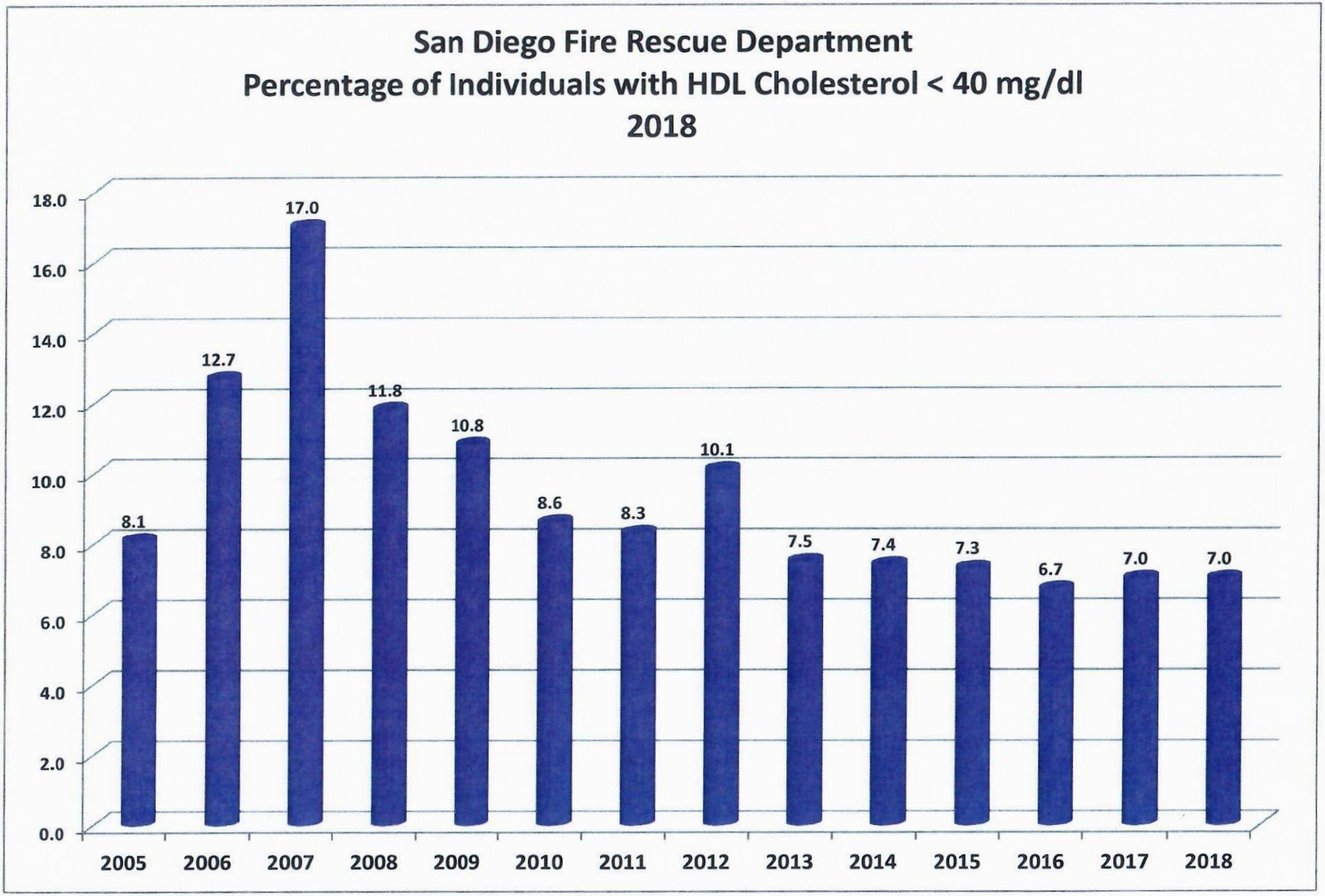

San Diego Fire Rescue
Percentage of Individuals
Age Groups
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
18-29
30-39
40-49
50-59
60+

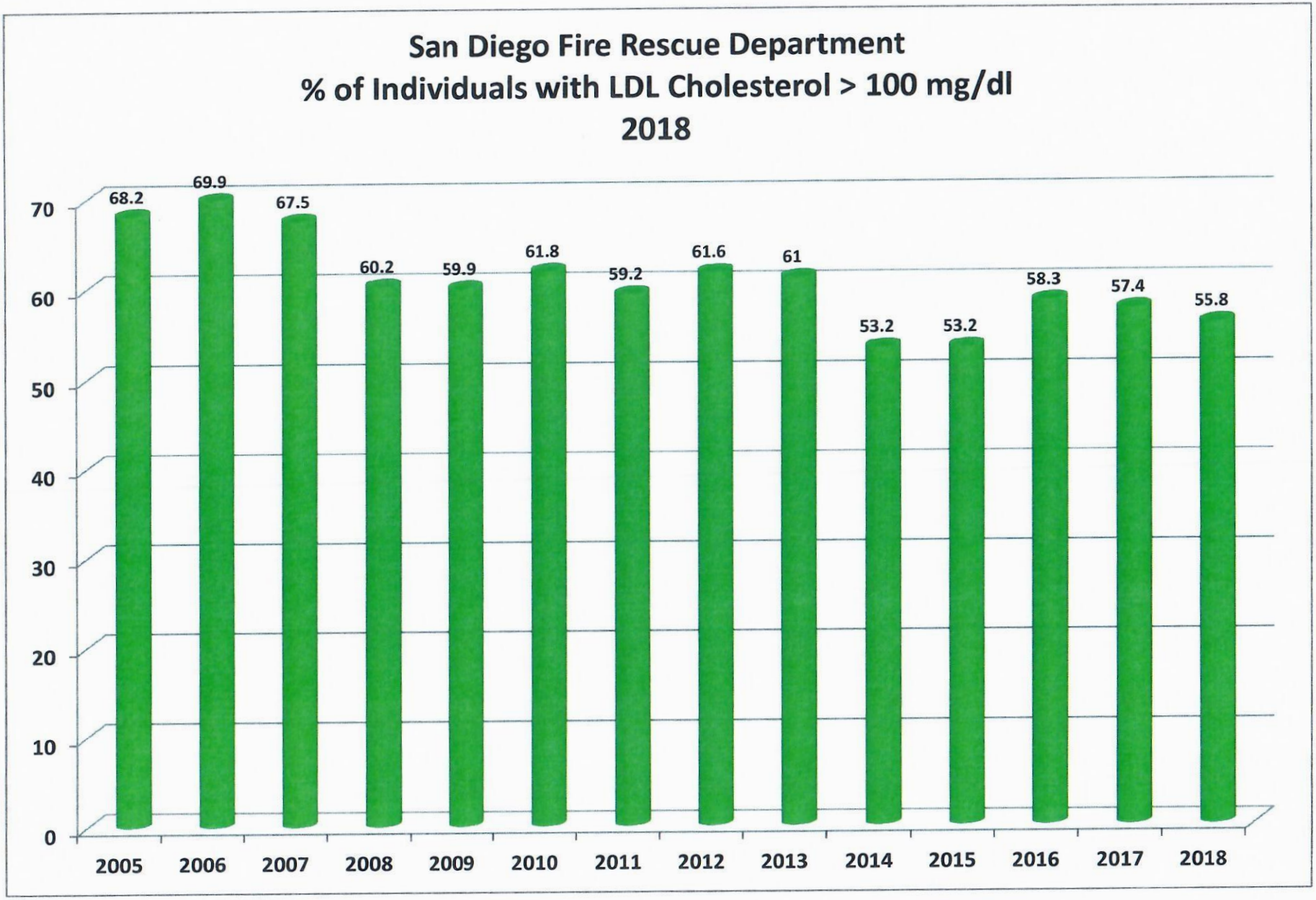

San Diego Fire Rescue Department
Exercise patterns
2018
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
71.1
77.7
76.4
76.8
73.3
71.6
68.1
72.9
72.8
73.7
74.5
73.8
71.6
72.8
41.0
45.0
43.7
43.5
41.8
42.6
44.6
46.3
52.4
54.5
56.3
59.4
59.2
57.6
31.5
37.9
41.0
43.5
37.6
31.8
33.0
32.6
40.1
42.3
44.9
45.3
44.6
42.8
Flexibility
Weight lifting
Aerobic

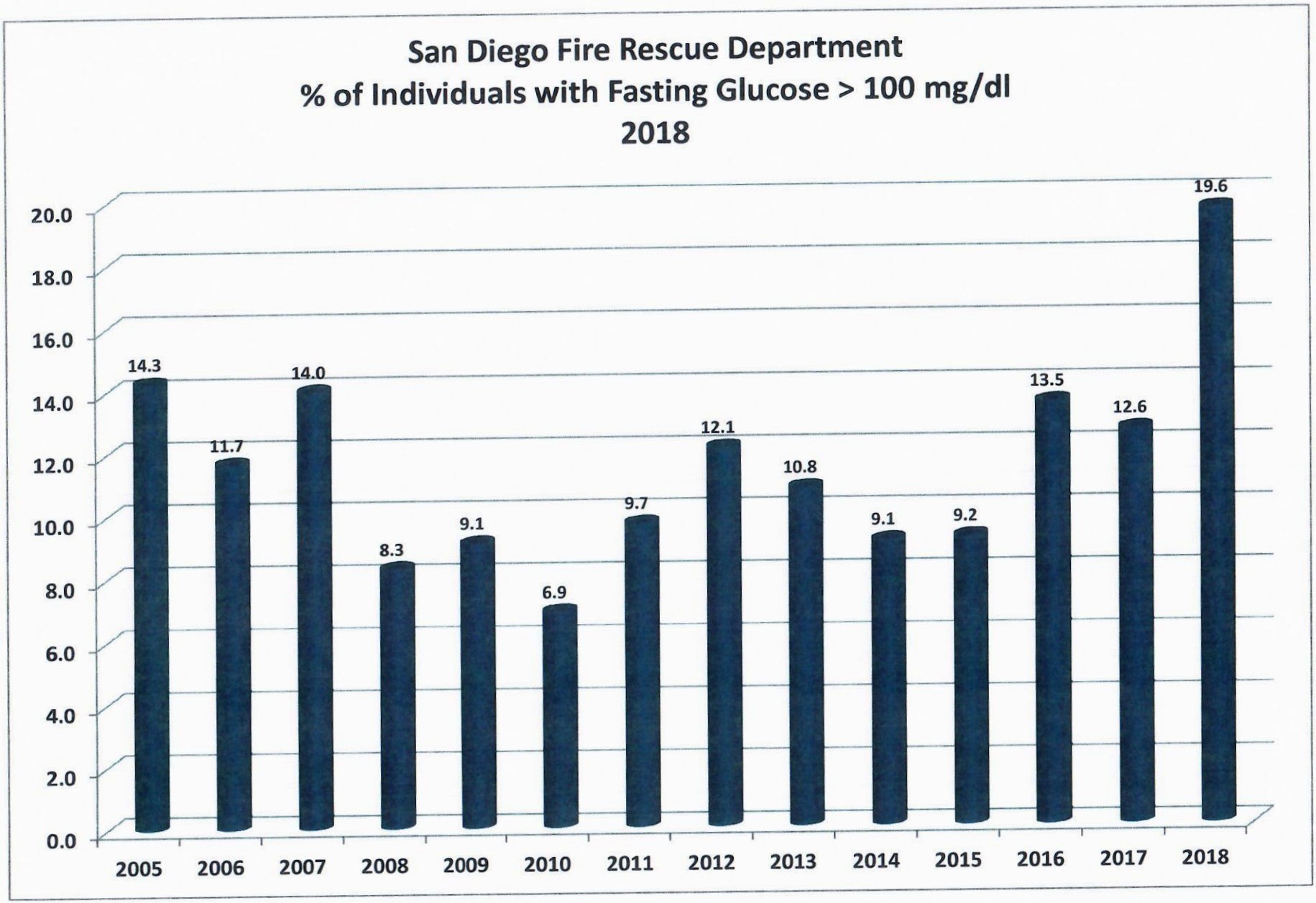

San Diego Fire Rescue Department
Average Age
2018
44.0
42.0
40.0
38.0
36.0
34.0
32.0
30.0
42.1
41.6
41.6
40.9
40.6
40.4
41.4
41.6
41.6
41.2
40.4
40.1
39.7
39.8
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

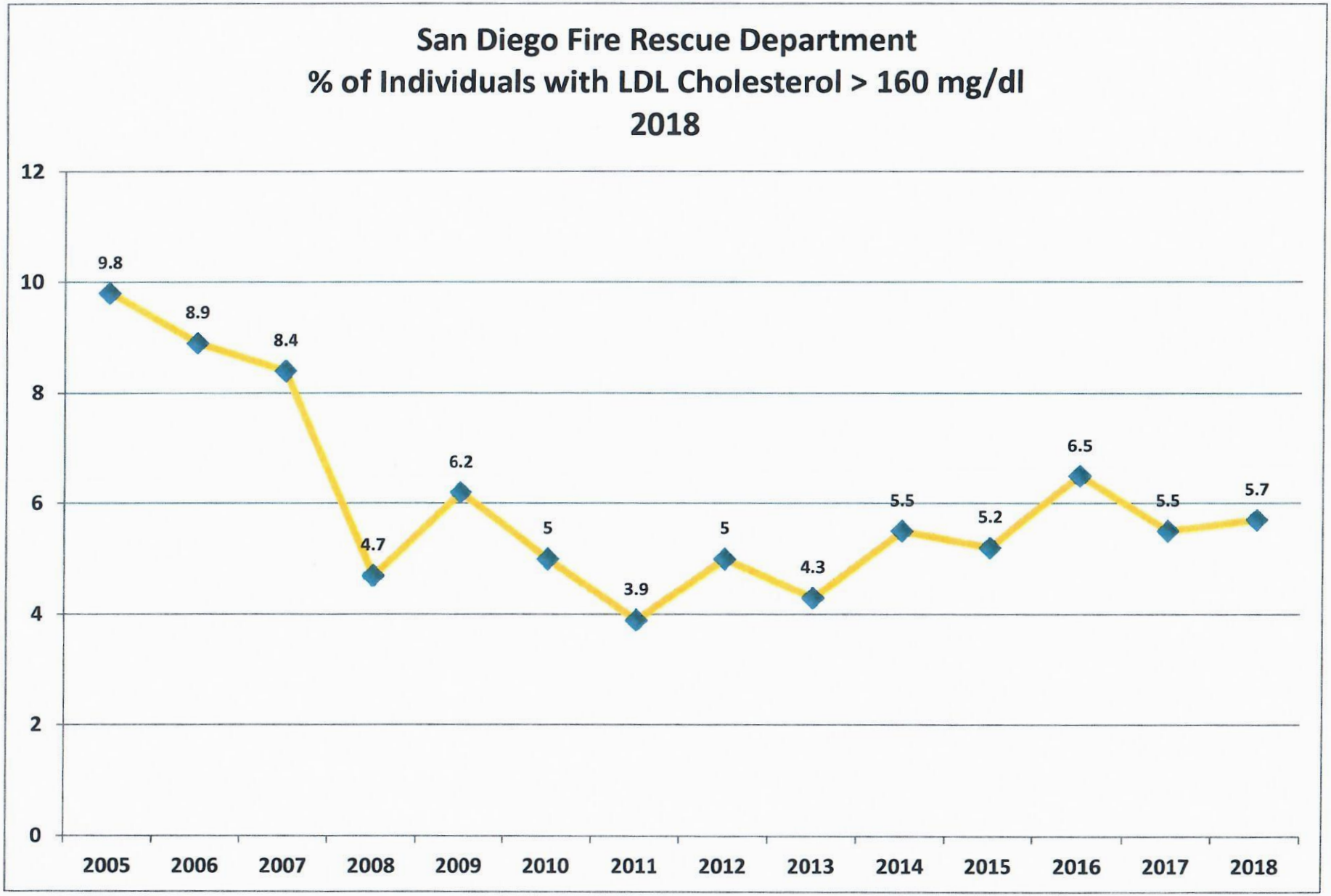

San Diego Fire Rescue Department
Percentage of Individuals Above 20.0%
2018
60.0
50.0
40.0
30.0
20.0
10.0
0.0
52.0
51.1
53.0
56.4
52.8
46.1
47.3
42.3
44.1
46.9
48.7
50.3
50.8
51.3
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

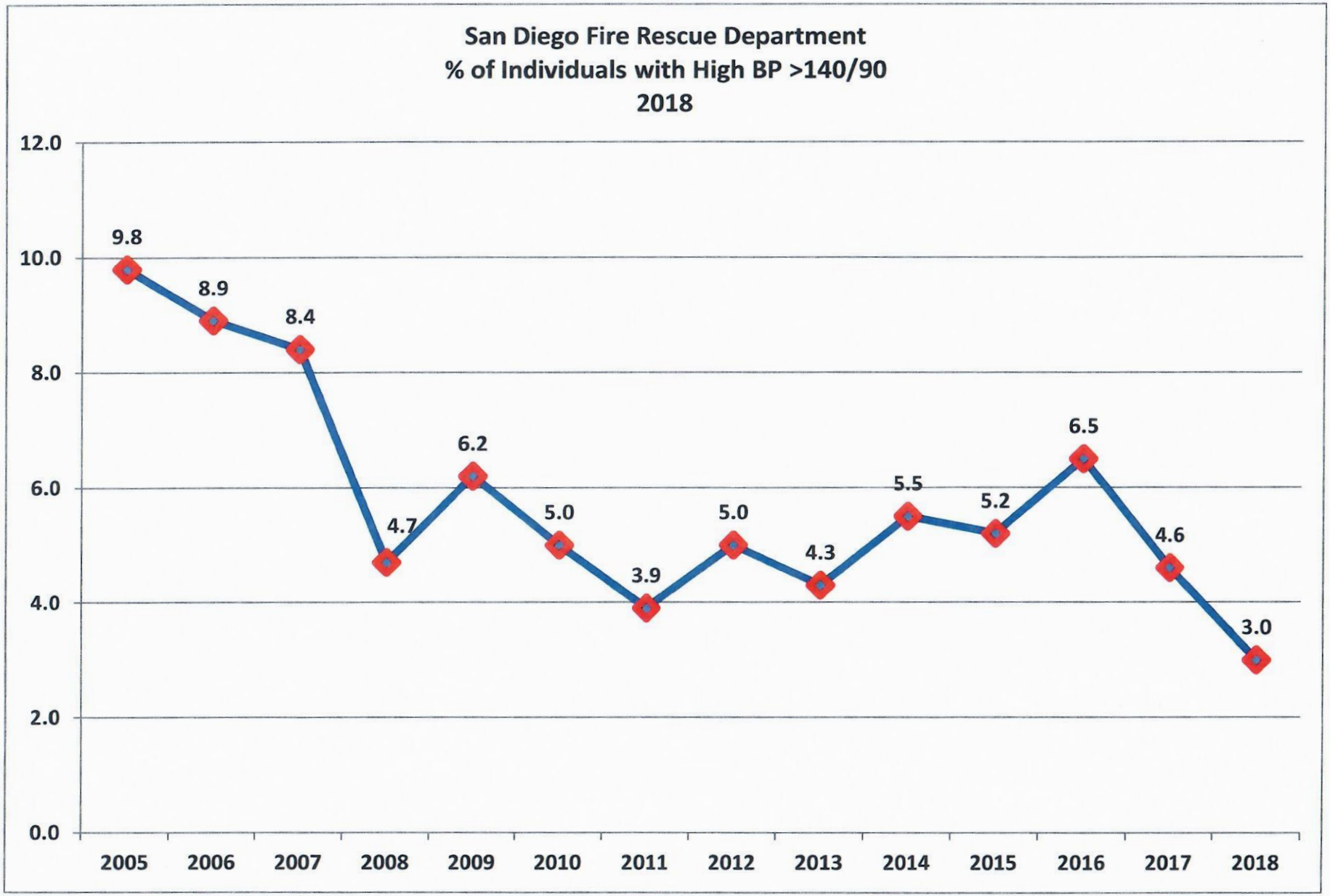

San Diego Fire Rescue Department
Percentage of Individuals with Triglycerides > 150 mg/dl
2018
25
20
15
10
5
0
20.8
22.1
24.3
18.5
19.1
16.1
14.7
16
13.5
13.3
13.4
12.5
12.8
12.5
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

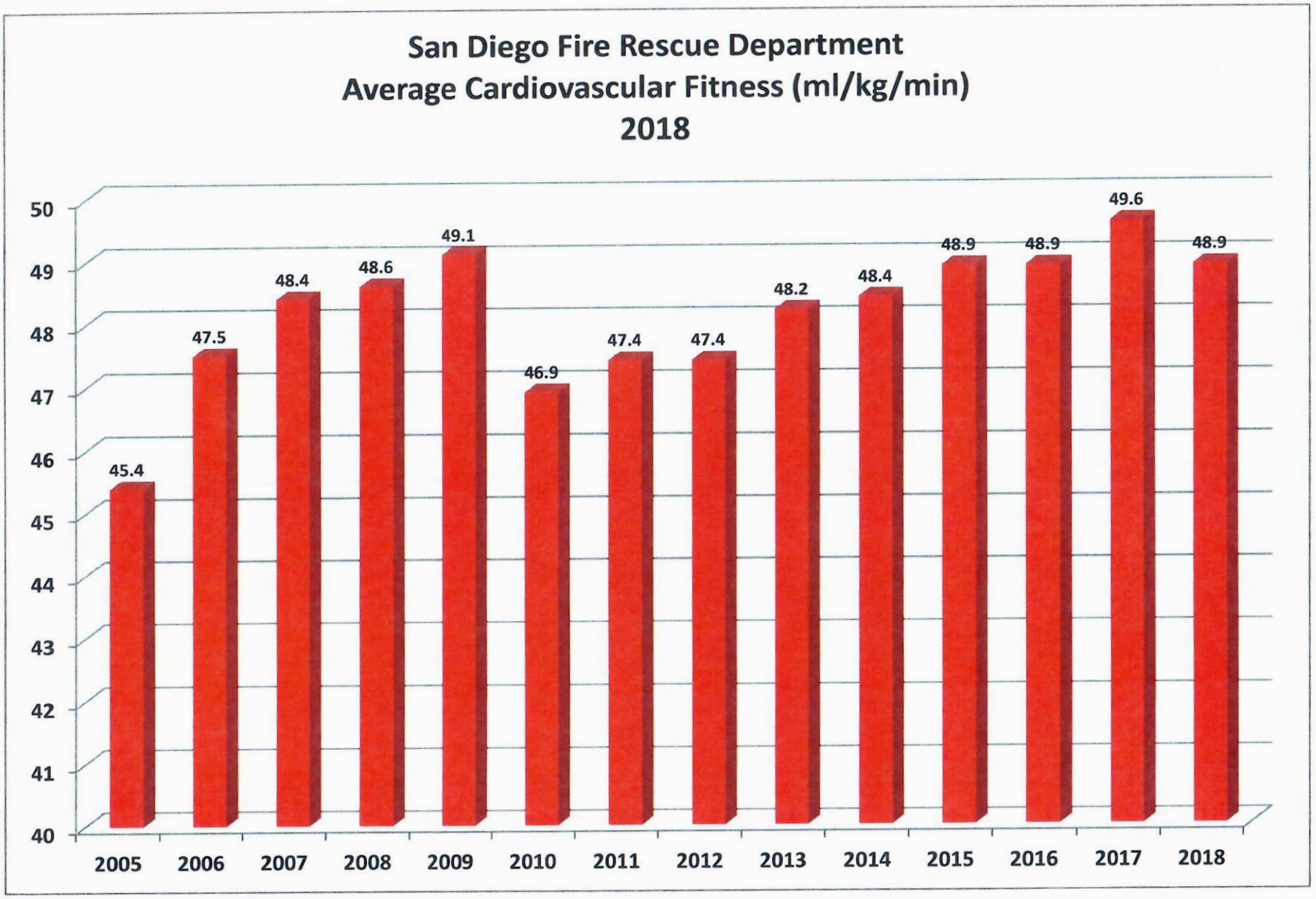

San Diego Fire Rescue Department
Percentage of Individuals with HDL Cholesterol < 40 mg/dl
2018
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
8.1
12.7
17.0
11.8
10.8
8.6
8.3
10.1
7.5
7.4
7.3
6.7
7.0
7.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

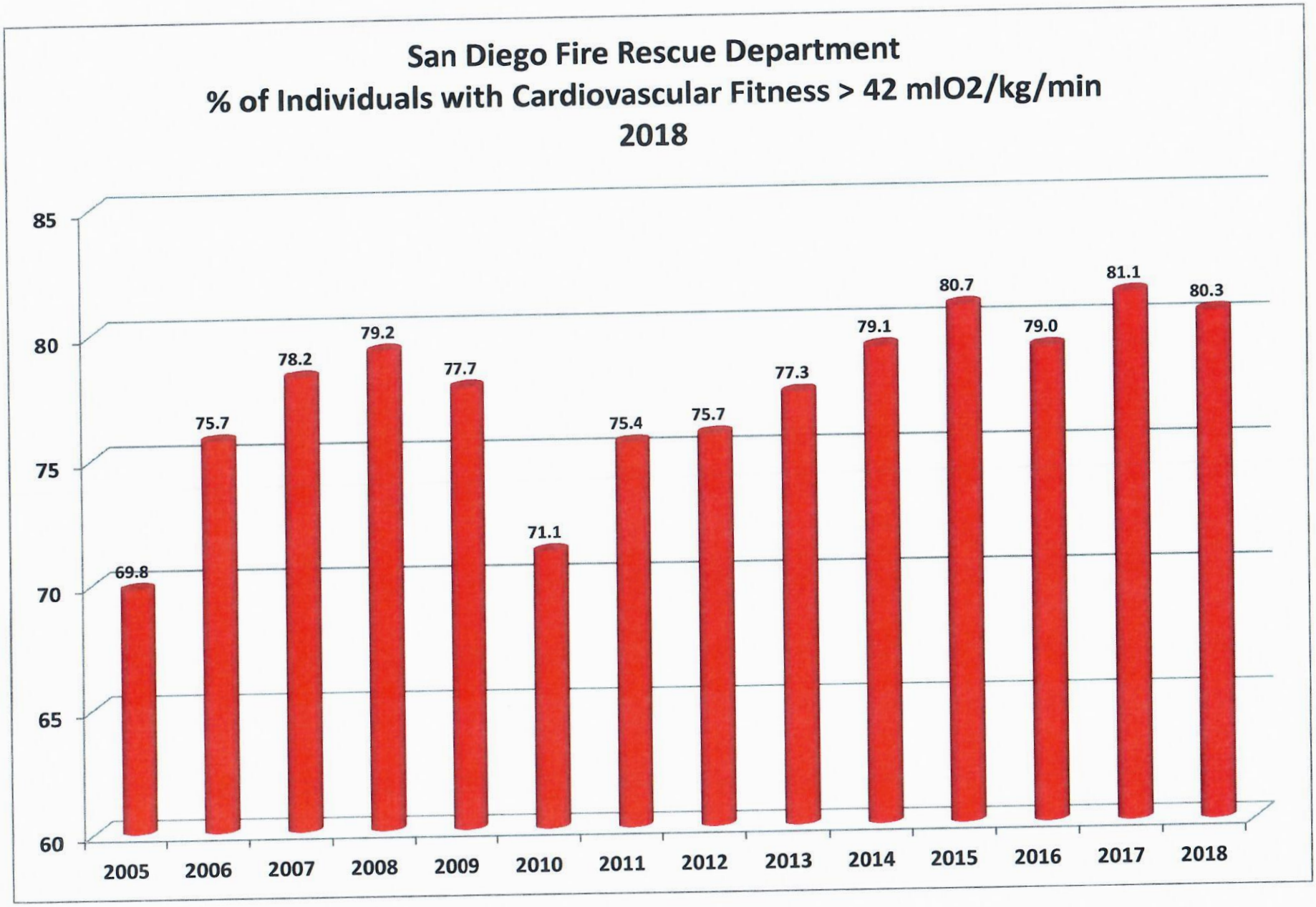

San Diego Fire Rescue Department
% of Individuals with LDL Cholesterol > 100 mg/dl
2018
70
60
50
40
30
20
10
0
68.2
69.9
67.5
60.2
59.9
61.8
59.2
61.6
61
53.2
53.2
58.3
57.4
55.8
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

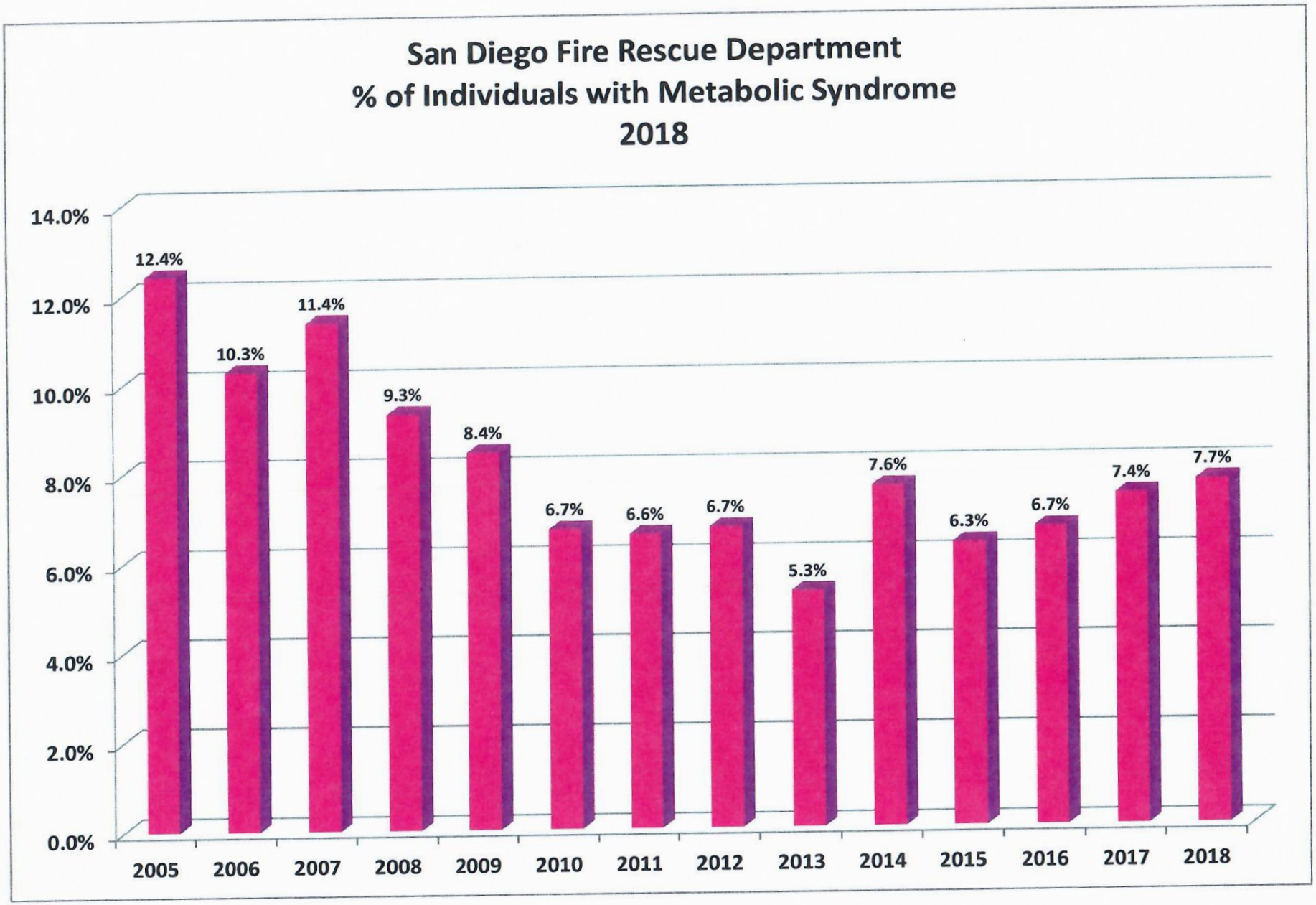

San Diego Fire Rescue Department
% of Individuals with Fasting Glucose > 100 mg/dl
2018
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
14.3
11.7
14.0
8.3
9.1
6.9
9.7
12.1
10.8
9.1
9.2
13.5
12.6
19.6
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

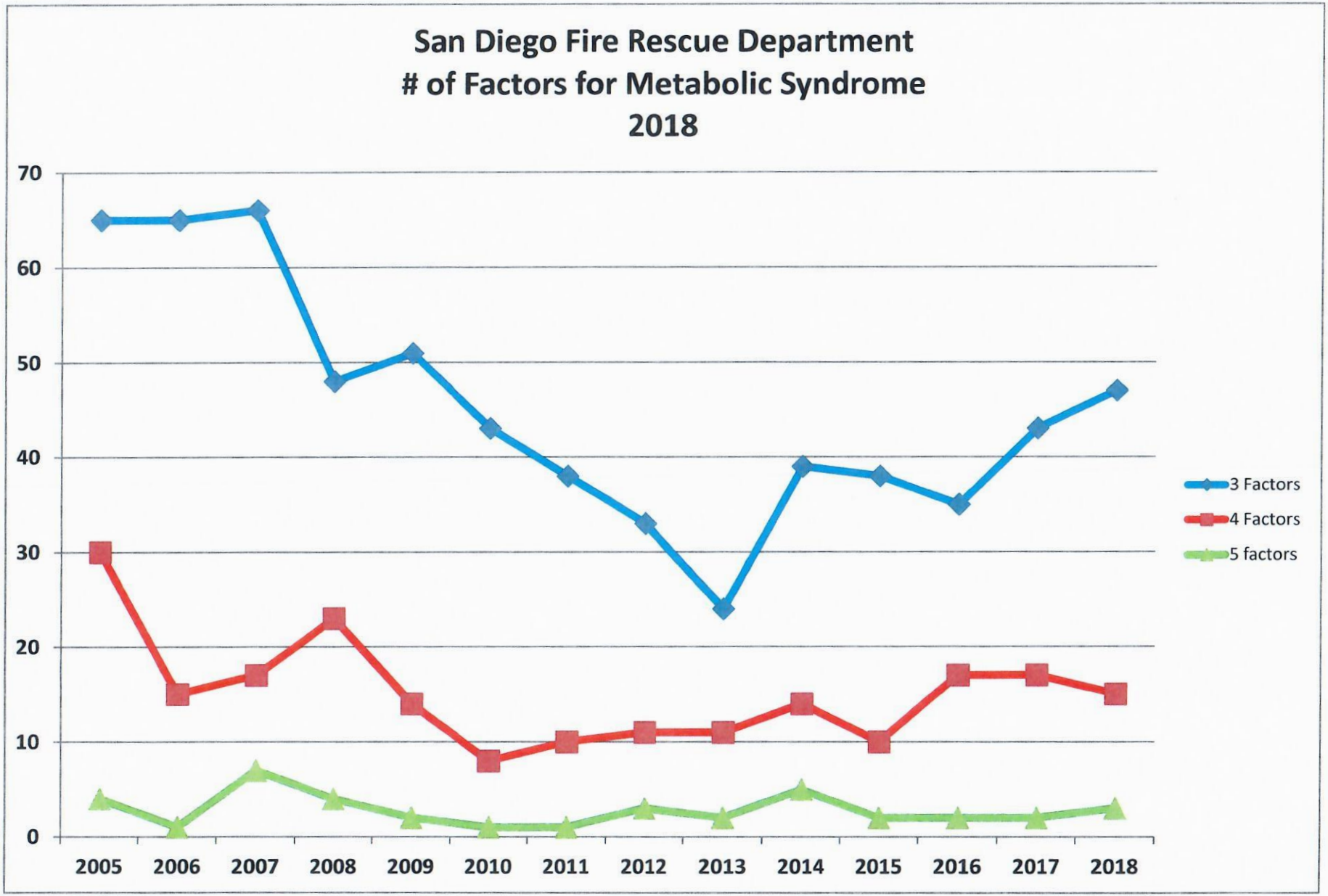

San Diego Fire Rescue Department
% of Individuals with LDL Cholesterol > 160 mg/dl
2018
12
10
8
6
4
2
0
9.8
8.9
8.4
4.7
6.2
5
3.9
5
4.3
5.5
5.2
6.5
5.5
5.7
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

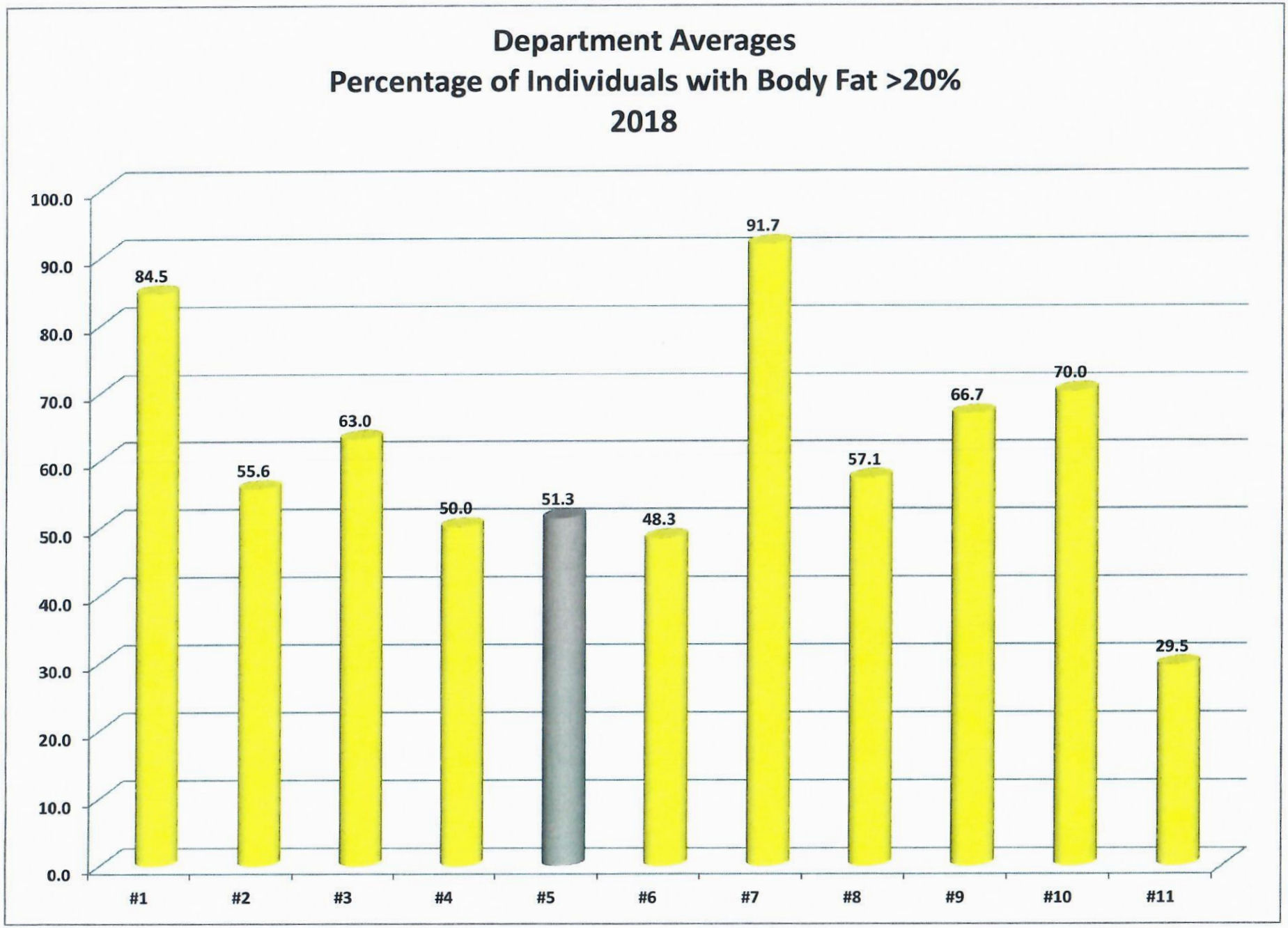

San Diego Fire Rescue Department
% of Individuals with High BP >140/90
2018
12.0
10.0
8.0
6.0
4.0
2.0
0.0
9.8
8.9
8.4
4.7
6.2
5.0
3.9
5.0
4.3
5.5
5.2
6.5
4.6
3.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

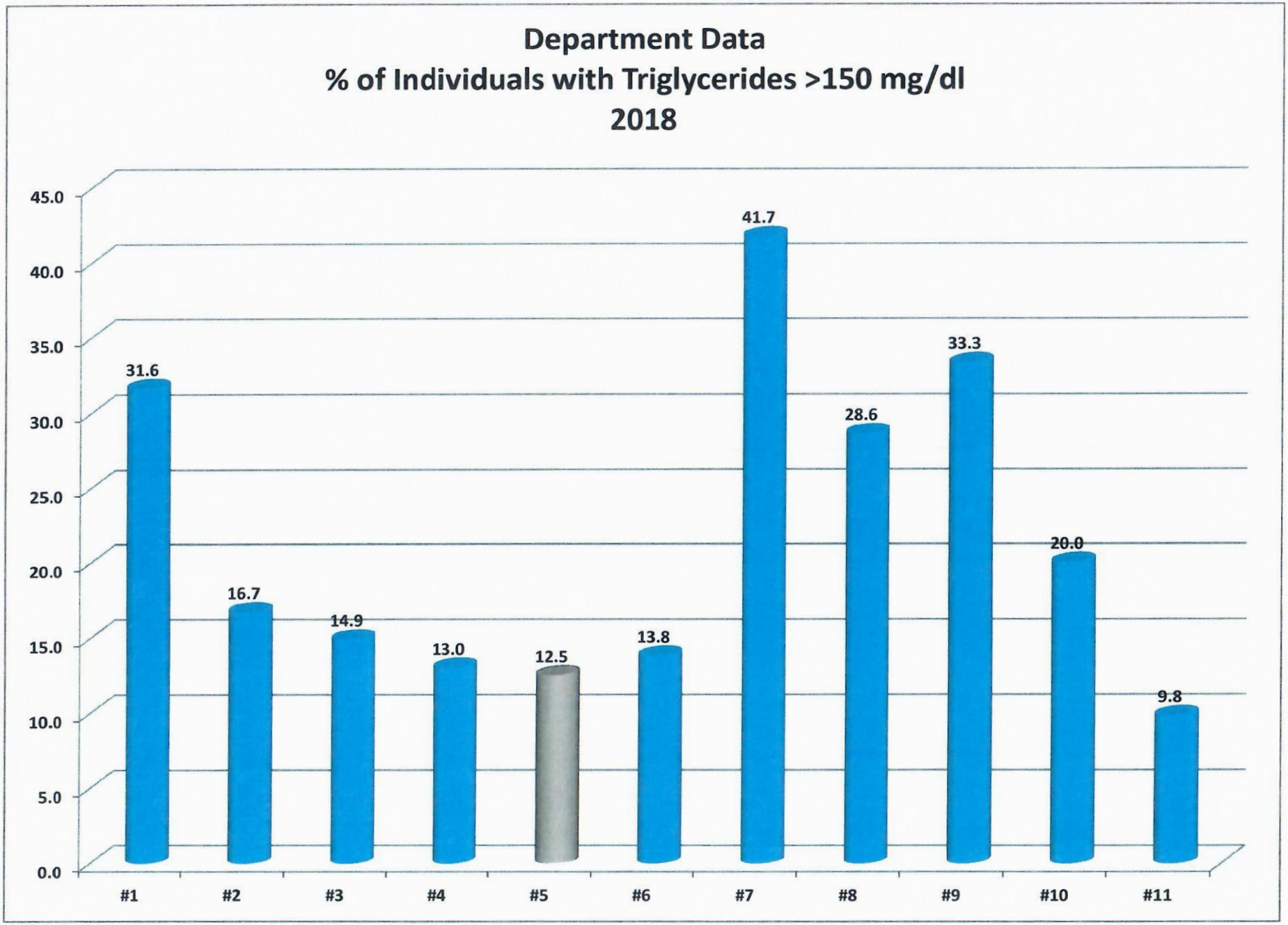

San Diego Fire Rescue Department
Average Cardiovascular Fitness (ml/kg/min)
2018
50
49
48
47
46
45
44
43
42
41
40
45.4
47.5
48.4
48.6
49.1
46.9
47.4
47.4
48.2
48.4
48.9
48.9
49.6
48.9
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

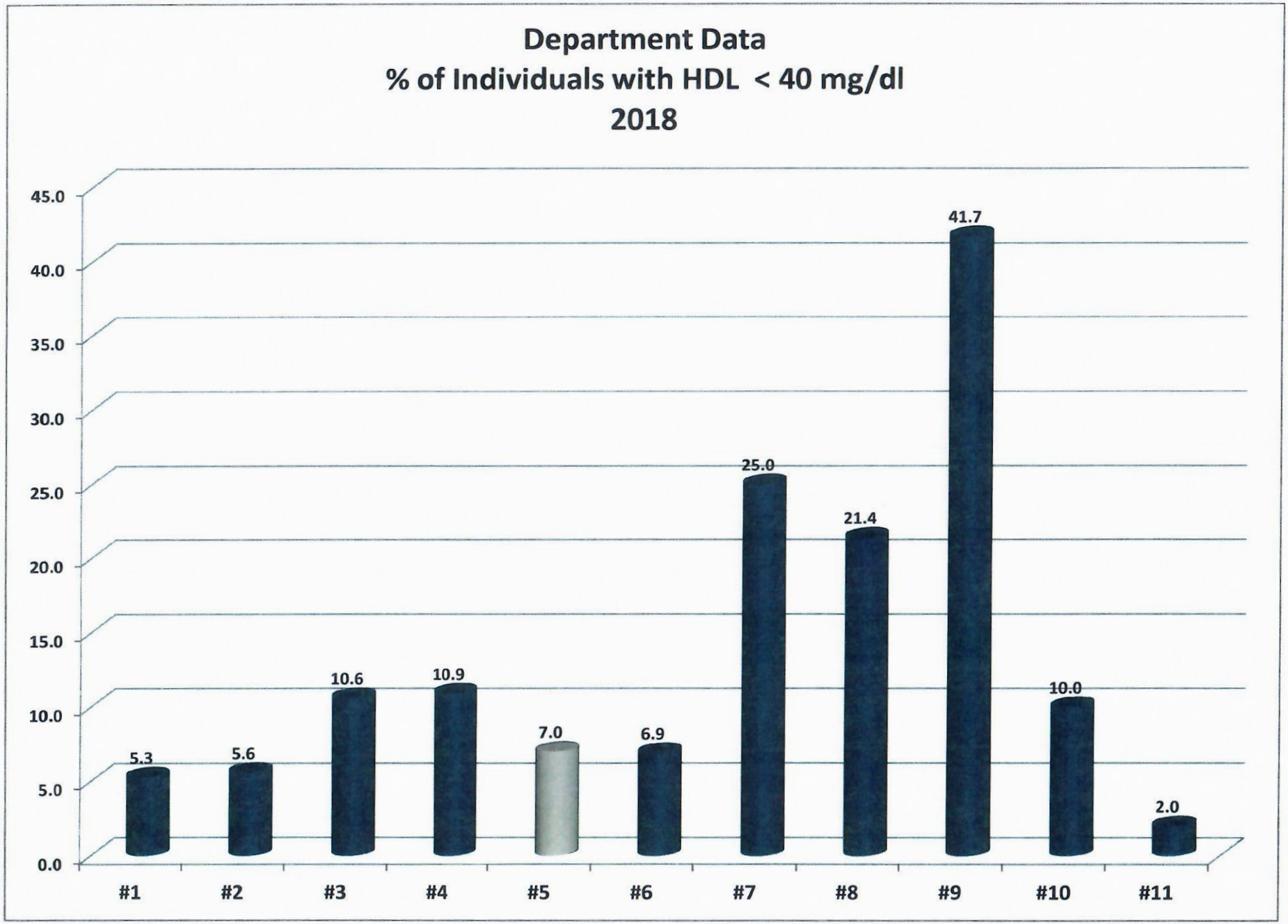

San Diego Fire Rescue Department
% of Individuals with Cardiovascular Fitness > 42 mlO2/kg/min
2018
85
80
75
70
65
60
69.8
75.7
78.2
79.2
77.7
71.1
75.4
75.7
77.3
79.1
80.7
79.0
81.1
80.3
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

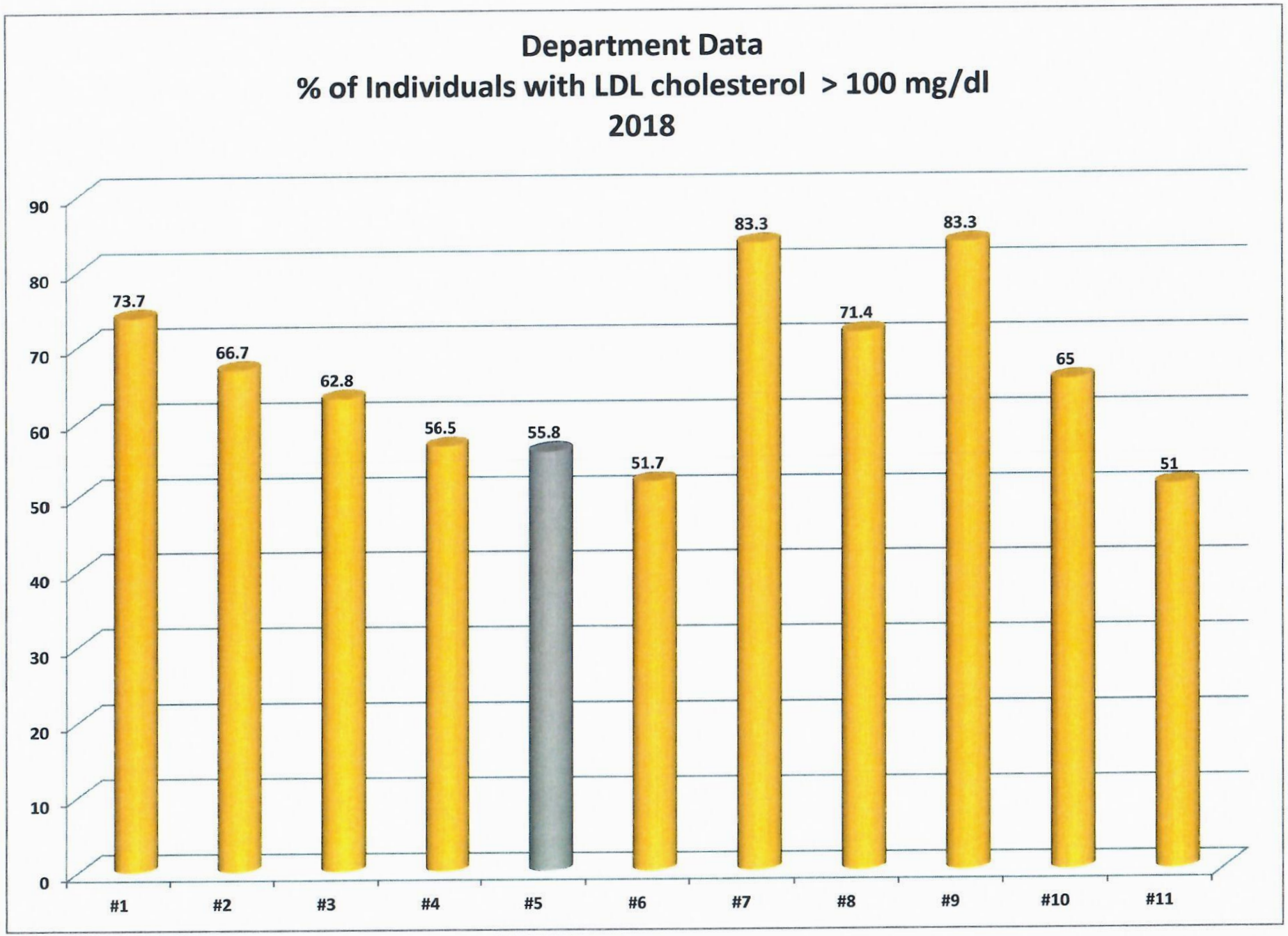

San Diego Fire Rescue Department
% of Individuals with Metabolic Syndrome
2018
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
12.4%
10.3%
11.4%
9.3%
8.4%
6.7%
6.6%
6.7%
5.3%
7.6%
6.3%
6.7%
7.4%
7.7%
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

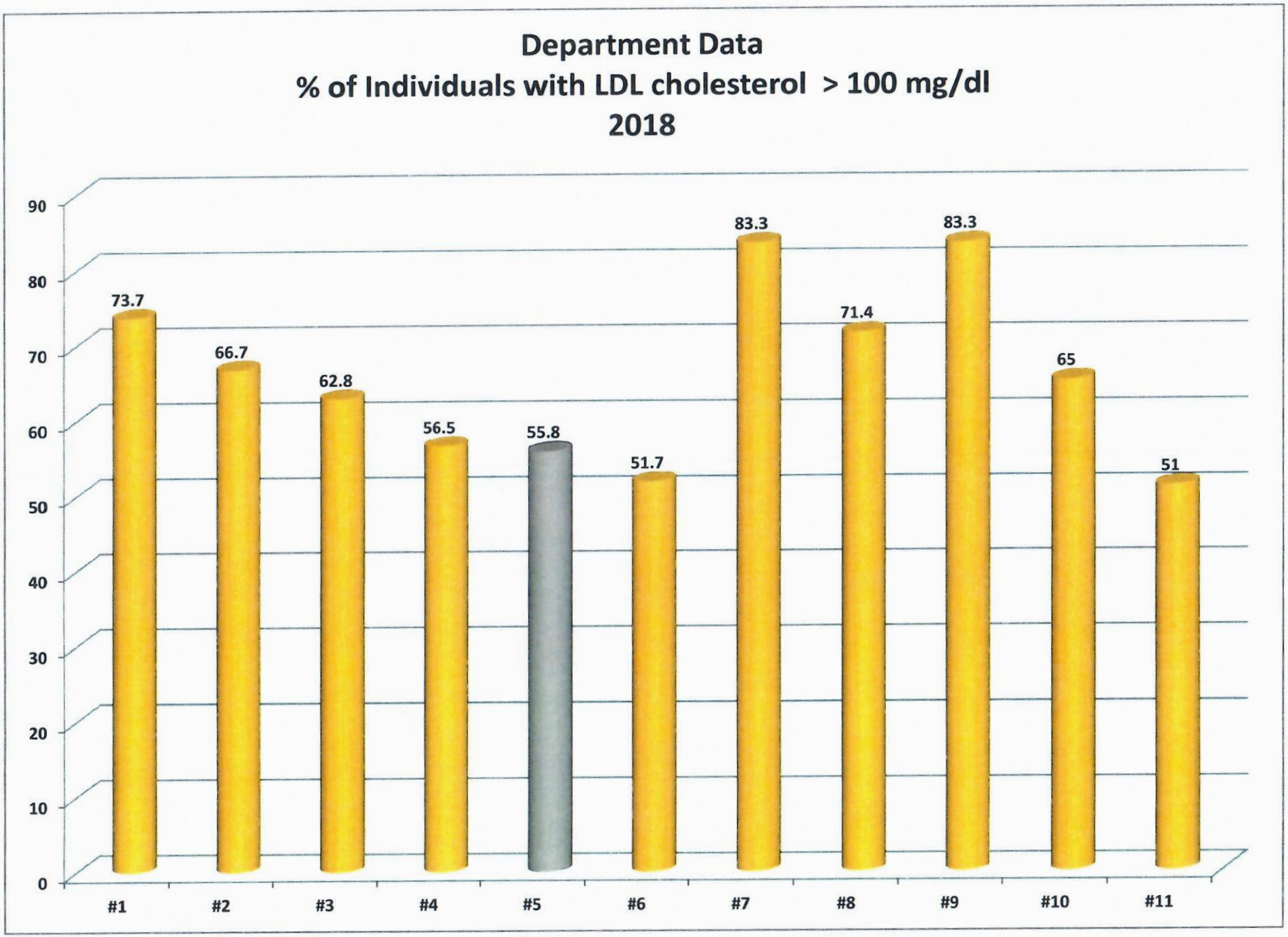

San Diego Fire Rescue Department
# of Factors for Metabolic Syndrome
2018
70
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
3 Factors
4 Factors
5 factors

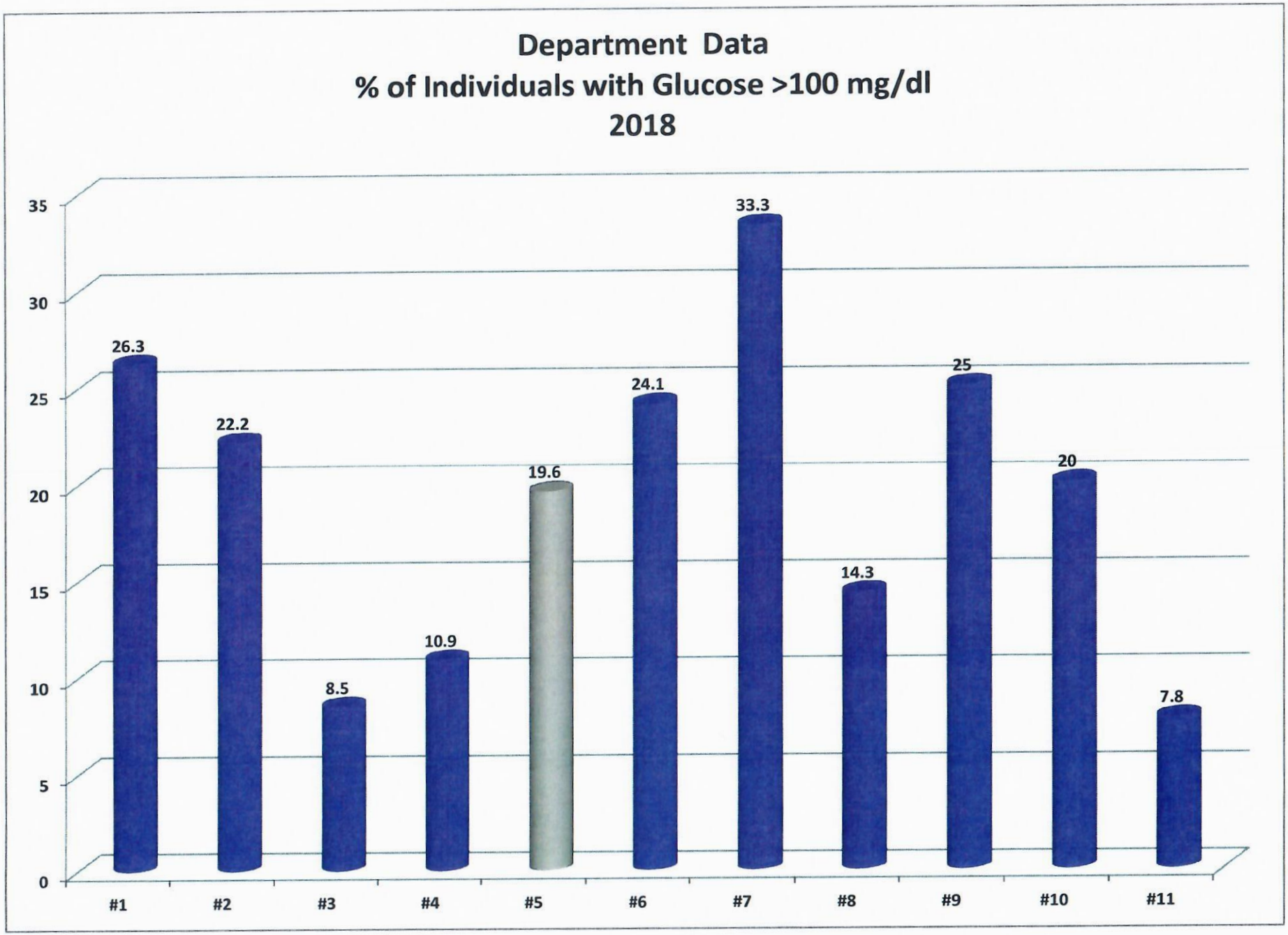

Department Averages
Percentage of Individuals with Body Fat >20%
2018
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
84.5
55.6
63.0
50.0
51.3
48.3
91.7
57.1
66.7
70.0
29.5
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11

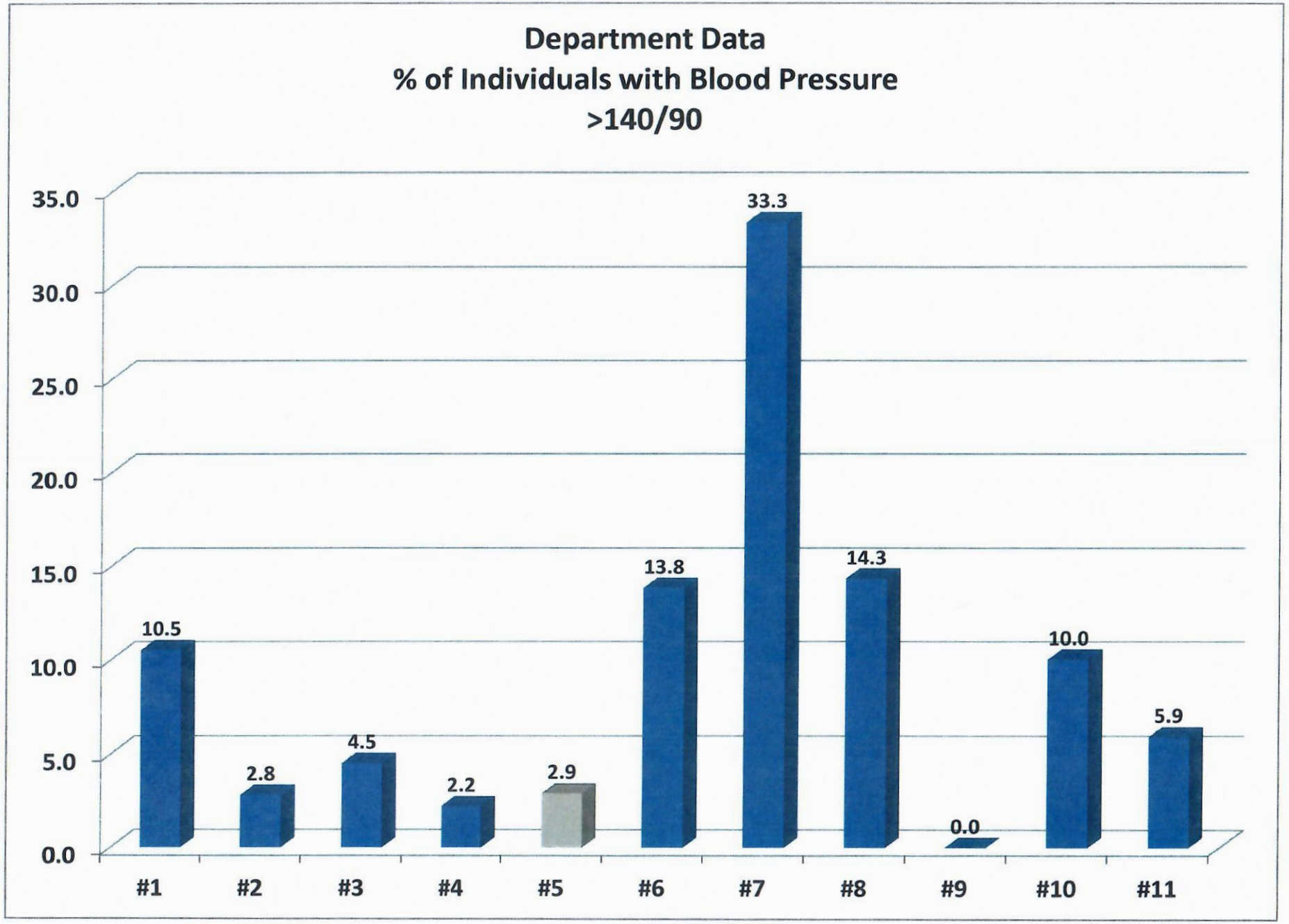

Department Data
% of Individuals with Triglycerides >150 mg/dl
2018
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
31.6
16.7
14.9
13.0
12.5
13.8
41.7
28.6
33.3
20.0
9.8
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11

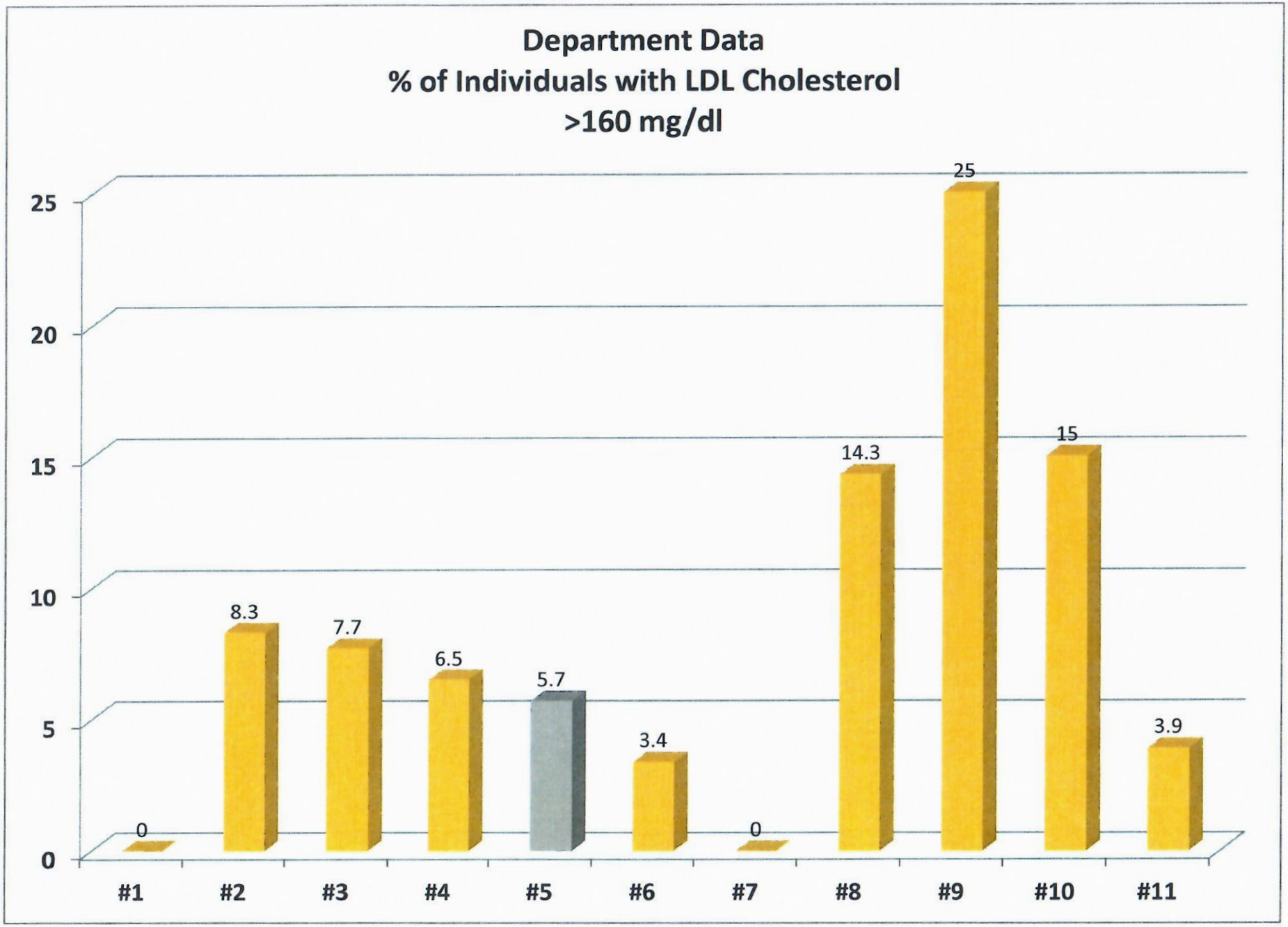

Department Data
% of Individuals with HDL < 40 mg/dl
2018
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5.3
5.6
10.6
10.9
7.0
6.9
25.0
21.4
41.7
10.0
2.0
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11

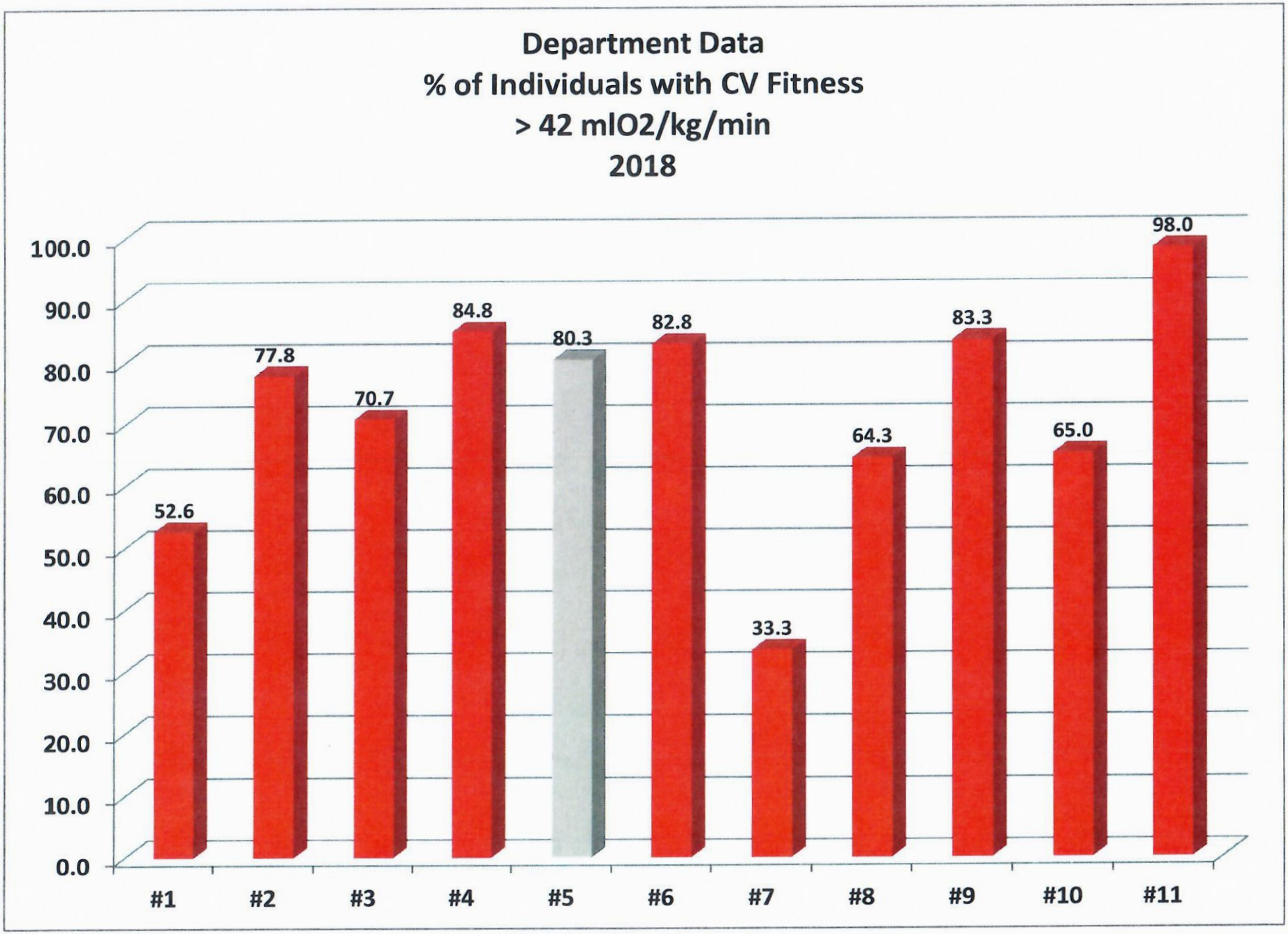

Department Data
% of Individuals with LDL cholesterol > 100 mg/dl
2018
90
80
70
60
50
40
30
20
10
0
73.7
66.7
62.8
56.5
55.8
51.7
83.3
71.4
83.3
65
51
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11

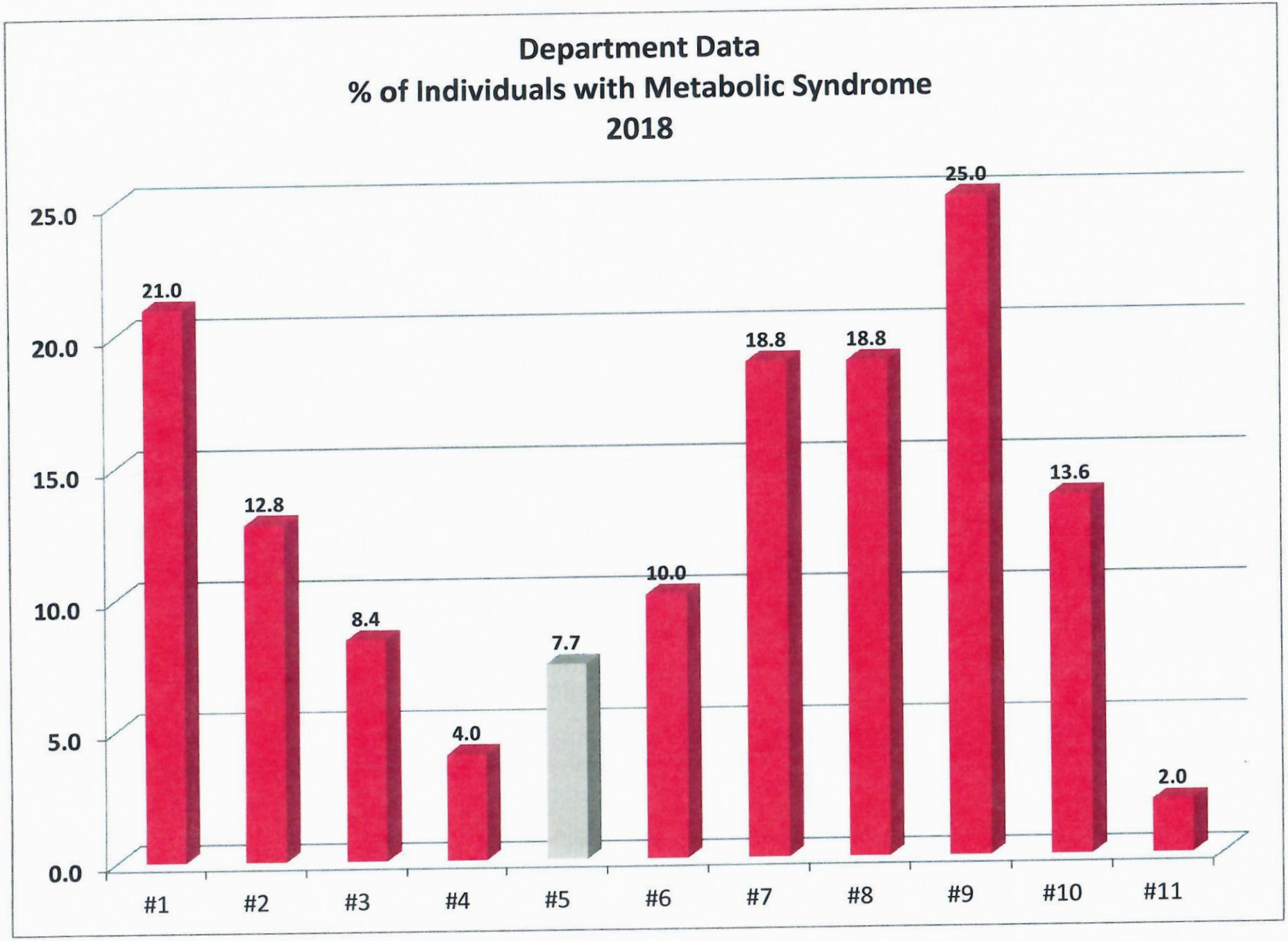

Department Data
% of Individuals with LDL cholesterol > 100 mg/dl
2018
90
80
70
60
50
40
30
20
10
0
73.7
66.7
62.8
56.5
55.8
51.7
83.3
71.4
83.3
65
51
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11

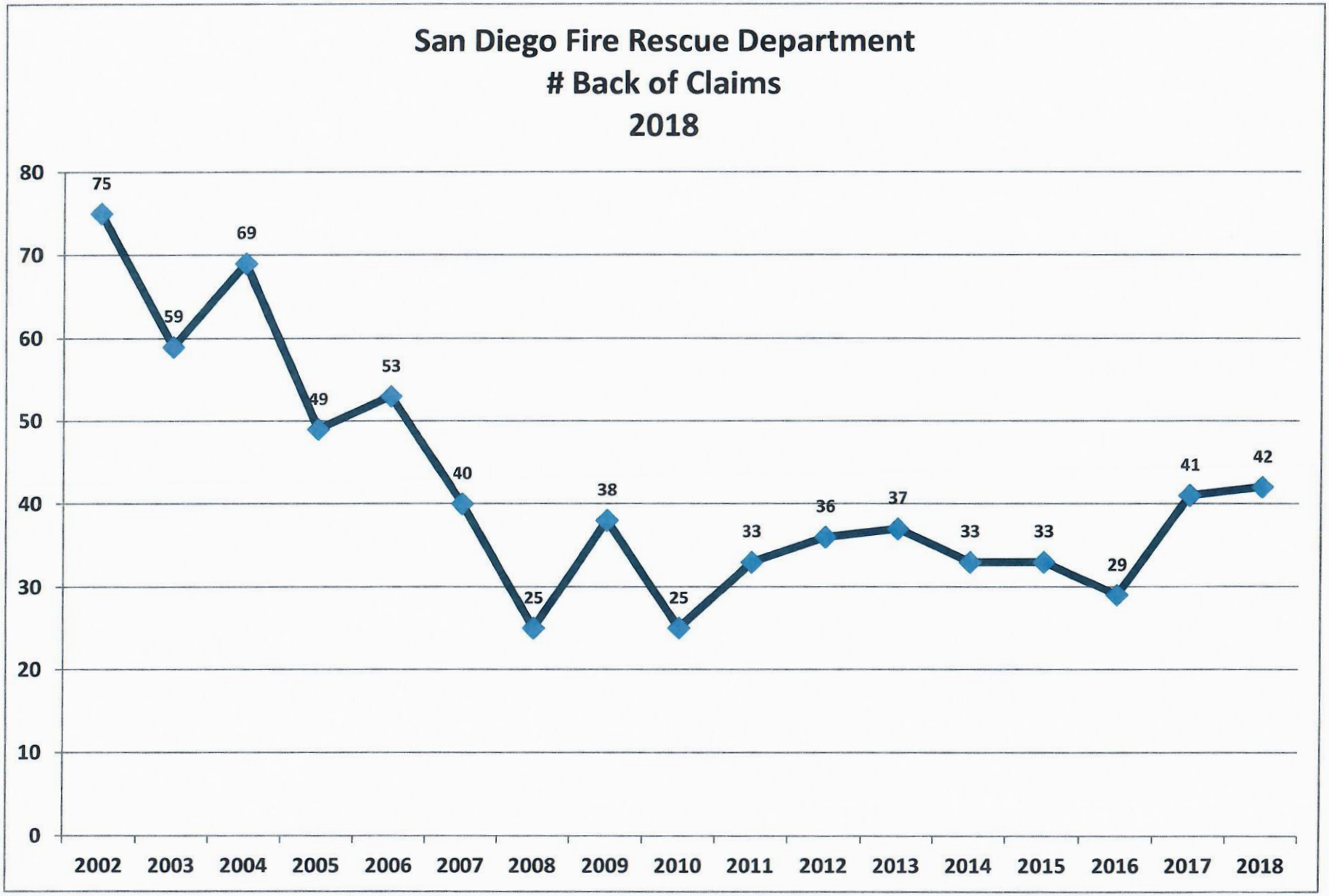

Department Data
% of Individuals with Glucose >100 mg/dl
2018
35
30
25
20
15
10
5
0
26.3
22.2
8.5
10.9
19.6
24.1
33.3
14.3
25
20
7.8
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11


Department Data
% of Individuals with Blood Pressure
>140/90
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
10.5
2.8
4.5
2.2
2.9
13.8
33.3
14.3
0.0
10.0
5.9
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11


Department Data
% of Individuals with LDL Cholesterol
>160 mg/dl
25
20
15
10
5
0
0
8.3
7.7
6.5
5.7
3.4
0
14.3
25
15
3.9
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11


Department Data
% of Individuals with CV Fitness
> 42 mlO2/kg/min
2018
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
52.6
77.8
70.7
84.8
80.3
82.8
33.3
64.3
83.3
65.0
98.0
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11


Department Data
% of Individuals with Metabolic Syndrome
2018
25.0
20.0
15.0
10.0
5.0
0.0
21.0
12.8
8.4
4.0
7.7
10.0
18.8
18.8
25.0
13.6
2.0
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11


San Diego Fire Rescue Department
Back of Claims
2018
80
70
60
50
40
30
20
10
0
75
59
69
49
53
40
25
38
25
33
36
37
33
33
29
41
42
2002
2003
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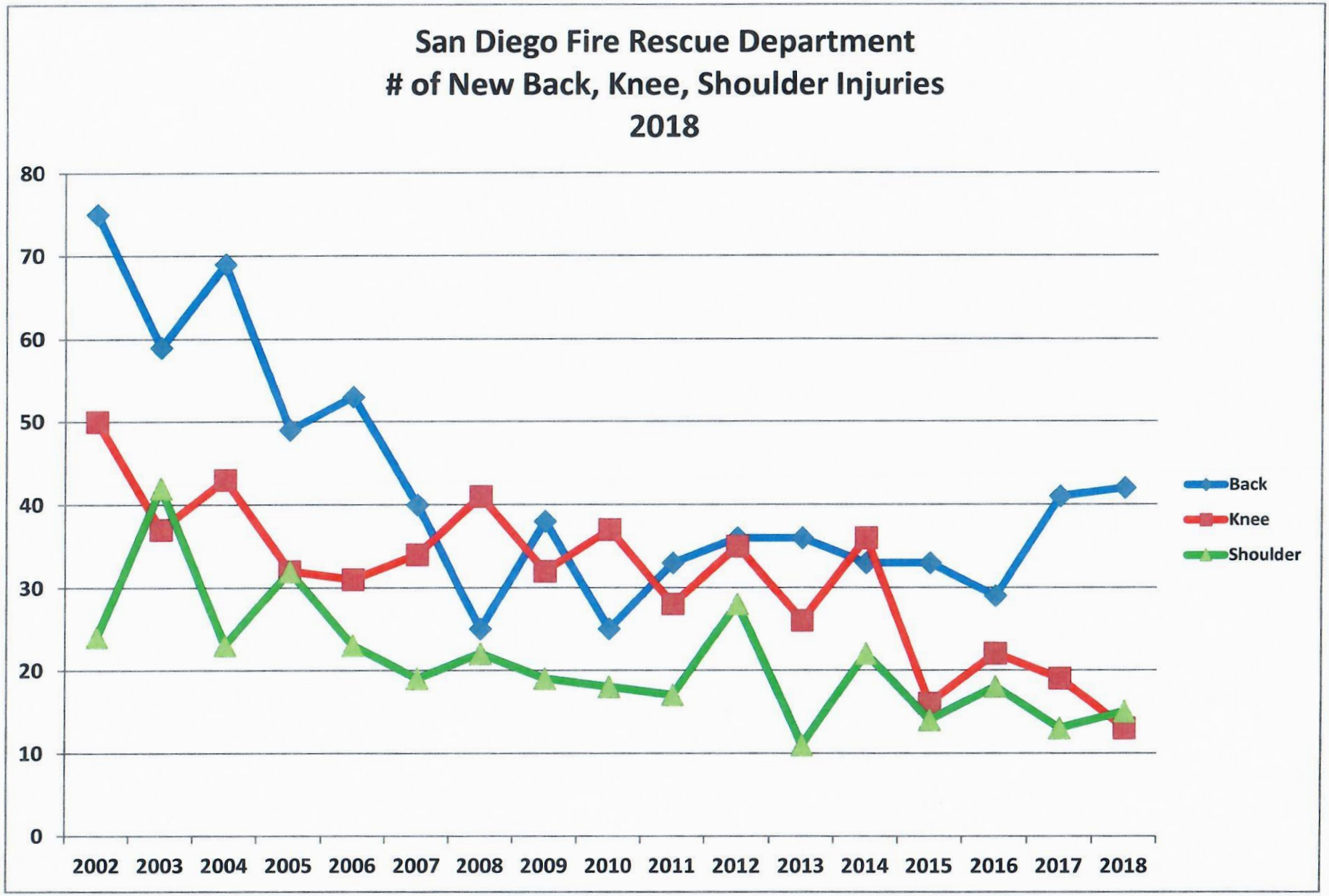
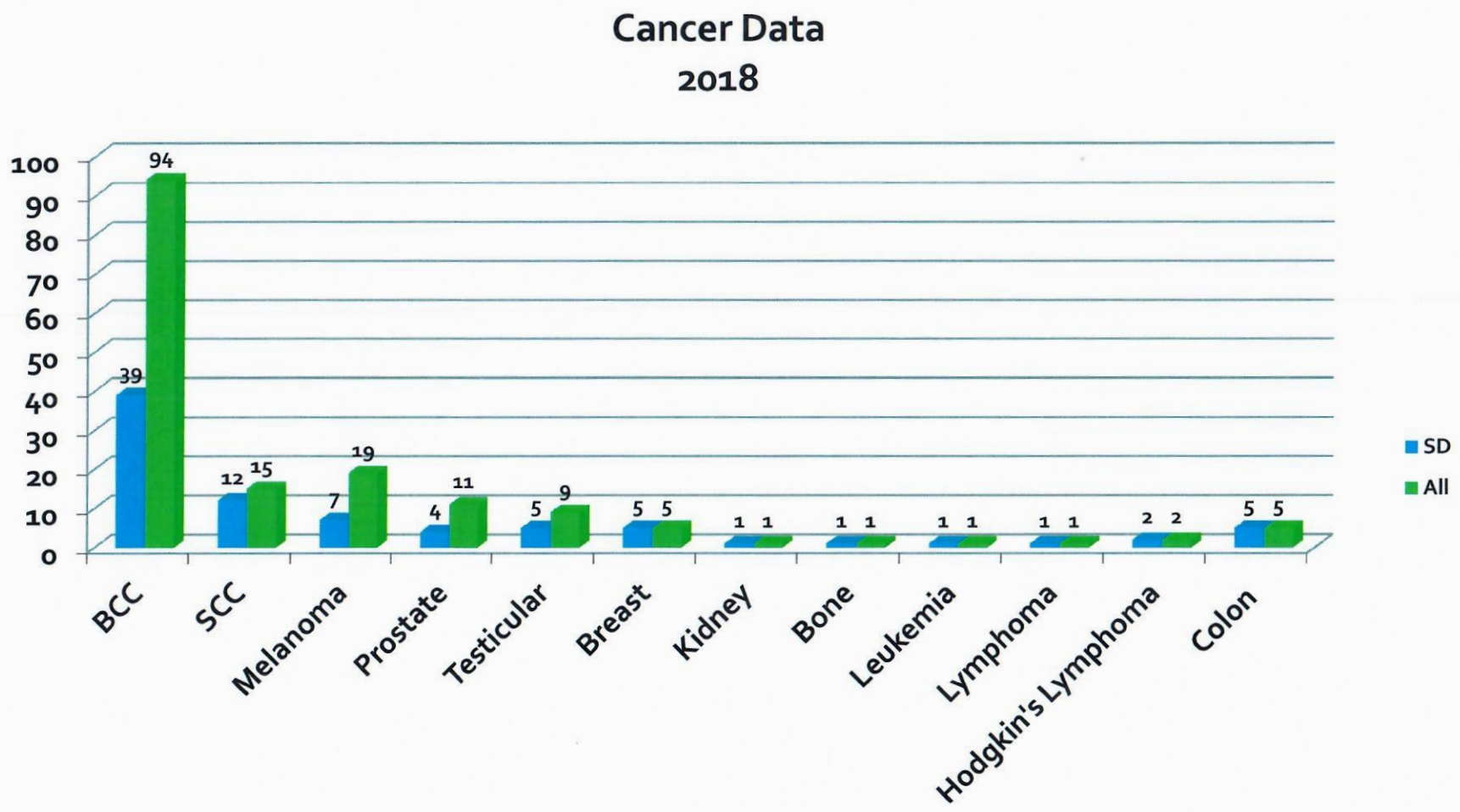
2016
2017
2018


San Diego Fire Rescue Department
# of New Back, Knee, Shoulder Injuries
2018
80
70
60
50
40
30
20
10
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Back
Knee
Shoulder

San Diego Firefighter Regional Wellness Program
Cancer Data



Behavioral Health

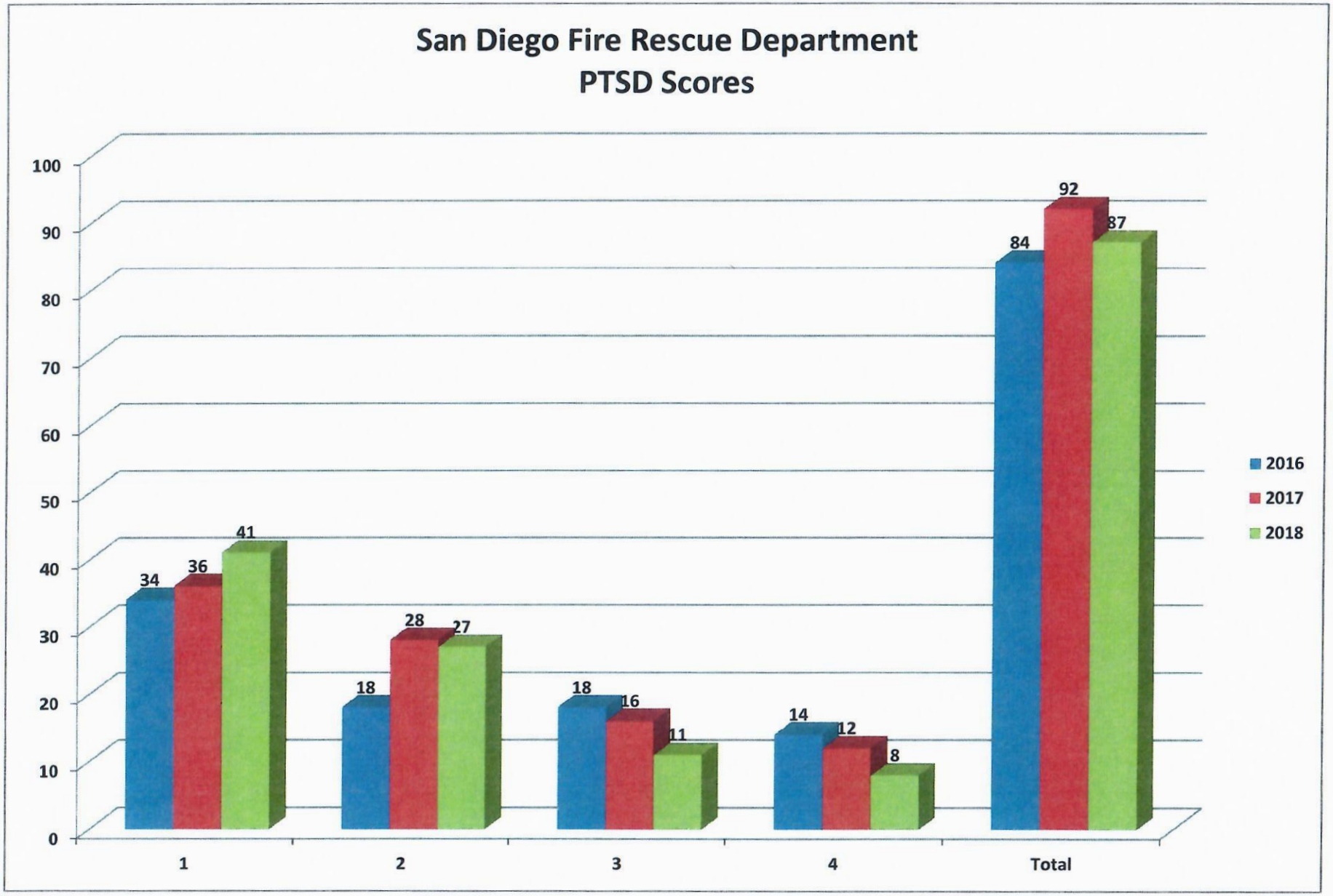
First responder deaths

The number of firefighters, EMTs and officers who took their own lives outnumber all line-of-duty deaths in 2017.



SOURCE Ruderman Family Foundation

Frank Pompa/USA TODAY


San Diego Fire Rescue Department
PTSD Scores
100
90
80
70
60
50
40
30
20
10
0
34
36
41
18
28
27
18
16
11
14
12
8
84
92
87
1
2
3
4
Total
2016
2017
2018

Summary 2018

1. Healthier Department
2. Injury rate is stable – lower in knees and shoulders
3. Cancer awareness – lifestyle factors
4. Areas to work on
    a. Lowering fasting blood sugar in high risk individuals
    b. Increasing percentage of Individuals over 12 Mets
    c. Lowering % of individuals with body fat >25%
    d. Continuing emphasis on injury reduction - education
    e. Hiring fit, lean & mentally healthy recruits

Fiscal Year 2021-2022

PRICE SCHEDULE - CITY FACILITY (FD & PD)

1. City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

a. Pricing Section - all inclusive of requirements specified in B.1.a & B.1.b exam costs (excluding pricing section b)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	(Est. Annual Qty. x Annual Cost Per Participant)
1150	EA	Complete Physical Wellness Medical Evaluation (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1a:	$ -

b. Pricing Section - all inclusive of requirements specified in B.1.b.xvi & B.1.b.xvii & B.1.b.xviii additional screenings

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*Additional Screenings for Firefighters with Specialities*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per
129	EA	Hazmat Team (B.1.b.xvi) & Bomb Squad (B.1.b.xvii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
150	EA	US&R TEAM (B.1.b.xviii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1b:	$ -

c. Pricing Section - all inclusive of requirements specified in B.1.c & B.1.d exam costs

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
40	HR	Athletic Trainer (Section B.1.c)		$ -
40	HR	Clerical Staff Member (Section B.1.d)		$ -
			TOTAL SECTION 1c:	$ -
			(52 X TOTAL SECTION 1c)	$ -

d. Pricing Section - all inclusive of requirements specified in B.2.a & B.2.b

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
40	EA	Respiratory Fit Exam		$ -
40	EA	DMV Exam		$ -
			TOTAL SECTION 1d:	$ -

e. Pricing Section - all inclusive of requirements specified in B.3.a

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	(Est. Weekly Qty. x Hourly Cost)
40	HR	Education Program Services (Section B.3.a)		$ -
			TOTAL SECTION 1e:	$ -
			ANNUAL TOTAL: (52 X TOTAL SECTION 1e)	$ -

f. Pricing Section - all inclusive of requirements specified in B.3.b & B.3.c

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
900	EA	Influenza Vaccinations - Quadrivalent		$ -
900	EA	TB/PPD testing		$ -
50	EA	Hepatitis A Vaccination		$ -
50	EA	Hepatitis B Vaccination - Series of 3		$ -
50	EA	MMR		$ -
50	EA	MMR Titer		$ -
50	EA	Varicella		$ -
50	EA	Varicella Titer		$ -
50	EA	Adacel (Tetanus)		$ -
			TOTAL SECTION 1f:	$ -

FINAL COST TOTALS

ANNUAL TOTAL SECTION 1a:	$ -

ANNUAL TOTAL SECTION 1b:	$ -
ANNUAL TOTAL SECTION 1c:	$ -
ANNUAL TOTAL SECTION 1d:	$ -
ANNUAL TOTAL SECTION 1e:	$ -
ANNUAL TOTAL SECTION 1f:	$ -
FINAL COST TOTAL PER YEAR	$ -

Fiscal Year 2021-2022

PRICE SCHEDULE - PROVIDOR FACILITY (FD & PD)

1. City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

a. Pricing Section - all inclusive of requirements specified in B.1.a & B.1.b exam costs (excluding pricing section b)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	(Est. Annual Qty. x Annual Cost Per Participant)
1150	EA	Complete Physical Wellness Medical Evaluation (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1a:	$ -

b. Pricing Section - all inclusive of requirements specified in B.1.b.xvi & B.1.b.xvii & B.1.b.xviii additional screenings

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*Additional Screenings for Firefighters with Specialities*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per
129	EA	Hazmat Team (B.1.b.xvi) & Bomb Squad (B.1.b.xvii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
150	EA	US&R TEAM (B.1.b.xviii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1b:	$ -

c. Pricing Section - all inclusive of requirements specified in B.1.c & B.1.d exam costs

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
40	HR	Athletic Trainer (Section B.1.c)		$ -
40	HR	Clerical Staff Member (Section B.1.d)		$ -
			TOTAL SECTION 1c:	$ -
			(52 X TOTAL SECTION 1c)	$ -

d. Pricing Section - all inclusive of requirements specified in B.2.a & B.2.b

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
40	EA	Respiratory Fit Exam		$ -
40	EA	DMV Exam		$ -
			TOTAL SECTION 1d:	$ -

e. Pricing Section - all inclusive of requirements specified in B.3.a

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	(Est. Weekly Qty. x Hourly Cost)
40	HR	Education Program Services (Section B.3.a)		$ -
			TOTAL SECTION 1e:	$ -
			(52 X TOTAL SECTION 1e)	$ -

f. Pricing Section - all inclusive of requirements specified in B.3.b & B.3.c

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
900	EA	Influenza Vaccinations - Quadrivalent		$ -
900	EA	TB/PPD testing		$ -
50	EA	Hepatitis A Vaccination		$ -
50	EA	Hepatitis B Vaccination - Series of 3		$ -
50	EA	MMR		$ -
50	EA	MMR Titer		$ -
50	EA	Varicella		$ -
50	EA	Varicella Titer		$ -

50	EA	Adacel (Tetanus)		$ -
			TOTAL SECTION 1f:	$ -

FINAL COST TOTALS

ANNUAL TOTAL SECTION 1a:	$ -
ANNUAL TOTAL SECTION 1b:	$ -
ANNUAL TOTAL SECTION 1c:	$ -
ANNUAL TOTAL SECTION 1d:	$ -
ANNUAL TOTAL SECTION 1e:	$ -
ANNUAL TOTAL SECTION 1f:	$ -
FINAL COST TOTAL PER YEAR	$ -

Fiscal Year 2021-2022

PRICE SCHEDULE - CITY FACILITY (FD ONLY)

1. City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

a. Pricing Section - all inclusive of requirements specified in B.1.a & B.1.b exam costs (excluding pricing section b)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	(Est. Annual Qty. x Annual Cost Per Participant)
1000	EA	Complete Physical Wellness Medical Evaluation (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1a:	$ -

b. Pricing Section - all inclusive of requirements specified in B.1.b.xvi & B.1.b.xvii & B.1.b.xviii additional screenings

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*Additional Screenings for Firefighters with Specialities*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per
129	EA	Hazmat Team (B.1.b.xvi) & Bomb Squad (B.1.b.xvii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
150	EA	US&R TEAM (B.1.b.xviii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1b:	$ -

c. Pricing Section - all inclusive of requirements specified in B.1.c & B.1.d exam costs

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
40	HR	Athletic Trainer (Section B.1.c)		$ -
40	HR	Clerical Staff Member (Section B.1.d)		$ -
			TOTAL SECTION 1c:	$ -
			ANNUAL TOTAL: (52 X TOTAL SECTION 1C)	$ -

d. Pricing Section - all inclusive of requirements specified in B.2.a & B.2.b

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
40	EA	Respiratory Fit Exam		$ -
40	EA	DMV Exam		$ -
			TOTAL SECTION 1d:	$ -

e. Pricing Section - all inclusive of requirements specified in B.3.a

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	(Est. Weekly Qty. x Hourly Cost)
40	HR	Education Program Services (Section B.3.a)		$ -
			TOTAL SECTION 1e:	$ -
			ANNUAL TOTAL: (52 X TOTAL SECTION 1e)	$ -

f. Pricing Section - all inclusive of requirements specified in B.3.b & B.3.c

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
900	EA	Influenza Vaccinations - Quadrivalent		$ -
900	EA	TB/PPD testing		$ -
50	EA	Hepatitis A Vaccination		$ -
50	EA	Hepatitis B Vaccination - Series of 3		$ -
50	EA	MMR		$ -
50	EA	MMR Titer		$ -
50	EA	Varicella		$ -
50	EA	Varicella Titer		$ -
50	EA	Adacel (Tetanus)		$ -

TOTAL SECTION 1f:	$ –

FINAL COST TOTALS

ANNUAL TOTAL SECTION 1a:	$ –
ANNUAL TOTAL SECTION 1b:	$ –
ANNUAL TOTAL SECTION 1c:	$ –
ANNUAL TOTAL SECTION 1d:	$ –
ANNUAL TOTAL SECTION 1e:	$ –
ANNUAL TOTAL SECTION 1f:	$ –
FINAL COST TOTAL PER YEAR	$ –

Fiscal Year 2021-2022

PRICE SCHEDULE - PROVIDOR FACILITY (FD ONLY)

1. City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

a. Pricing Section - all inclusive of requirements specified in B.1.a & B.1.b exam costs (excluding pricing section b)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	(Est. Annual Qty. x Annual Cost Per Participant)
1000	EA	Complete Physical Wellness Medical Evaluation (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1a:	$ -

b. Pricing Section - all inclusive of requirements specified in B.1.b.xvi & B.1.b.xvii & B.1.b.xviii additional screenings

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*Additional Screenings for Firefighters with Specialities*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per
129	EA	Hazmat Team (B.1.b.xvi) & Bomb Squad (B.1.b.xvii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
150	EA	US&R TEAM (B.1.b.xviii) (ONE EACH PER YEAR PER PARTICIPANT)		$ -
			TOTAL SECTION 1b:	$ -

c. Pricing Section - all inclusive of requirements specified in B.1.c & B.1.d exam costs

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
40	HR	Athletic Trainer (Section B.1.c)		$ -
40	HR	Clerical Staff Member (Section B.1.d)		$ -
			TOTAL SECTION 1c:	$ -
			ANNUAL TOTAL: (52 X TOTAL SECTION 1C)	$ -

d. Pricing Section - all inclusive of requirements specified in B.2.a & B.2.b

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
40	EA	Respiratory Fit Exam		$ -
40	EA	DMV Exam		$ -
			TOTAL SECTION 1d:	$ -

e. Pricing Section - all inclusive of requirements specified in B.3.a

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	(Est. Weekly Qty. x Hourly Cost)
40	HR	Education Program Services (Section B.3.a)		$ -
			TOTAL SECTION 1e:	$ -
			ANNUAL TOTAL: (52 X TOTAL SECTION 1e)	$ -

f. Pricing Section - all inclusive of requirements specified in B.3.b & B.3.c

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
900	EA	Influenza Vaccinations - Quadrivalent		$ -
900	EA	TB/PPD testing		$ -
50	EA	Hepatitis A Vaccination		$ -
50	EA	Hepatitis B Vaccination - Series of 3		$ -
50	EA	MMR		$ -
50	EA	MMR Titer		$ -
50	EA	Varicella		$ -
50	EA	Varicella Titer		$ -
50	EA	Adacel (Tetanus)		$ -

TOTAL SECTION 1f:	$ –

FINAL COST TOTALS

ANNUAL TOTAL SECTION 1a:	$ –
ANNUAL TOTAL SECTION 1b:	$ –
ANNUAL TOTAL SECTION 1c:	$ –
ANNUAL TOTAL SECTION 1d:	$ –
ANNUAL TOTAL SECTION 1e:	$ –
ANNUAL TOTAL SECTION 1f:	$ –
FINAL COST TOTAL PER YEAR	$ –

CITY OF SAN DIEGO

PURCHASING & CONTRACTING DEPARTMENT
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195
Fax: (619)236-5904

ADDENDUM A

RFP No. 10089601-20-K

RFP Closing Date: January 27, 2020 @2:00p.m.

Bid for furnishing the City of San Diego with **a Wellness Program for San Diego Fire-Rescue and Police Departments.**

The following changes to the specifications are hereby made effective as though they were originally shown and/or written:

1. *Delete* the original Request for Proposal signature page 3 and *replace* with the attached Addendum A Request for Proposal signature page 3.

2. *Delete* the original Request for Proposal page 8 and *replace* with the attached Addendum A Request for Proposal page 8. (**NOTE:** Changes made in bold)

3. *Add* two (2) pages "Questions and Answers". (**NOTE:** The questions and answers are being provided for informational purposes only, and are not part of any resulting contract from this RFP.)

4. *Add* four hundred and forty-five (445) pages of the current contract and thirty (30) pages of the First Amendment to the Contract in response to question number 1.

CITY OF SAN DIEGO PURCHASING & CONTRACTING DEPARTMENT

Brent Krohn
Program Coordinator
(619)236-6044

January 15, 2020

acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

_____
Proposer

_____
Street Address

_____
City

_____
Telephone No.

_____
E-Mail

BY:

_____
Signature of
Proposer's Authorized
Representative

_____
Print Name

_____
Title

_____
Date

CITY OF SAN DIEGO
A Municipal Corporation

BY:

_____

Print Name:

_____
Director, Purchasing & Contracting Department

_____
Date Signed

Approved as to form this ____ day of

_____, 20_____.
MARA W. ELLIOTT, City Attorney

BY:_____
Deputy City Attorney

added to the net amount invoiced. The City is liable for state, city, and county sales taxes but is exempt from Federal Excise Tax and will furnish exemption certificates upon request. All or any portion of the City sales tax returned to the City will be considered in the evaluation of proposals.

3. Escalation. An escalation factor is not allowed unless called for in this RFP. If escalation is allowed, proposer must notify the City in writing in the event of a decline in market price(s) below the proposal price. At that time, the City will make an adjustment in the Contract or may elect to re-solicit.

4. Unit Price. Unless the proposer clearly indicates that the price is based on consideration of being awarded the entire lot and that an adjustment to the price was made based on receiving the entire proposal, any difference between the unit price correctly extended and the total price shown for all items shall be offered shall be resolved in favor of the unit price.

C. EVALUATION OF PROPOSALS

1. Award. The City shall evaluate each responsive proposal to determine which proposal offers the City the best value consistent with the evaluation criteria set forth herein. The proposer offering the lowest overall price will not necessarily be awarded a contract.

2. Sustainable Materials. Consistent with Council Policy 100-14, the City encourages use of readily recyclable submittal materials that contain post-consumer recycled content.

3. Evaluation Process.

3.1 Process for Award. A City-designated evaluation committee (Evaluation Committee) will evaluate and score all responsive proposals. The Evaluation Committee may require proposer to provide additional written or oral information to clarify responses. Upon completion of the evaluation process, the Evaluation Committee will recommend to the Purchasing Agent that award be made to the proposer with the highest scoring proposal.

3.2 Reserved.

3.3 Site Inspection and Interview of Key Personnel. The City will conduct site inspection(s) of any facility(ies) if one or more proposals score within **ten (10) points** or less of the proposal with the highest score based on initial scoring of Evaluation Criteria A-D. Site inspection(s) and interview of key personnel will only be conducted for the proposer with the highest scoring proposal and those proposers scoring within **ten (10) points** or less of the highest scoring proposal. Site inspection(s) and interview of key personnel will be made by the Evaluation Committee in order to clarify the proposals and to answer any questions needed to complete the evaluation of the proposal submitted. Site inspection(s) and interview of key personnel will be scored as part of the selection process. The City will complete all reference checks prior to any oral interview. Proposers are required to complete their site inspection(s) and interview of key personnel within seven (7) workdays after the City's request. Proposers should be prepared to discuss and substantiate any of the areas of the proposal submitted, as well as proposer's qualifications to furnish the subject goods and services. Proposer is responsible for any costs incurred for the oral presentation and interview of the key personnel.

RFP No. 10089601-20-K

QUESTIONS AND ANSWERS

Question 1: Is the current contract - San Diego Firefighter's Wellness Program # 10056900-15-V? We'd like to request a copy of this contract, what is the procedure to obtain this?

Response: That is the correct contract number. The executed contract is included with this addendum.

Question 2: The scope of this RFP is broad asking that not only the participants in the RFP be specialized in Wellness, but also in Primary Care as well as Occupational Medicine. Will you be accepting more than one bid if a providing group can provide some but not all the services listed?

Response: It is the City's intent is to award one contract to one vendor. Respondents have the option to use subcontractors in order to meet the requirements of the solicitation. Refer to page 9, Statement of Subcontractors & Suppliers in the Contractor Standards Pledge of Compliance form.

Question 3: Can the Athletic Trainer perform other tasks for the contract?

Response: The Athletic Trainer can assist where needed but must always be available to take appointments and walk-ins. The Athletic Trainers priority and primary duty shall be injury rehabilitation and prevention with the workforce.

Question 4: What are the Clerical Assistant responsibilities?

Response: The Clerical Assistant will report to the Wellness Officers (FD and PD) to assist with scheduling wellness exams, ensure a smooth workflow for each exam and the work day (i.e. check in, paperwork, pulling medical reports, record keeping, etc.), coordinate appointments with the athletic trainer, coordination of education training, and other duties as assigned.

Question 5: What are the locations for the immunizations and TB testing?

Response: Immunizations and TB tests for the department will be performed on a mobile basis in the fire stations, fire academy and during their wellness exams at the wellness center. (B.3.b & B.3.C) During outbreaks, public health emergency's and times identified by the Wellness Officers the provider will be called upon to provide immunizations on a department wide scale.

Question 6: The RFP states that the practitioner for physicals must be a licensed MD/DO that provides testing. This can be done much more cost efficiently for the City if it is performed by a licensed NP/PA with MD/DO oversight. Would this be acceptable?

Response: **A Nurse Practitioner will not be allowed to perform the exams.**

A Physician Assistant (PA) will be allowed with MD/DO oversight (within the city limits) and under their strict guidance. The PA chosen will require the written approval of the Wellness Officers (FD and PD) and remain in good standing.

The Physician Assistant will be required to meet the same subspecialty certification, special knowledge (RFP, Section B.1.b.ii), certification by the National Registry of Certified Medical Examiners (RFP, Section B.1.b.ii.12) and experience (RFP, Section B.5.h).

Question 7: What services can be contracted out from the facility of the Medical Fitness Evaluation?

Response: **Laboratory Analyses and mammograms (RFP, Section B.1.a.ii)**

The intent of the RFP is to have all services for the evaluation provided at the wellness center. If a service needs to be contracted out it will need to be identified in writing and agreed to by the Wellness Officers.

Question 8: The RFP asks that the providers credentials/resumes be included in the RFP. With a scope this broad and the possibility of needing to staff on-site at the City's location chosen we will likely need to hire additional staff for this project if selected. This doesn't allow for us to provide resumes for all staff that would be allocated to this project as they have not all been hired. Will a response be deemed invalid if the staffing is not all listed?

Response: **At the time of the bid proposer shall, at minimum, provide all required documents for the Board Certified Designated Medical Director and further describe the "other" dedicated staff, their roles and responsibilities.**

At the time of contract award, proposer shall provide resumes/list of qualifications for all staff assigned to this Physical Wellness Program.

ORIGINAL

Addendum A,
January 15, 2020

CITY OF SAN DIEGO
PURCHASING & CONTRACTING DEPARTMENT
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195

REQUEST FOR PROPOSALS (RFP)/CONTRACT (COVER SHEET)

Goods and Services: San Diego Firefighter's Wellness Program

Solicitation Number: 10056900-15-V **ADDENDUM A**

Solicitation Issue Date: February 9, 2015

Proposal Due Date and Time (Closing Date): 4:00 p.m. Pacific Time on March 30, 2015

Contract Term: One (1) Year from Notice to Proceed, with Four (4), One (1)-Year Option Periods

City Contact: **Leslie Valdez, CPPB, 619-236-7090, LValdez@sandiego.gov**

Questions and Comments Due: No later than February 20, 2015 at 12:00 p.m. Pacific Time.

The City's Standard Payment Terms are Net 30 Days. Proposers may offer other payment terms (e.g., 2% 20 days) but such terms will not be considered in making the award decision. If different terms are offered, the City retains the option of making payment(s) based on these terms.

Discounted terms offered: _____% _____ Days.

Duration of Offer: By submitting a proposal, the proposer guarantees that the offer is firm for ninety (90) calendar days commencing the day following the Closing Date. Proposer agrees to accept a resulting contract subject to the terms and conditions stated herein. If an award is not made during that period, proposer's offer shall automatically extend for another ninety (90) calendar days unless the proposer indicates otherwise in writing thirty (30) calendar days prior to the end of the first ninety (90) calendar day period to the City Contact.

Proposer San Diego Sports Medicine and Family Health Center

Street Address 6699 Alvarado Road, Suite 2100

City San Diego, CA 92120

Telephone No. (619) 229-3922

E-Mail doctors@sdsm.com

IF PROPOSER'S OFFER IS ACCEPTED BY THE CITY, THIS IS THE CONTRACT. Proposer is required to sign this document and return one (1) original and five (5) copies of their proposal in sealed envelopes or cartons to the City Contact. Proposer shall also include an electronic copy of their proposal. Proposer agrees to furnish and deliver all goods and/or provide all services set forth or otherwise identified above subject to the terms and conditions specified herein. An original signature below is required. By signing below, the signer declares under penalty of perjury that she/he is authorized to sign this document and bind the proposer to the terms of this Contract.

Signature of Proposer's Authorized Representative	Signature of the City of San Diego Purchasing Agent	Approved as to Form City Attorney
Richard A. Parker, D.O.	By: Dennis Gakunga	Print Name
Print Name	Director Purchasing & Contracting	Dep. City Att'y
President		Title
Title		NOAH J. BRAZIER
Signature	Signature	Signature
3.25.15	5/5/15	8 July 2015
Date	Date	Date

R-309820

EXCEPTIONS TO RFP No. 10056900-15-V

NONE

City of San Diego

CONTRACTOR STANDARDS

Pledge of Compliance

The City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). The City of San Diego uses the criteria set forth in the CSO to determine whether a bidder or proposer has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds. This completed Pledge of Compliance signed under penalty of perjury must be submitted with each bid and proposal. If an informal solicitation process is used, the bidder must submit this completed Pledge of Compliance to the City prior to execution of the contract. All responses must be typewritten or printed in ink. If an explanation is requested or additional space is required, Respondents must provide responses on Attachment A to the Pledge of Compliance and sign each page. Failure to submit a signed and completed Pledge of Compliance may render the bid or proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted. A submitted Pledge of Compliance is a public record and information contained within will be available for public review except to the extent that such information is exempt from disclosure pursuant to applicable law.

A. BID/PROPOSAL/SOLICITATION TITLE:

San Diego Firefighter's Wellness Program
Bid Number RFP-10056900-15V

B. BIDDER/PROPOSER INFORMATION:

San Diego Sports Medicine and Family Health Center			
Legal Name		DBA	
6699 Alvarado Road, Suite 2100	San Diego	CA	92120
Street Address	City	State	Zip
Richard A. Parker, D.O., President	(619) 229-3922	(619) 229-3902	
Contact Person, Title	Phone	Fax	

C. OWNERSHIP AND NAME CHANGES:

1. In the past five (5) years, has your firm changed its name?
   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to list all prior legal and DBA names, addresses, and dates each firm name was used. Explain the specific reasons for each name change.

2. In the past five (5) years, has a firm owner, partner, or officer operated a similar business?
   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to list names and addresses of all businesses and the person who operated the business. Include information about a similar business only if an owner, partner, or officer of your firm holds or has held a similar position in another firm.

D. BUSINESS ORGANIZATION/STRUCTURE:

Indicate the organizational structure of your firm. Fill in only one section on this page. Use Attachment "A" if more space is required.

Corporation Date incorporated: 05 / 31 / 1995 State of incorporation: California

List corporation's current officers:
President: Richard A. Parker, D.O.
Vice Pres: Jeffrey P. Anthony, D.O.
Secretary: Frederick A. Richburg, M.D.
Treasurer: Lee P. Ralph, M.D.

Is your firm a publicly traded corporation? ☐ **Yes** ☑ **No**

If **Yes**, name those who own ten percent (10 %) or more of the corporation's stocks:

N/A

Limited Liability Company Date formed: ___/___/____ State of formation: _____

List names of members who own ten percent (10%) or more of the company:

N/A

Partnership Date formed: ___/___/____ State of formation: _____

List names of all firm partners:

N/A

Sole Proprietorship Date started: ____/____/____

List all firms you have been an owner, partner or officer with during the past five (5) years. Do not include ownership of stock in a publicly traded company:

N/A

Joint Venture Date formed: ____/____/____

List each firm in the joint venture and its percentage of ownership:

N/A

Note: To be responsive, each member of a Joint Venture must complete a separate *Pledge of Compliance*.

E. FINANCIAL RESOURCES AND RESPONSIBILITY:

1. Is your firm preparing to be sold, in the process of being sold, or in negotiations to be sold?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain the circumstances, including the buyer's name and principal contact information.

2. In the past five (5) years, has your firm been denied bonding?
   ☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances; include bonding company name.

3. In the past five (5) years, has a bonding company made any payments to satisfy claims made against a bond issued on your firm's behalf or a firm where you were the principal?

☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances.

4. In the past five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances.

5. Within the last five years, has your firm filed a voluntary petition in bankruptcy, been adjudicated bankrupt, or made a general assignment for the benefit of creditors?

6. Please provide the name of your principal financial institution for financial reference. By submitting a response to this Solicitation Contractor authorizes a release of credit information for verification of financial responsibility.

Name of Bank: Wells Fargo

Point of Contact: Jonathan Selga

Address: 4690 63rd Street, San Diego, CA 92115

Phone Number: (619) 583-8357

7. By submitting a response to a City solicitation, Contractor certifies that he or she has sufficient operating capital and/or financial reserves to properly fund the requirements identified in the solicitation. At City's request, Contractor will promptly provide to City a copy of Contractor's most recent balance sheet and/or other necessary financial statements to substantiate financial ability to perform.

F. PERFORMANCE HISTORY:

1. In the past five (5) years, has your firm been found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for defaulting or breaching a contract with a government agency?

☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances.

2. In the past five (5) years, has a public entity terminated your firm's contract for cause prior to contract completion?

☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances and provide principal contact information.

3. In the past five (5) years, has your firm entered into any settlement agreement for any lawsuit that alleged contract default, breach of contract, or fraud with or against a public entity?

☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances.

4. Is your firm currently involved in any lawsuit with a government agency in which it is alleged that your firm has defaulted on a contract, breached a contract, or committed fraud?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to explain specific circumstances.

5. In the past five (5) years, has your firm, or any firm with which any of your firm's owners, partners, or officers is or was associated, been debarred, disqualified, removed, or otherwise prevented from bidding on or completing any government or public agency contract for any reason?

☐ Yes ☑ No

If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances.

6. In the past five (5) years, has your firm received a notice to cure or a notice of default on a contract with any public agency?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to explain specific circumstances and how the matter resolved.

7. Performance References:

Please provide a minimum of three (3) references familiar with work performed by your firm which was of a similar size and nature to the subject solicitation within the last five (5) years.

Company Name: San Diego Fire-Rescue Department

Contact Name and Phone Number: Fire Chief Javier Mainar, (619) 533-4311

Contact Email: JMainar@sandiego.gov

Address: 1010 Second Avenue, Suite 400, MS 604, San Diego, CA 92101-4409

Contract Date: 1/1/2014

Contract Amount: $1,200,000.00 Annual

Requirements of Contract: San Diego Firefighter's Regional Wellness Program

Company Name: National City Fire Department

Contact Name and Phone Number: Frank Parra, Emergency Services Director

Contact Email: FParra@nationalcityca.gov, (619) 336-4241

Address: City Hall, 1243 National City Blvd, National City, California 91950

Contract Date: 1/1/2007

Contract Amount: $44,000.00 Annual

Requirements of Contract: Firefighter Wellness Program Services

Company Name: Imperial Beach Fire Department

Contact Name and Phone Number: Fire Chief Tom Clark, (619) 423-8223

Contact Email: TClark@imperialbeachca.gov

Address: 865 Imperial Beach Blvd., Imperial Beach, CA 91932

Contract Date: 1/1/2011

Contract Amount: $20,000.00 Annual

Requirements of Contract: Firefighter Wellness Program Services

G. COMPLIANCE:

1. In the past five (5) years, has your firm or any firm owner, partner, officer, executive, or manager been criminally penalized or found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for violating any federal, state, or local law in performance of a contract, including but not limited to, laws regarding health and safety, labor and employment, permitting, and licensing laws?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances surrounding each instance. Include the name of the entity involved, the specific infraction(s) or violation(s), dates of instances, and outcome with current status.

2. In the past five (5) years, has your firm been determined to be non-responsible by a public entity?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances of each instance. Include the name of the entity involved, the specific infraction, dates, and outcome.

H. BUSINESS INTEGRITY:

1. In the past five (5) years, has your firm been convicted of or found liable in a civil suit for making a false claim or material misrepresentation to a private or public entity?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances of each instance. Include the entity involved, specific violation(s), dates, outcome and current status.

2. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract?

   ☐ Yes ☑ No

   If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

3. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a federal, state, or local crime of fraud, theft, or any other act of dishonesty?

   ☐ Yes ☑ No

   If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

I. WAGE COMPLIANCE:

In the past five (5) years, has your firm been required to pay back wages or penalties for failure to comply with the federal, state or local prevailing, minimum, or living wage laws? Yes ☐ No ☑ If **Yes**, use Attachment "A" to explain the specific circumstances of each instance. Include the entity involved, the specific infraction(s), dates, outcome, and current status.

J. STATEMENT OF SUBCONTRACTORS:

Please provide the names and information for all subcontractors used in the performance of the proposed contract, and what portion of work will be assigned to each subcontractor. Subcontractors may not be substituted without the written consent of the City. Use Attachment "A" if additional pages are necessary. If no subcontractors will be used, please write "Not Applicable."

Company Name: Quest Diagnostics

Contact Name and Phone Number: Terry Camargo (619) 540-7956

Contact Email: Terry.L.Camargo@questdiagnostics.com

Address: 9245 Activity Road, Suite 109 San Diego, CA 92126

Contract Date 1/1/2005

Sub-Contract Dollar Amount: Cost of services provided

Requirements of Contract: Processing laboratory specimens

What portion of work will be assigned to this subcontractor: Laboratory - general labs

Is the Subcontractor a certified SLBE, ELBE, MBE, DBE, DVBE, or OBE? (Circle One) YES ☐ NO ☑

If YES, Contractor must provide valid proof of certification with the response to the bid or proposal.

Company Name: Scantibodies Laboratories, Inc.

Contact Name and Phone Number: David Cantor (619) 258-9300

Contact Email: david.cantor@scantibodies.com

Address: 9336 Abraham Way, Santee, CA 92071

Contract Date 1/1/2014

Sub-Contract Dollar Amount: Cost of services provided

Requirements of Contract: Processing laboratory specimens

What portion of work will be assigned to this subcontractor: Laboratory - Quantiferon testing

Is the Subcontractor a certified SLBE, ELBE, MBE, DBE, DVBE, or OBE? (Circle One) YES ☐ NO ☑

If YES, Contractor must provide valid proof of certification with the response to the bid or proposal.

K. STATEMENT OF AVAILABLE EQUIPMENT:

List all necessary equipment to complete the work specificied. Use *Pledge of Compliance Attachment "A"* if additional pages are necessary. In instances where the required equipment is not owned by the Contractor, Contractor shall explain how the equipment will be made available before the commencement of work. The City of San Diego reserves the right to reject any response when, in its opinion, the Contractor has not demonstrated he or she will be properly equipped to perform the work in an efficient, effective manner for the duration of the contract period.

If no equipment is necessary to complete the work specified, please write "Not Applicable."

Equipment Description: See Attachment for List of All Medical and Office Equipment

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

Equipment Description: _____

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

Equipment Description: _____

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

L. TYPE OF SUBMISSION: This document is submitted as:

✓ Initial submission of *Contractor Standards Pledge of Compliance.*

Update of prior *Contractor Standards Pledge of Compliance* dated ____/____/____.

Complete all questions and sign below.

Under penalty of perjury under the laws of the State of California, I certify that I have read and understand the questions contained in this Pledge of Compliance, that I am responsible for completeness and accuracy of the responses contained herein, and that all information provided is true to the best of my knowledge and belief. I agree to provide written notice to the Purchasing Agent within five (5) business days if, at any time, I learn that any portion of this Pledge of Compliance. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

I, on behalf of the firm, further certify that I and my firm will comply with the following provisions of SDMC section 22.3004:

(a) I and my firm will comply with all applicable local, State and Federal laws, including health and safety, labor and employment, and licensing laws that affect the employees, worksite or performance of the contract.

(b) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of receiving notice that a government agency has begun an investigation of me or my firm that may result in a finding that I or my firm is or was not in compliance with laws stated in paragraph (a).

(c) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of a finding by a government agency or court of competent jurisdiction of a violation by the Contractor of laws stated in paragraph (a).

(d) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of becoming aware of an investigation or finding by a government agency or court of competent jurisdiction of a violation by a subcontractor of laws stated in paragraph (a).

(e) I and my firm will cooperate fully with the City during any investigation and to respond to a request for information within ten (10) working days.

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed *Pledge of Compliance* is submitted.

Richard A. Parker, D.O., President		03/27/2015
Name and Title	Signature	Date

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed. Print in ink or type responses and indicate question being answered.

Additional Performance Reference:

Company Name: Corona Fire Department

Contact Name and Phone Number: Fire Chief David Duffy, (951) 279-3536

Contact Email: Fire@ci.corona.ca.us

Address: 735 Public Safety Way, Suite 201, Corona, CA 92880

Contract Date: 2/1/2014

Contract Amount: $150,000.00

Requirements of Contract: Fire Wellness Program Services

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Richard A. Parker, D.O., President		03/27/2015
Print Name, Title	Signature	Date

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed. Print in ink or type responses and indicate question being answered.

Equipment owned by SDSM needed to provide necessary services for contract:

- EKG machine
- Treadmill
- Bicycle ergometer
- AED
- Emergency equipment, oxygen tank, masks, ambubag, tubing
- Otoscope and Opthalmoscope
- Audiometer
- Sound proof booth
- Spirometer (2)
- Arm and leg dynamometer
- Grip dynamometer
- Skinfold calipers (Lange)
- Sit reach box/Acuflex
- Vertical jump - Probotics "Just Jump" Mat
- Roman chair
- Stopwatch
- Metronome
- Mat
- Polar TriFit 700 Fitness Evaluation and Health Risk Appraisal and Polar Body Age System
- Blood pressure cuffs (7)
- Digital thermometers (3)
- Scale, upright (2)
- Eye chart
- Examination table (2)
- Pillows (3)
- Desk, chair and computer (7)
- Printers (3)

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Richard A. Parker, D.O., President		03/27/2015
Print Name, Title	Signature	Date

San Diego Sports Medicine and Family Health Center
Equal Employment Opportunity Policy

In order to provide equal employment and advancement opportunities to all individuals, employment decisions at San Diego Sports Medicine and Family Health Center (SDSMFHC) will be based on merit, qualifications, and abilities. SDSMFHC does not discriminate in employment opportunities or practices on the basis of race, color, religion, sex, national origin, age, disability, or any other characteristic protected by law.

SDSMFHC will make reasonable accommodations for qualified individuals with known disabilities unless doing so would result in an undue hardship. This policy governs all aspects of employment, including selection, job assignment, compensation, discipline, termination, and access to benefits and training.

Any employees with questions or concerns about any type of discrimination in the workplace are encouraged to bring these issues to the attention of their immediate supervisor or the Personnel Department. Employees can raise concerns and make reports without fear of reprisal. Anyone found to be engaging in any type of unlawful discrimination will be subject to disciplinary action, up to and including termination of employment.

ATTACHMENT

AA. CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of its bid, the Contractor must provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Contractor in a legal or administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

☒ The undersigned certifies that within the past 10 years the Contractor has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers.

☐ The undersigned certifies that within the past 10 years the Contractor has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers. A description of the status of resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION REMEDIAL ACTION TAKEN

Contractor Name: San Diego Sports Medicine and Family Health Center

Certified By Richard A. Parker, D.O. Title President

Name

Signature Date 03/27/2015

Signature

City of San Diego
EQUAL OPPORTUNITY CONTRACTING (EOC)
1200 Third Avenue • Suite 200 • San Diego, CA 92101
Phone: (619) 236-6000 • Fax: (619) 236-5904

WORK FORCE REPORT

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR).*

NO OTHER FORMS WILL BE ACCEPTED

CONTRACTOR IDENTIFICATION

Type of Contractor: ☐ Construction ☑ Vendor/Supplier ☐ Financial Institution ☐ Lessee/Lessor ☐ Consultant ☐ Grant Recipient ☐ Insurance Company ☐ Other

Name of Company: San Diego Sports Medicine and Family Health Center

ADA/DBA:

Address (Corporate Headquarters, where applicable): 6699 Alvarado Road, Suite 2100

City: San Diego County: San Diego State: CA Zip: 92120

Telephone Number: (619) 229-3922 Fax Number: (619) 229-3902

Name of Company CEO: Richard A. Parker, D.O., President/CEO

Address(es), phone and fax number(s) of company facilities located in San Diego County **(if different from above):**

Address: See Contractor Standards Pledge of Compliance "A" for list of all facility locations

City: County: State: Zip:

Telephone Number: ( ) Fax Number: ( ) Email: doctors@sdsm.com

Type of Business: Physicians/Healthcare Type of License: Offices of Physicians

The Company has appointed: Jo Baxter

As its Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 6699 Alvarado Road, Suite 2100 San Diego, CA 92120

Telephone Number: (619) 229-3920 ext. 160 Fax Number: (619) 229-3902 Email: jobaxter@sdsm.com

☑ One San Diego County (or Most Local County) Work Force - Mandatory
☐ Branch Work Force *
☐ Managing Office Work Force

Check the box above that applies to this WFR.
**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

I, the undersigned representative of San Diego Sports Medicine and Family Health Center
(Firm Name)

San Diego, California hereby certify that information provided
(County) *(State)*

herein is true and correct. This document was executed on this 25th day of March, 20 15

(Authorized Signature)

Jo Baxter
Digitally signed by Jo Baxter
DN: cn=Jo Baxter, o, ou, email=jobaxter@sdsm.com, c=US
Date: 2015.03.25 16:46:56 -07'00'
(Print Authorized Signature Name)

WORK FORCE REPORT – Page 2

NAME OF FIRM: San Diego Sports Medicine and Family Health Center DATE: 03/25/2015

OFFICE(S) or BRANCH(ES): One San Diego County Workforce COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

(1) Black, African-American
(2) Hispanic, Latino, Mexican-American, Puerto Rican
(3) Asian, Pacific Islander
(4) American Indian, Eskimo
(5) Filipino
(6) White, Caucasian
(7) Other ethnicity; not falling into other groups

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) Black		(2) Hispanic		(3) Asian		(4) American Indian		(5) Filipino		(6) White		(7) Other Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Professional	0	0	0	1	1	0	0	0	2	0	10	6	0	0
A&E, Science, Computer	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technical	0	1	1	1	0	0	0	0	0	0	2	7	0	0
Sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative Support	0	0	0	2	0	1	0	0	0	0	0	7	0	0
Services	0	1	4	15	0	4	0	0	1	0	6	21	0	0
Crafts	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operative Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laborers*	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Construction laborers and other field employees are not to be included on this page

Totals Each Column	0	2	5	19	1	5	0	0	3	0	18	44	0	0

Grand Total All Employees	97

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

WORK FORCE REPORT – Page 3

NAME OF FIRM: San Diego Sports Medicine and Family Health Center DATE: 03/25/2015

OFFICE(S) or BRANCH(ES): One San Diego County Workforce COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

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(2) Hispanic, Latino, Mexican-American, Puerto Rican
(3) Asian, Pacific Islander
(4) American Indian, Eskimo
(5) Filipino
(6) White, Caucasian
(7) Other ethnicity; not falling into other groups

TRADE OCCUPATIONAL CATEGORY	(1) Black		(2) Hispanic		(3) Asian		(4) American Indian		(5) Filipino		(6) White		(7) Other Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carpet, Floor & Tile Installers Finishers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cement Masons, Concrete Finishers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction Laborers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drywall Installers, Ceiling Tile Inst	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electricians	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elevator Installers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
First-Line Supervisors/Managers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glaziers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Helpers; Construction Trade	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Millwrights	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Const. Equipment Operators	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painters, Const. & Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipelayers, Plumbers, Pipe & Steam Fitters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plasterers & Stucco Masons	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roofers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Security Guards & Surveillance Officers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Metal Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Structural Metal Fabricators & Fitters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Welding, Soldering & Brazing Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Workers, Extractive Crafts, Miners	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals Each Column	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Grand Total All Employees	97

Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CITY OF SAN DIEGO WORK FORCE REPORT

HISTORY

The Work Force Report (WFR) is the document that allows the City of San Diego to analyze the work forces of all firms wishing to do business with the City. We are able to compare the firm's work force data to County Labor Force Availability (CLFA) data derived from the United States Census. CLFA data is a compilation of lists of occupations and includes the percentage of each ethnicity we track (Black, Hispanic, Asian, American Indian, Filipino) for each occupation. Currently, our CLFA data is taken from the 2010 Census. In order to compare one firm to another, it is important that the data we receive from the consultant firm is accurate and organized in the manner that allows for this fair comparison.

WORK FORCE & BRANCH WORK FORCE REPORTS

When submitting a WFR, especially if the WFR is for a specific project or activity, we would like to have information about the firm's work force that is actually participating in the project or activity. That is, if the project is in San Diego and the work force is from San Diego, we want a San Diego County Work Force Report.[1] By the same token, if the project is in San Diego, but the work force is from another county, such as Orange or Riverside County, we want a Work Force Report from that county.[2] If participation in a San Diego project is by work forces from San Diego County and, for example, from Los Angeles County and from Sacramento County, we ask for separate Work Force Reports representing your firm from each of the three counties.

MANAGING OFFICE WORK FORCE

Equal Opportunity Contracting may occasionally ask for a Managing Office Work Force (MOWF) Report. This may occur in an instance where the firm involved is a large national or international firm but the San Diego or other local work force is very small. In this case, we may ask for both a local and a MOWF Report.[1,3] In another case, when work is done only by the Managing Office, only the MOWF Report may be necessary.[3]

TYPES OF WORK FORCE REPORTS:

Please note, throughout the preceding text of this page, the superscript numbers one [1], two [2] & three [3]. These numbers coincide with the types of work force report required in the example. See below:

[1] One San Diego County (or Most Local County) Work Force – Mandatory in most cases

[2] Branch Work Force *

[3] Managing Office Work Force

**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

Exhibit A: Work Force Report Job categories-Administration

Refer to this table when completing your firm's Work Force Report form(s).

Management & Financial

Advertising, Marketing, Promotions, Public Relations, and Sales Managers
Business Operations Specialists
Financial Specialists
Operations Specialties Managers
Other Management Occupations
Top Executives

Professional

Art and Design Workers
Counselors, Social Workers, and Other Community and Social Service Specialists
Entertainers and Performers, Sports and Related Workers
Health Diagnosing and Treating Practitioners
Lawyers, Judges, and Related Workers
Librarians, Curators, and Archivists
Life Scientists
Media and Communication Workers
Other Teachers and Instructors
Postsecondary Teachers
Primary, Secondary, and Special Education School Teachers
Religious Workers
Social Scientists and Related Workers

Architecture & Engineering, Science, Computer

Architects, Surveyors, and Cartographers
Computer Specialists
Engineers
Mathematical Science Occupations
Physical Scientists

Technical

Drafters, Engineering, and Mapping Technicians
Health Technologists and Technicians
Life, Physical, and Social Science Technicians
Media and Communication Equipment Workers

Sales

Other Sales and Related Workers
Retail Sales Workers
Sales Representatives, Services
Sales Representatives, Wholesale and Manufacturing
Supervisors, Sales Workers

Administrative Support

Financial Clerks
Information and Record Clerks
Legal Support Workers
Material Recording, Scheduling, Dispatching, and Distributing Workers
Other Education, Training, and Library Occupations
Other Office and Administrative Support Workers
Secretaries and Administrative Assistants
Supervisors, Office and Administrative Support Workers

Services

Building Cleaning and Pest Control Workers
Cooks and Food Preparation Workers
Entertainment Attendants and Related Workers
Fire Fighting and Prevention Workers
First-Line Supervisors/Managers, Protective Service Workers
Food and Beverage Serving Workers
Funeral Service Workers
Law Enforcement Workers
Nursing, Psychiatric, and Home Health Aides
Occupational and Physical Therapist Assistants and Aides
Other Food Preparation and Serving Related Workers
Other Healthcare Support Occupations
Other Personal Care and Service Workers
Other Protective Service Workers
Personal Appearance Workers
Supervisors, Food Preparation and Serving Workers
Supervisors, Personal Care and Service Workers
Transportation, Tourism, and Lodging Attendants

Crafts

Construction Trades Workers
Electrical and Electronic Equipment Mechanics, Installers, and Repairers
Extraction Workers
Material Moving Workers
Other Construction and Related Workers
Other Installation, Maintenance, and Repair Occupations
Plant and System Operators
Supervisors of Installation, Maintenance, and Repair Workers
Supervisors, Construction and Extraction Workers
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
Woodworkers

Operative Workers

Assemblers and Fabricators
Communications Equipment Operators
Food Processing Workers
Metal Workers and Plastic Workers
Motor Vehicle Operators
Other Production Occupations
Printing Workers
Supervisors, Production Workers
Textile, Apparel, and Furnishings Workers

Transportation

Air Transportation Workers
Other Transportation Workers
Rail Transportation Workers
Supervisors, Transportation and Material Moving Workers
Water Transportation Workers

Laborers

Agricultural Workers
Animal Care and Service Workers
Fishing and Hunting Workers
Forest, Conservation, and Logging Workers
Grounds Maintenance Workers
Helpers, Construction Trades
Supervisors, Building and Grounds Cleaning and Maintenance Workers
Supervisors, Farming, Fishing, and Forestry Workers

Exhibit B: Work Force Report Job categories-Trade

Brick, Block or Stone Masons

Brickmasons and Blockmasons
Stonemasons

Carpenters

Carpet, floor and Tile Installers and Finishers

Carpet Installers
Floor Layers, except Carpet, Wood and Hard Tiles
Floor Sanders and Finishers
Tile and Marble Setters

Cement Masons, Concrete Finishers

Cement Masons and Concrete Finishers
Terrazzo Workers and Finishers

Construction Laborers

Drywall Installers, Ceiling Tile Inst

Drywall and Ceiling Tile Installers
Tapers

Electricians

Elevator Installers and Repairers

First-Line Supervisors/Managers

First-line Supervisors/Managers of Construction Trades and Extraction Workers

Glaziers

Helpers, Construction Trade

Brickmasons, Blockmasons, and Tile and Marble Setters
Carpenters
Electricians
Painters, Paperhangers, Plasterers and Stucco
Pipelayers, Plumbers, Pipefitters and Steamfitters
Roofers
All other Construction Trades

Millwrights

Heating, Air Conditioning and Refrigeration Mechanics and Installers
Mechanical Door Repairers
Control and Valve Installers and Repairers
Other Installation, Maintenance and Repair Occupations

Misc. Const. Equipment Operators

Paving, Surfacing and Tamping Equipment Operators
Pile-Driver Operators
Operating Engineers and Other Construction Equipment Operators

Painters, Const. Maintenance

Painters, Construction and Maintenance
Paperhangers

Pipelayers and Plumbers

Pipelayers
Plumbers, Pipefitters and Steamfitters

Plasterers and Stucco Masons

Roofers

Security Guards & Surveillance Officers

Sheet Metal Workers

Structural Iron and Steel Workers

Welding, Soldering and Brazing Workers

Welders, Cutter, Solderers and Brazers
Welding, Soldering and Brazing Machine Setter, Operators and Tenders

Workers, Extractive Crafts, Miners

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed. Print in ink or type responses and indicate question being answered.

List of all facility locations in San Diego County:

San Diego Sports Medicine and Family Health Center - Alvarado Office
6699 Alvarado Road, Suites 2100 & 2101
San Diego, CA 92120
Telephone (619) 229-3922
Fax (619) 229-3902

San Diego Sports Medicine and Family Health Center - Sorrento Valley Office
4010 Sorrento Valley Blvd.
San Diego, CA 92121
Telephone (858) 793-7860
Fax (858) 436-1289

San Diego Sports Medicine and Family Health Center - Grossmont Office
8860 Center Drive, Suite 350A
La Mesa, CA 91942
Telephone (619) 229-3922 (all correspondence directed to Alvarado office)
Fax (619) 229-3902

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Jo Baxter, EEOO		03/27/2015
Print Name, Title	Signature	Date

EQUAL BENEFITS ORDINANCE
CERTIFICATION OF COMPLIANCE

For additional information, contact:
CITY OF SAN DIEGO
EQUAL BENEFITS PROGRAM
202 C Street, MS 8A, San Diego, CA 92101
Phone (619) 533-3948 Fax (619) 533-3220

COMPANY INFORMATION

Company Name: San Diego Sports Medicine and Family Health Center	Contact Name: Jo Baxter
Company Address: 6699 Alvarado Road, Suite 2100	Contact Phone: (619) 229-3922
San Diego, CA 92120	Contact Email: jobaxter@sdsm.com

CONTRACT INFORMATION

Contract Title: San Diego Firefighter's Wellness Program	Start Date: 2015
Contract Number (if no number, state location): 10056900-15-V	End Date: 2020

SUMMARY OF EQUAL BENEFITS ORDINANCE REQUIREMENTS

The Equal Benefits Ordinance [EBO] requires the City to enter into contracts only with contractors who certify they will provide and maintain equal benefits as defined in San Diego Municipal Code §22.4302 for the duration of the contract. To comply:

- Contractor shall offer equal benefits to employees with spouses and employees with domestic partners.
  - Benefits include health, dental, vision insurance; pension/401(k) plans; bereavement, family, parental leave; discounts, child care; travel/relocation expenses; employee assistance programs; credit union membership; or any other benefit.
  - Any benefit not offered to an employee with a spouse, is not required to be offered to an employee with a domestic partner.
- Contractor shall post notice of firm's equal benefits policy in the workplace and notify employees at time of hire and during open enrollment periods.
- Contractor shall allow City access to records, when requested, to confirm compliance with EBO requirements.
- Contractor shall submit *EBO Certification of Compliance*, signed under penalty of perjury, prior to award of contract.

NOTE: Full text of the EBO and its Rules are posted at *www.sandiego.gov/purchasing/programs/equalbenefits*.

CONTRACTOR EQUAL BENEFITS ORDINANCE CERTIFICATION

Please indicate your firm's compliance status with the EBO. The City may request supporting documentation.

◉ I affirm **compliance** with the EBO because my firm *(contractor must select one reason):*

- ◉ Provides equal benefits to spouses and domestic partners.
- ○ Provides no benefits to spouses or domestic partners.
- ○ Has no employees.
- ○ Has collective bargaining agreement(s) in place prior to January 1, 2011, that has not been renewed or expired.

○ I request the City's approval to pay affected employees a **cash equivalent** in lieu of equal benefits and verify my firm made a reasonable effort but is not able to provide equal benefits upon contract award. I agree to notify employees of the availability of a cash equivalent for benefits available to spouses but not domestic partners and to continue to make every reasonable effort to extend all available benefits to domestic partners.

It is unlawful for any contractor to knowingly submit any false information to the City regarding equal benefits or cash equivalent associated with the execution, award, amendment, or administration of any contract. [San Diego Municipal Code §22.4307(a)]

Under penalty of perjury under laws of the State of California, I certify the above information is true and correct. I further certify that my firm understands the requirements of the Equal Benefits Ordinance and will provide and maintain equal benefits for the duration of the contract or pay a cash equivalent if authorized by the City.

Jo Baxter, EEOO		3/27/2015
Name/Title of Signatory	Signature	Date

FOR OFFICIAL CITY USE ONLY

Receipt Date: EBO Analyst: □ Approved □ Not Approved – Reason:









SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS CENTER

RFP No. 10056900-15-V

Submitted by:

San Diego Sports Medicine and Family Health Center

6699 Alvarado Road, Suite 2100

San Diego, California 92120

Phone: 619.229.3922

Fax: 619.229.3902

Email: Doctors@sdsm.com

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SAN DIEGO FIREFIGHTERS' REGIONAL WELLNESS PROGRAM
RFP NO. 10056900-15-V

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a. Richard A. Parker, D.O., F.A.O.A.S.M.
b. Jeffrey P. Anthony, D.O., F.A.A.F.P., F.A.O.A.S.M.
c. Lee P. Ralph, M.D.
d. Frederick Allen Richburg, M.D., M.S., F.A.A.F.P.
e. Michelle L. Look, M.D., F.A.A.F.P.
f. Stephen J. Rohrer, D.O.
g. Scott R. Evans, M.D.
h. Rebeccah R. Rodriguez, D.O.
i. Douglas D. Dengerink, D.O.
j. Alexandra Myers, D.O.
k. Shannon K. Cheffet, D.O.
l. Kathleen D. Rusk, P.A.-C., M.S.
m. Matthew Downs, M.S.
n. Rebecca J. McClintock, M.S.
o. Kayli Gibbs, M.S.
p. Mia Green, M.S.
q. Kate Machado, M.S., R.D., C.S.S.D.
r. Brittany Davis
s. Davina Oropeza
t. Steven Birch, Ph.D.
u. Atul Malhotra, M.D.
v. Jeanne Nichols, Ph.D., F.A.C.S.M.
w. Linda Hill, M.D. M.P.H.
x. David Wing, M.S.

EXECUTIVE SUMMARY

Over 10 years ago San Diego Sports Medicine and Family Health Center (SDSMFHC) earned the privilege of partnering with the San Diego Fire-Rescue Department in the establishment of the San Diego Firefighter's Regional Wellness Program (SDFRWP). This program stands alone in North America as the premier Wellness Fitness Initiative program (WFI). The SDFRWP was well conceived and has been well executed for over a decade. The result has been a fitter, healthier firefighter workforce, lower injury rates and lives saved. Far greater than dollars saved for the Fire-Rescue Department is the impact our Wellness Program has had on the lives of hundreds of participants. Effectively reducing morbidity and mortality of many individual firefighters has occurred in no small measure as the result of the expertise and dedication of SDSMFHC physicians, Exercise Physiology staff, Nutritionists and other support staff.

It is said that necessity is the mother of invention. This axiom holds true with regard to the proprietary software system developed by SDSMFHC in the early years of the wellness program. We recognized very early that effective biometric data collection and the ability to study this data was key to an effective wellness program. In the absence of municipal funding for this endeavor SDSMFHC, at its sole expense, began developing wellness software in 2007. The Welltivia software system is now a well established one-of-a-kind electronic health record specifically created to support the WFI. Welltivia has provided licensed software to a large medical group on the East Coast that operates a regional WFI program in northern Virginia and southern Maryland. Two additional large metropolitan fire agencies are in the process of acquiring licenses for Welltivia software as well. SDSMFHC has included a report of impressive biometric trends from the past 10 years of San Diego Fire-Rescue wellness participation utilizing Welltivia software. This data reveals the incredible success of the SDFRWP over the past 10 years. However, the success of the program is not inherent to the software. Rather it is the expertise, commitment and passion of professionals at SDSMFHC in concert with the "ownership" of the program by San Diego Fire-Rescue personnel as well as the support of San Diego Fire-Rescue leadership.

SDSMFHC is honored to submit this proposal in an effort to continue the work started in 2004. We look forward to the opportunity to present an oral presentation and demonstrate our Welltivia software. SDSMFHC desires to bring the SDFRWP to the next level in terms of further mitigating health risks among participant firefighters. In this proposal the committee will discover innovative and creative new ways we believe will help discover, prevent and treat disease in the areas of cardiopulmonary health, musculoskeletal injury and cancer among San Diego Fire-Rescue personnel. SDSMFHC will approach the next five years of service to the SDFRWP with as much enthusiasm and passion as we have exhibited over the past ten years. SDSMFHC and the SDFRWP have benefitted greatly from all we have learned over the past decade. SDSMFHC intends to parlay that experience into an even more robust wellness program should we earn the privilege of leading the SDFRWP into its second decade.

THE CITY OF SAN DIEGO

March 25, 2015

To Whom It May Concern:

RE: LETTER OF REFERENCE – SAN DIEGO SPORTS MEDICINE

Dear Sir/Madam,

I am writing to share the positive experiences the San Diego Fire-Rescue Department (SDFD) has had with the Wellness Services provided us by San Diego Sports Medicine (SDSM). SDSM anticipates delivering a proposal in response to the City's current Request for Proposals soliciting Wellness Services for my department and I feel this information might be helpful in your review.

SDSM has served as SDFD's sole provider of Wellness Services since the inception of our Wellness Program in 2005. Each year, SDSM completes approximately 750 comprehensive wellness exams for our firefighters, lifeguards, hazmat crews and search and rescue personnel. Over the course of their tenure (10 years), SDSM has performed over 8,000 wellness exams for SDFD.

The quality and thoroughness of exams performed by SDSM's physicians and staff has resulted in the identification of several previously undetected life threatening health issues including 25 prostate cancers, 11 melanoma cancers, 5 breast cancers and 4 testicular cancers. In addition, SDSM has diagnosed and treated hypertension and cardio vascular risk cases and discovered a 90 degree blockage in the coronary artery of one firefighter.

Not only have these physical exams led to life saving medical interventions, but they've also resulted in behavioral changes in physical activity levels, lifestyle, improved nutrition and work practices. These changes have been initiated and reinforced by SDSM physicians and through their clinicians' counseling of individual employees. As part of their goal to improve health, they have developed nutritional & exercise challenges such as the "Biggest Burn", annual 5k run, "Move More Challenge" and "12 Met Challenge." These types of programs appeal to the competitive nature of those drawn to public safety professions and are achievable via educational visitations from SDSM staff and through educational material presented online and via newsletters.

Beyond these clinical accomplishments, one of the most impactful initiatives undertaken by SDSM was the creation of a comprehensive database that tracks both individual and aggregate health parameters of our workforce. This data has been instrumental in identifying unfavorable health and injury patterns and implementing corrective measures that have contributed to a reduction in certain types of injuries historically suffered by our workforce.

Office of the Fire Chief
San Diego Fire-Rescue Department • 1010 Second Avenue, Suite 400, MS 604 • San Diego, CA 92101-4409
Tel (619) 533-4311 Fax (619) 533-4377

In summary, SDSM has demonstrated a strong commitment to the wellbeing of our workforce and has proven they are an extremely professional and responsive provider of Wellness Services to the San Diego Fire-Rescue Department.

Respectfully,

Javier Mainar
Fire Chief

THE PEW CHARITABLE TRUSTS
One Commerce Square
2005 Market Street
Suite 2800
Philadelphia, PA 19103-7077

March 26, 2015

City of San Diego
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195

Attn: Selection Committee, San Diego Firefighter Wellness Program

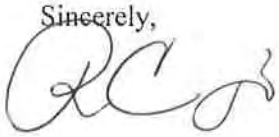
Dear Committee Members,

My name is Robert H. Campbell, and my wife and I are currently patients of Dr. Richard Parker at San Diego Sports Medicine. From July 1960 to July 2000, I was employed by the Sun Oil Company (Sunoco), and eventually rose to the positions of President, CEO, and Chairman of the Board. Beginning in mid-1985, I began to receive annual Executive Physical exams because of the executive positions I held in the company, and the wellness program that was part of my compensation package. During that 15 year period, the majority of the exams were held in doctors' offices and clinics primarily associated with the University of Pennsylvania, and hospitals in the Philadelphia, Pennsylvania region.

In July 2000 my wife and I moved west to Colorado and California. We continued to have annual physical exams, and for a period of time we commuted back to Philadelphia for the exam. Beginning in 2005, we established residence in Coronado, California, but because of some prior medical advice we received from friends, we used the Eisenhower Medical system in Rancho Mirage for our routine medical needs and our annual physical exams (we own a condo in Palm Desert; it was not too inconvenient). However, my medical needs and questions eventually became frequent enough that I asked acquaintances who they would recommend. I told them I wanted to be associated with the "best general practitioner in Southern California". I was told to go see Dr. Parker at San Diego Sports Medicine. It turned out to be excellent advice.

We first visited with Dr. Parker in early 2014, and my wife and I experienced his Executive Physical exam at SDSM in October of last year. I will tell you, in all honesty, it was the most comprehensive physical exam I have ever experienced in my 30 years of taking physical exams. The follow-up on all issues found was rapid and complete, with true specialists in the San Diego region. In addition to the executive physical, I have visited with Dr. Parker on half a dozen or so times, and he has always made himself available in a timely fashion, and taken the time to answer my questions and provide advice. We are truly pleased with our association with SDSM, and we recommend his services, and his staff's services to anyone interested in outstanding medical care.

Sincerely,



Robert H. Campbell
Chairman, Board of Directors, Pew Charitable Trusts

SAN DIEGO STATE
UNIVERSITY
Homeland Security
Graduate Program

March 26th, 2015

Dear City of San Diego Decision-makers:

I am writing this unusual letter to volunteer my extremely enthusiastic support of the San Diego Sport Medicine group (https://sdsm.com/) and its efforts with the San Diego Firefighter Wellness Program (http://www.sdsportsmedicineandfamilyhealth.com/fire-wellness/). As the Director of the SDSU Homeland Security Graduate Program and the Viz Center, which are both very involved in fires as well as many of the other extreme events in which Firefighters are involved, I have had an opportunity to be deeply aware of the Firefighter Wellness Program and how it has contributed to the people of the San Diego region.

This remarkable program obviously consists of special services, workflows, tests, protocols, software, and improved health for Firefighters. However, the "things" that make up the program are really only specific aspects and reflections of the people who developed them and put the entire system together as a means of caring for, encouraging, and protecting Firefighters. By the extreme care that the San Diego Sports Medicine team has architected this entire system, they have provided the Firefighters of our region with increased health and wellness and provided the City of San Diego with lower costs from Worker's Comp, training of new Firefighters, and lost productivity from injuries and poor health. By their remarkable innovation and understanding of Firefighters, the San Diego Sports Medicine team has brought together a host of components to equal not only specific services but also developing an attitude of Wellness and a desire among Firefighters to achieve this Wellness including by competing with themselves, their fire station colleagues, and Firefighters from other stations. This attitude of Wellness translates into Firefighters making massive numbers of choices for things as simple as what to eat, so reducing the propensity toward heart disease, as well as choosing to exercise and be fit to save lives.

Being able to architect this attitude of Wellness comes from their deep care for Firefighters and the understanding of the specific types of tests and care that are needed. By understanding how Firefighters see themselves and their role in society, the San Diego Sports Medicine team has been able to come alongside the Firefighters and find effective ways to measure health and fitness and also ways of alerting the Firefighter to potential dangers such as from genetic predisposition to challenges. Being able to see the danger and take action is a remarkable aspect of the medical professionals in this group

as their passion and expertise is used on behalf of the Firefighters and people of San Diego.

Another remarkable aspect of how the work has been done is maintaining the appropriate privacy and protection of the Firefighters information and records. The extreme care taken to protect the medical records and other personal information leads to confidence and assurance as people continually experience the safe use of data. As this becomes more and more challenging in today's Cyber world, the security-by-design methodology of the San Diego Sports Medicine system becomes even more important. Firefighters have the safety and security of being able to share medical concerns with the Wellness medical professionals and seek solutions rather than trying to ignore or hide things. Developing this atmosphere of trust and security is a remarkable achievement and is a shared achievement for the medical professionals as well as the Firefighters. The gracious respect and professional camaraderie with the Wellness program staff encourages Firefighters to be engaged in their Wellness. They actually deal with the concerns of their health and fitness rather than trying to hide them or ignore them as is culturally easier to do many times.

One of the driving forces for the San Diego Sports Medicine team is their understanding and leadership (http://www.sdsportsmedicineandfamilyhealth.com/fire-wellness/medical-providers/) in research about why firefighters die or are sidelined because of heart disease at younger ages than the rest of the population. Their research into the complex interplay of adrenalin, tactical stress, diet, sleeplessness, and fitness give them a compassion for Firefighters and awareness of the increased risk that can be addressed. By understanding the increased risks Firefighters face and working to overcome these risks, the San Diego Sports Medicine team has deeply impacted the lives of hundreds of Firefighters, their families, and the people they serve.

Another remarkable achievement of the Wellness program is how it helps instill pride and confidence in Wellness so that health and fitness are seen as positive achievements to be proud of and to compete with other Firefighters to achieve. This is in contrast to many other professions where health and fitness are seen as job requirements for retention and are thus resisted rather than being points of pride. Instilling this pride and personal desire is something that comes from the Wellness team and its leadership as well as the understanding of Firefighters as special people serving the people of the City and region. This pride in their health and fitness translates into real capability to save lives including those of other firefighters---all of which translates into saving money for Worker's Comp and other associated costs of health problems and long-term neglect of health and fitness. The Wellness team uses an entire spectrum of personal relationships, warmth, shared professionalism, cutting-edge understanding of health, and practical understanding of Firefighting culture and personal motivation to build this program that is real Wellness.

The City of San Diego is enormously blessed to have the San Diego Sports Medicine team here to provide this innovative and compelling service to Firefighters and to the community. Lives have been changed in very positive ways and a culture of Wellness has been instilled within the Firefighting community. The San Diego Sports Medicine team

has also built an infrastructure of training and education with local universities where new generations of Physical Therapists, Physician's Assistants, and doctors learn how to build up and care for Firefighters and their Wellness as these same Firefighters care for the safety of the citizens of San Diego. Similarly, the Wellness team has encouraged major research in the region such as that from the Homeland Security Graduate Program that I direct as well as the Fire Infrastructure Research and Educational Solutions (FIRES) center that I direct at SDSU. Our programs have been deeply impacted by the professionalism, understanding, and wisdom of the San Diego Sports Medicine team and their critical role in the San Diego Regional Firefighters Wellness program. I absolutely think the world of their achievements as they have impacted my life and the Firefighters of the region.

Sincerely yours,



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SCOPE OF SERVICES

SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS CENTER

II. SCOPE OF WORK

C. CORE REQUIREMENTS AND DELIVERABLES

San Diego Sports Medicine and Family Health Center (SDSMFHC) shall provide the following services as outlined in the RFP.

1. Services for Wellness Program Participants

To encourage participation and understanding of the program for all participants, the following forms, reports and documentations will be provided to all participants prior to Medical Fitness Exam: *(See Appendix A for a copy of all forms.)*

a. **Provision of Required Paperwork and Services Prior to Medical Evaluation *(See Appendix A)***

(i) **Introductory letter** describing the Wellness Fitness Initiative. *(See Appendix A, Number 1)*

(ii) **Health history/lifestyle questionnaire** for new participants will be provided. A summary sheet will be provided to past participants that reviews previous data including medications, allergies, past medical history, surgical history, family history, habits and immunizations from the previous year. All participants will review and change or add any new information and sign the summary sheet to update information on the database. *(See Appendix A, Number 2)*

(iii) **Exercise risk assessment** will be addressed through a cardiovascular risk questionnaire and through questions on the database with respect to frequency of flexibility, cardiovascular and strength training. Injury assessment is determined through a questionnaire and the health history. *(See Appendix A, Number 3)*

(iv) **Participant information** form will be given at time of blood draw that includes demographic and contact information, as well as the participant's election for type of exam. *(See Appendix A, Number 4)*

(v) **HIPAA information and acknowledgement** educates the participants as to their privacy rights and HIPAA laws with a signed acknowledgement. *(See Appendix A, Number 5)*

(vi) **Nutrition risk assessment** developed by SDSMFHC Registered Dietitians includes a questionnaire designed to elicit dietary habits of individual participants incorporated with health related risk factors or diseases to determine a nutrition risk score. *(See Appendix A, Number 6)* **Arbitration agreement** between participant and SDSMFHC addresses dispute resolution. *(See Appendix A, Number 7)*

(vii) **Explanation of testing procedures** provides a complete description of the purpose of the tests and evaluations that will be performed during the exam. *(See Appendix A, Number 8)*

(viii) **Instructions for participation** on exam date, includes information on eating, drinking, dress, exercise precautions, medications, etc. *(See Appendix A, Number 9)*

(ix) **Laboratory requisition form** will be included in the packet or provided at the time of scheduled blood draw for each individual. *(See Appendix A, Number 10)*

a. The schedule for all blood draws will be coordinated with the Wellness Officer.

b. SDSMFHC will provide mobile staff for blood draws at the designated fire stations at least one week prior to the participant's Wellness Program evaluation. Accommodations will also be made to provide blood draws at SDSMFHC on a scheduled basis.

c. The costs for mobile services will be included in the Medical and Fitness Evaluation cost.

(x) **Respiratory fit clearance form and OSHA questionnaire** in compliance with the requirements of City of San Diego will be provided for each individual. *(See Appendix A, Number 11)*

(xi) **Request form for immunization records** will be provided to determine participant's immunization status. *(See Appendix A, Number 12)*

(xii) **Directions and map** to the SDSMFHC facilities will be provided. *(See Appendix A, Number 13)*

b. **Complete Wellness Medical Exam**

The exam includes the following tests and examinations:

(i) **Vital signs** to include height, weight, blood pressure, pulse, temperature and respirations.

(ii) **Complete hands-on physical examination** by a Qualified Physician. Physical exams will be conducted every 12 months. Forty-five minutes will be allocated to each firefighter physical exam. This is a complete physical and psychological examination to determine health status of participant including the following systems of the body:

a. Head, Eyes , Ears, Nose, Throat

b. Cardiovascular

c. Pulmonary

d. Gastrointestinal

e. Rectal (age appropriate, over 40 in males and 50 in females)

f. Lymph nodes

g. Musculoskeletal and Neurological

h. DMV exam performed by a Physician certified by the National Registry of Certified Medical Examiners to provide DMV exams.

i. Endocrine (thyroid gland)

j. Skin

k. Pap/pelvic exam if desired

(iii) **Blood profile** including a complete blood count (CBC), chemistry panel (SMAC20), lipid profile, thyroid stimulating hormone test (TSH) and prostate specific antigen (PSA) for special populations. SDSMFHC utilizes Quest Laboratories for blood analysis which is certified to perform such tests by the State of California.

(iv) **Chest x-ray** (2 views) utilizing digital imaging technology will be performed onsite at the initial exam and every two years thereafter.

(v) **Respiratory Fitness Exam** including a Pulmonary Function Test will be performed on each individual using a calibrated spirometer which will measure the following variables: Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV1) and FEV1/FVC ratio, and Peak Expiratory flow rate. Data will be graphed from year to year to see individual trends and kept in their individual chart on the database. *(See Appendix B, Medical section, for example of individual report in Participant Binder.)*

(vi) **Nutritional risk assessment and consultation** will be offered using the SDSMFHC nutrition risk assessment developed by our Registered Dietitians specifically for the firefighters. The SDSMFHC staff with Master's Degree training in exercise physiology and nutrition will conduct the assessment. The staff will use this tool in conjunction with overall health risk to consult with individuals on improving dietary intake, exercise habits, weight control, nutrient intake, hydration, energy balance, and specific nutrient requirements for their job. Personalized nutrition education material will be given to individuals in their packet including the most up-to-date information on lowering health risks. The consultation will be conducted on the day of physical and is scheduled for approximately 20-30 minutes during the exam. Other educational and consultation formats will be used in conjunction with the Nutritional assessment (i.e. Nutritional Quiz) to keep firefighters current on the latest nutritional recommendations and findings and to employ new tools in educating the firefighters. *(See example of Nutrition Assessment and Quiz in Appendix C.)*

(vii) **Hearing and vision screening**: Hearing test will be conducted using an ANSI–approved soundproof booth at the San Diego Firefighters Regional Wellness Center. The following frequencies will be tested: 500Hz, 1000Hz, 2000Hz, 3000Hz, 4000Hz, 6000Hz, and 8000Hz. Current audiograms will be compared with all previous audiograms to establish trends in individuals.

The current database used by SDSMFHC is capable of graphing results from year to year. Vision will be assessed by evaluation of near, distance, peripheral and color vision as indicated.

(viii) **Resting ECG** using 12 lead ECG will be performed annually.

(ix) **Maximal Exercise Test** will be performed annually. A physician will be onsite for supervision of the test. The maximal cardiopulmonary test with 12 lead ECG will be performed on bike or treadmill to determine cardiovascular fitness, heart rate and blood pressure response to exercise as well as evaluation of any arrhythmias, heart blocks or evidence of ischemia (lack of oxygen to the heart) during maximal stress. The test will be conducted by staff trained at a Master's level in Exercise Physiology. The staff conducting the test will also determine exercise prescription based on the findings of this test.

(x) **Department of Transportation (DOT)/Department of Motor Vehicles (DMV) physical** will be conducted on those individuals who require DMV physicals every two years. Any necessary forms and documentation will be completed by SDSMFHC staff and physicians for the participant's Medical Examiner's Card. Information will be delivered to the appropriate personnel at the City of San Diego in coordination with the Wellness Officer. All Qualified Physicians at the SDSMFHC are registered Medical Examiners on the Federal Motor Carrier Safety Administration's National Registry of Certified Medical Examiners. All SDSMFHC Qualified Physicians have completed the new training and testing concerning the Federal physical qualifications and standards for truck and bus drivers and possess the necessary knowledge and professional credentials to perform physical qualification examinations for commercial motor vehicle drivers in accordance with the Federal Motor Carrier Safety Regulations (49 CFR 391.41 – 391.49).

(xi) **Cancer Screening**

a. **Skin Exam**: Comprehensive examination of the skin, with particular attention to sun exposed areas will be performed during the physical exam by the physician. Any individuals with suspicious lesions will be referred to their private physician or dermatologist for further assessment and/or treatment.

b. **Breast Exam**: Breast cancer is the most common type of cancer in women and the second leading cause of cancer death in women after lung cancer. An annual clinical breast examination will be given to each participating female firefighter going through the exam. Self breast examination (SBE) will be taught and each individual will be encouraged to perform the SBE monthly. Educational material will be made available to interested participants. Five females on the department have recently been diagnosed with breast cancer, four under the age of 50. In 2013, SDFRWP added a risk assessment to our cancer screening strategies. The Breast Cancer Risk Assessment Tool we use is an interactive tool designed by scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer.

c. **Mammogram**: Annual mammogram screening shall be performed on all female firefighters beginning at age 40 at a contracted facility utilizing digital technology (Imaging Healthcare Services). Uniformed female firefighters with a family history of breast cancer or other significant personnel risks shall be provided with appropriate individualized recommendations for breast cancer screening.

d. **Pap Smear**: Annual pap smear screening will be provided for female firefighters as well as Human Papilloma Virus (HPV) screening for those individuals over age 21. Pap smears will be conducted on an annual basis until three normal pap smears have been obtained. Pap smears will be provided every three years thereafter. Cervical cancer risk assessment will be determined annually. In high risk individuals screening will be performed more frequently.

e. **Testicular Examination**: Testicular cancer represents one percent of all cancers in men. It remains the most common cancer in Caucasian men 20-34 years old. Early detection and treatment generally results in an excellent prognosis. Examination of testicles will be performed on each male participant and self examination will be taught and encouraged. Educational materials on testicular cancer will be made available to all interested participants.

f. **Prostate Specific Antigen** (PSA): Prostate cancer is the second most common type of cancer in men after skin cancer. The PSA is a

screening test for prostate cancer. Male firefighters at increased risk for prostate cancer will be screened annually. Those at risk include individuals with family history of prostate cancer or those of African American heritage. These individuals shall have a test annually beginning at 40 years old. All other male uniformed personnel shall have annual PSAs beginning at age 50.

g. **Digital Rectal Examination** (DRE) will be performed on all uniformed personnel beginning at age 40 for males and age 50 for females.

h. **Fecal Occult Blood Screening** is used to screen for colorectal cancer. Testing is done annually in conjunction with the DRE. This testing will be done on all participants over age 50 using the OC-Light fecal occult blood test rather than conventional guaiac-based tests. Any abnormal results will be referred to the appropriate primary care physicians. The presence of fecal occult blood in the stool is associated with gastrointestinal disorders such as diverticulitis, polyps and Crohn's disease, which may lead to colorectal cancer if not treated. Early diagnosis and treatment has been shown to significantly reduce mortality from colorectal cancer. Conventional guaiac-based tests used for the detection of fecal occult blood do not provide a high degree of accuracy. Guaiac-based tests are highly affected by a patient's diet, due to the fact that the assay is testing for the presence of peroxidase activity. However, apart from human hemoglobin, other substances have similar peroxidase activity, such as meat, certain vegetables, fruit and certain drugs (e.g. Vitamin C). Patients must abstain from consuming any of these items for three days prior to taking the guaiac test, which consists of three samples from three separate bowel movements. OC-Light is an immunological based test that is specifically designed to test for the presence of human hemoglobin in feces. This will increase sensitivity and specificity while decreasing false positives and false negatives. There is no need for patients to adhere to any dietary restrictions. The sampling procedure is user friendly, requiring virtually no fecal handling and only one sample vs. the three required for guaiac-based tests. Patient compliance will increase based on the added convenience.

i. **Lung Cancer Screening:** Firefighters will receive a chest x-ray at their initial visit and every three years thereafter. All chest x-rays are reviewed by a Radiologist from Imaging Health Care. If any pulmonary

nodule or other suspicious finding is observed on x-ray, a high resolution Lung CT scan will be offered after approval from the Wellness Officer according to protocol. *(See section on Innovative Ideas, 3.f.ii.)*

j. **Bladder Cancer Screening**: Because firefighters are regularly exposed to smoke and chemical fumes, they may be at an increased risk of transitional cell carcinoma (TCC), a cancer of the bladder. Bladder cancer screening will be screened by looking for hematuria (blood in the urine) on urine dipstick. If urine dipstick is positive for blood, urinalysis will be done onsite at time of exam to determine microscopic count of red blood cells (RBC's). Other tests at the discretion of the Wellness Officer can be performed on individuals found to be at risk including nuclear matrix protein 22 (NMP22) or for telomerase, an enzyme found in bladder cancer cells. Appropriate referrals will be made to a Urologist through the individual's primary insurance if he/she is found to be at increased risk for bladder cancer. *(See section on Innovative Ideas, 3.i.)*

c. **Fitness Evaluation**

(i) **Body Composition** can be measured by several different methods including circumferential measurements, hydrostatic weighing, BodPod, bioelectrical impedance (BIA), skinfold measurements, body mass index (BMI), and dual energy x-ray absorptiometry (DEXA). The accuracy, reliability, practicality and associated cost of these methods vary. The WFI has recommended skinfold measurement as a realistic, cost effective, and relatively accurate method of assessing body fat. Skinfold measurement will be taken at seven different sites and the Jackson and Pollock regression equation will be used to determine body fat. From the estimated body fat, lean body mass will be determined along with an ideal body weight for each individual. Body circumferences will also be made at waist and hip to help determine health risk associated with increased waist to hip ratio.

(ii) **Abdominal endurance crunch test** will be conducted for two-minute duration by the Wellness staff. Purpose of this test is to evaluate muscular endurance of the core stabilization and abdominal muscles. *(See Appendix D, Page 1)*

(iii) **Push-up evaluation,** or alternate grip push-up, will be used to evaluate upper body strength and endurance. The alternate grip push-up will be used for those individuals with a history of hand, wrist or shoulder injuries. *(See Appendix D, Pages 2 & 3)*

(iv) **Strength testing** will be done according to WFI protocol using the Jackson Strength Evaluation System for leg strength and arm strength as well as a hand dynamometer to measure grip strength. To insure the highest degree of safety and accuracy the strength and conditioning staff will provide appropriate pre-screening for injury, detailed instructions on how the test is performed and emphasize performance technique. Those individuals at risk for injury, or those with any apprehension about the test, will be given the option to perform a vertical jump. The vertical jump is a test of leg power versus the isometric leg strength test which evaluates muscular strength. The purpose of this assessment is to estimate peak power produced in lower body. *(See Appendix D, Pages 4, 5 & 6)*

(v) **Flexibility evaluation** will be done using the Novel Acuflex I to measure trunk flexibility. *(See Appendix D, Page 7)*

(vi) **Low back muscular endurance** will be tested using the static plank test as recommended in the WFI. Purpose of this test is to evaluate muscular endurance of the core stabilization muscles. *(See Appendix D, Page 2)*

(vii) **Functional Movement Screening** is now employed as part of the current Wellness program for the San Diego Firefighters to help evaluate core strength, flexibility and balance. The eight tests are listed below:

a. **Shoulder Mobility**: assess bilateral shoulder range of motion. *(See Appendix D, Page 8)*
b. **Balance Drill**: assess multi-planar stability while balancing on one leg. *(See Appendix D, Page 8)*
c. **Thoracic Mobility**: assess thoracic rotation in both directions while low back and hips are stabilized. *(See Appendix D, Page 9)*
d. **Rotational Stability**: assess multi-planar stability while combined upper and lower extremity motion is performed. *(See Appendix D, Page 10)*
e. **Active Straight Leg Raise**: assess active hamstring and gastrocnemius-soleus flexibility while maintaining a stable pelvis. *(See Appendix D, Page 10)*

f. **Quadricep Flexibility**: assess passive quadriceps length and hip flexor abnormalities. *(See Appendix D, Page 11)*

g. **Overhead Range of Motion**: assess ability to maintain neutral spine while reaching overhead. *(See Appendix D, Page 12)*

h. **Ankle Mobility**: assess range of motion in the ankle joint and surrounding tissues. *(See Appendix D, Page 13)*

d. **Follow-up Consultation with Physician at Time of Initial Appointment**

(i) At the time of the exam, the Physician will review the results of the tests with each participant as well as follow up on findings from any prior annual exams. Time will be provided for any questions by the participant as well as educational time for the physician to go over individualized/personalized recommendations and goals.

(ii) Abnormal findings will be addressed directly with each individual during the examination. Recommendations, remedies, further testing, or referrals to specialists will be provided.

(iii) Referrals will be made as appropriate for services not contracted in this agreement with participant's primary care physician or specialist. SDSMFHC Qualified Physicians often communicate directly with the firefighter's PCP or Specialist for high-risk or urgent referrals.

e. **Personalized Written Health and Wellness Report** ***(Sample in Appendix B)***

(i) SDSMFHC has developed a Personal Wellness Profile for each firefighter. This report will be given to each firefighter at the immediate conclusion of their medical fitness evaluation. The report will consist of most recent findings and comparisons with their own retrospective data. It will contain a medical letter that summarizes all the findings of the exam and it will also contain specific data with respect to each parameter of the medical/fitness exam. The entire staff and physicians are available at the time of the evaluation to answer all questions.

(ii) Recommendations will be made throughout each section of the report to help each individual improve or maintain their level of health and fitness, including the following:

a. Comparison charts will be made to their own personal profile over the years, to other firefighters in the department and county and to available national statistics in the years to come.

b. Risk status and appraisals will be given to each firefighter with respect to their cardiovascular risk (utilizing Framingham Risk Score), metabolic risk (utilizing Metabolic Syndrome Risk Status), and cancer risk. These appraisals and risk status will be formulated using our current database as well as Polar Body Health Risk Appraisal System. *(See Appendix B, Cardiovascular Risk)*

c. Personalized educational material will be given to those individuals with respect to specific nutritional needs, cholesterol reduction, body composition, weight control, injury prevention, injury rehabilitation, exercise routines and more.

(iii) The Physician will incorporate all aspects of the findings on medical examination, fitness assessment, past medical history, family history, immunization status, and job responsibilities into the assessment and plan for each individual. The plan and strategy for each individual will be thoroughly reviewed with them at the time of the consultation.

f. **Follow-up**

Abnormal findings on the annual medical exam will be addressed by the SDSMFHC Physician at the time of exam. SDSMFHC will review and accept responsibility for all medical and fitness evaluations. In the event that a participant needs further evaluation or treatment for a specific condition, SDSMFHC will refer to workers' compensation if appropriate or to the participant's primary care physician and corresponding health care system. SDSMFHC will provide any and all pertinent data in order to expedite any referral needed.

g. **Immunizations/Vaccinations/Screening**

(i) SDSMFHC will make available to the Participants the vaccinations listed below. The participant may provide documentation of having received the following vaccinations and at the recommendation of the Physician and approval of the Wellness Officer or designee, may receive additional vaccinations:

a. Hepatitis A (if on USAR or Swift Water Rescue teams)

b. Hepatitis B (shall be given until a follow-up confirmation of antibody production demonstrates conversion)

c. Tetanus/Diptheria with Pertussis (Tdap)

d. Influenza

e. Measles, Mumps, Rubella (MMR)

f. Polio

g. Human Papilloma Virus (HPV) shall be provided to all women participants up to 26 years of age if a previous vaccination is not documented

h. Varicella

(ii) SDSMFHC will provide mobile staff to provide infectious disease screening for Tuberculosis.

(iii) SDSMFHC will obtain authorization in writing from the Wellness Officer or designee in advance of performing these immunization services.

h. **Hazardous Materials Technician Physical**

SDSMFHC will provide the following services to the wellness participants designated as Hazardous Materials Technicians, as specifically required:

(i) All components of the Respiratory Fitness Exam and Pulmonary Function Test

(ii) Complete Medical Exam

(iii) Blood testing consisting of CBC, chemistry panel (SMAC 20) and heavy metals (arsenic, mercury and lead) at initial exam and designated times after exposure. Results will be archived.

(iv) Urinalysis

(v) Cholinesterase on annual basis

(vi) Any additional blood testing required for specific or known exposure

(vii) Hepatitis A series for new members otherwise unimmunized

i. **Department of Motor Vehicles (DMV) Physicals**

(i) SDSMFHC will provide DMV Physicals for Wellness Program Participants as requested.

(ii) SDSMFHC will follow all current DMV guidelines.

(iii) SDSMFHC will follow HIPAA privacy regulations.

(iv) SDSMFHC will complete the DMV physical form and the Medical Examiner's Card as required every two (2) years.

(v) SDSMFHC will coordinate efforts as necessary with the staff of the City of San Diego.

(vi) SDSMFHC physicians are certified Medical Examiners by U.S. Department of Transportation Federal Motor Carrier Safety Administration and will update certification and training as needed.

j. **Vision and Audiometric Examinations**

SDSMFHC will provide vision and audiometric examinations as referenced by guidelines published by the California Department of Motor Vehicles (DMV).

k. **Fitness Staff (Exercise Physiology and Certified Athletic Training and Strength and Conditioning)**

(i) SDSMFHC will employ Fitness Staff in the disciplines of Exercise Physiology and Certified Athletic Training and Strength and Conditioning to facilitate fitness evaluations and other activities relative to the Wellness Fitness Initiative including education. SDSMFHC Fitness Staff will possess a Master's Degree in the disciplines of Exercise Physiology and Nutrition. The

fitness staff will provide key education and consultation to the Participants in the program. Currently we have a staff of six highly trained individuals with Master's Degrees in Exercise Physiology and Nutrition. Three of the staff members have been certified as Strength and Conditioning Specialists by the National Strength and Conditioning Association. Three of the individuals have also been certified as Health Fitness Specialists or Clinical Exercise Specialists through the American College of Sports Medicine (ACSM). The fitness staff also includes two Certified Athletic Trainers, five Registered Physical Therapists and a Master's Level Registered Dietitian who is also certified in Sports Dietetics and is presently working on her Doctorate.

(ii) The Fitness staff shall be available to the City to directly perform the fitness evaluations of each Wellness Participant.

(iii) SDSMFHC Fitness Staff will provide the following services:

a. Evaluate participant level of fitness through Fitness tests specified in the WFI.

b. Evaluate level of improvement since past assessment(s).

c. Provide realistic evaluation of the Participant's physical capacity to safely perform assigned jobs.

d. Review participant's current exercise program and suggest modifications as appropriate and develop exercise programs for individuals, crews and groups in the SDFRD and prospective firefighters in each Fire Academy.

e. Comprehensive wellness/fitness program recommendations.

f. Perform physical fitness age assessment.

g. Orthopedic/musculoskeletal rehabilitation under the direction of physician if prescribed by the physician.

h. Flexibility testing with Novel Acuflex Sit-Reach equipment. We have also instituted a Functional Fitness Evaluation over the last year that assesses multiple upper and lower body joints range of motion.

i. Endurance strength testing including sit-ups and push-ups will follow the WFI protocol.

j. Body composition measurements using skinfold measurements.

k. Provide individual recommendations for overall conditioning program for individuals and the department as a whole.

l. Develop and provide educational materials and instruction that addresses specific needs of the individual participant (i.e., core stabilization exercises, treatment and rehabilitation exercises for plantar fasciitis, rotator cuff injuries and more). *See Appendix E for examples of educational material.*

m. Enter data into a database for tracking of individual strength, flexibility and body composition measurements, treadmill results and functional movement testing.

n. Provide educational workshops at individual stations, Fire Academy and at headquarters, along with individual counseling to high risk participants as part of the ongoing educational program.

2. Services for Wellness Program Non-Participants

a. **Respiratory Fit Exam**

SDSMFHC will provide Respiratory Fit Exams to Wellness Program Non-Participants as referenced by guidelines published by Cal-OSHA to include spirometry (FVC, FEV1, FEV1/FVC ratio, Peak Expiratory flow rate). SDSMFHC will also provide a physical examination by a Qualified Physician for these individuals to include review of systems and a physical examination of head ears, eyes, nose, throat, heart and lungs and any other examination that is deemed appropriate by the physician. Past medical history and family history will be obtained and reviewed by the physician.

b. **DMV Physicals**

SDSMFHC will provide DMV physicals to Wellness Program Non-Participants and be responsible for the following:

(i) SDSMFHC will follow all current DMV guidelines.

(ii) SDSMFHC will follow HIPAA privacy regulations.

(iii) SDSMFHC will complete the DMV physical form and the Medical Examiner's Card as required every two (2) years.

(iv) SDSMFHC will coordinate efforts as necessary with the staff of the City of San Diego.

(v) SDSMFHC physicians are all certified by the National Registry of Certified Medical examiners to provide DMV exams.

c. **Hazardous Materials Technician Physical**

SDSMFHC will provide the following services to Wellness Program Non-Participants designated as Hazardous Materials Technicians, as specifically required:

(i) All components of the Respiratory Fitness Exam and Pulmonary Function Test

(ii) Complete Wellness Physical Exam

(iii) Blood testing consisting of CBC, chemistry panel (SMAC 20) and heavy metals (arsenic, mercury and lead) and archiving of results

(iv) Urinalysis

(v) Cholinesterase annually

(vi) Any additional blood testing required for specific or known exposure

(vii) EKG (Resting 12 lead)

(viii)Treadmill (Max Exercise Stress Test) age appropriate per HAZMAT Wellness Guidelines

(ix) Audiogram

(x) Fecal Occult Blood testing over age 45

(xi) Hepatitis A series for new unimmunized members

(xii) Vision screening

d. **Urban Search and Rescue (USAR) Physical**

SDSMFHC will provide the following services to USAR personnel managed by San Diego Fire-Rescue and outside (non-City) agencies/departments. This exam will be provided every two years. The exam shall consist of the following:

(i) All components of the Respiratory Fitness Exam and Pulmonary Function test

(ii) Vital signs including heart rate, blood pressure, respirations, height, weight and vision

(iii) Blood testing consisting of CBC, chemistry panel (SMAC 20) and cholinesterase biannually. Heavy metals (arsenic, mercury and lead) will be performed at initial evaluation.

(iv) Urinalysis

(v) History and physical examination performed by a Qualified Physician.

(vi) Any additional blood testing required for specific or known exposure

(vii) Immunization update including Hepatitis A series for new unimmunized members

(viii)Audiometry

(ix) Exercise stress test (maximal with EKG)

e. **SCUBA Physical**

SDSMFHC will provide the following services to Wellness Program Non-Participants designated as Lifeguards and/or personnel utilizing SCUBA, as specifically required:

(i) Complete Wellness Physical Exam

(ii) All of the components and procedures of the Respiratory Fit Exam listed above

(iii) Additional services as required

f. **CEDMAT Fire Inspectors Physical Exam**

SDSMFHC will provide the following services to Wellness Program Non-Participants designated as Combustible, Explosive and Hazardous Materials (CEDMAT) Fire Inspectors, as specifically required:

(i) Vital signs

(ii) Complete Physical Exam

(iii) Vision exam

(iv) Pulmonary Function Testing to include spirometry (FVC, FEV1, FEV1/FVC ratio, Peak Expiratory flow rate)

(v) Audiometry

(vi) Chest x-ray

(vii) Urine dipstick

(viii)EKG

(ix) Laboratory testing (CBC and complete chemistry panel)

3. **Additional Services Available to Wellness Program Participants Not Included in Wellness Participant Fee**

a. **Follow-up Services – No additional cost will be charged for follow up services.**

(i) SDSMFHC will provide the following services (consultation, personalized follow-up) to Participants:

(a) Fitness consultation with exercise prescription.

(b) Development of personalized strength and flexibility programs.

(c) Dietary consultation.

(d) Preventive measures or techniques to mitigate developing injuries or rehabilitation past injuries not covered under Workers' Compensation.

(e) Physician recommendation for risk mitigation strategies and recommendation for specialty referrals or additional testing as indicated.

(f) Educational materials based upon specific findings distributed in personal profile packet.

(g) DMV, Hazmat, USAR, Respiratory Fit, Explosive Device, and Dive Physical Exams

(ii) The entire Wellness Staff shall be available by phone, e-mail or in person to help guide all participants through any and all follow-up services when the Wellness Exam indentifies an issue requiring further evaluation or treatment. Examples may include:

(a) Discussions with participant's Primary Care Physician or with appropriate specialist regarding findings from the Wellness Exam.

(b) Ongoing care in anticipation of a referral or for guidance for participant and/or family members regarding findings from the Wellness Exam and findings or specialty referral.

(c) Organization of materials (e.g.: copy of entire Stress EKG) to accompany participant to specialist when referral is made.

(d) Processing of additional testing (e.g.: additional imaging views, Coronary Calcium Score) to be performed based upon abnormal findings. This includes call back to participant with results and tracking of same.

(e) Calls to participants prior to exam with critical lab values upon receipt of same. This includes appropriate guidance and advice from the physician.

(f) Responding to all incoming calls and e-mails with any and all questions and issues from participants (eg: need for signatures on specific forms).

b. **Education Program**

SDSMFHC will implement an Education program as an essential part of the overall Wellness Program. Educational strategies, methods and materials are developed each year in response to emerging biometric trends, noted through data collection and analysis. Based on our experience with firefighters we have found that a multifaceted approach to education is needed. Individuals, departments and even crews respond differently to the delivery of educational material. We have and will continue to develop ongoing education that is pertinent to the health and fitness needs of the uniformed personnel of the San Diego Fire-Rescue Department. Education will be provided for a minimum of 832 hours per year and delivered in the following formats:

(i) **A Nutrition Station** will be included as part of the annual physical. New participants will receive a nutritional risk assessment. Due to the varying needs and interests of participants, we have developed diverse methods of nutritional education. Over the years we have focused on lowering cholesterol through diet, portion size, protein requirements and many other topics. In 2015 we have incorporated the use of a nutrition quiz at the time of exam. The quiz has been well received by the firefighters. Each year we creatively develop new materials and programs to further educate firefighters on nutrition. *(See Appendix C for examples of the nutritional assessments and new nutritional quiz.)*

(ii) **Station visits** have been one of the most popular forms of education for firefighters. Station visits will continue to be an integral part of the education process. The SDSMFHC database can provide geographical mapping to look at stations or locales with the City of San Diego that have need for specific educational sessions. *(See Appendix F, Section 16.)* The Wellness staff and Physician will be keenly aware of any specific crew needs or educational desires. Aggregate data has driven the development of our educational programs to the stations and to the group as a whole. The following is a list of some of the educational presentations that we have developed to meet the health and fitness needs of the firefighters:

(a) Grocery tour and food composition/comparisons (reading labels)

(b) Lowering your cholesterol with diet

(c) Nutrition 101 for the probationary firefighters

(d) Phytochemicals

(e) Hypertension quiz

(f) Understanding weight control

(g) Omega 3 Fatty Acids

(h) Immune boosting diet

(i) Anti-inflammatory diet

(j) How much protein is enough?

(k) Foam rolling

(l) High intensity exercise

SDSMFHC has the capacity and resources among our staff and in our medical community to continue to deliver education on a wide variety of topics. We will continue to work with the Wellness Officer, the uniformed personnel and other departments to offer new and exciting ideas for education for the stations.

(iii) **Individual Counseling for High Risk participants**: As participants complete their Wellness exam, certain health risks may be identified which place that individual at high risk for a poor outcome. Recommendations are made at the time of exam to mitigate these risks and appropriate referrals may be necessary. One of the many strategies that has been successful over the years is to identify high risk individuals and offer them individual counseling. One-on-one counseling has proven to be particularly useful for those with high nutrition risk, low exercise capacity and those with specific strength and

flexibility issues. We will continue to offer individual appointments with the Wellness staff as part of the overall educational component of the program.

(iv) **Personal Profile**: Our goal each year is to improve the content, delivery and educational material that firefighters receive in their personal packet. It was the intent from the inception of this program to be able to deliver the packet on the day of the exam. Beginning January 2009 we accomplished that goal. Over the last few years we have added the functional fitness exam and developed educational handouts for improving core strength, flexibility and balance. We also added the metabolic risk profile and the Framingham Risk Assessment Score as well as Welltivia Body Age. There are also pages from the database that demonstrate individual trends in lab work, pulmonary function and hearing. It is the intent of the Medical and Fitness staff to continue to provide innovative ways to present results as well as creative ideas to present specific individual educational material. *(See Appendix B.)*

(v) **Group Educational Projects**: SDSMFHC physicians and staff have gained tremendous experience working with firefighters over the past ten years. We believe that we have built trusting relationships with the firefighters who have participated in our program. Our staff has been truly innovative and creative in developing fresh and effective educational tools. Our database is key in identifying group educational needs. Aggregate data has driven the development of our educational programs to the Fire Department as a whole. Examples of our response to new data and literature include the following. We are presently developing a Cholesterol Challenge Quiz based on the 2014 Firefighter Wellness data. Recently we rolled out an extensive Yoga stretching program to the Fire Academy, Stations and at Headquarters. Recent data from the American Heart Association suggests that cardiovascular risk reduction relies not only with dedicated exercise but even more importantly relies on active lifestyles. In July 2015 we will be rolling out an education program to address the concept of Physical Activity vs. Active Lifestyle. Similar programs have been developed in the past to address issues that the staff deems appropriate based on the data. The Fiber Challenge, Biggest Burn, Holiday Challenge, "Stop, Drop, Control" and Move More Challenge were all developed with the needs of firefighters in mind.

(vi) SDSMFHC will provide resources and consultation on health and fitness related issues identified in the medical exam not related to work-related

injury or illness. (e.g. Breast cancer risk information for the female firefighters, training programs for candidates at each new Fire Academy.)

(vii) **Registered Dietitian**: SDSMFHC will provide a Registered Dietitian to help those participants with high risk nutritional/health related problems. Kate Machado, R.D. is SDSMFHC's staff dietitian and nutritionist. Kate received her Master's degree from California State University Long Beach in Nutritional Sciences. She is our Director of Nutritional Services and oversees the nutritional component of the Wellness Program. Nutritional consults for high risk individuals will be conducted by Kate.

(viii)**Physical Therapist/Athletic Trainer**: SDSMFHC has a full-service Physical Therapy department including eight Physical Therapists and two Certified Athletic Trainers. This qualified staff will be utilized to help those individuals with specific injury related problems identified by the Physician.

(ix) **Workplace environmental studies** will be provided by SDSMFHC based on need and interest of the SDFRD. In May 2009, SDSMFHC completed a pilot study on heat tolerance during wildland fire training at the request of San Miguel Fire Department. This study proved to be beneficial in discovering the fact that many of the firefighters (30%) were dehydrated at the start of training. It also was very productive in demonstrating to participating firefighters the effect of heat on body temperature as well as the increase in workload to their cardiovascular system. *(See Appendix G, Section 19 for educational material on Study.)* We have also looked at the oxygen uptake cost of simulated work related firefighting tasks in conjunction with the Department of Exercise and Nutritional Sciences at San Diego State University (SDSU).

We are currently working with the Preventive Medicine Department at University of California San Diego Health Systems (UCSD) on two interesting initiatives. The first initiative involves the "Exploratory Analysis of Metabolic Syndrome as Correlates in Firefighters". Preliminary data indicates fitness is a strong predictor of Metabolic Syndrome. We have discovered the likelihood of having Metabolic Syndrome is 10.35 times greater for firefighters with low fitness and 4.5 times greater for firefighters with moderate fitness as compared to those with high fitness. This suggests a "dose-response" relationship between fitness and Metabolic Syndrome. Another initiative looks at "The Effects of 2007 Wildfire on Firefighters' Pulmonary Function." Data on these initiatives are forthcoming.

We will continue to work the SDFRD and our immediate academic and medical community to help fund and supply resources for projects of this nature. Our academic affiliation with UCSD offers SDFRD the unique opportunity to mine our extensive database to gain valuable information on firefighter health.

(x) **Website**: SDSMFHC will continue to provide and maintain a website (http://www.sdsportsmedicineandfamilyhealth.com/fire-wellness/) for the San Diego Firefighter Regional Wellness program. The website will provide communications from the Wellness Center which will be updated on a regular basis, following educational materials and other elements listed below:

(a) Electronic copy of newsletter

(b) Communications on upcoming challenges and results of past efforts

(c) Access to health and fitness materials in electronic format

(d) Information on Medical and Wellness staff

(e) Calendar with blood draws, testing dates for battalions and crews, educational sessions and special events

(f) Exercise section including the Exercise Physiologist's blog and new exercise programs

(g) Newsworthy events or topics

c. **Additional Services Required Available to Wellness Program Participants and Non-Participants (Not Included in Wellness Participant Fee)**

SDSMFHC offers the following optional services to Wellness Program Participants and Non-Participants. Costs for these services are listed in the Fee Schedule in Tab C. SDSMFHC will obtain written approval from the City through the Wellness Officer or designee prior to performing any optional services.

1. **Job-Wide Immunizations/Vaccinations and Tuberculosis/PPD screening**

a. SDSMFHC will provide on-duty influenza vaccinations, PPD testing and TB screening at strategic locations throughout the City. The dates, times, locations will be mutually agreed upon with the Wellness Officer or designee of the City. SDSMFHC will allocate time and trained staff for this service.

b. SDSMFHC will provide mobile services to accommodate up to thirty (30) individuals at one time.

c. SDSMFHC will provide all forms necessary for this service including consent forms and educational information with respect to the vaccines or screening for Tuberculosis.

d. SDSMFHC will provide appropriate licensed staff to perform the immunization and screening services.

e. SDSMFHC will provide licensed staff to read PPD results within the allotted time frame of 48 to 72 hours of any tests administered.

f. SDSMFHC will offer the option to perform a QuantiFERON-TB Gold blood test for any individuals determined by the City to have had a significant exposure or to be in high risk category.

g. SDSMFHC will work with the Wellness Officer to set up a schedule that is convenient and accommodating for City personnel.

h. SDSMFHC will maintain all immunization records and history of immunizations in patient's chart or electronic medical record. This will be reviewed by staff and Physician at time of Medical Examination, Fitness Evaluation or Respiratory Fit Exam.

i. SDSMFHC will provide any other necessary immunizations at the time of the Medical Evaluation, Fitness Evaluation or Respiratory Fit exam. These immunizations and services will be charged according to the Fee Schedule found in Section B.

j. SDSMFHC will gain the approval from the Wellness Officer or designee before administering or scheduling any/or all of additional immunizations.

k. SDSMFHC will provide Hepatitis B vaccinations to all personnel on a schedule determined by the City through the Wellness Officer or designee.

l. SDSMFHC will provide Hepatitis B vaccination series and antibody testing according to the standards of the Center for Disease Control and agreed upon regimen with City and Wellness officer. Individuals who do not convert beyond the medically accepted series may be considered as non-converters.

2. **Cancer Screening** (This information is also listed under section Complete Wellness Medical Exam/Cancer Screening)

a. **Skin Exam**: Comprehensive examination of the skin, with particular attention to sun exposed areas will be performed during the physical exam by the physician. Any individuals with suspicious lesions will be referred to their primary care physician or dermatologist for further assessment and/or treatment.

b. **Breast Cancer Screening**: Breast cancer is the most common type of cancer in women and the second leading cause of cancer death in women after lung cancer. An annual clinical breast examination will be given to each participating female firefighter going through the exam. Self breast examination (SBE) will be taught and each individual will be encouraged to perform the SBE monthly. Educational material will be made available to interested participants. Five females on the department have recently been diagnosed with breast cancer, four under the age of 50. In 2013, SDFRWP added a risk assessment to our cancer screening strategies. The Breast Cancer Risk Assessment Tool we use is an interactive tool designed by scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer. **Mammogram**: Annual mammogram screening shall be performed on all female firefighters beginning at age 40 at a contracted facility utilizing digital technology (Imaging Healthcare Services). Uniformed female firefighters with a family history of breast cancer or other significant personnel risks shall be provided with appropriate individualized recommendations for breast cancer screening.

c. **Cervical cancer Screening**: Annual pap smear screening will be provided for female firefighters as well as Human Papilloma Virus (HPV) screening for those individuals over age 21. Pap smears will be conducted on an annual basis until three normal pap smears have been obtained. Pap smears will be provided every three years thereafter. Cervical cancer risk assessment will be determined annual. In high risk individuals screening will be performed more frequently.

d. **Testicular Cancer Screening:** Testicular cancer represents one percent of all cancers in men. It remains the most common cancer in Caucasian men 20-34 years old. Early detection and treatment generally results in an excellent prognosis. Examination of testicles will be performed on each male participant and self examination will be taught and encouraged. Educational materials on testicular cancer will be made available to all interested participants.

e. **Prostate cancer screening**: Prostate cancer is the second most common type of cancer in men after skin cancer. The PSA is a screening test for prostate cancer. Male firefighters at increased risk for prostate cancer will be screened annually. Those at risk include individuals with family history of prostate cancer or those of African-American heritage. These individuals shall have a test annually beginning at 40 years old. All other male uniformed personnel shall have annual PSAs beginning at age 50. Digital Rectal Examination (DRE) will be performed on all uniformed personnel beginning at age 40 for males.

f. **Colon cancer screening:** Fecal Occult Blood Testing is used to screen for colorectal cancer. Testing is done annually in conjunction with the DRE. This testing will be done on all participants over age 50 using the OC-Light fecal occult blood test. Any participant with an abnormal result will be referred to their PCP for further evaluation including colonoscopy if indicated. The presence of fecal occult blood in the stool is associated with gastrointestinal disorders such as diverticulitis, polyps and Crohn's disease, which may lead to colorectal cancer if not treated. Early diagnosis and treatment has been shown to significantly reduce mortality from colorectal cancer. Conventional guaiac-based tests used for the detection of fecal occult blood do not provide a high degree of accuracy. Guaiac-based tests are highly affected by a patient's diet, due to the fact that the assay is testing for the presence of peroxidase activity. However, apart from human hemoglobin, other substances have similar

peroxidase activity, such as meat, certain vegetables, fruit and certain drugs (e.g. Vitamin C). Patients must abstain from consuming any of these items for three days prior to taking the guaiac test, which consists of three samples from three separate bowel movements. OC-Light is an immunological based test that is specifically designed to test for the presence of human hemoglobin in feces. This will increase sensitivity and specificity while decreasing false positives and false negatives. There is no need for patients to adhere to any dietary restrictions. The sampling procedure is user friendly, requiring virtually no fecal handling and only one sample vs. the three required for guaiac-based tests. Patient compliance will increase based on the added convenience.

g. **Lung Cancer Screening:** Firefighters will receive a chest x-ray at their initial visit and every two years thereafter. All chest x-rays are reviewed by a Radiologist from Imaging Health Care. If any pulmonary nodule or other suspicious finding is observed on x-ray, a high resolution Lung CT scan will be offered after approval from the Wellness Officer according to protocol. *(See section on Innovative Ideas, 3.f.ii.)*

D. DESIRABLES – OPTIONAL SERVICES AVAILABLE TO WELLNESS PROGRAM PARTICIPANTS AND NON-PARTICPANTS (NOT INCLUDED IN WELLNESS PARTICIPANT FEE)

SDSHFMC proposes the following additional services that are available to participants in the Wellness Program. SDSMFHC shall obtain written approval from the City of San Diego through the Wellness Officer or designee prior to performing any optional services. *(See fee schedule in Tab C.)*

1. Physical Therapy Services

SDSMFHC will provide physical therapy services to evaluate Wellness Program Participants that are identified as needing injury prevention and/or rehabilitation with a Physical Therapist. The services that the Physical Therapist will be responsible to provide include but are not limited to the following:

a. Restoration and maintenance of maximum movement and functional ability.

b. Management and treatment of disorders and injuries of the musculoskeletal system to help restore conventional function.

c. Assistance in increasing and improving mobility following injuries.

d. Relief of pain from prior injuries.

e. Prevention or reduction of permanent physical disabilities.

2. <u>Safety/Prevention Services</u>

a. SDSMFHC will provide Safety/Prevention services in the following categories:

i. Hydration

(a) SDSMFHC developed an education program for uniformed personnel of San Miguel that can easily be adapted to service the City firefighters. This program can be delivered in multiple formats including IST training, station visits, Battalion meetings or on the website. *(See Appendix G, Number 19 for PowerPoint.)*

(b) Dehydration is a significant but completely preventable health problem. The risk of dehydration is highest in extreme environments, and dehydration is a common health threat in warfighters and firefighters. Studies have found over 50% rate of dehydration in US Marines in San Diego County. Even a mild dehydration degrades mental and physical performance, and increases risk of injuries, heat stroke, heat illness and seizures.

In correlation with the Exercise and Physical Activity Resource Center (EPARC) within the Department of Family and Preventive Medicine at the University of California, San Diego, SDSMFHC can provide a future study into the hydration status of firefighters. This future study is a device based real-time assessment of hydration based on salivary assay. The assay is presently available in the laboratory setting to rest hydration status based on salivary sample collected in the field. The device is projected to be ready for deployment the second quarter of 2017.

The proposed technology was selected by the US Army to develop a field-expedient dehydration test for warfighters. The test will be rapid (five minutes), noninvasive and mobile (Smartphone integrated). The test can be used to monitor hydration during training and missions: screen for dehydration and return-to-duty assessments. The main goal is to prevent dehydration, and a secondary goal to understand the practical

consequences in terms of performance of varying degrees of dehydration. The test is expected to significantly improve health and mission readiness during training and combat. Further, the saliva-based test provides a major advancement in hydration assessment in terms of speed and ease-of-use compared to urine or blood samples.

Proposal

(i) Baseline Hydration Assessment: Samples collected are 5-10 ml urine and 2-3ml saliva-passive drool into tube. Results identify the type and magnitude of dehydration, and the correlation between urine and salivary assays. A report will be delivered on the results of the standard hydration urine test and the new saliva test.

(ii) Field hydration assessment(s) during peak mission times (e.g. wildfire season): Samples collected are 1-2 ml saliva collected on site, stored on ice and shipped to EPARC for analysis. Results identify the type and magnitude of dehydration. A report will delivered on saliva test results. The type and magnitude of dehydration can be correlated to time in the field and various performance metrics.

ii. Back injury prevention: SDSMFHC has been successful in delivering back injury programs to multiple fire agencies and corporations. One of the most popular and successful programs has been our Low Back Injury Prevention Workshop originally developed for firefighters at Heartland Fire and Rescue. SDSMFHC proposes the following for back injury prevention:

(a) All probationary firefighters will participate in a five week program on back safety and prevention of injuries. *(See Appendix G, Number 20 for outline of program.)*

(b) All uniformed firefighters will be offered a refresher course on back injury prevention. *(See Appendix G, Number 20 for outline of program.)*

(c) Educational curriculum will be developed on website.

iii. Weight loss: In addition to our Biggest Burn Challenge and individualized nutritional counseling, SDSMFHC can provide the following services for weight loss:

(a) Educational website program for those individuals over 25% body fat for men and 30% for women.

(b) Educational modules for weight loss at stations and SDSMFHC for firefighters. *(See Appendix G, Number 21)*

(c) Online resources including: Figwee, Weight Watchers, HMR (Health Management Resources).

3. Innovative Ideas

a. Depression and Post Traumatic Stress Disorder (PTSD) Evaluation

Post-traumatic stress disorder (PTSD) is a mental health condition that is triggered by a terrifying event – either experiencing or witnessing it. Symptoms may include flashbacks, nightmares and severe anxiety, as well as uncontrollable thoughts about the event.

The focus on the behavioral health of emergency responders increased after 9/11/2001. With this came an advent of fire service organizations taking action to assess and combat the behavioral health issues that surround the fire service. Most recently in 2013 the NFPA incorporated firefighter behavioral health issues into its national standards. In the 2013 edition of NFPA 1500, two chapters in this edition were re-titled "Behavioral Health and Wellness Programs" and "Occupational Exposure to Atypically Stressful Events" to broaden the perspective of firefighter health and to allow for a more comprehensive application of behavioral health programs. For more than 20 years, the peer-based Critical Incident Stress Debriefing (CISD) has been used to reduce psychological stress for emergency responders. Following a critical incident such as a violent event or a coworker's death, responders could talk to a CISD team of trained fire service members. CISD was considered effective when it was introduced but recent research indicates other methods including use of outside behavioral health professionals may be more effective.

The National Fallen Firefighter's Foundation has also taken a very active role in addressing behavioral health issues and state that troubled emergency responders need not suffer silently or in isolation. They have developed a new model for firefighter behavioral health to fulfill Firefighter Life Safety Initiative 13 (Firefighters and their family members must have access to counseling and psychological support). The components of FLSI13 represent a comprehensive plan that is the result of a three year consensus process of translating state-of-the-art research and best practices currently being utilized in civilian applications, the

military and other high-risk professions and adapting them into behavioral programs for members of the fire service and their families. *(See Appendix H for recommended protocol.)*

The third edition of the WFI also addresses the need for a confidential behavioral health evaluation for all uniformed personnel. The confidential behavioral health evaluation should include questions that address dealing with stress, alcohol use, financial and family problems, substance abuse, departmental problems, weight management, tobacco abuse and assistance with any of these problems for an immediate family member. SDSMFHC routinely addresses issues of this nature on at each Wellness visit. In recent years the fire service has had an emphasis on more detailed assessment and treatment of depression and PTSD. This emphasis comes from research and an article published in 2011,"State of the Union", an influential paper that takes stock of behavioral health problems among emergency responders. The paper is a result of a conference that brought together representatives of the psychological, medical, public health and fire service communities. In the findings of that paper, Kim VanOrden, an assistant professor of psychiatry at the University of Rochester Medical Center stated that he is not convinced that behavioral health issues are actually increasing among emergency responders, arguing instead that the growing awareness around the issue is finally shedding light on a long-buried problem. There have been over 305 confirmed firefighter suicides that occurred between 2000 and 2013, with more of those deaths occurring in recent years; 57 occurred each year in 2012 and 2013 out of a national population of 1.1 million career and volunteer firefighters (data from the Firefighter Behavioral Health Alliance website). This information the Behavioral Health Alliance received was sent voluntarily and represents only a fraction of the nation's more than 30,000 fire departments.

In a response to the call to address this growing awareness of behavioral health issues in the fire service, SDSMFHC proposes as part of the annual exam we employ a PH-9 depression scale and PTSD assessment to help identify any underlying anxiety/depression and acute and chronic PTSD issues that might be affecting the overall health of the firefighter.

It is the intent of SDSMFHC to be an integral part of identifying, preventing and treating behavioral health issues of firefighters. In addition to the PH-9 depression scale and the PTSD questionnaire, we will commit to NFFF training for our providers on the diagnosis, treatment and management of PTSD. We will work hand in hand with the Wellness Officer, Management of the San Diego Fire-Rescue Department, and the Union in developing and making available the necessary resources and treatment for the uniformed personnel and their families. *(See Appendix H for examples of Depression scale and PTSD questionnaire.)*

b. **Monitoring High Risk Individuals**

One of the National Fallen Firefighters Foundation's goals for the future is to use available technology wherever it can produce higher levels of health and safety. In an effort to improve the health and safety of San Diego Firefighters we propose the following use of technology in the effort to improve the health and safety of the high risk individuals for cardiovascular and metabolic disease. These individuals will be identified by using the results of our annual exam and the database.

(i) Monitoring Movement: Those individuals identified as having low fitness (<10 METS) or having 4-5 factors for Metabolic Syndrome or significant risk for CV disease will be monitored for movement.

Sedentary behaviors are defined as a range of human behaviors that result in an energy expenditure of no more than 1.5 times resting energy expenditure and are typically associated with time spent sitting, reclining, or lying down during waking hours. Recent epidemiological evidence indicates that on average, people spend approximately 7.7 hours per day sedentary. The fact that individuals are sitting more is problematic because these epidemiological studies have shown deleterious health effects of prolonged sedentary behavior that are separate from participation in physical activity. The negative health outcomes associated with sedentary behavior include increased risk of weight gain, cancer, metabolic syndrome, diabetes, and heart disease. Based on these negative health associations, we propose to assess and intervene upon excessive sitting and reclining behavior among high risk participants in the Wellness Program.

Sedentary time will be measured continuously for seven consecutive days using a thigh-mounted inclinometer called the ActivPAL^{TM} (PAL Technologies Limited, Glasgow, UK). This device detects daily sitting time, standing time, stepping time, and number of sit-to-stand transitions. To omit sleep time from these measures, participants will complete a log to document sleep time and daily waking hours. Participants will be provided with a waterproof device and instructed how to apply the device with adhesive tape.

Data from the ActivPAL^{TM} will be aggregated to the daily level and the overall minutes across the seven days of wear-time, and will be used as the unit of analysis to compare sedentary time among firefighters at high vs. low risk for metabolic syndrome. Unpaired t-tests will be used to determine statistical significance between groups. If statistical significance ($p<0.05$) or trends ($p<0.10$) are found in these group comparisons, we will implement

strategies to reduce sitting/reclining time. Specifically, we will initiate an intervention with a group presentation on the health risks of too much sitting, even among individuals who "workout" 1-2 hours/day but spend seven or more hours sitting the rest of the day. We will target a reduction in sitting time by having participants set goals to engage in either or both of the following: 1) increase standing by two hours per day; 2) increase the number of sit-to-stand transitions by 30 per day. These strategies have been used successfully in studies on working adults.

(ii) Blood pressure monitoring: High risk individuals, of which there are presently 58 according to the 2014 San Diego Fire-Rescue annual wellness report, will be monitored on a rotating basis using the iHealth BP monitoring cuff. Measurements will be taken on a daily basis while on duty for 10 days per month for two months. Data will be collected wirelessly on their smart phone. Information will then be transmitted to the Wellness Center and reviewed by our providers. Lifestyle modification or treatment will then be instituted and followed up within one month.

(iii) Glucose monitoring: Individuals with fasting blood sugar above 100 (presently 108 individuals) will be monitored for one week using iHealth Blood glucose monitors. Individuals will be asked to monitor fasting blood sugar and one random blood sugar per day (14 total readings). The readings will be transmitted to the individual's smart phone using the iHealth app. Information will then be transmitted to the Wellness Center. Our Exercise Physiology staff and Registered Dietitian will meet with the individuals to review the data and make recommendations with respect to lifestyle modification including diet and exercise.

c. **Cardiovascular and Other Additional Screening**

We recommend that individuals over age 40 have the following services included in their annual exam. Along with the chest x-ray, these services can be performed on an alternating basis each year:

(i) **Carotid Artery Ultrasound (US)**: There are two common carotid arteries, one on each side of the neck, that supply blood to the head and neck. Ultrasound of the carotid arteries is a useful tool for assessing carotid artery disease. The amount of disease is determined by the amount of plaque that is built up in these two vessels. Plaque is made up of fat, cholesterol, calcium and other substances found in the blood. The plaque can slow down or block the flow of blood through the artery allowing a blood clot to form. A piece of the blood clot can break off and block the artery thereby allowing or stopping

blood flow to the brain. This can cause a stroke. The US of the carotids will measure the intimal-medial thickness (IMT) of the arterial wall. Increases in the IMT of the arteries have been associated with increased risk of myocardial infarctions and stroke.

(ii) **Abdominal Aorta US**: Ultrasound technology is used to measure the size of the abdominal aorta. The abdominal aorta is the large blood vessel in the abdomen that distributes oxygen rich blood to all part of the body and extremities. The abdominal aorta should measure less than 3 centimeters. An aneurysm is suspected if the abdominal aorta measures larger than three centimeters. Abdominal Aortic Aneurysm (AAA) is a general term for any dilation of the aorta 1.5 times greater than normal, usually representing an underlying weakness in the wall of the aorta at that location. A ruptured AAA can cause blood loss, shock and possibly death. Abnormal abdominal aortic measurements do not always indicate the presence of an aneurysm, but they do warrant further investigation.

(iii) **Thyroid US**: A thyroid ultrasound is a common and painless procedure that allows a physician to visualize the thyroid, a gland in the neck that regulates your metabolism among other functions. Ultrasound technology uses high frequency sound to image internal body structures. A thyroid ultrasound will allow a physician to visualize the size of the thyroid gland as well as show any physical abnormalities. The thyroid nodule is the most common thyroid abnormality discovered on an ultrasound.

(iv) **Peripheral Vascular Disease Screening:** Ankle Brachial Index (ABI): The ankle brachial index test is a quick, noninvasive way to check risk of peripheral artery disease (PAD). PAD is a condition in which the arteries in the extremities are narrowed or blocked. Individuals with peripheral artery disease are at high risk of heart attack, stroke, poor circulation and leg pain. The Ankle Brachial Pressure Index is the ratio of the blood pressure in the lower legs to the blood pressure in the arms. Compared to the arm, lower blood pressure in the leg is a symptom of PAD.

(v) The above services in conjunction with the chest x-ray will be performed according the following schedule:

First year: Chest x-ray

Second year: Carotid US, Abdominal Aorta US, Thyroid US

Third year: Peripheral Vascular Disease Screening

d. **Fire Academy Athletic Injury Clinic**: SDSMFHC proposes an injury clinic for the firefighter candidates every two weeks for 1-2 hours during the first four weeks of the Academy and weekly thereafter. A physician will be present to evaluate the injury and give appropriate advice, treatment or referral, based on the extent of the injury. Candidates will also be given education on prevention. Candidates will be scheduled and approved to see the physician by the Academy Training Officer. Appropriate medical records will be kept and HIPAA laws will be enforced.

e. **Web Based Learning Modules**: SDSMFHC will develop educational material (modules) on various topics related to firefighter health and fitness online. These educational modules will be accessible through the San Diego Regional Firefighter Wellness Program website. The intent of these modules will be to address topics of interest as well as topics that are pertinent to identified health risks for the firefighter. There will be questions for the firefighter to answer or to assess their own personal understanding of the topic. A list of potential topics for these educational modules is listed below:

   (i) Controlling Blood Pressure

   (ii) Vitamins – To Supplement or Not to Supplement

   (iii) Caffeine and Your Health

   (iv) Building Muscle through Diet and Exercise

   (v) Stress: Are you a Hot Reactor?

f. **Pulmonary Disease and Sleep Disorder Screening**: In collaboration with Atul Malhotra, MD, Chief of the Department of Pulmonary and Critical Care Medicine at UCSD and Director of the Sleep Medicine as well as the current President of the American Thoracic Society, SDSMFHC recognizes the opportunity to study three very important areas of risk related to firefighter health:

   (i) **Sleep Disorders**: Substantial data suggest that firefighters are at risk of significant sleep disorders and that the abnormalities correspond with important health complications. In addition, many firefighters are sleep deprived working rotating shifts and thus may benefit from education about sleep hygiene, circadian rhythms and other factors.

   (ii) **Lung Imaging**: There is compelling data showing benefit to lung cancer screening using a Lung CT in high risk individuals based on heavy tobacco use. However, other patients including firefighters that may be at higher risk

would benefit from more extensive testing. The SDFRWP will use the expertise of the UCSD pulmonary department for high risk individuals that would consist of a Lung CT scan and further review of the individual's pulmonary function testing.

(iii) **Lung and exercise physiology**: UCSD has some of the world's leading experts in respiratory and exercise physiology. SDSMFHC will collaborate with their leading experts by having them analyze the data from 10 years of SDFRD pulmonary function testing to draw conclusions regarding how best to minimize risk of complications and symptoms secondary to repeated toxic exposure.

g. **CT Cardiac Calcium Score**: Electron Beam Computed Tomography (EBCT) Cardiac Calcium Scan measures the amount of calcium buildup in the arteries of the heart. Calcium is one of the many substances found in atherosclerotic plaques. The calcium score correlates with atherosclerotic plaque burden and severity of the arterial blockage within the heart. Higher scores predict an increased risk of heart attack. Heart scans may detect very early atherosclerosis that may be missed by a stress test. In order for a stress test to show an abnormality, a coronary artery must be narrowed by at least 50% to 70%. At the American Heart Association's most recent scientific sessions they stated that knowing a patient's coronary artery calcium score facilitates a more informed physician-patient discussion and shared decision making regarding whether to go on statin therapy for long periods of time. In a recent study done by Dr. Khurram Nasir of the Center for Prevention and Wellness Research at Baptist Health Medical Center in Miami Beach, they demonstrated that half of their 4,758 participants would be recommended for high statin therapy. 41% of those subjects who had a calculated risk score of 7.5% from the AHA/ACC risk estimator, were recommended for high intensity therapy had a calcium score of 0 indicating that they had 10 year composite risk of myocardial infarction, stroke or cardiovascular death of 4.9%, way below the 7.5% threshold recommended for statin therapy. This study demonstrates that participants with cholesterol levels that put them at high risk have one more tool (Calcium score) to stratify their CV risk and help them make cost effective and meaningful decisions on their treatment and long term health.

h. **Breast Cancer Screening:** Breast cancer is the most common type of cancer in women and the second leading cause of cancer death in women after lung cancer. An annual clinical breast examination will be given to each participating female firefighter going through the exam. Self breast examination (SBE) will be taught

and each individual will be encouraged to perform the SBE monthly. Educational material will be made available to interested participants. Five females on the department have recently been diagnosed with breast cancer, four under the age of 50. In 2013, SDFRWP added a risk assessment to our cancer screening strategies. The Breast Cancer Risk Assessment Tool we use is an interactive tool designed by scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer.

i. **Bladder Cancer Screening**: Because firefighters are regularly exposed to smoke and chemical fumes, they may be at an increased risk of transitional cell carcinoma (TCC), a cancer of the bladder. Bladder cancer screening will be screened by looking for hematuria (blood in the urine) on urine dipstick. If urine dipstick is positive for blood, urinalysis will be done onsite at time of exam to determine microscopic count of red blood cells (RBC's). Other tests at the discretion of the Wellness Officer can be performed on individuals found to be at risk including nuclear matrix protein 22 (NMP22) or for telomerase, an enzyme found in bladder cancer cells. Appropriate referrals will be made to a Urologist through the individual's primary insurance if he/she is found to be at increased risk for bladder cancer.

j. **Sleep Study:** Substantial data suggest those firefighters are at risk of important sleep disorders and that these abnormalities correspond with important health complications. In addition, many firefighters are sleep deprived working rotating shifts and thus may benefit.

Sleep can be measured using a wrist-worn Actigraph GT3X+ "actisleep" or LINK accelerometer. This can be done in conjunction with a self-reported sleep-log, or using custom derived algorithms developed by UCSD and Harvard researchers. Participants are instructed to wear the wrist accelerometer for 24 hours per day during the monitoring period (usually one week), and to record their in-bed and out-of-bed times for each sleep period. Minute-level actigraphy data of the sleep periods are scored using a validated algorithm (Cole, Kripke et al. 1992) to categorize each minute as either "awake" or "asleep". Total sleep time (TST) is derived as the total number of minutes categorized as "sleep" during each sleep period. Sleep efficiency (EFF) was calculated as the percentage of in-bed time that was spent asleep. Other outcome measures commonly examined include sleep latency, number of "wake-up" events (WUE), average time of WUE.

Cole, R. J., D. F. Kripke, et al. (1992). "Automatic sleep/wake identification from wrist activity." Sleep **15**(5): 461-469

(x) **Functional Movement Screening** is now employed as part of the current Wellness program for the San Diego Firefighters to help evaluate core strength, flexibility and balance. The eight tests are listed below:

a. **Shoulder Mobility**: assess bilateral shoulder range of motion. *(See Appendix D, Page 8)*
b. **Balance Drill**: assess multi-planar stability while balancing on one leg. *(See Appendix D, Page 8)*
c. **Thoracic Mobility**: assess thoracic rotation in both directions while low back and hips are stabilized. *(See Appendix D, Page 9)*
d. **Rotational Stability**: assess multi-planar stability while combined upper and lower extremity motion is performed. *(See Appendix D, Page 10)*
e. **Active Straight Leg Raise**: assess active hamstring and gastrocnemius-soleus flexibility while maintaining a stable pelvis. *(See Appendix D, Page 10)*
f. **Quadricep Flexibility**: assess passive quadriceps length and hip flexor abnormalities. *(See Appendix D, Page 11)*
g. **Overhead Range of Motion**: assess ability to maintain neutral spine while reaching overhead. *(See Appendix D, Page 12)*
h. **Ankle Mobility**: assess range of motion in the ankle joint and surrounding tissues. *(See Appendix D, Page 13)*

Cost Summary: A cost summary table that summarizes these optional services and potential costs and/or cost avoidance can be found in *Tab C*. It should be noted that these are estimated costs to be used for planning purposes and the maximum estimated usage.

E. PROGRAM FACILITIES AND EQUIPMENT REQUIREMENTS

1. SDSMFHC facilities are located as follows:

a. Our primary facility is centrally located near San Diego State University at 6699 Alvarado Road, Suites 2100 & 2101, San Diego, CA 92120. This facility consists of 17,000 square feet with 18 examination rooms, onsite x-ray, laboratory services, exercise stress testing room, three minor surgical procedure rooms, and a Physical Therapy/Fitness Center with a 25 yard 4-lane lap pool, Executive Wellness Center and the location of the SDFRWP. Our administration, billing and referral departments are located onsite.

Our Sorrento Valley office is convenient to the Northern Coastal area of San Diego located at 4010 Sorrento Valley Blvd., San Diego, CA 92121. This facility offers 12,000 square feet with 14 examination rooms, onsite x-ray,

laboratory services and full service Physical Therapy, Fitness and Wellness facilities.

Our Grossmont office is located at 8860 Center Drive, Suite 350A, La Mesa, CA 91942 where we provide Open MRI services in addition to our physician services.

b. San Diego Sports Medicine and Family Health Center is the provider for the San Diego Firefighters Regional Wellness Program. We currently serve and fulfill the requirements of the WFI initiative for the San Diego Fire-Rescue Department, Pala Fire Department, Viejas Fire Department, San Miguel Fire Department, Alpine Fire Department, National City Fire Department and Rancho Santa Fe Fire Department, San Diego City Lifeguards and Corona Fire Department. In the process of developing this program over the last ten years, we have procured and maintained the equipment necessary to carry out the services outlined in the WFI. Below is a list of the requirements and recommendations of the Fire Service Joint Labor Management Wellness-Fitness Initiative for equipment. All of the equipment listed below is currently available at the San Diego Sports Medicine and Family Health Center Alvarado location:

Medical Examination Room

- Otoscope and Opthalmoscope
- Examination table
- Eye chart
- Audiometer
- Sound proof booth
- Spirometer (2)
- Pillows (3)
- Blood pressure cuffs (5)
- Digital thermometers
- Scale, upright (2)
- Desk, chair and computer

Treadmill Room

- EKG machine
- Treadmill
- Bicycle ergometer
- Examination table
- AED
- Blood pressure cuffs, handheld (2)
- Emergency equipment, oxygen tank, masks, ambubag, tubing

- Desk, chair and computer

Fitness Testing Equipment

- Arm and leg dynamometer
- Skinfold calipers (Lange)
- Sit reach box/Acuflex
- Grip dynamometer
- Vertical jump - Probotics "Just Jump" Mat
- Roman chair
- Desk, chair and computer
- Stopwatch
- Metronome
- Mat

Computers and Programs

- Computers (7) for staff
- Polar TriFit 700 Fitness Evaluation and Health Risk Appraisal and Polar Body Age System
- Printers (3)

c. Maintenance, repair and replacement: SDSMFHC will be responsible for any maintenance, repair and replacement of equipment listed above.

d. Subcontracted services:

(i) Laboratory services will be contracted out to Quest Diagnostics and Scantibodies Laboratory Inc.

(ii) Mammograms will be contracted out to Imaging Healthcare Services

(iii) Data collection and database development and maintenance is performed by SDSMFHC using proprietary Welltivia software.

(iv) All other services will be conducted under the auspices of SDSMFHC.

2. SDSMFHC facilities are uniquely designed that all Medical and Fitness Evaluations can be carried out in one geographical area including radiology and blood draws.

3. SDSMFHC will be responsible for any and all equipment required to perform services under this contract including maintenance, repair and replacement.

4. SDSMFHC will provide a private office for the Wellness Officer at our Alvarado location where the examinations will be performed. This office will include a computer, internet access and telephone service.

F. Staffing Requirements

The combined experience of SDSMFHC's physicians exceeds 150 years in the fields of Family, Sports, Occupational and Wellness/Preventive Medicine. Our physicians stay current on medical publications and literature pertaining to the fire service and related occupational and personal medical issues.

Our physicians are nationally known experts in Sports Medicine, having served as team physicians for the San Diego Chargers, USA Men's and Women's Volleyball Teams, San Diego Spirit, San Diego Sockers, San Diego Gulls, San Diego Flash, America's Cup Yacht Racing, US Olympic Training Center, San Diego State University, Grossmont College, San Diego Christian College and multiple area high schools over the last 30 years. We have also provided medical coverage for numerous events around the county, country and world including Senior Olympics, Fire and Police Games, Junior Olympics, Hawaii's Ironman Triathlon, Breast Cancer Foundation Three Day Walk in San Diego, Boston, New York and other cities, and America's Cup Sailing in Auckland, New Zealand. The Sports Medicine aspect of our practice focuses on the prevention and treatment of medical and musculoskeletal injuries, complete team care and sporting event coverage.

Several of our physicians have served as Qualified Medical Examiners for the State of California and have extensive experience in the treatment of occupational injuries. This experience has sharply developed our ability to understand the roles of labor and management relating to occupational medicine, health and safety. We have worked with employers, managers and workers' compensation carriers and have an excellent working knowledge of local, state and federal laws.

As exclusive medical providers of the SDFRWP for the past ten years, SDSMFHC has been involved in the health care of hundreds of firefighters across San Diego County including San Diego Fire-Rescue Department, City of Coronado Fire Department, City of Bonita Fire Department, City of Imperial Beach Fire Department, City of La Mesa Fire Department, Pala Fire Department, Sycuan Fire Department, Viejas Fire Department, Alpine Fire Department, Chula Vista Fire Department, Rancho Santa Fe Fire Department, San Miguel Fire Department, City of Santee Fire Department, National City Fire Department, Lemon Grove Fire Department, Heartland District Firefighters and the City of Corona Fire Department.

SDSMFHC has provided service to Fire Agencies and their uniformed personnel for over 30 years. Our services have included personal health care, pre-employment physicals,

fitness evaluations, respiratory fitness examinations, DMV examinations, USAR examinations, HAZMAT examinations, DOD examinations, wellness and behavioral education, back injury prevention, workers' compensation injury rehabilitation, immunizations, treatment and prevention of occupational exposures. This experience has given us expertise with job-related activities, physical demands of the occupation and stresses associated with firefighting.

We have also provided comprehensive wellness programs that have included extensive medical evaluations, fitness evaluations, nutritional analysis, behavioral and lifestyle evaluations, ongoing disease management, wellness and educational seminars to multiple companies and organizations. Our clients have included Mammoth Mountain Ski Area, Cox Communications, the Young Presidents Organization, City of La Mesa, City of Coronado, The Executive Committee (TEC) and the San Diego Chargers, among others.

In the fall of 2004, SDSMFHC was awarded the contract as Medical Provider for a FEMA grant awarded to the SDFRD to start a Wellness Program based on the IAFF Wellness Fitness Initiative. It has been our pleasure over the last ten years to work in partnership with the SDFRD to develop, implement and expand this exceptional program. Our goal at the initiation of this contract was to create a permanent, comprehensive and fiscally responsible Health and Wellness Program that would provide ongoing services to qualified public safety personnel. We have worked diligently in collaboration with the SDFRD to promote the physical and emotional well-being of the participants in a positive, respectful environment. Our professional team of physicians, exercise physiologists, nutritionists, athletic trainers, medical assistants and clerical staff has gained the trust and confidence of the firefighters over the years. Evidence of this trust rests in the 96% participation rate for this voluntary program: the best participation rate in the country for a program of this nature. We feel strongly that SDSMFHC in conjunction with the SDFRD have created a Wellness Program that has met and exceeded our initial expectations and goals.

The Wellness Program has grown and developed over these past ten years and has proven to be successful in meeting the goals of early detection of disease, reducing health risk factors and injury rates and increasing the health and fitness of the firefighters. Our data and statistics indicate that we have significantly reduced risk factors for heart disease, the number one cause of death among firefighters.

There have been numerous accounts of early detection of disease including prostate cancer, testicular cancer, melanoma, leukemia, myocardial bridging, diabetes, and Metabolic Syndrome. SDSMFHC has provided creative educational information and programs to assist the firefighters in reaching their goals. We are committed to building on existing programs and developing new innovative resources to help the firefighters of San Diego to remain fit, healthy and injury free throughout their careers.

SDSMFHC with its experience, background, medical and fitness professionals is uniquely qualified to carry out this contract to its fullest extent. Our record of delivering an efficient, effective and creative Wellness Program serves as tangible evidence that SDSMFHC is the best organization in San Diego prepared to provide ongoing Wellness Services to the SDFRD.

1. SDSMFHC will provide qualified staff dedicated to the Wellness Program. Résumés of personnel that will be providing services for the Wellness Program are located in *Appendix O*, including the following personnel:

   (a) **Physicians:**

   (i) **Richard A. Parker, D.O., F.A.O.A.S.M.** Dr. Parker is the Medical Director of the SDFRWP. He completed his Sports Medicine Fellowship in 1987 at SDSMFHC. He graduated from the Kirksville College of Osteopathic Medicine and is Board Certified in Family Practice and Sports Medicine. Dr. Parker is an Associate Clinical Professor at UCSD in the Department of Family and Preventive Medicine. He is also a Clinical Professor at Western University of Health Sciences. Dr. Parker is the Director of the Sports Medicine Fellowship Program at San Diego Sports Medicine and is Past President of the American Osteopathic Academy of Sports Medicine. He served for six years as Chairman of the American Osteopathic Association Conjoint Sports Medicine Examination Committee, responsible for the examination leading to Board Certification in Sports Medicine. He has recently been appointed Co-Chairman of the UCSD Health Physicians Network Advisory Board. Dr. Parker received All-American Honors in Swimming at Springfield College. Dr. Parker was recognized by San Diego Magazine and the San Diego County Medical Society as one of San Diego's "Top Doctors" in Family Medicine in 2014. *(See Appendix O, Section A)*

   (ii) **Jeffrey P. Anthony, D.O., F.A.A.F.P., F.A.O.A.S.M.** Dr. Anthony joined our practice in 1987 and is Board Certified in Family Practice and Sports Medicine. He is a Team Physician for the US Olympic Training Center, SDSU Club Sports, San Diego Christian College and Santa Fe Christian High School. He is an Assistant Clinical Professor at the UCSD School of Medicine, adjunct professor at SDSU, and the primary care physician for the Alvarado Spine Institute. He has served on many boards, including the Governor's Board for Alvarado Hospital and Medical Center, and the San Diego Academy of Family Practice, which he is currently presiding. He has been team physician for the Challenged Athletes Foundation (CAF) and the Million Dollar Ride since 2007. Dr. Anthony was voted among America's Best Family Medicine doctors by the Consumers' Research Council of

America in 2008. Dr. Anthony was recognized by San Diego Magazine and the San Diego County Medical Society as one of San Diego's "Top Doctors" in Family Medicine in 2014. *(See Appendix O, Section B)*

(iii) **Lee P. Ralph, M.D.** Dr. Ralph joined SDSMFHC in 1997 after serving as a family physician at UCSD's Family and Preventive Medicine Department. He graduated from Amherst College and the University of Virginia School of Medicine before completing his residency and fellowship training at UCSD. Dr. Ralph is currently an Assistant Clinical Professor at the UCSD School of Medicine and is board certified in Family Medicine and Sports Medicine. Dr. Ralph is the past president of the San Diego Academy of Family Physicians and is on the board of directors of the California Academy of Family Physicians. Dr. Ralph has been voted among San Diego's "Top Doctors" in Family Medicine and Sports Medicine by his peers through the San Diego County Medical Society. *(See Appendix O, Section C)*

(iv) **Frederick Allen Richburg, M.D., M.S., F.A.A.F.P.** Dr. Richburg joined SDSMFHC after completing a Fellowship Program in Sports Medicine in 1998. He graduated from the University of California, Los Angeles Family Practice Residency Program in Santa Monica, California and is Board Certified in Family Practice and Sports Medicine. Dr. Richburg is the Head Team Physician at the U.S. Olympic Training Center in Chula Vista and at the San Diego Cycling Velodrome, where he works closely with some of the most elite athletes in the world. He is also the Director of Athletic Medicine for the San Diego State University Aztecs. Dr. Richburg currently serves as the Medical Director of the San Diego Sports Medicine Skin Wellness Department. *(See Appendix O, Section D)*

(v) **Michelle L. Look, M.D., F.A.A.F.P.** Dr. Look joined San Diego Sports Medicine in 2001 after completing SDSMFHC's Primary Care Sports Medicine Fellowship Program and a Family Practice residency at Sharp Healthcare in San Diego. She graduated from Jefferson Medical College in Philadelphia. She is Board Certified in Family Medicine, Sports Medicine and Obesity Medicine. Dr. Look serves on the Board of Directors for the American Heart Association San Diego Chapter and was the National Medical Director for the Susan G. Komen for the Cure Breast Cancer 3 Day Walk for several years. She was a team physician for the United States 2008 Summer Olympics in Beijing, China and 2010 Winter Olympics in Vancouver, Canada. She is currently a staff physician for the US Olympic Training Center in Chula Vista and team physician for the USA Men's and Women's Rugby Sevens Team. Dr. Look has been honored by

San Diego Magazine and the San Diego County Medical Society as one of San Diego's "Top Doctors" in Family Medicine and Sports Medicine in 2006, 2008, 2009, 2010, 2012, 2013 and 2014. *(See Appendix O, Section E)*

(vi) **Stephen J. Rohrer, D.O.** Dr. Rohrer completed SDSMFHC's Sports Medicine Fellowship program in July 2009 and joined our group as an associate physician. He is board certified in Family Medicine, Osteopathic Manipulative Medicine and Sports Medicine. He currently is a team physician for SDSU, San Diego Christian College, and La Jolla County Day School. He is an Assistant Clinical Professor at the UCSD School of Medicine and an adjunct professor at SDSU. Dr. Rohrer has provided medical coverage at the Ironman World Championship, Keystone State Games, the USA Olympic Training Center, and the Thunderboat Regatta in Mission Bay. *(See Appendix O, Section F)*

(vii) **Scott R. Evans, M.D.** Dr. Evans joined San Diego Sports Medicine in 2008 after completing his fellowship in Sports Medicine at UCLA. He completed his undergraduate degree at Brigham Young University and earned his medical degree from George Washington University. He is currently a team physician for San Diego State University as well as Francis Parker High School. Dr. Evans was previously a team physician for UCLA athletics. He is fluent in Spanish and is board certified in Family Medicine and Sports Medicine. *(See Appendix O, Section G)*

(viii) **Rebeccah R. Rodriguez, D.O.** Dr. Rodriguez completed her Sports Medicine Fellowship training at San Diego Sports Medicine and Family Health Center in 2010. She graduated from Kirksville College of Osteopathic Medicine and completed her Family Medicine residency in Phoenix, Arizona. Dr. Rodriguez is fluent in Spanish. She is board certified in Family Medicine and Sports Medicine and specializes in Dance Medicine. Prior to her medical training, Dr. Rodriguez danced professionally for 19 years and has worked with Disney, Paula Abdul, Star Search, and Warner Brothers' Power Rangers. Dr. Rodriguez is the company physician for the San Diego Ballet, The Academy of Performing Arts of San Diego and The San Diego Symphony. She participates in team coverage for the California Ballet, San Diego Ballet, San Diego State University Athletics, San Diego Surge Women's Football, San Diego Derby Dolls, the US Olympic Training Center, and Torrey Pines High School. *(See Appendix O, Section H)*

(ix) **Douglas D. Dengerink, D.O.** Dr. Dengerink joined San Diego Sports Medicine in 2012 after completing fellowship training at SDSMFHC. He completed his undergraduate degree at Azusa Pacific University and earned

his medical degree from Western University College of Osteopathic Medicine. He completed his medical training at the Mayo Clinic in Scottsdale, Arizona. Having worked in the urgent care setting, Dr. Dengerink brings six years of acute care experience to the practice, most recently for Sharp Rees-Stealy. He is currently a team physician for San Diego State University Athletics and the US Olympic Training Center. Dr. Dengerink specializes in sports medicine, musculoskeletal ultrasound and injections, as well as Platelet Rich Plasma (PRP) injections. *(See Appendix O, Section I)*

(x) **Alexandra Myers, D.O.** Dr. Myers is board certified in Family Practice and has a Certificate of Added Qualifications in Sports Medicine. In addition to her osteopathic medical degree, Dr. Myers obtained a Master's degree in Health Sciences, focusing on health professions education. Dr. Myers enjoys practicing a mixture of family practice and sports medicine. As an osteopathic physician, Dr. Myers regularly performs Osteopathic Manipulative Treatment (OMT) to improve her patients' pain and increase their functionality. Dr. Myers serves as the team physician for the Women's Basketball team at SDSU. Dr. Myers also cares for the athletes at San Diego Christian College, San Diego City College, Santa Fe Christian High School and the Olympic Training Center. Dr. Myers covers events such as the San Diego Half Marathon, the Susan G. Komen 3-Day Breast Cancer Walk, San Diego Surge Women's Football and most recently the San Diego Derby Dolls. As a bilingual physician, Dr. Myers enjoys traveling on medical missions and exchange programs to Spanish speaking countries. She regularly serves with LIGA International, an aid organization that serves the inhabitants of El Fuerte, Sinaloa, Mexico. *(See Appendix O, Section J)*

(xi) **Shannon K. Cheffet, D.O.** Dr. Cheffet joined SDSMFHC in June 2013. After completing her undergraduate studies at UC Davis, she attended medical school at Western University College of Osteopathic Medicine. Pursuing her love of both Pediatric and Adult Medicine, she completed a combined residency in Pediatrics and Internal Medicine at Loma Linda University in 2006. She obtained board certification in both specialties. Her career has spanned a variety of interests which started with her serving four years as a medical director of a San Diego County community health center system. Her clinical experience has included treating critically ill hospitalized patients at Sharp Memorial Hospital as well as caring for newborn babies at Sharp Mary Birch Hospital for Women and Newborns. Bringing her pediatric and internal medicine training to our team, she enhances our philosophy of quality care for the entire family. *(See Appendix O, Section K)*

(b) **Executive Director of Wellness**:

Kathleen D. Rusk, P.A.-C., M.S. Katie joined SDSMFHC in 1982 after she received her Master's Degree in Exercise Physiology from SDSU and Bachelor of Science Degree in Nutrition from the University of Wisconsin. She graduated from Stanford University's Primary Care Program in 1996 as a Physician's Assistant. She served for 14 years as the Co-Director and Clinical Instructor of the Stanford University Primary Care satellite program in San Diego. Katie has served as the Executive Director for the San Diego Firefighter's Regional Wellness Program for the last 10 years. Katie has been instrumental in the development of the SDFRWP since its inception. Her responsibilities include management, hiring and training of staff, overseeing education, development, maintenance, utilization of the database, instituting new tests, evaluations and protocols, interfacing with the Wellness Officer and coordinating efforts for firefighter research with local academic agencies. She has represented the SDFRWP by presenting at the Redmond Health and Safety Conference and Firehouse World. Katie provides full spectrum family health care and has provided physical examinations for the firefighters for the last 10 years. *(See Appendix O, Section L)*

(c) **Exercise Physiologists:**

(i) **Matthew Downs, M.S.** Matt received his undergraduate degree in Kinesiology with an emphasis in Fitness, Nutrition and Health and completed his Master's Degree in Exercise Physiology at San Diego State University. In addition to working at San Diego Sports Medicine Center, he is also a Personal Trainer. He is certified by the National Strength and Conditioning Association (NSCA) as a Certified Strength and Conditioning Specialist (CSCS). He is trained and certified in Functional Movement Screen testing. Matt oversees all the special projects with the Wellness program for the firefighters including Academy training and measurements and Database projects. He also is an integral part of our Peak Performance department at SDSMFHC. Matt enjoys an active lifestyle that includes trail running, tennis, co-ed softball, kickball and resistance training. *(See Appendix O, Section M)*

(ii) **Rebecca J. McClintock, M.S.** Becki received her Master's Degree in Exercise Physiology at San Diego State University. She earned an undergraduate degree in Nutrition with a minor in Sports & Exercise Science at Messiah College in Grantham, Pennsylvania. She is certified as a Clinical Exercise Specialist by ACSM and as a Certified Strength and Conditioning Specialist by the NSCA. Her previous employment includes working as a Physical Therapy Assistant, a Nutritionist with Women, Infants and Children (WIC) program, and a Health and Physical education teacher in Phnom Penh,

Cambodia. Outside of work, Becki enjoys traveling with her husband and spending time with friends. She is an avid runner and enjoys yoga. Becki serves as the Clinical Coordinator of the Wellness Program. *(See Appendix O, Section N)*

(iii) **Kayli Gibbs, M.S.** Kayli received her undergraduate degree in Kinesiology with an emphasis in Fitness, Nutrition and Health and her dual Master's Degree in Exercise Physiology and Nutritional Sciences at San Diego State University. She is certified as a Health and Fitness Specialist through ACSM and just recently received her certification as a Strength and Conditioning Specialist from NSCA. Outside of work, Kayli enjoys an active lifestyle of resistance training, hiking, kickball, yoga and running with her dog. *(See Appendix O, Section O)*

(iv) **Mia Green, M.S.** Mia graduated from San Diego State University with a dual Master's degree in Exercise Physiology and Nutritional Science. She received her undergraduate degrees in Physical Education and Biology from University of Stuttgart and University of Hohenheim in Germany. Mia is a certified Personal Trainer and is a Certified Clinical Exercise Physiologist by ACSM. In addition to her current position at SDSMFHC, Mia also works as an Exercise Physiologist for the Cardiac Rehabilitation program at Sharp Hospital. During her free time, Mia enjoys an active lifestyle of hiking, Pilates and running. She also loves to travel and explore new foods. *(See Appendix O, Section P)*

(d) **Registered Dietitian:**

Kate Machado, M.S., R.D., C.S.S.D. Kate Machado is a Registered Dietitian (RD) who has been helping others make positive changes toward improved nutrition for health and sport performance for over eight years. She has been a Certified Specialist in Sports Dietetics (CSSD) for over six years, since receiving her Master's degree in Exercise Physiology and Nutrition from Cal State University Long Beach. She received her undergraduate degree from UC Berkeley in Nutritional Sciences. Her previous professional experience includes working as a Sport Dietitian at the Olympic Training Center, leading weight loss groups at the Cancer Center, and providing nutritional counseling and cooking classes at multiple eating disorder treatment centers. When not working or studying for her PhD, Kate can be found teaching her daughter the joys of cooking or trail running with her dogs. *(See Appendix O, Section Q)*

(e) **Medical Assistant:**

Brittany Davis, Brittany is the Medical Assistant for the Regional Wellness Program. She received her Associates Degree in Pre-Nursing and Psychology at San Diego Mesa College. She is also an Aeromedical Evacuation flight medic and EMT for the United States Air Force. Her previous medical experience includes working in level 1 trauma emergency rooms at both San Antonio Military Medical Center and Tripler Army Medical Center. Outside of work, Brittany enjoys the San Diego beach life, cooking and entertaining friends. *(See Appendix O, Section R)*

(f) **Program Assistant:**

Davina Oropeza, Davina is the Regional Wellness Program's Administrative Coordinator for the past six years. She welcomes each Firefighter as they arrive for their Wellness Exam and performs administrative and receptionist duties. Davina is also the Administrative Assistant for the SDSMFHC Executive Wellness Program. *(See Appendix O, Section S)*

(g) **Physical Therapists/Athletic Trainers**:

(i) **Chad Neubrand, M.S., P.T.** Chad is the Director of Physical Therapy for SDSMFHC. He received his Master's degree in Physical Therapy from the University of Iowa in 1991. He has been practicing Physical Therapy for 24 years specializing in Manual Therapy and Functional Exercise. Chad's other specialties include foot biomechanics and custom orthotics, as well as writing and administering specific rehabilitation protocols for post-op hip and shoulder surgeries. He is currently a guest lecturer at San Diego State University Doctorate of Physical Therapy Program.

(ii) **Elizabeth Stelter, M.S., P.T.** Liz Stelter received her Master's Degree in Physical Therapy in 1992 from the University of Massachusetts. Living and working in San Diego since then, her specialties include manual orthopedic skills learned through continuing education as well as aquatic therapy, TMJ and women's health issues.

(iii) **Denise O'Hagan, M.P.T., A.T.C.** Denise graduated from Sacred Heart University in Fairfield, CT in 1998 with a Bachelor's Degree in Human Movement and Sports Science and Psychology. She earned her Master's of Physical Therapy in 2001. Denise has worked in orthopedic outpatient settings since arriving in San Diego in 2001.

(iv) **Joseph Mahon, D.P.T.** Joe received his Doctorate in Physical Therapy from the University of Pittsburgh School of Health and Rehabilitation Sciences in Pittsburgh, Pennsylvania. He had previously graduated Magna

Cum Laude with a B.S. in Rehabilitation Science. Joe provides physical therapy services to sports and orthopedic patients with a focus on the latest evidence-based practice and manual therapy techniques. Joe has served as a Clinical Instructor in the University of Delaware Sports and Orthopedic Clinic.

(v) **William Taylor, BS, PTA, ATC, OTC** Bill received his BS in athletic training at San Diego State University. Bill has worked in the field of sports medicine since 1980, starting with the San Diego Padres minor league and working with varied teams such as the 1984 Gold Medal Olympic Men's Volleyball Team, San Diego Sockers, San Diego Gulls, San Diego Spirit and the Oracle-BMW racing team for the Americas Cup Challenge in New Zealand. Bill has worked with athletes from the high school level through the elite competitive level designing rehabilitation, training and nutrition programs.

(h) **Data Developer and Analyst: Steven Birch, PhD** Dr. Birch obtained his PhD in Electrical & Computer Systems - Biomedical Engineering in 1999. He provides active development of the Wellness data systems in use since 2007, extending the capabilities and adding research methodologies to the system to optimize physician access to information from the individual patient level through to the Department as a whole. His focus is on empowering the physician with unique insights into each patient's medical history through advanced visualization techniques, with a feedback loop aimed at enhancing quality of care. As adjunct senior scientist with the SDSU Vizcenter, he has performed tasks as diverse as telemedicine installations in Afghanistan, data analysis for the Executive Office of the President (Office of National Drug Control Policy), developing a regional business opportunity mapping system recognized in a Whitehouse press release as a model of bi-national cooperation, technology support to SDPD's Critical Incidents Unit as well as sensor and communications technology research and integration. *(See Appendix O, Section T)*

(i) **Consulting Faculty from University of California San Diego:**

(i) **Atul Malhotra, M.D.** Dr. Malhotra is a board-certified pulmonologist, intensivist and chief of the Division of Pulmonary and Critical Care Medicine at UCSD. He is active clinically in pulmonary, critical care and sleep medicine. In the sleep clinic, he provides a full spectrum of diagnostic and therapeutic services to patients with sleep-related disorders, including sleep apnea, insomnia, restless leg syndrome, narcolepsy and sleep disorders associated with medical or psychiatric conditions. He has a special interest in the treatment of sleep apnea. He has taught and presented his research on

sleep-related disorders locally, regionally, nationally and internationally. He has published more than 200 original manuscripts in leading journals. He is a principal- and co-investigator on numerous projects relating to sleep apnea and serves as an ad hoc reviewer for many leading journals including the *New England Journal of Medicine*, *Mayo Clinic Proceedings*, *Sleep* and the *Journal of American Medical Association.* As a professor of medicine, Dr. Malhotra is involved in training medical students, residents and fellows at UC San Diego School of Medicine. Before joining UC San Diego Health System, Dr. Malhotra practiced pulmonary, critical care and sleep medicine at Massachusetts General Hospital, Beth Israel Deaconess Medical Center and Brigham and Women's Hospital. He also served as attending physician in intensive care at King Faisal Hospital in Rwanda. He was associate professor at Harvard Medical School and medical director of the Brigham and Women's Hospital Sleep Disorders Research Program. Dr. Malhotra completed his fellowship training in pulmonary and critical care medicine at Harvard Medical School and a residency in internal medicine at the Mayo Clinic. He completed an internship at St. Thomas Medical Center in Akron, OH and received his medical degree from the University of Alberta in Canada. Dr. Malhotra is triple board-certified in pulmonary disease, sleep medicine and critical care medicine. *(See Appendix O, Section U)*

(ii) **Jeanne Nichols, PhD, FACSM** Dr. Nichols is Professor Emeritus in the School of Exercise and Nutritional Sciences at SDSU, and currently a Research Associate and Chief Exercise Physiologist in the Exercise and Physical Activity Resource Center (EPARC) within the Department of Family and Preventive Medicine at the University of California, San Diego. Dr. Nichols has 29 years of teaching and research experience with a broad interest in exercise and musculoskeletal health across the lifespan, with emphasis on prevention/reduction of sarcopenia and osteopenia in older adults, and prevention of low bone mass in adolescent girls at risk for low energy status. She has extensive experience in developing, implementing, and evaluating exercise interventions focused on improving strength, balance and mobility to reduce fall risk among community-residing older adults. Dr. Nichols has worked with the San Diego County Aging and Independence Services to develop an instructor training curriculum for a County-wide physical activity program for older adults, and continue as a volunteer conducting quarterly booster training sessions for approximately 25 County instructors. She has been a Co-Investigator on several NIH and CDC funded trials to increase physical activity and improve bone health in children and adults, reduce/prevent obesity and related co-morbidities, and prevent recurrence of breast cancer. *(See Appendix O, Section V)*

(iii) **Linda Hill, MD, MPH** Dr. Hill is the Director of the UCSD/SDSU General Preventive Medicine Residency Program, Professor of Family Medicine and Public Health at UCSD, and Associate Professor of the Graduate School of Public Health at SDSU. Dr. Hill has directed two Community Health Centers in San Diego, providing direct patient care in addition to programmatic responsibilities and continues her 30 year practice at one of these centers. She serves as Chair of the Graduate Medical Education Committee for the American College of Preventive Medicine. Dr. Hill's other clinical activities include roles as the Co-Director of the UCSD Injury Epidemiology Prevention and Research Center and Medical Director of the Refugee Health Assessment Program. She is also the Principal Investigator of a federal training grant that funds EPARC. EPARC spearheads a unique program to train residents in preventive medicine, focusing on utilizing exercise as medicine as a standard of care among physicians. This training is then implemented by residents serving rotations in medically underserved communities. Dr. Hill also mentors and precepts medical, graduate, pre-doctoral, and undergraduate students. Through several collaborative projects utilizing the personnel, services, and equipment housed at EPARC, she is involved in research on injury prevention, clinical preventive services, and compliance research with the Center for Behavioral Epidemiology and Community Health, where she is also the Associate Director. As the Director of TREDS, Dr. Hill aims to reduce injury by improving traffic safety through service projects and research. Her involvement with older driver safety began in 2004 and she has provided medical expertise on the topic to countless audiences ranging from students to colleagues. Her leadership provides a great foundation for the activities supported by the TREDS team. *(See Appendix O, Section W)*

(iv) **David Wing, MS, CDT** David is the laboratory manager for UCSD's EPARC, a state-of-the science laboratory focusing on the objective assessment of physical activity, bone health, body composition, cardiorespiratory fitness, and balance. David holds a Master's degree in Exercise Physiology from San Diego State University and is a registered X-Ray Technician (Dual Energy X-Ray Absorptiometry) and Certified Phlebotomy Technician (CPT-I) in the State of California. He also holds additional certifications in Cardiopulmonary Resuscitation and Automated External Defibrillation, and is a certified as a personal trainer with the American Council on Exercise. David has extensive experience in maximal and submaximal exercise stress testing, metabolic assessment via indirect calorimetry, body composition analysis, functional movement screening, and Computerized Dynamic Posturography (balance assessments) in healthy and

diseased populations. David has hundreds of hours of direct exercise training with individuals from diseased populations including those suffering from cystic fibrosis, type II diabetics, and the obese. David also coordinates the accelerometer loan and data analysis program(s) operated by EPARC. David's professional research interests include sweat-rate kinetics during heat acclimatization, the development of functional exercise tests for individuals with neurological disease, and the links between executive function and balance in both healthy and diseased populations. *(See Appendix O, Section X)*

2. **Medical Director**: Richard A. Parker, D.O., F.A.O.A.S.M. has been the Medical Director of the San Diego Firefighter Regional Wellness Program for the last 10 years. Dr. Parker has been instrumental in the development and implementation of the Wellness Fitness Initiative Wellness Program from its inception. He is very familiar with all aspects of the initiative and has a great working knowledge of the Program. Dr. Parker has overseen greater than 25,000 stress EKG's. He has practiced Family and Sports Medicine for over 30 years and has extensive experience in diagnosing and treating cardiovascular disease. He offers not only extensive knowledge of Firefighter health and safety, but brings a passion for Wellness, prevention and health promotion that is unparalleled. Dr. Parker is Board Certified in Family Medicine and Sports Medicine. He has served as the Team Physician for San Diego State University since 1985. A large percentage of his practice involves the diagnosis and treatment of musculoskeletal injury and disease. Over the last 10 years, Dr. Parker has gained invaluable experience administrating the SDFRWP, making well-informed and prudent decisions for the health and well being of individual firefighters as well as the department as a whole. He stays current on the latest firefighter research and is considered a recognized authority, working at the forefront of ideas for improving and maintaining firefighter health.

3. The Physician(s) providing services to the SDFRWP will be on site during periods of scheduled medical/fitness testing. SDSMFHC has been the provider for multiple municipal fire wellness programs over the last 30 years. It has been our experience that the face-to-face time with the physician is perhaps the most critical component of the evaluation as well as an asset in developing overall trust and confidence of each firefighter. At SDSDFMC, our physicians lead the Wellness team. The physician's presence onsite during the entire evaluation process affords SDSMFHC the opportunity to perform maximal stress testing. Maximal stress testing gives our team a true measure of each firefighter's cardiovascular fitness, allowing us to properly educate and counsel each firefighter toward optimum fitness and provides us the data necessary to create fitness programs that create department-wide fitness which meets and exceed IAFF standards.

4. The Physicians, Project Manager and Wellness staff have extensive working knowledge of firefighter injuries/illnesses and the IAFF Wellness Fitness Initiative. Our physicians provide primary care for hundreds of San Diego County firefighters and their families. Many San Diego County firefighters have also chosen our physicians to treat their work-related and athletic injuries as well. SDSMFHC has been the medical provider for the SDFRD Wellness Program since inception and has served as the medical provider for multiple other fire agencies for over 30 years. Through this service we have gained valuable working knowledge of health risks associated with a career in firefighting. We have developed many strategies to decrease risk and mitigate disease and injury. The physicians and Wellness staff have had over 10 years experience in implementing the IAFF Wellness Fitness Initiative and developing additional tests and services throughout these 10 years including the Functional Movement Screen and Nutrition Services. We have a knowledgeable and well trained staff and take pride in the quality and efficiency of the delivery of our services. Our program is recognized as one of the most comprehensive programs in the country and is listed on the IAFF Wellness Fitness Initiative website as a resource for other programs.

5. SDSMFHC has demonstrated our ability over the past 30 years to decrease health risks among firefighters, detect disease as it first presents and prevent injury. In the 1980's we developed and implemented a low back injury program for La Mesa Fire Department that demonstrated a significant decrease in workers' compensation costs. We delivered a low back education program for the Heartland Fire District for the next 12 years and developed Wellness programs for multiple fire departments in the county. SDSMFHC is the medical provider for the San Diego Firefighters Regional Wellness Program, which has been in existence for over ten years. The improvement in various health/fitness parameters among the participants from the SDFRD has been substantial. We have seen improvement in firefighter's health and exercise habits, including increased frequency of participation in flexibility, strength and aerobic activity. We have seen a reduction in cardiovascular risk factors including cholesterol, blood pressure and the number of individuals with metabolic syndrome. Strength and endurance has also improved in all physiological parameters tested including curl-ups, push-ups and low back endurance. In 2010 we had a significant reduction in CV fitness and we responded to this reduction by instituting a fitness challenge. In 2014, the fitness levels have once again reached 2009 levels. With our new statistical program added to our database, we can confidently say that all lipid values and fitness parameters have improved significantly at the 99% confidence level. *(See Appendix F)* These improvements within the SDFRD are reflective of the same kind of changes we have seen in other departments participating in the program.

Aggregate data tells only one part of the story. Over the last ten years there have been many individual stories that reflect the impact that the Wellness program and our staff has had on the firefighters of San Diego County. One individual lost 75 lbs, decreased his LDL cholesterol from 173 mg/dl to 92mg/dl, decreased his body fat by 11% and increased his cardiovascular fitness by 4 METs. Over the last 10 years, at least 25 prostate cancers have been detected, two firefighters have been diagnosed with leukemia, five firefighters with testicular cancer and several with malignant melanoma. Four new cases of breast cancer have been diagnosed in the last 10 years. Multiple cases of new onset cardiovascular disease and Diabetes Mellitus have been diagnosed and treated over the past ten years. Several firefighter lives have literally been saved by early diagnosis at the SDFRWP.

Based upon workers' compensation data from San Diego Risk Management, injury rates have declined. Specifically there has been a significant downward trend in new open claims for back, knee and shoulder cases. *(See Appendix I)*

6. The Physicians working with the Wellness Program have extensive experience working in industrial medicine. Our Physicians have been selected by over 300 San Diego County firefighters and they are the medical providers for Workers' Compensation cases for the San Miguel Fire District, Alvarado Hospital and Scripps Healthcare among other employers. The Physicians have extensive knowledge of infectious disease from over 30 years in Family Medicine. They have broad knowledge of cardiology, having performed over 50,000 treadmill tests. The Physicians are all Board Certified in Family Medicine and Sports Medicine providing valuable experience in the diagnosis and treatment of orthopedic injuries. They have served as the team physicians for SDSU Aztec Athletics, San Diego Chargers, San Diego Clippers, USA Men's and Women's Volleyball Teams, San Diego Soccers, Olympic Athletes at the Olympic Training Center in Chula Vista, OMBAC Rugby, San Diego Ballet, and the professional women's soccer team San Diego Spirit, Grossmont College and as team physicians for numerous local high schools. Over the last six years SDSMFHC has had experience treating the physical and psychological stresses of Hurricane Katrina, the Witch Fire, and the Cedar Fire. We have guided fire personnel through debilitating injuries and disease, economic stressors, family stressors, death and retirement.

7. The Physicians and Wellness Staff have gained immense experience and familiarity with the tasks of the firefighter over the past 30 years, and particularly over the past 10 years since opening the San Diego Firefighters Regional Wellness Program. All new Wellness Staff spend time on ride-alongs so they can experience firsthand the job demands of a firefighter. The Physicians and Wellness Staff are well acquainted with the data from the National Fire Protection Association (NFPA) regarding the physiology and psychological stressors that firefighters experience and have

collaborated with other departments locally and nationally to gain more information on what is being done around the nation to ensure the health and safety of our firefighters. One of our providers completed the Fire Surgeon course through the Phoenix Wellness Program to obtain more knowledge. Several of our providers have attended and spoken at the IAFF Redmond Health and Safety Conference in both 2007 and 2009 and Fire World in 2013. We have developed relationships with the WFI program providers: Dr. Don Stewart in Fairfax, Virginia; Dr. Ellen Kessler with Prince Williams County Fire Department; and Robert Taxeira, the Wellness Officer from LA County, who are all members of the Wellness Committee for the Wellness Fitness Initiative. The committee members keep us abreast of new developments related to firefighter health at the national level.

8. The Physicians and Wellness Staff will continue to update their working knowledge of local, state, provincial and federal laws related to the health and safety of the firefighter and work in conjunction with management and union to address any issues related to these laws.

9. The Wellness Staff responsible for conducting fitness examinations all have a Master's Degree in a fitness related discipline such as Kinesiology, Exercise Physiology or Athletic Training. We also require they maintain certification in strength and conditioning from one of the following organizations:

    a. American Council on Exercise (ACE)

    b. American College of Sports Medicine (ACSM)

    c. National Strength and Conditioning Association (CSCS)

10. The Wellness Staff responsible for performing Maximal Stress EKG testing are qualified at the Master's degree level in order to have the background necessary to run a maximal test, read EKG's, deliver appropriate education during testing and to develop appropriate exercise prescriptions. SDSMFHC currently has six individuals on staff with this education and background. We also work in collaboration with the Master's program at SDSU to train students in this capacity. Several staff members originally started as interns in our training program and later became employees. This collaboration has allowed us to work with the professors at SDSU as well as develop these students firsthand.

11. The Wellness Staff responsible for performing nutrition assessments and counseling either have special training in nutrition at the Master's level or are a Registered Dietitian. Currently all of our personnel involved in nutrition meet this requirement. We are fortunate to have a Registered Dietitian with a Master's degree who oversees the training of our staff and development of our nutritional education. Our Registered

Dietitian is responsible for counseling the high risk nutrition participants and provides valuable expertise for those individuals.

12. SDSMFHC will continue to provide a clerical staff member dedicated to working with the Wellness Officer or designee on scheduling and coordination of the Wellness Program. SDSMFHC presently has an individual who does an excellent job assuring that the Wellness Program runs effectively and efficiently. This individual has been working in the program for six years. SDSMFHC will continue to develop this integral position into one who represents the goals and objectives of the program.

G. MEETINGS, DATA COLLECTION AND REPORTING REQUIREMENTS

1. SDSMFHC Medical Staff will be able to meet with the City to discuss goals related to the Wellness Program on a regular, ongoing basis. This will occur on a quarterly basis or more frequently as warranted by the Wellness Officer or other City personnel.

2. SDSMFHC will provide an annual Wellness Report *(See Appendix J)* to the SDFRD Senior Staff. SDSMFHC has collaborated with SDSU in providing scientific and technical support related to collection and analysis, confidentiality procedures, research design and implementation, preparation and development of a unique database designed specifically to support the WFI. Over the last eight years we have developed this SQL database into a fully functional Electronic Health Record (Welltivia LLC) that can be used by any organization across the country with a similar Wellness Program. From this database we are able to quickly and efficiently provide an annual report for the management staff. The annual report will address the following:

    a. General recognized trends: SDSMFHC will provide general recognized trends in the annual report associated with the health and fitness of Wellness Program participants in accordance with the IAFF Wellness Fitness Initiative. This report will include the following information:

        (i) Demographics and age distribution

        (ii) Current diagnoses and current habits

        (iii) Exercise habits

        (iv) Nutrition and diet risk

(v) Medical demographic trends including height, weight, body fat and body mass index

(vi) Blood laboratory value trends, including triglycerides, cholesterol (total, LDL, HDL) and glucose

(vii) Blood pressure trends

(viii) Fitness parameters including push-ups, curl-ups, flexibility and cardiovascular values

(ix) Metabolic Syndrome

(x) Other values deemed appropriate to report *(See Appendix J – Annual Report.)*

b. Strategies: SDSMFHC will include in the annual report strategies undertaken over the last year toward mitigation of negative trends, or other steps taken to improve the general health and fitness of Wellness Program participants. Over the last 10 years SDSMFHC has developed programs based on information derived from our Welltivia database for San Diego as well as other departments. The Stop, Drop, Control program was developed based on the fact there were a significant number of individuals with high normal blood pressure not only in San Diego but in other departments. The Biggest Burn Challenge was conceived from trends in the data showing the majority of firefighters had over 20% body fat. Responding to a drop in CV fitness in 2010, we designed a 12 MET challenge to increase fitness. We can confidently say in 2014 that trend has resolved. The Firefighters' fitness level and percentage of individuals above 42 ml/kg/min has returned to 2009 levels. We now have age group norms for the last 10 years on all health and fitness parameters which will enable us to encourage firefighters to meet standards for their age groups. SDSMFHC will continue to analyze the data we collect to help form strategies to improve the health and well-being of the SDFRD.

c. Comparative data with other departments: SDSMFHC has a strong working relationship with LA County and Orange County and has received health and fitness data from these departments as well as Prince William County in Virginia. The San Diego Fire-Rescue Annual Wellness 2014 report demonstrated comparisons with nine other local fire departments. We have also worked with the IAFF in developing our database to be able to match their data dictionary enabling any Wellness program using Welltivia software to share their aggregate

data in an effort to build the national database for the benefit of firefighter health into the future. *(See Appendix K)*

d. Repeat Participants: SDSMFHC has developed the mechanism to retrieve data from repeat participants from the Welltivia database. This offers us the unique ability to formulate trends among those firefighters that have been in the program over ten years. It also gives us the ability to see the effectiveness of the program for mitigating disease over time for these individuals. *(See Report in Appendix L.)*

e. Disease management: The Welltivia database SDSMFHC developed specifically for this Wellness program and the IAFF Wellness Fitness Initiative was uniquely designed to give us information on disease management. Welltivia can capture the following information quickly and concisely:

(i) Top ten diagnoses made by Physician. *(See Appendix F, Section 15)*

(ii) Metabolic Syndrome: The database pulls information from different fields (i.e. blood pressure, fasting glucose, triglycerides, waist circumference, and HDL level) to determine if an individual has Metabolic Syndrome. This information is presented to the individual at the time of the exam. From this information we can also query the database to get a report on how many individuals have Metabolic Syndrome or have those risk factors. This allows us to target those individuals and recommend strategies to aggressively treat those risk factors. *(See Appendix F, Section 16)*

(iii) Coronary artery disease: Cardiovascular risk status is currently calculated from the Framingham Risk Score. The Framingham Risk Score is a sex-specific algorithm used to estimate the 10-year cardiovascular risk of an individual. The Framingham Risk Score was first developed based on data obtained from the Framingham Heart Study to estimate the 10-year risk of developing coronary heart disease. In order to more fully assess the 10-year cardiovascular disease risk, cerebrovascular events, peripheral artery disease and heart failure were subsequently added as disease outcomes for the 2008 Framingham Risk Score. *(See Appendix F, Section 18)*

(iv) Diabetes: Welltivia is designed to obtain this information from assessment by the Physician and from ICD-9 diagnosis codes. We are able to query the database to retrieve information on those individuals with Diabetes and develop strategies to mitigate this disease. *(See Appendix F, Section 15)*

Welltivia has the ability to query other pertinent information upon demand and we will be able to build reports in the future deemed necessary or important. An example of this might be determining how many participants have Skin Cancer. We can query this based on geographical mapping and determine if there is an exposure or specific reason for this particular diagnosis.

f. Medical Privacy Laws: The Welltivia database complies with all medical privacy laws. SDSMFHC and Welltivia procured the assistance of the Homeland Security Department at SDSU with extensive knowledge in HIPAA, the Health Insurance Portability and Accountability Act, which governs privacy acts in medicine. We utilized best industry practices and guidelines with respect to security in the development of Welltivia Software. The database uses a multi-layer security approach to ensure protection of private medical information. We have encrypted data access and storage to ensure that only appropriate personnel are able to gain access to the data.

g. Reports and aggregate health and fitness data are property of the City of San Diego. Release of this information will not be given without the express authorization and written consent of the Wellness Officer. Individual health information is protected by HIPAA and will not be released without the consent of the Wellness participant.

3. SDSMFHC has a demonstrable database and electronic health record (EHR) that captures all information related firefighter demographics, lifestyle, personal medical history, family history, immunizations, lab values, audiometric and pulmonary function values, vital signs, review of systems, current medical findings and all health and fitness parameters consistent with the Wellness Fitness Initiative. This system has been developed over the past eight years and currently holds 11,000 Wellness encounters and has over 900 fields to collect data on each firefighter. We presently have the ability to demonstrate the database. The database that we have developed has the following capabilities the RFP has requested:

a. Our database/EHR (Welltivia) is able to expand to incorporate new medical and fitness tests, diagnostic tools and health risk assessments related to the dynamically changing Wellness Fitness Initiative and research available on Firefighter health. Over the last five years, we have added a functional movement screen, the new Framingham Risk Score and developed our own Wellness AGE. This year we have added the data fields to store information on vertical jump, added a depression scale and PTSD questionnaire. We have the capacity and

interest to expand and customize our database at the direction of the Designated Medical Director and Wellness Officer.

b. Our database is secure and complies with all appropriate medical privacy laws as prescribed through HIPAA.

c. The database contains all of the components of the IAFF data dictionary and is easily expandable to accommodate any new changes that might be delineated in upcoming years. As the developers of Welltivia software, we have made certain that the information collected will be easily transferable to the IAFF data dictionary.

d. The database currently holds all data from 2005 to the present on all SDFRD Wellness Program participants. Information was converted from a previous database and placed into Welltivia so that all retrospective data can be accessed for individual and group reports.

   (i) Integration of data from the previous SDSMFHC database is already complete and will not cause any additional cost to the City.

   (ii) Integration of data from the previous SDSMFHC database is already complete and will not cause any delay in the provision of Medical/Fitness Exams.

   (iii) SDSMFHC will continue to obtain release of information as required from the individual Wellness Participants.

e. Medical Record Database

   (i) SDSMFHC will use the Welltivia database and EHR to meet the City's data collection and reporting requirements. It has the capacity to collect all health and fitness variables that are outlined in the Wellness Fitness Initiative and has the ability to capture pertinent Medical Findings and therefore record assessments and plans/recommendations for each individual. We presently generate standardized reports that meet the reporting requirements that are outlined in the RFP.

   (ii) The database and EHR developed by Welltivia is a web browser interface based system designed exclusively around the Wellness Fitness Initiative and workflow of SDSMFHC. It is very intuitive to use. The system is scalable in

terms of concurrent users, multiple patients, and large multi-year collections of data in geographically dispersed locations. The system uses a relational database to store over 1,000 relevant variables such as demographic, physiological and work-related information. The system is capable of producing a rich variety of reports in real time. Both pre-made and ad hoc reporting of individual or group data is available. The database system provides a professional copy of results to individuals and group data reports.

(iii) SDSMFHC is able to provide the City with an annual report that corresponds exactly to the sample report attached. (*See Appendix J for the 2014 Annual Report.)*

(iv) SDSMFHC is able to examine population data. We have recently developed 10 year average data for the majority of health parameters of data collected. The multi-year reports allow us to manage and report disease and demonstrate biometric data migration over the years. *(See Appendix M)*

H. HIPAA COMPLIANCE PROGRAM REQUIREMENTS

SDSMFHC has developed a comprehensive plan and has developed the appropriate policies and procedures that comply with the provisions of the Health Insurance Portability and Accountability Act of 1996 and the current rules and regulations enacted by the Department of Health and Human Services. SDSMFHC complies with all components of HIPAA including:

1. Standards for Privacy and Individually Identifiable Health Information

2. Health Insurance Reform: Security Standards

3. Health Insurance Reform: Standards for Electronic Transaction Sets and Code Standards

4. SDSMFHC is responsible for all aspects of complying with these rules and particularly those enacted to protect the confidentiality of patient information. Any violations of the HIPAA rules and regulations will be reported immediately to the City along with SDSMFHC's actions to mitigate the effect of such violations.

5. SDSMFHC provides annual certified HIPAA training for all staff and providers as required by federal law.

I. CONTRACT ADMINISTRATION

SDSMFHC acknowledges there is a Contract Administrator and Purchasing Agent assigned by the City of San Diego responsible for daily oversight and compliance of this Contract. SDSMFHC acknowledges that all changes to the Contract must be in writing and be signed by the Purchasing Agent.

J. OPTION TO EXTEND SERVICES/TERM

SDSMFHC acknowledges the City of San Diego may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as required by law. Upon the City's determination to exercise an option to extend the services/term, the City may increase the compensation 5%, or based upon the Centers for Medicare/Medicaid Services (CMS), National Health Expenditure Data (NHE), Physician Services Expenditures Table 9, Other Third Party Payers, or whichever is less. *(See example table in Appendix N)*

If any such adjustment results in a change in the contract price, that change must be agreed to by the parties in writing pursuant to the General Contract Terms and Provisions. The option provision may be exercised more than once. The Purchasing Agent may exercise the option by written notice to the Contractor within 30 days prior to the expiration of the prior term.

If a contract term is applicable, the City of San Diego may extend the term of this contract by written notice to the Contractor within 30 days; provided, the City of San Diego gives the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the City of San Diego to an extension.

III. PRICE SCHEDULE

A. Pricing.

1. **City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.**

   a. **Services Included in PARTICIPANT FEE for all Wellness Program Participants (all inclusive of requirements specified in Section II)**

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per Participant)
750	EA	MEDICAL AND FITNESS EVALUATIONS (ONE EACH PER YEAR PER PARTICIPANT)	$ 1,135	$ 851,250
			TOTAL SECTION 1a:	$ 851,250

   b. **Services Available to Wellness Program Non-Participants (all inclusive of requirements specified in Section II)**

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
35	EA	Respiratory Fit Exam	$ 150	$ 5,250
8	EA	DMV Exam	$ 125	$ 1,000
4	EA	CEDMAT Exam	$ 550	$ 2,200
			TOTAL SECTION 1b:	$ 8,450

c. Additional Costs for Services Provided Above Those Required and Covered Under Wellness Participant Fee.

EST. WEEKLY QTY.	U/M	***SERVICES***	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
24	HR	Additional Services provided by Exercise Physiologist/ Athletic Trainer/Strength Conditioning Trainer/C SCS (provided weekly)	$ 60 / Per Hour	$ 1,440
16	HR	Additional Education Program Services (provided weekly)	$ 60 / Per Hour	$ 960
			TOTAL SECTION 1c:	$ 2,400
				Yearly $ 124,800

d. Additional Services Available to Wellness Program Participants and Non-Participants.

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
512	EA	Influenza Vaccinations	$ 20	10,240
565	EA	TB/PPD testing	$ 25	14,125
5	EA	Hepatitis A Vaccination	$ 110	550
9	EA	Hepatitis B Vaccination	$ 252 / Per Series	2,268
200	EA	Prostate-Specific Antigen Test (PSA)	$ 45	9,000
25	EA	MMR	$ 114	2,850
1	EA	Polio	$ 60	60
1	EA	HPV	$ 180	180
10	EA	Diptheria N.I. (Diptheria is in Adacel)	$ 0	0
3	EA	Varicella	$ 150	450
130	EA	Hemocult	$ 24	3,120
10	EA	Pap Smear with HPV testing	$ 175	1,750

d. Additional Services Available to Wellness Program Participants and Non-Participants (continued)

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
16	EA	Mammogram	$ 200	$ 3,200
10	EA	Adacel (Tetanus)	$ 75	$ 750
3	EA	Chest x-ray	$ 65	$ 195
61	EA	Cholinesterase	$ 70	$ 4,270
2	EA	Resting EKG	$ 50	$ 100
1	EA	Audiometry	$ 40	$ 40
1	EA	Treadmill	$ 250	$ 250
4	EA	Heavy Metals Testing	$ 215	$ 860
25	EA	General Labs for various blood work	$ 48	$ 1,200
			TOTAL SECTION 1d:	$ 55,458

COST SUMMARY FOR DESIRABLES AND INNOVATIVE IDEAS

g. (continued)

Item	Service	Service Description	Units	Unit Cost	Monthly Cost	Annual Cost
D.1.	**Physical Therapy Services**	Physical Therapy as authorized by Wellness Officer (1 hour)	4 individuals per month	$75.00 per hour	$300.00	$3,600.00
D.2.a.	**Safety/Prevention Services**					
D.2.a.i.a.	Hydration Education Program	2 hour educational sessions to stations	48 hours per year/ 2 sessions per month			Included in Educational Services
D.2.a.i.b.	Hydration Assessment	Hydration status of firefighters through urine and saliva testing	6 assessments per year	$2,000.00 initial set up cost $150.00 per individual	n/a	$2,900.00
D.2.a.ii.	Back Injury Prevention	Academy Low Back Workshop	2 per year	$3,000.00 per workshop	n/a	$6,000.00
D.2.a.ii.	Back Injury Prevention Education	Back Injury Education				Included in Educational Services
D.2.a.iii.	Weight Loss					Included in Educational Services
D.3.a.	**Depression and Post Traumatic Stress Disorder Assessment**	Questionnaire	750 per year			Included in Medical Fitness Evaluation
D.3.b.	**Monitoring High Risk Individuals**					
D.3.b.i.	Monitoring Movement		5 individuals per month		$200.00	$2,400.00
D.3.b.ii.	Blood Pressure Monitoring		5 individuals per month		$140.00	$1,680.00
D.3.b.iii.	Glucose Monitoring		5 individuals per month		$140.00	$1,680.00
D.3.c.	**Cardiovascular and Other Additional Screening**					
D.3.c.i.	Carotid Ultrasound		Every three years			Included in Medical Fitness Evaluation
D.3.c.ii.	Abdominal Aorta Ultrasound		Every three years			Included in Medical Fitness Evaluation

COST SUMMARY FOR DESIRABLES AND INNOVATIVE IDEAS

g. (continued)

Item	Service	Service Description	Units	Unit Cost	Monthly Cost	Annual Cost
D.3.c.iii.	Thyroid Ultrasound		Every three years			Included in Medical Fitness Evaluation
D.3.c.iv.	Peripheral Vascular Screening		Every three years			Included in Medical Fitness Evaluation
D.3.d.	**Fire Academy Athletic Injury Clinic**		2 hours per visit/8 visits per Academy	$200.00 per visit/ 8 visits per Academy/ 2 Academies per year		$3,200.00
D.3.e.	**Web-based Learning Module**					Included in Educational Services
D.3.f.	**Pulmonary Disease and Sleep Disorder Screening**					Apply for grant with UCSD
D.3.g.	**CT Cardiac Calcium Score**	16 Slice EBCT	24 screenings per year	$300.00 per screening		$7,200.00
D.3.h.	**Breast Cancer Screening**					Included in Medical Fitness Evaluation
D.3.i.	**Bladder Cancer Screening**					Included in Medical Fitness Evaluation
D.3.j.	**Sleep Study**					Apply for grant with UCSD
D.3.k.	**Functional Movement Screening**					Included in Medical Fitness Evaluation

SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS PROGRAM

Dear San Diego Fire Rescue Department Personnel:

San Diego Sports Medicine and Family Health Center (SDSMFHC) is excited to serve as the Wellness provider for the San Diego Fire-Rescue Department. Our group of Board Certified Family and Sports Medicine physicians along with our professional staff of Exercise Physiologists, Athletic Trainers and Medical Assistants has dedicated their careers to the health, wellness and fitness of all our clients whom have entrusted us with their healthcare. We look forward to assisting you personally in maintaining and improving your health and well-being.

In partnership with the San Diego Fire-Rescue Department, SDSMFHC has created a permanent Health and Wellness Center that will meet the ongoing health care needs of firefighters in the years to come. We have developed a thorough medical evaluation and creative educational programs designed to promote, enhance and maintain the health of our most important asset, the firefighters, who deliver vital services to the citizens of San Diego County.

You will find this program to be quite comprehensive. All information will be kept strictly confidential. It is our intent to keep every firefighter on the job and healthy throughout their careers and into retirement. Our first step is to prepare you for your physical. To assist you in this process we have enclosed the following information:

1. Instructions for blood draw
2. Instructions on what to do the day prior to and the day of your physical
3. What to wear and bring to the physical
4. Directions to the San Diego Firefighter's Regional Wellness Center

We have also enclosed information and material for you to complete at home and bring with you on the day of the physical. All of the data collected will allow us to prepare a personalized, complete and effective assessment and lifestyle prescription. The following forms are included in the packets: Health/Exercise Risk Screening Questionnaire, Past Medical History Form, Respiratory Fit Questionnaire, Participant Information sheet, HIPAA acknowledgment, Dietary Analysis form and an envelope for you to pre-address.

If you have questions about any of the procedures or information provided to you, please call us at (619) 286-7333. We look forward to seeing and working with you.

Sincerely,

Richard A. Parker, D.O., F.A.O.A.S.M.
Medical Director

Katie Rusk, PA-C, MA
Executive Director

San Diego Firefighter Regional Wellness Program
Medical History Form

Name: _____ **Date:** _____

Employer: _____ **Job Title:** _____

Home Phone#: _____ **Work#:** _____ **Cell/Other Phone#:** _____

Date of Birth ____/____/____ **Age:** _____ **Rank:** _____ ☐ **MALE** ☐ **FEMALE**

Current Complaints Do you currently have any of the following?	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
General:			
Weight loss or gain	☐	☐	
Fatigue	☐	☐	
Fever or chills	☐	☐	
Generalized weakness	☐	☐	
Other	☐	☐	
Skin:	☐	☐	
Rashes/hives	☐	☐	
Lumps	☐	☐	
Itching	☐	☐	
Dryness	☐	☐	
Color Changes	☐	☐	
Hair and nail changes	☐	☐	
Other	☐	☐	
Head:			
Recurrent Headaches	☐	☐	
Head Injury	☐	☐	
Other	☐	☐	
Ears:			
Decreased hearing	☐	☐	
Ringing in ears	☐	☐	
Earache	☐	☐	
Drainage	☐	☐	
Hearing aids	☐	☐	
Other	☐	☐	
Eyes:			
Vision loss/Changes	☐	☐	
Glasses or contacts	☐	☐	
Pain	☐	☐	
Redness	☐	☐	
Blurry or double vision	☐	☐	
Other	☐	☐	
Date of last eye exam			
Nose:			
Stuffiness/congestion	☐	☐	
Discharge	☐	☐	
Recurrent Nosebleeds	☐	☐	
Sinus pain	☐	☐	

Other	☐	☐	

Current Complaints	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Mouth/Throat:			
Bleeding in gums	☐	☐	
Dentures	☐	☐	
Sore throat	☐	☐	
Hoarseness	☐	☐	
Mouth sores	☐	☐	
Tooth pain	☐	☐	
Other	☐	☐	
Neck:			
Neck pain	☐	☐	
Lumps/masses	☐	☐	
Swollen glands	☐	☐	
Stiffness	☐	☐	
Other	☐	☐	
Breasts:			
Lumps	☐	☐	
Pain	☐	☐	
Discharge from nipples	☐	☐	
Respiratory:			
Cough	☐	☐	
Sputum production	☐	☐	
Coughing up blood	☐	☐	
Shortness of breath	☐	☐	
Wheezing	☐	☐	
Painful breathing	☐	☐	
Told that you have loud snoring	☐	☐	
Told you have pauses in breathing while asleep	☐	☐	
Excessive daytime sleepiness	☐	☐	
Other	☐	☐	
Cardiovascular:			
Chest pain or discomfort	☐	☐	
Chest Tightness	☐	☐	
Palpitations/skipping beats	☐	☐	
Shortness of breath with activity	☐	☐	
Swelling	☐	☐	
Sudden awakening from sleep with shortness of breath	☐	☐	
Lightheadedness	☐	☐	
Other	☐	☐	
Gastrointestinal:			
Swallowing difficulties	☐	☐	
Heartburn	☐	☐	
Change in appetite	☐	☐	
Nausea/vomiting	☐	☐	
Change in bowel habits	☐	☐	
Rectal bleeding	☐	☐	

Current Complaints **Yes** **No** **If "Yes", Please Give Details Including Date(s)**

Constipation	☐	☐	
Diarrhea	☐	☐	
Jaundice/yellowing of eyes	☐	☐	
Other	☐	☐	
Urinary:			
Frequency	☐	☐	
Urgency	☐	☐	
Burning or pain	☐	☐	
Blood in urine	☐	☐	
Incontinence	☐	☐	
Change in urinary strength	☐	☐	
Frequent urination at night	☐	☐	
Other	☐	☐	
Vascular:			
Calf pain with walking	☐	☐	
Leg/calf cramping	☐	☐	
Swelling of legs	☐	☐	
Other	☐	☐	
Musculoskeletal:			
Muscle or joint pain	☐	☐	
Stiffness	☐	☐	
Back pain	☐	☐	
Neck pain	☐	☐	
Hand or finger pain	☐	☐	
Redness of joints	☐	☐	
Swelling of joints	☐	☐	
Trauma	☐	☐	
Masses or deformities	☐	☐	
Other	☐	☐	
Neurologic:			
Dizziness	☐	☐	
Fainting/near fainting	☐	☐	
Seizures	☐	☐	
Weakness	☐	☐	
Numbness	☐	☐	
Tingling	☐	☐	
Tremor	☐	☐	
Other	☐	☐	
Hematologic:			
Ease of bruising	☐	☐	
Ease of bleeding	☐	☐	
Other	☐	☐	
Endocrine:			
Heat or cold intolerance	☐	☐	
Excessive Sweating	☐	☐	
Frequent urination	☐	☐	
Current Complaints	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Thirst	☐	☐	
Change in appetite	☐	☐	
Other	☐	☐	

Psychiatric:

Nervousness	☐	☐	
Stress	☐	☐	
Depression	☐	☐	
Memory loss	☐	☐	
Other	☐	☐	

Personal Health History	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Have you had or do you currently have:			
Eyes:			
Cataracts	☐	☐	
Glaucoma	☐	☐	
Disorder of retina	☐	☐	
Other eye conditions	☐	☐	
Ears, nose, throat:			
Allergic Rhinitis	☐	☐	
Chronic sinusitis	☐	☐	
Other conditions	☐	☐	
Respiratory:			
Obstructive Lung	☐	☐	
Pneumonia	☐	☐	
Bronchitis	☐	☐	
Tuberculosis/Positive TB test	☐	☐	
Asthma	☐	☐	
Sleep Apnea	☐	☐	
Other conditions	☐	☐	
Heart:			
History of Heart Attack	☐	☐	
Stent Placement	☐	☐	
Hypertension	☐	☐	
Abnormal EKG	☐	☐	
Heart Disease non arteriosclerotic	☐	☐	
Heart Murmur	☐	☐	
Hypercholesterolemia	☐	☐	
Other conditions	☐	☐	
Gastrointestinal:			
GERD	☐	☐	
Ulcerative Colitis/Crohns	☐	☐	
Ulcers/Gastritis	☐	☐	
Hepatitis	☐	☐	
Irritable Bowel Syndrome	☐	☐	
Pancreatitis	☐	☐	
Gall bladder	☐	☐	

Personal Health History	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Diverticulitis	☐	☐	
Hernia (abdominal or umbilical)	☐	☐	
Colonoscopy	☐	☐	
Genitourinary:			
Bladder/kidney infection	☐	☐	
Kidney Stones	☐	☐	

Hernia, inguinal	☐	☐	
Other conditions	☐	☐	
Reproduction:			
Reproduction system condition (self)	☐	☐	
Reproduction system condition (partner)	☐	☐	
Other conditions	☐	☐	
For Males Only:			
Prostate Problems	☐	☐	
Testicular Problems	☐	☐	
Other conditions	☐	☐	
For Females Only:			
Irregular Menses	☐	☐	
Recurrent problems of female organs	☐	☐	
Number of pregnancies			
Number of births			
Number of miscarriages			
Date of last menstrual period			
Date of last Pap Smear			
Date of last Mammogram			
Other conditions	☐	☐	
Musculoskeletal:			
Neck/Back problems/injury	☐	☐	
Shoulder problems/injury	☐	☐	
Broken bones	☐	☐	
Knee problems/injury	☐	☐	
Ankle/Foot problems/injury	☐	☐	
Arthritis	☐	☐	
Osteoporosis	☐	☐	
Other conditions	☐	☐	
Neurological:			
Epilepsy/Seizures	☐	☐	
Headaches	☐	☐	
Migraines	☐	☐	
TIA	☐	☐	
Stroke	☐	☐	
Other conditions	☐	☐	

Personal Health History	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Endocrine:			
Diabetes	☐	☐	
If yes:			
Do you take insulin?	☐	☐	
Do you take pills?	☐	☐	
Thyroid Problems	☐	☐	
Obesity	☐	☐	
Other	☐	☐	
Psychiatric:			
Depression	☐	☐	

Anxiety	☐	☐	
ADHD	☐	☐	
PTSD	☐	☐	
Are you receiving treatment?	☐	☐	
Other conditions	☐	☐	
Hematology			
Anemia	☐	☐	
Other conditions	☐	☐	
Skin			
Eczema	☐	☐	
Psoriasis	☐	☐	
Other conditions	☐	☐	
Miscellaneous:			
Cancer/tumor	☐	☐	
Alcoholism	☐	☐	
Chemical Dependency	☐	☐	
Receiving any Current Disability	☐	☐	
Any Hospitalizations	☐	☐	
Other conditions not mentioned	☐	☐	
Immunizations:			
Date of last Tetanus Booster			
Have you had Hepatitis B vaccines?	☐	☐	
Allergies:			
Serious allergy, i.e. insect/ food/environment	☐	☐	
Allergy or bad reaction to any medications	☐	☐	
Advised not to take any medications	☐	☐	
Latex allergy	☐	☐	

Surgical History:	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Have you had any of the following surgeries?			
Eye	☐	☐	
Chest/Cardiopulmonary	☐	☐	
Neck/Back	☐	☐	
Shoulder	☐	☐	
Arm	☐	☐	
Surgical History (continued):	**Yes**	**No**	**If "Yes", Please Give Details Including Date(s)**
Elbow	☐	☐	
Wrist/Hand	☐	☐	
Hip	☐	☐	
Knee	☐	☐	
Ankle/Foot	☐	☐	
Other	☐	☐	

Medications

Please list any medications you are currently taking:

Medication(s)	Dose	Doses/day

Over the counter medications, including supplements:

_____

_____

_____

General Lifestyle	Yes	No			
Do you drink alcohol?	☐	☐	On average, how many drinks do you consume per day? _____	per week?	_____
Do you consume caffeinated beverages?	☐	☐	On average, how many caffeinated drinks (coffee, tea, soda, etc.) do you consume per day? _____	per week?	_____
Do you use recreational/illicit drugs?	☐	☐	If yes, explain: _____		
Do you use tobacco products?	☐	☐	Cigarettes: Amount per week: _____	Number of years:	_____
			Chewing/ dipping tobacco: Tins per week: _____	Number of years:	_____
			Cigar/Pipe: Times per week: _____	Number of years:	_____
			E cigarettes/other: Amount per week: _____	Number of years:	_____
Are you a former smoker?	☐	☐	Date you quit smoking: _____	Number of years:	_____
			# of packs/day: _____		
Do you own a firearm?	☐	☐			

Exercise

How many times do you participate in at least 30 minutes of cardio exercise per week? _____

How many times do you participate in at least 30 minutes of weight lifting per week? _____

How many times do you participate in at least 10 minutes of stretching per week? _____

Health and Well-Being

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly Everyday
Little interest or pleasure in doing things	☐	☐	☐	☐
Feeling down, depressed, or hopeless	☐	☐	☐	☐
Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☐
Feeling tired or having little energy	☐	☐	☐	☐
Poor appetite or overeating	☐	☐	☐	☐

	Not at all	Several days	More than half the days	Nearly Everyday
Feeling bad about yourself—or that you are a failure or have let yourself or your family down	☐	☐	☐	☐

Trouble concentrating on things, such as reading the newspaper or watching television	☐	☐	☐	☐
Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	☐	☐	☐	☐
Thoughts that you would be better off dead, or of hurting yourself in some way	☐	☐	☐	☐
	Not difficult at all	**Somewhat difficult**	**Very difficult**	**Extremely difficult**
If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	☐	☐	☐	☐

In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you:	**Yes**	**No**
Have had nightmares about it or thought about it when you did not want to?	☐	☐
Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?	☐	☐
Were constantly on guard, watchful, or easily startled?	☐	☐
Felt numb or detached from others, activities, or your surroundings?	☐	☐

Other Lifestyle Questions	**Yes**	**No**				
Do you wear a seat belt?	☐	☐				
Average hours of sleep/day	☐	6 or less	☐	7-8	☐	8 or more

Comments

Physician Review: _____ Date: _____

STRICTLY CONFIDENTIAL
Preliminary Information and Screening for Testing
San Diego Sports Medicine and Family Health Center

Note: It is very important that you answer these questions as accurately as possible. This form is used by SDSM physicians to determine whether or not cardiovascular exercise testing imposes an unacceptable risk for you.

Name:_____Age:_____Sex:__Ht.:____ Wt.:_____
Please list any medications you are taking:_____
_____
List medications you are allergic to: _____
_____
3. Do you have any close family members with a history of heart disease, high blood pressure, diabetes or thyroid problems? _____
If yes, please explain _____
4. Has a physician ever indicated that you have a heart or cardiovascular problem?
If yes, please explain_____
_____
5. Have you ever had chest pains that you suspected were heart related?_If yes, please explain_____
_____
6. Have you ever experienced heart palpitations (thumping or racing)?___If yes, please explain_____
_____
7. How many caffeinated beverages do you drink per day?_____
8. Are you now a tobacco product smoker?____How much? _____
9. Have you been a smoker in the past?_____ Quit_____ when?_____
10. Do you have any arthritic joint problems, joint pain, or back problems?_____ If yes, explain _____
_____

Yes No

☐ ☐ 11. Do you have or have you had high blood pressure?
☐ ☐ 12. Do you have high cholesterol or blood fats?
☐ ☐ 13. Are you now or have you ever been diabetic?
☐ ☐ 14. Are you substantially overweight?
☐ ☐ 15. Do you have a history of asthma or bronchitis that is aggravated by exercise?
☐ ☐ 16. Do you have difficulty sleeping or relaxing?
☐ ☐ 17. Do you feel anxious or under stress on a regular basis?
☐ ☐ 18. Do you have difficulty coping with stressful situations?
☐ ☐ 19. Are you or have you ever been a heavy alcohol or substance abuser?
☐ ☐ 20. Does your diet contain too much fat, salt, or refined sugar?
☐ ☐ 21. Has it been more than two years since you had a physical exam by a physician?
☐ ☐ 22. Have you ever had an exercise stress test? Result:_____ DATE:_____

Describe any other physical condition that might place you at risk during exercise: _____
_____
Describe your current exercise patterns: _____
_____

Signature_____ Date_____

do not write below this line
Apparently Healthy Suspected Risk
Low Risk High Risk
Physician's signature_____

6699 Alvarado Road, Suite 2100, San Diego, CA 92120 (619) 229-3909 FAX (619) 582-1497
4010 Sorrento Valley Road, Suite 300, San Diego, CA 92121 (858) 793-7860 FAX (858) 793-1989

SAN DIEGO FIREFIGHTERS REGIONAL WELLNESS PROGRAM

PLEASE PRINT CLEARLY
(REQUIRED)

LAST NAME: _____ FIRST NAME: _____

Employer: _____ Station/Division Assignment: _____

Rank: _____ Birth date: _____/_____/_____ AGE: _____

Home Phone#: _____ Work: _____

CELL/Other Phone#: _____ ☐ MALE ☐ FEMALE

---

1. Are you **NEW** to the San Diego Fire Regional Wellness Program? ☐ YES ☐ NO
2. Are you going to participate in the Wellness program in 2015? ☐ YES ☐ NO
3. If NO, are you going to participate in the respiratory fit exam? ☐ YES ☐ NO
4. Are you on the any of the following? Please check all that apply.
   HAZMAT or RELIEF ☐ *US&R* ☐ *MAST* ☐ *EDT* ☐
5. Do you have a DMV Medical Examiner's Certificate *(green card)*? ☐ YES ☐ NO
   Expiration date on your DMV Medical Examiner's Certificate: ___/___/___
   (REQUIRED)
6. If Male, do you prefer a Male medical provider?
   ☐ YES ☐ NO ☐ No preference
7. If Female, do you prefer a Female medical provider?
   ☐ YES ☐ NO ☐ No preference
8. If Female, do you request your exam to include?
   ☐ Pap Smear ☐ Mammogram
9. Who is your primary care physician? _____

Signature: _____ **Date:** _____

LAB SLIP LABEL

DO NOT WRITE BELOW THIS LINE

☐ Needs MMR vaccine
☐ Needs Varicella vaccine
☐ Sending copy of immunization record to Wellness

Acknowledgement of Receipt of Notice of Privacy Practices

San Diego Sports Medicine and Family Health Center
6699 Alvarado Road, Suite 2100, San Diego, CA 92120
4010 Sorrento Valley Blvd., Suite 300, San Diego, CA 92121
Privacy Officer: Officer Manager Phone No. 619-229-3909

I hereby acknowledge that I received a copy of this medical practice's Notice of Privacy Practices. I further acknowledge that a copy of the current notice will be posted in the reception area, and that I will be offered a copy of any amended Notice of Privacy Practices at future office visits as any amendments are made.

Signed: _____ Date: _____

Print Name: _____ Telephone: _____

If not signed by the patient, please indicate:

Relationship: ☐ parent or guardian of minor patient

☐ guardian or conservator of an incompetent patient

☐ beneficiary or personal representative of deceased patient

Name of Patient: _____

Methods of Communication Request

I request the use of the following methods of communication of information related to my personal health, treatment or payment or treatment. I acknowledge that I am responsible for updating this information as necessary. This request supercedes any prior request for methods of communication I may have made.

Please select all that apply. Where you list more than one communication option, please indicate which you prefer.

☐ **Phone** You may contact me by telephone at _____

May we leave messages concerning results of laboratory work, other diagnostic testing, or referrals to other providers on your answering machine or with someone in your household?

☐ **Yes** ☐ **No**

Do you wish for our physicians and staff to have detailed conversations concerning your health care and condition with family members or designated others?

☐ **Yes** **Name & Relationship** _____
Name & Relationship _____

☐ **No**

☐ **Mail** (at the address provided on the registration paperwork)

☐ **E-mail** You may contact me at the following e-mail address: _____

☐ **Fax** You may contact me at the following fax number: _____

(Not all physicians and/or staff have access to e-mail for the purposes of communicating with patients. By providing your e-mail address or fax number, you are authorizing our physicians and/or staff to communicate with you by e-mail or fax, the content of which may include protected health information. You agree that we are not responsible for the interception of those messages by others.)

Signed: _____ Date: _____

Print Name: _____

NOTICE OF PRIVACY PRACTICES

San Diego Sports Medicine and Family Health Center
6699 Alvarado Road, Suite 2100, San Diego, CA 92120
3880 Valley Centre Drive, Suite 201, San Diego, CA 92130
Privacy Officer: Office Manager, Phone No. 619-229-3909

Effective Date: April 11, 2003

THIS NOTICE DESCRIBES HOW MEDICAL INFORMATION ABOUT YOU MAY BE USED AND DISCLOSED AND HOW YOU CAN GET ACCESS TO THIS INFORMATION. PLEASE REVIEW IT CAREFULLY.

We understand the importance of privacy and are committed to maintaining the confidentiality of your medical information. We make a record of the medical care we provide and may receive such records from others. We use these records to provide or enable other health care providers to provide quality medical care, to obtain payment for services provided to you as allowed by your health plan and to enable us to meet our professional and legal obligations to operate this medical practice properly. We are required by law to maintain the privacy of protected health information and to provide individuals with notice of our legal duties and privacy practices with respect to protected health information. This notice describes how we may use and disclose your medical information. It also describes your rights and our legal obligations with respect to your medical information. If you have any questions about this Notice, please contact our Privacy Officer listed above.

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A. How this Medical Practice May Use or Disclose Your Health Information

This medical practice collects health information about you and stores it in a chart and on a computer. This is your medical record. The medical record is the property of this medical practice, but the information in the medical record belongs to you. The law permits us to use or disclose your health information for the following purposes:

1. Treatment. We use medical information about you to provide your medical care. We disclose medical information to our employees and others who are involved in providing the care you need. For example, we may share your medical information with other physicians or other health care providers who will provide services which we do not provide. Or we may share this information with a pharmacist who needs it to dispense a prescription to you, or a laboratory that performs a test. We may also disclose medical information to members of your family or others who can help you when you are sick or injured.

2. Payment. We use and disclose medical information about you to obtain payment for the services we provide. For example, we give your health plan the information it requires before it will pay us. We may also disclose information to other health care providers to assist them in obtaining payment for services they have provided to you.

3. Health Care Operations. We may use and disclose medical information about you to operate this medical practice. For example, we may use and disclose this information to review and improve the quality of care we provide, or the competence and qualifications of our professional staff. Or we may use and disclose this information to get your health plan to authorize services or referrals. We may also use and disclose this information as necessary for medical reviews, legal services and audits, including fraud and abuse detection and compliance programs and business planning and management. We may also share your medical information with our "business associates", such as our billing service, that perform administrative services for us. We have a written contract with each of these business associates that contains terms requiring them to protect the confidentiality of your medical information. Although federal law does not protect health information which is disclosed to someone other than another healthcare provider, health plan or healthcare clearinghouse, under California law all recipients of health care information are prohibited from re-disclosing it except as specifically required or permitted by law. We may also share your information with other health care providers, health care clearinghouses or health plans that have a relationship with you, when they request this information to help them with their quality assessment and improvement activities, their efforts to improve health or reduce health care costs, their review of competence, qualifications and performance of health care professionals, their training programs, their accreditation, certification or licensing activities, or their health care fraud and abuse detection and compliance efforts. We may also share medical information about you to all the other health care providers, health care clearinghouses and health plans who participate in the medical groups with whom we are contracted for any health care operations activities.

4. Appointment Reminders. We may use and disclose medical information to contact and remind you about appointments. If you are not home, we may leave this information on your answering machine or in a message left with the person answering the phone.

5. Sign in sheet. We may use and disclose medical information about you by having you sign in when you arrive at our office. We may also call out your name when we are ready to see you.

6. Notification and communication with family. We may disclose your health information to notify or assist in notifying a family member, your personal representative or another person responsible for your care about your location, your general condition or in the event of your death. In the event of a disaster, we may disclose information to a relief organization so that they may coordinate these notification efforts. We may also disclose information to someone who is involved with your care or helps pay for your care. If you are able and available to agree or object, we will give you the opportunity to object prior to making these disclosures, although we may disclose this information in a disaster even over your objection if we believe it is necessary to respond to the emergency circumstances. If you are unable or unavailable to agree or object, our health professionals will use their best judgment in communication with your family and others.

7. Marketing. We may contact you to give you information about products or services related to your treatment, case management or care coordination, or to direct or recommend other treatments or health-related benefits and services that may be of interest to you, or to provide you with small gifts. We may also encourage you to purchase a product or service when we see you. We will not use or disclose your medical information without your written authorization.

8. Required by law. As required by law, we will use and disclose your health information, but we will limit our use or disclosure to the relevant requirements of the law. When the law requires us to report abuse, neglect or domestic violence, or respond to judicial or administrative proceedings, or to law enforcement officials, we will further comply with the requirement set forth below concerning those activities.

9. Public health. We may, and are sometimes required by law to disclose your health information to public health authorities for purposes related to: preventing or controlling disease, injury or disability; reporting child, elder or dependent adult abuse or neglect; reporting domestic violence; reporting to the Food and Drug Administration problems with products and reactions to medications; and reporting disease or infection exposure. When we report suspected elder or dependent adult abuse or domestic violence, we will inform you or your personal representative promptly unless in our best professional judgment, we believe the notification would place you at risk of serious harm or would require informing a personal representative we believe is responsible for the abuse or harm.

10. Health oversight activities. We may, and are sometimes required by law to disclose your health information to health oversight agencies during the course of audits, investigations, inspections, licensure and other proceedings, subject to the limitations imposed by federal and California law.

11. Judicial and administrative proceedings. We may, and are sometimes required by law, to disclose your health information in the course of any administrative or judicial proceeding to the extent expressly authorized by a court or administrative order. We may also disclose information about you in response to a subpoena, discovery request or other lawful process if reasonable efforts have been made to notify you of the request and you have not objected, or if your objections have been resolved by a court or administrative order.

12. Law enforcement. We may, and are sometimes required by law, to disclose your health information to a law enforcement official for purposes such as identifying of locating a suspect, fugitive, material witness or missing person, complying with a court order, warrant, grand jury subpoena and other law enforcement purposes.

13. Coroners. We may, and are often required by law, to disclose your health information to coroners in connection with their investigations of deaths.

14. Organ or tissue donation. We may disclose your health information to organizations involved in procuring, banking or transplanting organs and tissues.

15. Public safety. We may, and are sometimes required by law, to disclose your health information to appropriate persons in order to prevent or lessen a serious and imminent threat to the health or safety of a particular person or the general public.

16. Specialized government functions. We may disclose your health information for military or national security purposes or to correctional institutions or law enforcement officers that have you in their lawful custody.

17. Worker's compensation. We may disclose your health information as necessary to comply with worker's compensation laws. For example, to the extent your care is covered by workers' compensation, we will make periodic reports to your employer about your condition. We are also required by law to report cases of occupational injury or occupational illness to the employer or workers' compensation insurer.

18. Pre-employment physicals, periodic employment physicals and other services provided in conjunction with employment. We may disclose your health information as necessary to employers or prospective employers who have retained our services for the purpose of pre-employment physicals and periodic employment physicals. We may also disclose your health information as necessary to employers who have retained our services for purposes other than physicals, such as drug screens and vaccinations.

19. Participation in sports teams and athletic events. We may disclose your health information as necessary to officials of sports teams or athletic organizations who have retained our services for the purpose of providing physicals or other medical services to you as a result of your participation in athletics on a professional, semi-professional, collegiate, amateur or volunteer basis.

20. Change of Ownership. In the event that this medical practice is sold or merged with another organization, your health information/record will become the property of the new owner, although you will maintain the right to request that copies of your health information be transferred to another physician or medical group.

21. Research. We conduct clinical research studies within our office and may disclose information regarding your diagnosis and the treatment you received to that department for the purpose of determining study eligibility. We may disclose your health information to outside researchers conducting research with respect to which your written authorization is not required as approved by an Institutional Review Board or privacy board, in compliance with governing law.

B. When This Medical Practice May Not Use or Disclose Your Health Information

Except as described in this Notice of Privacy Practices, this medical practice will not use or disclose health information which identifies you without your written authorization. If you do authorize this medical practice to use or disclose your health information for another purpose, you may revoke your authorization in writing at any time.

C. Your Health Information Rights

1. Right to Request Special Privacy Protections. You have the right to request restrictions on certain uses and disclosures of your health information, by a written request specifying what information you want to limit and what limitations on our use or disclosure of that information you wish to have imposed. We reserve the right to accept or reject your request, and will notify you of our decision.

2. Right to Request Confidential Communications. You have the right to request that you receive your health information in a specific way or at a specific location. For example, you may ask that we send information to a particular e-mail account or to your work address. We will comply with all reasonable requests submitted in writing which specify how or where you wish to receive these communications.

3. Right to Inspect and Copy. You have the right to inspect and copy your health information, with limited exceptions. To access your medical information, you must submit a written request detailing what information you want access to and whether you want to inspect it or get a copy of it. We will charge a reasonable fee, as allowed by California law. We may deny your request under limited circumstances. If we deny your request to access your child's records because we believe allowing access would be reasonably likely to cause substantial harm to your child, you will have a right to appeal our decision. If we deny your request to access your psychotherapy notes, you will have the right to have them transferred to another mental health professional.

4. Right to Amend or Supplement. You have a right to request that we amend your health information that you believe is incorrect or incomplete. You must make a request to amend in writing, and include the reasons you believe the information is inaccurate or incomplete. We are not required to change your health information, and will provide you with information about this medical practice's denial and how you can disagree with the denial. We may deny your request if we do not have the information, if we did not create the information (unless the person or entity that created the information is no longer available to make the amendment), if you would not be permitted to inspect or copy the information at issue, or if the information is accurate and complete as is. You also have the right to request that we add to your record a statement of up to 250 words concerning any statement or item you believe to be incomplete or incorrect.

5. Right to an Accounting of Disclosures. You have a right to receive an accounting of disclosures of your health information made by this medical practice, except that this medical practice does not have to account for the disclosures provided to you or pursuant to your written authorization, or as described in paragraphs 1 (treatment), 2 (payment), 3 (health care operations), 6 (notification and communication with family) and 16 (specialized government functions) of Section A of this Notice of Privacy Practices or disclosures for purposes of research or public health which exclude direct patient identifiers, or which are incident to a use or disclosure otherwise permitted or authorized by law, or the disclosures to a health oversight agency or law enforcement official to the extent this medical practice has received notice from that agency or official that providing this accounting would be reasonably likely to impede their activities.

6. You have a right to a paper copy of this Notice of Privacy Practices, even if you have previously requested its receipt by e-mail.

If you would like to have a more detailed explanation of these rights or if you would like to exercise one or more of these rights, contact our Privacy Officer listed at the top of this Notice of Privacy Practices.

D. Changes to this Notice of Privacy Practices

We reserve the right to amend this Notice of Privacy Practices at any time in the future. Until such amendment is made, we are required by law to comply with this Notice. After an amendment is made, the revised Notice of Privacy Protections will apply to all protected health information that we maintain, regardless of when it was created or received. We will keep a copy of the current notice posted in our reception area. We will also post the current notice on our website.

E. Complaints

Complaints about this Notice of Privacy Practices or how this medical practice handles your health information should be directed to our Privacy Officer listed at the top of this Notice of Privacy Practices.

If you are not satisfied with the manner in which this office handles a complaint, you may submit a formal complaint to:

Department of Health and Human Services
Office of Civil Rights
Hubert H. Humphrey Bldg.
200 Independence Avenue, S.W.
Room 509F HHH Building
Washington, DC 20201

You will not be penalized for filing a complaint.

NUTRITION & EATING HABITS

NAME _____ DATE _____

Please answer the following questions as accurately and completely as possible for an accurate nutritional assessment.

1. Have you gained or lost weight recently? ❑ Yes ❑ No
   If yes, was this weight change intentional? ❑ Yes ❑ No
   How much weight lost/gained? _____
   Over what length of time? _____

2. Are you interested in speaking with a nutritionist to talk about your eating habit and health status?
   ❑ Yes ❑ No

3. Are you currently following a special diet? ❑ Yes ❑ No
   If yes, please specify: _____

4. How would you rate your usual eating habits?
   ❑ Excellent ❑ Good ❑ Fair ❑ In need of improvement

5. What would you say is good about your current eating habits? _____

_____

6. What would you say could be improved about your current eating habits? _____

_____

7. Are there any foods that you do not eat or restrict in your diet? _____

_____

8. What foods do you eat the most often? _____

9. Do you eat breakfast? Yes ☐ No ☐ If so, what is a typical breakfast for you? _____

_____

10. Please list any nutritional supplements (vitamins, minerals, herbs, etc.) that you are currently taking:

_____

_____

continues on reverse side of this sheet

Please take a few minutes to complete the following questions about your typical food intake.

Using the past week as a timeframe …. Please answer the following questions.

Yes ☐ No ☐ Did you eat less than 1 cup of **Fruit** per day?
Yes ☐ No ☐ Did you eat less than 2 cups of **Vegetables** per day?
Yes ☐ No ☐ Did you eat less than 3 servings of **Whole grains** per day?
Yes ☐ No ☐ Did you eat less than 2 cups of **Dairy** products per day?
Yes ☐ No ☐ Typically, do you eat dairy foods that are *high in fat?* (whole milk, cream, regular cheese)
Yes ☐ No ☐ Did you eat **High fat meat** (beef, steak, bacon, sausage, lamb, etc.) more than 5 times per *week?*
Yes ☐ No ☐ Did you eat more than one serving of **Desserts/Sweets** (ice cream, cookies, pastries, donuts, cake, candy) per day?
Yes ☐ No ☐ Did you drink more than two **Alcohol** beverages per day?
Yes ☐ No ☐ Did you drink more than two **Caffeine** beverages per day?
Yes ☐ No ☐ Did you eat more than one serving of **Snack foods** (chips,crackers,etc.) per day?
Yes ☐ No ☐ Did you eat foods that are **High in Salt** (chips, crackers, breakfast meats, soups) more than once per day?
Yes ☐ No ☐ Did you drink more than 12 ounces of **Sugar beverages** (regular soda, juice drinks, lemonade, Gatorade, etc.) per day?
Yes ☐ No ☐ Did you eat less than 2 servings of **Fish** per *week?*
Yes ☐ No ☐ Did you eat less than 1 cup of **Legumes** (beans) per *week?*

On a scale of 1 to 10, how motivated are you right now to make nutritional changes?

Not at all motivated *Highly Motivated*
1 2 3 4 5 6 7 8 9 10

As a participant in the Wellness Program, many education programs are available to you. These programs include station visits, lectures, etc. Would your crew be interested in a station visit from the Nutritionist? If so, what topics would your crew be most interested in learning about?

_____

_____

What additional resources or education would you like to see?

_____

_____

Is there any thing else that you would like to comment on, or do you have any specific questions that you would like to ask the nutritionist?

_____

_____

THANK YOU!

PHYSICIAN-PATIENT ARBITRATION AGREEMENT

le 1: **Agreement to Arbitrate:** It is understood that any dispute as to medical malpractice, that is as to whether any medical services rendered under this contract were unnecessary or unauthorized or were improperly, negligently, or incompetently rendered, will be determined by submission to arbitration as provided by California law, and not by a lawsuit or resort to court process except as California law provides for judicial review of arbitration proceedings. Both parties to this contract, by entering into it, are giving up their constitutional right to have any such dispute decided in a court of law before a jury, and instead are accepting the use of arbitration.

Article 2: **All Claims Must be Arbitrated:** It is the intention of the parties that this agreement bind all parties whose claims may arise out of or relate to treatment or service provided by the physician including any spouse or heirs of the patient and any children, whether born or unborn, at the time of the occurrence giving rise to any claim. In the case of any pregnant mother, the term "patient" herein shall mean both the mother and the mother's expected child or children.

All claims for monetary damages exceeding the jurisdictional limit of the small claims court against the physician, and the physician's partners, associates, association, corporation or partnership, and the employees, agents and estates of any of them, must be arbitrated including, without limitation, claims for loss of consortium, wrongful death, emotional distress or punitive damages. Filing of any action in any court by the physician or patient to collect or contest any medical fee shall not waive the right to compel arbitration of any malpractice claim. However, following the assertion of any malpractice claim, any fee dispute, whether or not the subject of any existing court action, shall also be resolved by arbitration.

Article 3: **Procedures and Applicable Law:** A demand for arbitration must be communicated in writing to all parties. Each party shall select an arbitrator (party arbitrator) within thirty days and a third arbitrator (neutral arbitrator) shall be selected by the arbitrators appointed by the parties within thirty days of a demand for a neutral arbitrator by either party. Each party to the arbitration shall pay such party's pro rata share of the expenses and fees of the neutral arbitrator, together with other expenses of the arbitration incurred or approved by the neutral arbitrator, not including counsel fees or witness fees, or other expenses incurred by a party for such party's own benefit. The parties agree that the arbitrators have the immunity of a judicial officer from civil liability when acting in the capacity of arbitrator under this contract. This immunity shall supplement, not supplant, any other applicable statutory or common law.

Either party shall have the absolute right to arbitrate separately the issues of liability and damages upon written request to the neutral arbitrator.

The parties consent to the intervention and joinder in this arbitration of any person or entity which would otherwise be a proper additional party in a court action, and upon such intervention and joinder any existing court action against such additional person or entity shall be stayed pending arbitration.

The parties agree that provisions of California law applicable to health care providers shall apply to disputes within this arbitration agreement, including, but not limited to, Code of Civil Procedure Sections 340.5 and 667.7 and Civil Code Sections 3333.1 and 3333.2. Any party may bring before the arbitrators a motion for summary judgment nmmary adjudication in accordance with the Code of Civil Procedure. Discovery shall be conducted pursuant to Code of Civil Procedure section 1283.05; however, depositions may be taken without prior approval of the neutral arbitrator.

Article 4: **General Provisions:** All claims based upon the same incident, transaction or related circumstances shall be arbitrated in one proceeding. A claim shall be waived and forever barred if (1) on the date notice thereof is received, the claim, if asserted in a civil action, would be barred by the applicable California statute of limitations, or (2) the claimant fails to pursue the arbitration claim in accordance with the procedures prescribed herein with reasonable diligence. With respect to any matter not herein expressly provided for, the arbitrators shall be governed by the California Code of Civil Procedure provisions relating to arbitration.

Article 5: **Revocation:** This agreement may be revoked by written notice delivered to the physician within 30 days of signature. It is the intent of this agreement to apply to all medical services rendered any time for any condition.

Article 6: Retroactive Effect: If patient intends this agreement to cover services rendered before the date it is signed (including, but not limited to, emergency treatment) patient should initial below:

Effective as of the date of first medical services _____

Patient's or Patient Representative's Initials

If any provision of this arbitration agreement is held invalid or unenforceable, the remaining provisions shall remain in full force and shall not be affected by the invalidity of any other provision.

I understand that I have the right to receive a copy of this arbitration agreement. By my signature below, I acknowledge that I have received a copy.

NOTICE: BY SIGNING THIS CONTRACT YOU ARE AGREEING TO HAVE ANY ISSUE OF MEDICAL MALPRACTICE DECIDED BY NEUTRAL ARBITRATION AND YOU ARE GIVING UP YOUR RIGHT TO A JURY OR COURT TRIAL. SEE ARTICLE 1 OF THIS CONTRACT.

By: _____ _____

SAN DIEGO SPORTS MEDICINE AND FAMILY HEALTH CENTER AND ITS AFFILIATED PHYSICIANS Authorized Representative's Signature (Date)

_____

Print or Stamp Name of Physician, Medical Group, or Association Name

By: _____ _____

Patient's or Patient Representative's Signature (Date)

By: _____

Print Patient's Name

_____

(If Representative, Print Name and Relationship to Patient)

A signed copy of this document is to be given to the Patient. Original is to be filed in Patient's medical records.

(9-13)

SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS PROGRAM

Description of Testing Services

These evaluations provide a complete assessment of risk factors influencing the development of current and future health problems. They form the basis for a personalized lifestyle prescription. Each individual receives a personal profile with specific recommendations based on findings made during the testing session.

Medical Evaluations

Physician's Examination

Your physician will conduct a thorough medical examination of your ears, eyes, nose, throat, heart, lungs, joints and other vital organ systems of your body. You will have the opportunity to spend a substantial amount of time with your attending physician, who will also review the follow-up findings at the time of your evaluation. Any abnormal findings will be addressed with specific recommendations to control or remedy the condition, and follow-up or referral recommendations will be made.

Laboratory Tests

Chemistry Panel

A laboratory panel of 24 different tests provides general as well as specific information concerning your overall health status. This testing battery evaluates early signs of abnormalities of organ systems such as muscle, lungs, kidneys, heart, liver, urinary tract or gastrointestinal tract. It is useful as a preventive screening device for heart disease, diabetes, gout, hepatitis, and hypothyroidism.

Complete Blood Count (CBC)

A blood count is done to evaluate the number and morphology of both red and white cells and detect early signs of anemia and infection.

Thyroid Stimulating Hormone (TSH)

A thyroid-stimulating hormone (TSH) blood test is used to detect problems affecting the thyroid gland. TSH causes the thyroid gland to produce two hormones: triiodothyronine (T3) and thyroxine (T4). T3 and T4 help control your body's metabolism. An under-active thyroid gland (hypothyroidism) can cause symptoms such as weight gain, tiredness, dry skin, constipation, a feeling of being too cold, or frequent menstrual periods. An overactive thyroid (hyperthyroidism) can cause symptoms such as weight loss, rapid heart rate, nervousness, diarrhea, a feeling of being too hot, or irregular menstrual periods.

Prostate Specific Antigen (PSA) Test for Men 50+ Cancer Screening Test

Prostate Specific Antigen (PSA) is a protein produced by the cells of the prostate gland. The PSA test measures the level of PSA in the blood. The U.S. Food and Drug Administration (FDA) has approved the use of the PSA test along with a digital rectal exam to help detect prostate cancer in men age 50 and older. The FDA has also approved the PSA test to monitor patients with a history of prostate cancer to see if the cancer has come back (recurred).

Urinalysis

A urinalysis is an examination of the urine by chemical means. Urinalysis comprises a battery of chemical and microscopic tests that help to screen for urinary tract infections, renal disease, and diseases of other organs that results in abnormal metabolites (break-down products) appearing in the urine.

Visual Acuity

This is a measurement of usable vision.

Audiometry

This is a measurement of hearing ability to help detect early hearing loss.

Chest X-Ray

The chest x-ray is used as a screening test and to provide a baseline for future referencing should a problem develop. The chest x-ray can demonstrate changes in the shape of the heart and problems with the lungs.

Pulmonary Function Test

This test determines various lung capacities and flow rates of air through the lungs. This evaluation is used to screen for early signs of obstructive or restrictive airway disease (conditions such as emphysema, chronic bronchitis, and asthma as well as "smokers lungs" will have abnormal values on this test).

Fitness and Nutritional Assessments

12-Lead Electrocardiogram (EKG) Exercise Tolerance (Stress) Test

This test will evaluate the ability of the heart and lungs to respond to maximal exercise. Heart rate and blood pressure are monitored throughout the test along with a 12-lead EKG. Results from this test are used to establish coronary risk status, aerobic capacity and exercise tolerance, and will provide information for a detailed and individualized exercise prescription. This test involves walking at 3.5 mph (brisk walking) up an incline that changes elevation every 2 minutes of exercise, until maximal effort is achieved. A bicycle ergometer is available for participants who prefer this option.

EKG

An exercise electrocardiography test compares the heart's electrical activity at rest and under exertion. A recording of the electrical activity of the heart during physical stress displays the heart's reaction to an increased demand for oxygen. The test may uncover problems with heart rhythm or blood supply to the heart, which cannot be found on an EKG taken at rest. It can also be used to determine your fitness level and decide how much exercise is safe for you.

Estimated VO2peak

VO2peak is the maximum amount of oxygen that an individual utilized in a set period of time. It is a measurement of the upper limit of aerobic muscle cell metabolism and is dependent on both the maximal cardiac output and the maximal arterial-venous oxygen difference at the muscle or tissue level. This value is used as a measure of aerobic fitness and can be used to estimate caloric expenditure. This will be estimated from maximal workload reached by treadmill or bicycle.

Heart Rate Training Zone

Your training heart rate zone is a critical element in exercise. Finding the right zone is not as simple as plugging numbers into a formula; it requires personalized measurements and calculations. Exercising at the right zone will maximize the result and minimize the risks of exercise. This will be determined from you physiological response to exercise.

Body Composition

Over time, people tend to gain fat and lose muscle without an obvious change in their weight. Excess body fat has been found to increase the risk of diseases such as cancer, diabetes, and heart disease. Skinfold calipers will be utilized to determine the skinfold thickness of seven different sites on the body. This evaluation gives a relative idea of body fat distribution as well as percentage of fat, fat weight, and lean body mass. This technique allows determination of an individual's ideal body weight for health as well as performance.

Functional Movement Screen (FMS), Muscular Endurance, and Flexibility Assessment

Functional Muscular Screen (FMS)

The Functional Movement Screen is comprised of seven movement tests that require a combination of mobility and stability. The patterns that are used provide the health professional the ability to observe performance of

basic, manipulative and stabilizing movements by placing patients in positions where weaknesses, imbalances, asymmetries and limitations become noticeable. Many people are able to adequately perform a wide variety of physical activities yet are unable to efficiently execute the movements in the screen. Any deficiencies on the screen indicate that a patient is using compensatory movement patterns during regular activity. If these compensations continue, sub-optimal movement patterns are reinforced, leading to poor biomechanics and may contribute to a future injury.

Muscular Endurance

Muscular endurance varies among different muscles and muscle groups. It is defined as the ability of a muscle or muscle group to resist fatigue. As muscles fatigue, their joint support and shock absorption capabilities become comprised increasing the risk for injury. Sit-ups and push-ups will be performed to a cadence until muscular failure to measure muscular endurance. The Back Sorensen Test (see below) will be used to evaluate lower back endurance.

Flexibility

Flexibility is defined as the range of motion in a joint or a series of joints. Your degree of flexibility is specific to each individual joint. Flexibility varies greatly among individuals and is influenced by many factors such as gender and age. Lack of flexibility in the hamstrings and low back may lead to lower back problems. Flexibility will be measured by utilizing the sit-reach test.

Nutritional Consultation

The nutrition consultation performed by our qualified staff utilizes a series of specially designed questions to assess your nutrition risk and to evaluate the quality of your diet. Specific dietary recommendations are given based on individual health and lifestyle needs, including body weight, lipid panel profile, blood pressure, and blood sugar levels. Suggestions are given to accommodate different lifestyle needs, such as meal planning, grocery shopping, and dining out.

Wellness Age Analysis

The Welltivia Body Age system calculates an individual's wellness age, compared to their chronological age, by analyzing seven different body components: 1) flexibility, 2) blood pressure, 3) height, 4) weight, 5) body composition, 6) upper body strength and 7) cardiovascular fitness, as well as a "Health Risk Appraisal," which is a series of questions about lifestyle. The components are then analyzed by the system to calculate the physical age of an individual's body. After the body age score is calculated, the system can then determine an obtainable body age, the youngest age an individual's body is capable of being.

Additional Optional Testing

Pap Smear

The Pap smear test checks for changes in the cells of the cervix. This test can detect infection, abnormal (unhealthy) cells, or cancer.

Mammogram

A mammogram is an x-ray test that produces an image of the inner breast tissue. This technique, called mammography, is used to visualize normal and abnormal structures within the breasts. Mammography, therefore, can help in identifying cysts, calcifications, and tumors within the breast. It is currently the most cost effective way to detect early breast cancer.

SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS PROGRAM

Instructions for Your Physical

Laboratory Work

You will have your blood drawn for lab work approximately two to six weeks prior to your physical. The Wellness Officer will schedule a phlebotomist at your local fire station for your blood draw. Please follow the directions below to prepare.

Fast for 12 hours prior to your blood draw. Do not eat or drink ANYTHING except for water from approximately 6:30 to 7:30 p.m. the night before until after your blood draw the next morning.

Preparation for the Physical Exam

1. Take any medications as you normally would prior to your exam.

2. Bring the following items with you:

    a. Exercise clothes (shorts, shirts, tennis shoes, etc.)
    b. Women should bring a sports bra or other supportive bra (without an underwire).

3. No smoking four (4) hours prior to the testing.

4. No heavy exercise 24 hours prior to testing (a moderate amount of exercise is fine).

5. Exam time is approximately four (4) hours in duration so please plan appropriately.

Follow-up

At the time of your physical you will meet with the physician to discuss the results of your medical examination. The physician will make any indicated recommendations for further medical evaluation or lifestyle changes at that time.

Each individual will receive a packet with all findings, interpretations of test results, exercise, diet, and lifestyle prescription and other recommendations that are indicated.

San Diego Sports Medicine and Family Health Center is staffed with Nutritionists, Exercise Physiologists, Athletic Trainers, Personal Trainers, Physical Therapists and Physicians to assist you with any specific individual questions or needs.

Quest Diagnostics®

92120127-3 7159073-

ACCOUNT #: SAN DIEGO FIREFIGHTERS
NAME: REGIONAL WELLNESS PROGRAM
ADDRESS: 6699 ALVARADO RD STE 101
CITY, STATE, ZIP: SAN DIEGO, CA 92120-5238
TELEPHONE #: 619-229-3909

BILL TO:
- [x] MY ACCOUNT
- [ ] PATIENT
- [ ] MEDICARE
- [ ] RAILROAD MEDICARE
- [ ] Medi-Cal
- [ ] Lab Card/Select
- [ ] OTHER INSURANCE

DID YOU KNOW

Patient Service Center location and appointment scheduling information is on the back.

Each sample should be labeled with at least two patient identifiers at time of collection.

PRINT PATIENT NAME (LAST, FIRST, MIDDLE)

PATIENT ID / REGISTRATION # | DATE OF BIRTH (M M D D YEAR) | SEX

ROOM # | LAB REFERENCE #

PATIENT SOCIAL SECURITY # - - | PATIENT PHONE # ( )

PATIENT STREET ADDRESS | APT. # | KEY #

CITY | STATE | ZIP

PRINT NAME OF INSURED/RESPONSIBLE PARTY (LAST, FIRST, MIDDLE) - IF OTHER THAN PATIENT

INSURED ADDRESS

CITY | STATE | ZIP

DATE COLLECTED | TIME : [ ] AM [ ] PM | TOTAL VOL/HRS. _____ ML _____ HR | [ ] Fasting [ ] Non Fasting

NPI/UPIN ORDERING/SUPERVISING PHYSICIAN AND/OR PAYORS (MUST BE INDICATED)

( ) 1376654632 ANTHONY,JEFFREY P ( ) 1881798221 RICHBURG,FREDERIC
( ) 1851402143 LOOK,MICHELLE L ( ) 1376654699 RUSK,KATHLEEN
(x) 1982715348 PARKER,RICHARD A
( ) 1063523330 RALPH,LEE P
( ) 1073511150 RICE,EMMETT L

PRIMARY INSURANCE

RELATIONSHIP TO INSURED [ ] SELF [ ] SPOUSE [ ] DEPENDENT

INSURANCE COMPANY NAME / IPA NAME

INSURANCE COMPANY ADDRESS | CITY | ST | ZIP

INSURANCE ID # | GROUP # / DATE OF INJURY

MEDICARE # | MEDI-CAL #

EMPLOYER NAME / EMPLOYER #

[ ] ADDIT'L PHYS.: Dr. _____ NPI/UPIN

NON-PHYSICIAN PROVIDER: NAME | I.D.#

[ ] Fax Results to: ( ) _____

Send Duplicate Report to: Client # OR NAME: _____ ADDRESS: _____ CITY: _____ STATE _____ ZIP _____

Medicare Limited Coverage Tests

@ = May not be covered for the reported diagnosis
F = Has prescribed frequency rules for coverage
& = A test or service performed with research/experimental kit
B = Has both diagnosis and frequency-related coverage limitations

Provide signed ABN when necessary

ICD Codes (enter all that apply)

P L COMPONENTS ON BACK

GAN / DISEASE PANELS

34392	[ ] **Electrolyte Panel**	S
10256	[ ] **Hepatic Function Panel**	S
10165	[ ] **Basic Metabolic Panel w/eGFR**	S
10231	[x] **Comp Metabolic Panel w/eGFR**	S
B 7600	[x] **Lipid Panel** (Fasting Specimen)	S
B 14852	[ ] **Lipid Panel w/Reflex DLDL**	S
@ 20210	[ ] **Obstetric Panel w/Reflex**	Y,L,S
@ 10306	[ ] **Hepatitis Panel, Acute w/Reflex**	S
10314	[ ] **Renal Functional Panel w/eGFR**	S

HEMATOLOGY

@ 510	[ ] Hemoglobin	L
@ 509	[ ] Hematocrit	L
@ 1759	[ ] CBC (Hgb, Hct, RBC, WBC, Plt)	L
@ 6399	[x] CBC w/Diff (Hgb, Hct, RBC, WBC, Plt, Diff)	L
B 8847	[ ] PT with INR	B
@ 763	[ ] PTT, Activated	B

OTHER TESTS

823	[ ] ALT	S
243	[ ] Amylase	S
249	[ ] ANA w/Reflex Titer	S
822	[ ] AST	S
4420	[ ] C-Reative Protein - CRP	S
10124	[ ] Cardio CRP	S
B 334	[ ] Cholesterol, Total	S
374	[ ] CK, Total	S
375	[ ] Creatinine (CR) w/eGFR	S
@ 457	[ ] Ferritin	S
470	[ ] FSH	S
B 482	[ ] GGT	S
8477	[ ] Glucose Gest. Screen	GY
B 483	[ ] Glucose, Serum	S
B 8396	[ ] HCG, Serum, Quant	S
B 496	[ ] Hemoglobin A1C	L
498	[ ] Hep B Surface Ag w/Reflex Confirm	S
8472	[ ] Hep C Virus Ab	S
B 19728	[ ] HIV-1/HIV-2 Scr w/Reflexes	S
@ 7573	[ ] Iron (Total), IBC, % Sat	S
@ 571	[ ] Iron, Total	S
593	[ ] LDH	S
599	[ ] Lead (B)	TN
622	[ ] Magnesium	S
6517	[ ] Microalbumin, Random Urine w/Creat	
Fecal Globin, Feces - FIT, InSure‡		
@ 11290	[ ] DX F 11293 [ ] Mcr Scr	
718	[ ] Phosphorus	S
B 5363	[ ] PSA, Total	S
4418	[ ] Rheumatoid Factor	S
799	[ ] RPR (Monitoring) w/Reflex Titer	S
36126	[ ] RPR (DX) w/Reflex Confirm	S
809	[ ] SED Rate by Mod West	L
B 899	[x] TSH	S
B 36127	[ ] TSH w/Reflex T-4, Free	S
34429	[ ] T-3, Free	S
859	[ ] T-3, Total	S
B 861	[ ] T-3 Uptake	S
B 867	[ ] T-4 (Thyroxine), Total	
B 866	[ ] T-4 (Thyroxine), Free	S
15983	[ ] Testosterone, Total, LC/MS/MS	SR
873	[ ] Testosterone, Total, Male	SR
6448	[ ] UA, Dipstick Only	U
7909	[ ] UA, Dipstick, w/Reflex Microscopic	U
5463	[ ] UA, Complete (Dipstick & Microscopic)	U
@ 3020	[ ] UA, Complete, w/Reflex Culture	
294	[ ] Urea Nitrogen (BUN)	
905	[ ] Uric Acid	
927	[ ] Vitamin B12	
7065	[ ] Vitamin B12/Folic Acid	
17306	[ ] Vitamin D (QuestAssure 25-OH D2, D3 LC/MS/MS)	

MICROBIOLOGY

Source (Required) _____

4550	[ ] Culture, Aerobic Bacteria*	
5617	[ ] Culture, Group B Strep*	
394	[ ] Culture, Throat*	
@ 395	[ ] Culture, Urine Routine*	

Amplified Specimen Type (Aptima)
[ ] Endocervical [ ] Urethral [ ] Urine

11363	[ ] Chlamydia & N. gonorrhoeae RNA, TMA	

( ) 270 ARSENIC, RAND URINE
( ) 90372 CHOLINESTERASE RBC/P
( ) 8459 CREATININE, RAND UR
( ) 7507 HEAVY METALS, RAND U
( ) 601 LEAD, RAND URINE
( ) 964 MEASLES AB IGG
( ) 637 MERCURY, RAND URINE
( ) 8624 MUMPS VIRUS AB (IGG)
( ) 4439 VZV AB IGG

ADDITIONAL TESTS: (MUST INCLUDE COMPLETE TEST NAME AND ORDER CODE. REFER TO DIRECTORY OF SERVICES.)

* Additional charge for ID/Susceptibility studies.
Reflex tests are performed at an additional charge.

COMMENTS, CLINICAL INFORMATION:

TOTAL TESTS ORDERED

Physician Signature

For any patient of any payor (including Medicare and Medicaid), only order those tests which are medically necessary for the diagnosis and treatment of the patient

REASNCLA

92120127 7159073 | 92120127 7159073 | 92120127 7159073

NAME: _____ | 92120127 7159073 | 92120127 7159073

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San Diego Firefighters' Regional Wellness Program

Employee Medical Respirator Clearance

First Name:
Last Name:
Agency Name:

Do not write below this line

Physician completes the following	
Initials	Employee has **NO** restriction on use of respirator at this time
Initials	Employee has **NO** restriction on use of respirator at this time, **BUT** requires follow-up medical evaluation. Provide explanation:
Initials	Employee may **NOT** wear any type of respirator

Physician Signature **Date**

The above medical determination may need to be disallowed if the employee has an acute respiratory impairment causing difficulty breathing.

The employer agrees to promptly notify the Physician of any significant changes in the employee 's ability to use a respirator.

OSHA Respirator Medical Evaluation Questionnaire

(Mandatory)
To the employee: Can you read (circle one): **Yes / No**

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory)
The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male / Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): **Yes / No**
11. Check the type of respirator you will use (you can check more than one category):
    a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
    b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air or self-contained breathing apparatus.
12. Have you worn a respirator (circle one): **Yes / No**
    If "yes," what type(s): _____

Part A. Section 2. (Mandatory)
Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: **Yes / No**
2. Have you ever had any of the following conditions?
    a. Seizures (fits): - - - - - - - - - **Yes / No**
    b. Diabetes (sugar disease): - - - - - - - - **Yes / No**
    c. Allergic reactions that interfere with your breathing: - - - - - **Yes / No**
    d. Claustrophobia (fear of closed-in places): - - - - - - **Yes / No**
    e. Trouble smelling odors: - - - - - - - - **Yes / No**
3. Have you ever had any of the following pulmonary or lung problems?
    a. Asbestosis: - - - - - - - - - **Yes / No**
    b. Asthma: - - - - - - - - - **Yes / No**
    c. Chronic bronchitis: - - - - - - - - - **Yes / No**
    d. Emphysema: - - - - - - - - - **Yes / No**
    e. Pneumonia: - - - - - - - - - **Yes / No**
    f. Tuberculosis: - - - - - - - - - **Yes / No**
    g. Silicosis: - - - - - - - - - **Yes / No**
    h. Pneumothorax (collapsed lung): - - - - - - - - **Yes / No**
    i. Lung cancer: - - - - - - - - - **Yes / No**
    j. Broken ribs: - - - - - - - - - **Yes / No**
    k. Any chest injuries or surgeries: - - - - - - - - **Yes / No**

l. Any other lung problem that you've been told about: - - - - - **Yes / No**

4. Do you currently have any of the following symptoms of pulmonary or lung illness?
   a. Shortness of breath: -- - - - - - - - **Yes / No**
   b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: **Yes / No**
   c. Shortness of breath when walking with other people at an ordinary pace on level ground: **Yes / No**
   d. Have to stop for breath when walking at your own pace on level ground: - - **Yes / No**
   e. Shortness of breath when washing or dressing yourself: - - - - **Yes / No**
   f. Shortness of breath that interferes with your job: - - - - - **Yes / No**
   g. Coughing that produces phlegm (thick sputum): - - - - - **Yes / No**
   h. Coughing that wakes you early in the morning: - - - - - **Yes / No**
   i. Coughing that occurs mostly when you are lying down: - - - - **Yes / No**
   j. Coughing up blood in the last month: - - - - - - - **Yes / No**
   k. Wheezing: - - - - - - - - - - **Yes / No**
   l. Wheezing that interferes with your job: - - - - - - **Yes / No**
   m. Chest pain when you breathe deeply: - - - - - - **Yes / No**
   n. Any other symptoms that you think may be related to lung problems: - - - **Yes / No**

5. Have you ever had any of the following cardiovascular or heart problems?
   a. Heart attack: - - - - - - - - - **Yes / No**
   b. Stroke: - - - - - - - - - - **Yes / No**
   c. Angina: - - - - - - - - - - **Yes / No**
   d. Heart failure: - - - - - - - - - **Yes / No**
   e. Swelling in your legs or feet (not caused by walking): - - - - - **Yes / No**
   f. Heart arrhythmia (heart beating irregularly): - - - - - - **Yes / No**
   g. High blood pressure: - - - - - - - - **Yes / No**
   h. Any other heart problem that you've been told about: - - - - **Yes / No**

6. Have you ever had any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest: - - - - - - **Yes / No**
   b. Pain or tightness in your chest during physical activity: - - - **Yes / No**
   c. Pain or tightness in your chest that interferes with your job: - - - **Yes / No**
   d. In the past two years, have you noticed your heart skipping or missing a beat: - **Yes / No**
   e. Heartburn or indigestion that is not related to eating: - - - - **Yes / No**
   f. Any other symptoms that you think may be related to heart or circulation problems: **Yes / No**

7. Do you currently take medication for any of the following problems?
   a. Breathing or lung problems: - - - - - - - - **Yes / No**
   b. Heart trouble: - - - - - - - - - **Yes / No**
   c. Blood pressure: - - - - - - - - **Yes / No**
   d. Seizures (fits): - - - - - - - - - **Yes / No**

8. If you've used a respirator, have you ever had any of the following problems? (If you've never (if you've never used a respirator, check the following space _____ and go to question 9:)
   a. Eye irritation: - - - - - - - - **Yes / No**
   b. Skin allergies or rashes: - - - - - - - - **Yes / No**
   c. Anxiety: - - - - - - - - - - **Yes / No**
   d. General weakness or fatigue: - - - - - - - **Yes / No**
   e. Any other problem that interferes with your use of a respirator: - - - **Yes / No**

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? - - - - - - - - - - **Yes / No**

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): - - - - **Yes / No**
11. Do you currently have any of the following vision problems?
   a. Wear contact lenses: - - - - - - - - **Yes / No**
   b. Wear glasses: - - - - - - - - - **Yes / No**
   c. Color blind: - - - - - - - - - **Yes / No**
   e. Any other eye or vision problem: - - - - - - - **Yes / No**
12. Have you ever had an injury to your ears, including a broken ear drum: - - Yes / No
13. Do you currently have any of the following hearing problems?

a. Difficulty hearing: - - - - - - - - - **Yes / No**
b. Wear a hearing aid: - - - - - - - - - **Yes / No**
c. Any other hearing or ear problem: - - - - - - **Yes / No**

14. Have you ever had a back injury: - - - - - - - **Yes / No**
15. Do you currently have any of the following musculoskeletal problems?
a. Weakness in any of your arms, hands, legs, or feet: - - - - **Yes / No**
b. Back pain: - - - - - - - - - - **Yes / No**
c. Difficulty fully moving your arms and legs: - - - - - **Yes / No**
d. Pain or stiffness when you lean forward or backward at the waist: - - **Yes / No**
e. Difficulty fully moving your head up or down: - - - - - **Yes / No**
f. Difficulty fully moving your head side to side: - - - - - **Yes / No**
g. Difficulty bending at your knees: - - - - - - **Yes / No**
h. Difficulty squatting to the ground: - - - - - - **Yes / No**
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: - - - **Yes / No**
j. Any other muscle or skeletal problem that interferes with using a respirator: - - **Yes / No**

OSHA Respirator Medical Evaluation Supplementary Questionnaire (Optional)
Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: **Yes / No**
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: **Yes / No**
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: **Yes / No**
If "yes," name the chemicals if you know them:

_____
_____
_____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:
a. Asbestos: - - - - - - - - - - **Yes / No**
b. Silica (e.g., in sandblasting): Yes / No
c. Tungsten/cobalt (e.g., grinding or welding this material): - - - **Yes / No**
d. Beryllium: - - - - - - - - - - **Yes / No**
e. Aluminum: - - - - - - - - - **Yes / No**
f. Coal (for example, mining): - - - - - - - **Yes / No**
g. Iron: - - - - - - - - - - **Yes / No**
h. Tin: - - - - - - - - - - **Yes / No**
i. Dusty environments: - - - - - - - - **Yes / No**
j. Any other hazardous exposures: - - - - - - **Yes / No**

If "yes," describe these exposures:_____
_____
_____

4. List any second jobs or side businesses you have:_____
_____

5. List your previous occupations:_____
_____

6. List your current and previous hobbies:_____
_____

7. Have you been in the military services? **Yes / No**
If "yes," were you exposed to biological or chemical agents (either in training or combat): **Yes / No**
8. Have you ever worked on a HAZMAT team? **Yes / No**
9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): **Yes / No**
If "yes," name the medications if you know them:_____
10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: - - - - - - - - - **Yes / No**
b. Canisters (for example, gas masks): - - - - - - **Yes / No**
c. Cartridges: - - - - - - - - - **Yes / No**

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:
a. Escape only (no rescue): - - - - - - - **Yes / No**
b. Emergency rescue only: - - - - - - - **Yes / No**
c. Less than 5 hours per week: - - - - - - - **Yes / No**
d. Less than 2 hours per day: - - - - - - - **Yes / No**
e. 2 to 4 hours per day: - - - - - - - - **Yes / No**
f. Over 4 hours per day: - - - - - - - - **Yes / No**

12. During the period you are using the respirator(s), is your work effort:
a. Light (less than 200 kcal per hour): **Yes / No**
If "yes," how long does this period last during the average shift:_____hrs._____mins.
Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): **Yes / No**
If "yes," how long does this period last during the average shift:_____hrs._____mins.
Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): **Yes / No**
If "yes," how long does this period last during the average shift:_____hrs._____mins.
Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: **Yes / No**
If "yes," describe this protective clothing and/or equipment:_____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): **Yes / No**

15. Will you be working under humid conditions: **Yes / No**

16. Describe the work you'll be doing while you're using your respirator(s):_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):
Name of the first toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
Name of the second toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
Name of the third toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
The names of any other toxic substances that you'll be exposed to while using your respirator:_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and wellbeing of others (for example, rescue, security):

Authorization for Release of Medical Records

San Diego Sports Medicine and Family Health Center

6699 Alvarado Road, Suite 2100, San Diego, CA 92120
3880 Valley Centre Drive, Suite 201, San Diego, CA 92130
Privacy Officer: Office Manager, Phone No. 619-229-3909

As required by the Health Information Portability and Accountability Act of 1996 (HIPAA) and California law, this practice may not use or disclose your individually identifiable health information except as provided in our Notice of Privacy Practices without your authorization. Your completion of this form means that you are giving permission for the uses and disclosure described below. Please review and complete this form carefully. It may be invalid if not fully completed. You may wish to ask the person or entity you want to receive your information to complete the sections detailing the information to be released and the purposes for the disclosure.

I hereby authorize the use and release of health information concerning:

Patient Name: _____

Address: _____

_____

Date of Birth: _____

Social Security No.: _____

Phone Number: _____

This health information may be disclosed by:

Doctor/Facility Name: San Diego Firefighters' Regional Wellness Center

Address: 6699 Alvarado Road, Suite 101
San Diego, CA 92120

Phone No.: _____

This health information may be disclosed to:

Doctor/Facility Name: _____

Address: _____

_____

Phone No.: _____

Health information to be used or disclosed (check *only one box*): *

☐ Any and all health information other than psychotherapy notes may be released, including, but not limited to, mental health records, drug and/or alcohol abuse records and/or HIV test results, if any, except as specifically provided below:

_____

_____

_____

☐ All psychotherapy notes may be released, except as specifically provided below:

_____

_____

_____

The information may be used only for the following purposes (if you do not want to explain the purpose, write "At the request of the individual":

_____

I understand that I may revoke this authorization at any time notifying this medical practice in writing. My revocation will not affect actions taken by this medical practice prior to its receipt. I understand that although federal law does not protect health information which is disclosed to someone other than another health care provider, health plan or health care clearinghouse, under California law all recipients of health care information are prohibited from re-disclosing it except as specifically required or permitted by law. I understand that my health care treatment or benefits will not be affected whether I sign or do not sign this form.

This authorization is effective now and will remain in effect until _____.
(*Expiration event or date*).

I understand that I have the right to receive a copy of this authorization.

Signed: _____ Date: _____

Print Name: _____

If not signed by the patient, please indicate relationship:

- ☐ parent or guardian of minor patient (to the extent minor could not have consented to the care)
- ☐ guardian or conservator of an incompetent patient
- ☐ beneficiary or personal representative of deceased patient **
- ☐ spouse or person financially responsible (where information solely for purpose of processing application for dependant health care coverage)

Name of patient: _____

Signature of Treating Physician (only required in the circumstances described below*):

Signed: _____ Date: _____
Treating Physician

* *For the release of records (1) protected by the Lanterman-Petris-Short Act (LPS) or (2) containing HIV test results, a separate authorization is required for each separate disclosure. Further, the LPS Act often requires that both the patient's treating physician and the patient sign the authorization form before information may be released. Under HIPAA, an authorization for release of psychotherapy notes may not be combined with an authorization involving any other type of health information (except other psychotherapy notes).*

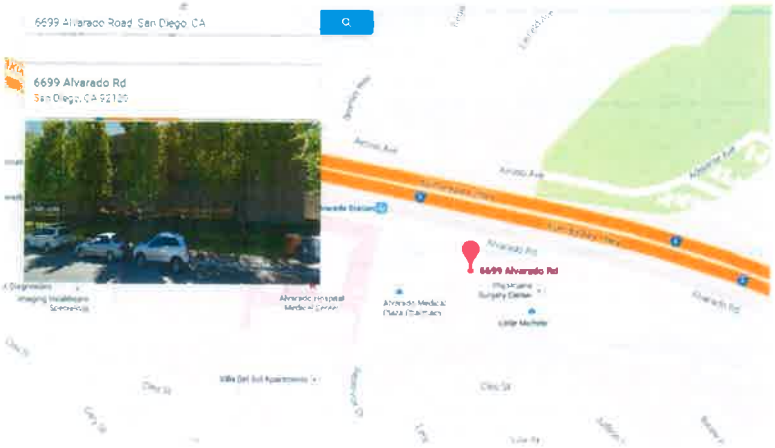
** *It is unclear whether the beneficiary or personal representative of a deceased patient can obtain and disclose certain records containing HIV test results.*

SAN DIEGO FIREFIGHTER'S REGIONAL WELLNESS PROGRAM

Directions to SDSMFHC Facilities

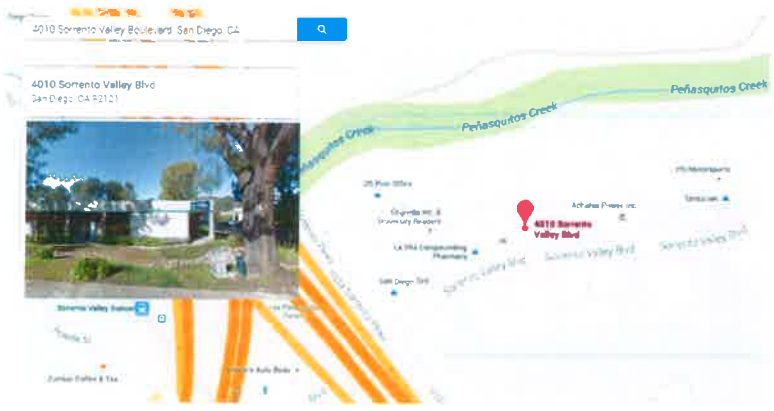
San Diego Sports Medicine and Family Health Center - Alvarado Office
6699 Alvarado Road, Suites 2100 and 2101
San Diego, CA 92120
Telephone: (619) 286-7333
Fax: (619) 229-3919

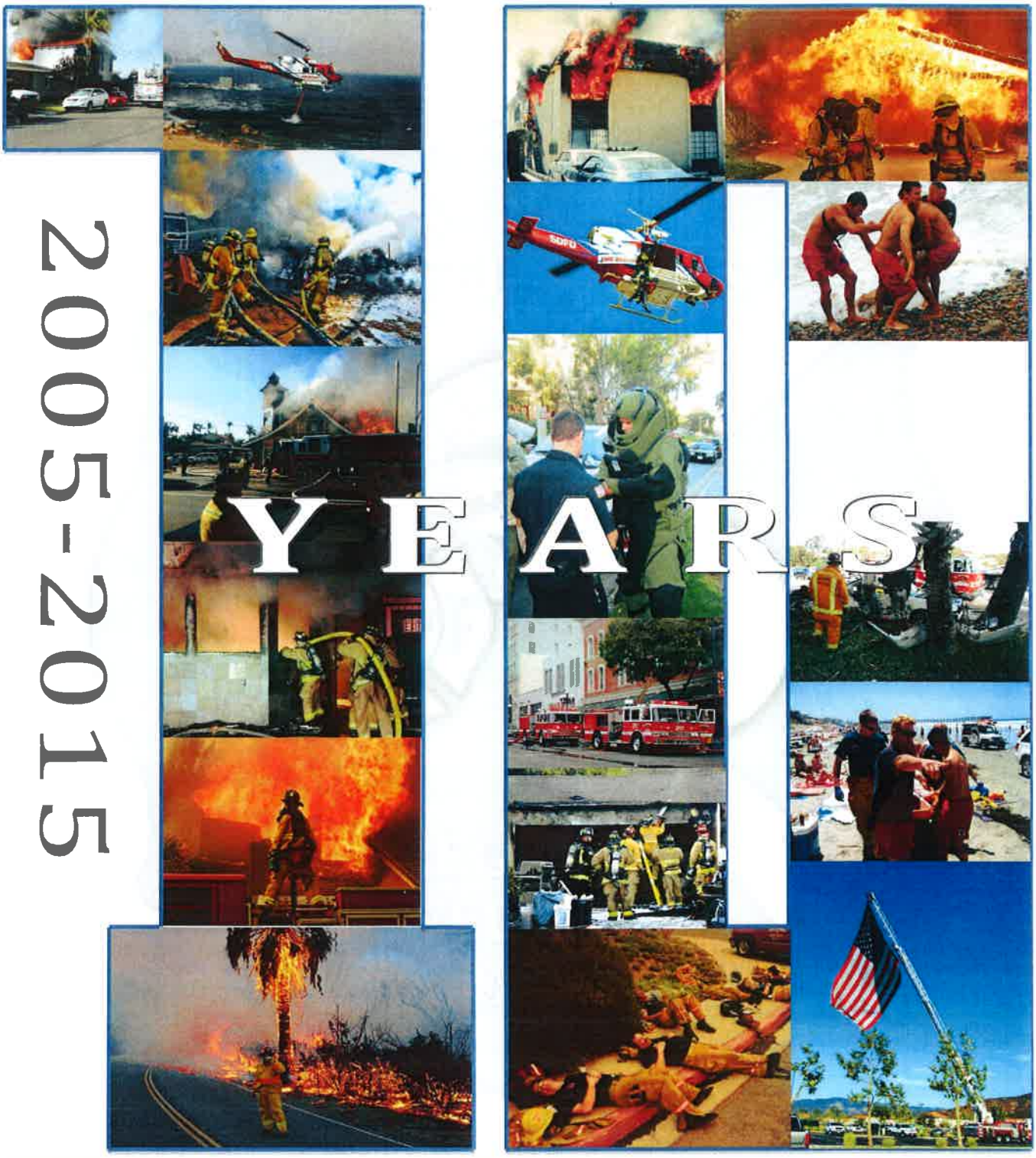
SDSMFHC's Alvarado office is located on Alvarado Road between 70th Street and College Avenue, parallel to Interstate 8. We are located near the corner of Alvarado Road and Reservoir Drive.



San Diego Sports Medicine and Family Health Center – Sorrento Valley Office
4010 Sorrento Valley Blvd., Suite 300
San Diego, CA 92121
Telephone: (858) 793-7860
Fax: (858) 436-1289

SDSMFHC's Sorrento Valley office is located on Sorrento Valley Boulevard off Vista Sorrento Parkway, near the 5/805 merge.





Personal Fitness Profile

Donold Duck
2015

MEDICAL LETTER
Donold Duck
1962-06-03

August 2 , 2014

Dear Donold,

Thank you for participating in your recent Wellness Program Evaluation at San Diego Sports Medicine and Family Health Center. This letter will serve as a summary of your findings in the program. You will also find specific recommendations tailored to allow you to improve your overall health and wellness. Please see the corresponding sections in this pamphlet for further information on any one test or result.

• Medication / Dietary Supplements

Omeprazole *1 tablet as needed*
Lisinopril/HCTZ *20 mg, 1 tablet every day*

• Allergies

Pet dander - 1985
Gluten allergy - 2009

• Past Medical History

Asthma - childhood, exercise induced
Herniated disc L5-S1 - 1992
Patella tendonitis - 1997
Sacroilliac separation - 2002
Hemia - 2007
Fractured clavicle - 2009
Abnormal stress test - 2009
Cataract - 2009
Testicular cancer - 2009
Nocturia - 2012

• Surgical History

Discectomy L5-S1 - 1998
Right knee arthroscopy - 2012

• Family History

Father	Mother
Alive at age 75 Hypothyroidism Allergies Spina bifida Hypercholesterolemia	Alive at age 74 Hypothyroidism
Brothers	**Sisters**
1 Brother alive and well at age 42	1 Sister alive at age 44 Epilepsy Cervical Cancer

Paternal grandparents	Maternal grandparents
G/father: Deceased at age 90 - Bladder Cancer Bladder removal - 2008 Asthma G/mother: Deceased at age 89 - Myocardial Infarction Hypertension Osteoporosis Arthritis	G/father: Deceased at age 82 - Diabetes complications Type II diabetes mellitus Quadruple bypass (1991) G/mother: Deceased at age 79 - Pneumonia Schizophrenia

---

• Alcohol / Caffeine / Tobacco Habits

Alcohol use / week: **12**
Caffeine use /day: **2-3**
Tobacco use: **None**

• Exercise habits

Aerobic: **5-6** /week
Weights: **2-3** /week
Flexibility: **1** /week

• Immunity Status

Last Tetanus shot	2010
Last MMR shot	2000
Last Influenza shot	2012

• Screening Tests

Last PSA test	2013
Last Colon Cancer test	2010
Last TB test	2011

Dtap - 2010
MMR - 2000
PPD placed, negative - 2011
Influenza - 2011
Varicella - History of disease
Hep A #1 and Hep B #1 - 09/25/2014
Colonoscopy -2010

• Current Complaints

Sore throat
Patient has palpitations for the last 2 weeks with dizziness
Skin rash on chest

• Physical Exam

Nevi on chest

• Vision Evaluation

Right eye: 20 | 13 Left eye: 20 | 13 Bilateral: 20 | 10
Vision correction: Uncorrected Color perception: Normal

• Significant Lab Findings

Triglycerides:	120 mg/dL
Total Cholesterol:	195 mg/dL
HDL Cholesterol:	83 mg/dL
LDL Cholesterol:	120 mg/dL
Cholesterol/HDL ratio:	2.70
Glucose:	87 mg/dL

• Chest X-Ray
Normal

• Hearing Evaluation
Moderate hearing loss

• Pulmonary Function Testing
Reduced FEF 25-75 (L/s) - 60% of predicted value

• Resting and Stress EKG

Stress EKG:	Equivocal exercise stress test - maximal
Resting HR:	180
METs:	11.5
VO_{2max}:	40.2 ml/kg/min
Reason for terminating test:	Maximum Effort
Cardiovascular Fitness:	Good

• Nutrition Risk
Low - based on health risk factors and dietary intake

• Strength, Endurance and Flexibility

Left Grip Strength (kg)	7	Poor
Right Grip Strength (kg)	4	Poor
Leg Strength (kg)	3	Poor
Arm Strength (kg)	3	Poor
PushUps (# reps)	11	Fair
SitUps (# reps)	12	Poor
Flexibility (in)	14.0	Excellent
Lower Back Endurance (sec)	41	Poor
Plank (sec)	70	Average

• Body Composition
Your percentage body fat is: **23.6%** which is considered Average
Good Recommended range is from **16.10 -- 21.50 %**

• Assessment / Recommendations

Assessment	Recommendation
Immunizations - update needed	Hepatitis A vaccine - administered today Hep B administered as well
Body fat percentage, elevated	Lose 3-6% body fat over the next 3 months by decreasing caloric intake and increasing physical activity. See nutrition and exercise profiles for more detailed information.
Asthma	Follow up with primary care physician for further evaluation. Consider use of alubterol inhaler.

Fitness - Flexibility Screen Score = 90/120	Mild Risk for injury
Fitness - Flexibility Screen. Areas to work on 1)Shoulder Mobility 2)Hamstring Flexibility 3)Quad Flexibility	Refer to fitness section of binder for specific recommendations and exercises.
Radiculopathy	Continue program. Follow up with treating Doctor.
Cancer - Leukemia (unspecified cell type) (detailed annotation)	Follow up with Oncologist
Rash	Hydrocortisone, over-the-counter twice daily for 1 week. Follow up with primary care physician if persists.
Prostate - hyperplasia, benign 1+ enlargement	Recommend further evaluation with urologist. Trial of Saw Palmetto
RBC's enlarged	Follow up with primary care physician for further evaluation.
Blood pressure, elevated	Check BP regularly; regular CV exercise; watch weight.
Reactive airway disease	Recommend judicious use of BA. Follow up with primary care physician to discuss treatment options.
Alcohol intake, elevated	Recommend decreasing alcohol intake to no more than 2 per day.
Obesity	Recommend reducing caloric intake and increasing physical activity to promote gradual weight loss and improve body composition. See nutrition and exercise profiles for more detailed information.
Rectal bleeding	Follow up with primary care physician for further evaluation.

As always if there are any questions or concerns about your findings please feel free to contact us.

Sincerely,

Richard Parker, DO, FAOASM
Medical Director
San Diego Sports Medicine and Family Health Center
6699 Alvarado Rd., Suite 101
San Diego, CA 92120
(619) 229-3909

MEDICAL DIALS

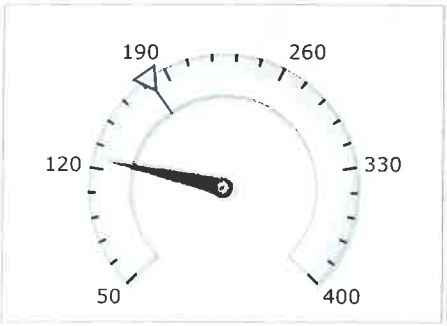
Name: Donold Duck

Test dates: **2014-08-02** 2012-02-09

Weight

2012 : 180

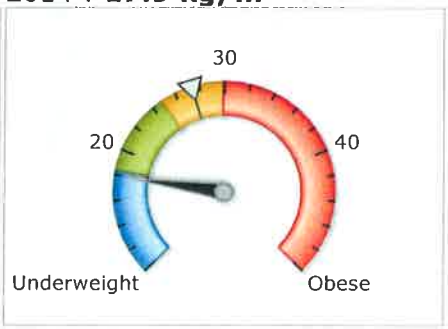
2014 : **125 lbs**



Body Mass Index

2012 : 27.4

2014 : **17.9 kg/m^2**



- Normal
- Underweight
- Overweight
- Obese

Body Composition

2012 : 23.4

2014 : **23.6 % fat**

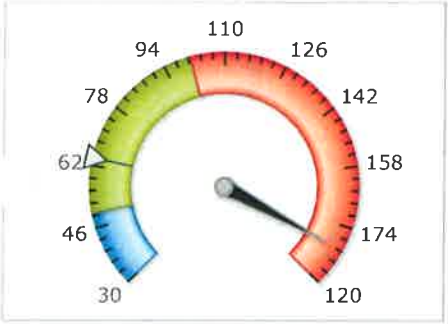


< 16.00	Excellent	21.60 26.00	Average
16.10-21.50	Good	26.10 31.00	Overweight
		> 31.10	Obese

HEART RATE - Resting

2012 : 64

2014 : **180 bpm**

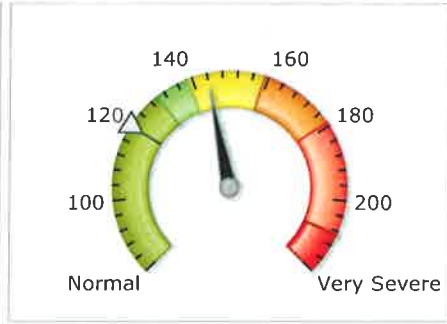


50-101	Normal	<50	Bradychardia
		>101	Tachychardia

BLOOD PRESSURE - Systolic

2012 : 120

2014 : **144 mmHg**

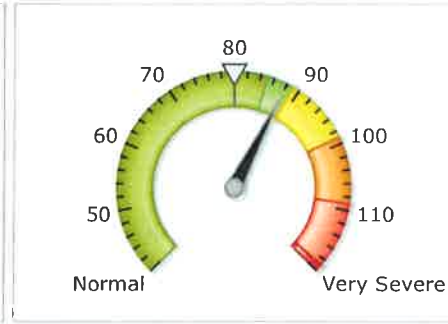


<130	Normal	160-79	Moderate
130-39	High Normal	180-209	Severe
140-59	Mild	>209	Very Severe

BLOOD PRESSURE - Diastolic

2012 : 80

2014 : **88 mmHg**



<85	Normal	100-109	Moderate
85-89	High Normal	110-119	Severe
90-99	Mild	>119	Very Severe

TOTAL CHOLESTEROL

2012 : 202

2014 : **195 mg/dL**



<170	Low Risk	186-200	High Risk
170-185	Moderate	>200	Very High

HDL CHOLESTEROL

2012 : 42

2014 : **83 mg/dL**



<35	Low HDL	>35	Desirable

LDL CHOLESTEROL

2012 : 103

2014 : **120 mg/dL**



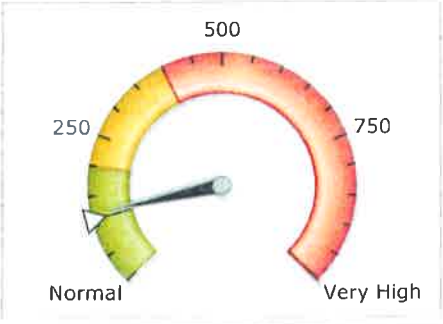
<130	Desirable	130-159	Borderline High
		>159	High LDL

CHOL/HDL RATIO
2012 : 3.50
2014 : **2.70**



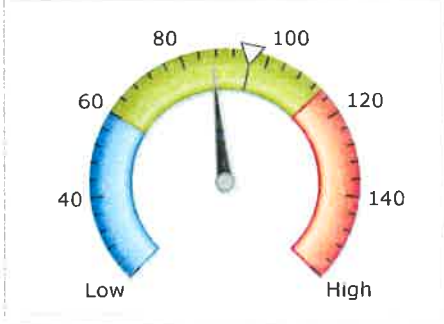
<3.2	Low Risk	4.9-5.5	High Risk
3.3-4.8	Moderate	>5.5	Very High

TRIGLYCERIDES
2012 : 112
2014 : **120 mg/dL**



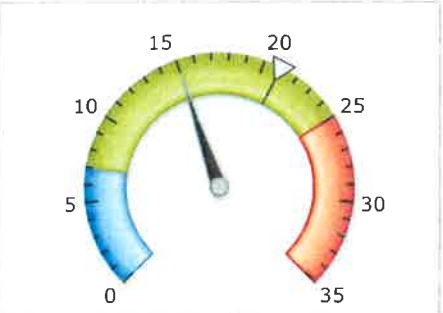
<200	Normal	401-1000	High Risk
200-400	Borderline	>1000	Very High

GLUCOSE
2012 : 96
2014 : **87 mg/dL**



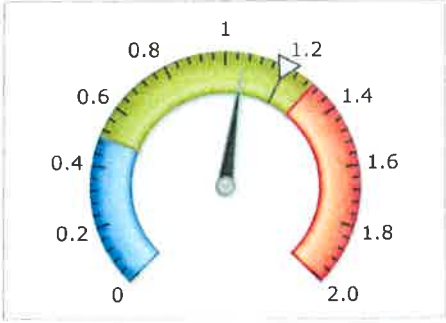
60-114	Normal	< 60	Low
		>200	High

UREA NITROGEN (BUN)
2012 : 21
2014 : 15 mg/dL



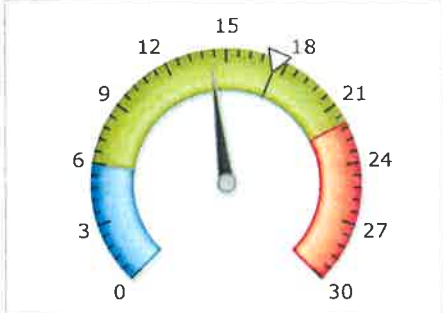
7 - 25	Normal	< 7	Low
		>25	High

CREATININE
2012 : 1.20
2014 : **1.06 mg/dL**



0.5-1.3	Normal	< 0.5	Low
		>1.3	High

BUN/CR RATIO (Calc)
2012 : 17.5
2014 : **14.2**



6-22	Normal	< 6	Low
		>22	High



EXPLANATION OF BLOOD WORK

It is not possible to diagnose or treat any disease or problem with this blood test alone. It can help you learn more about your body and detect potential problems in early stages when treatment or changes in personal habits can be most effective.

Reference ranges are on the far right column on the blood work slip.

Values which are outside expected ranges may show possible problems needing medical evaluation, or may be due to the fact that you ate/drank before your blood was drawn, or may mean there was a processing error. CONSULT YOUR DOCTOR WITH ANY QUESTIONS, AND MAKE AN APPOINTMENT FOR FURTHER EVALUATION IF YOUR DOCTOR INDICATES THAT THIS IS NECESSARY.

GLUCOSE: This is a measure of sugar levels in your blood. High values are associated with eating before the test, impaired glucose tolerance, and diabetes. If you were truly fasting and your value is over 100, consult your doctor. Even if you know you have diabetes, it is important to report an elevated sugar level to your doctor.

CHOLESTEROL AND TRIGLYCERIDES are fats in the blood. Elevated levels have been associated with heart disease and hardening of the arteries in some people. The values are affected by the hours since you last ate and may be high if you ate within ten hours of the test. However, even if you just ate and your total cholesterol result is over 200 or your triglyceride result is higher than 150, consult your doctor. Low values for these fats are not important in the screening situation.

HDL a type of protein and lipid (fat) mixture. Generally, HDL is considered a measure of "Good Cholesterol." A low value is associated with a higher risk of arteriosclerotic blood vessel disease. Higher values are thought to be protective against heart disease. Recommended values are higher than or equal to 40; optimal values are greater than 50.

LDL a type of protein and lipid (fat) mixture whose elevation is generally considered an increased risk factor for arteriosclerotic blood vessel disease. Recommended values are less than 130; optimal is less than 100.

CHOLESTEROL /HDL RATIO: This is an estimate of the risk of having or developed arteriosclerotic cardiovascular disease based on a long term study on a relatively large number of people. The number used to evaluate risk is based on the blood cholesterol and triglyceride values, high if over 5.0; optimal is less than 3.2.

ALBUMIN AND GLOBULIN measure the amount and type of protein in your blood. They are a general index of overall health and nutrition. Globulin is the "antibody" protein important for fighting disease. If one of these is high, but all other values are within expected ranges, the result is probably not significant.

ALBUMIN AND GLOBULIN RATIO is the mathematical relationship between albumin and globulin. High or low values are not important in the screening situation if both albumin and globulin fall within expected ranges.

POTASSIUM is controlled very carefully by the kidneys. It is important for the proper functioning of nerves and muscles, particularly the heart. Any value outside the expected, high or low, requires medical evaluation. This is especially important if you are taking a diuretic (water pill) or heart pill (Digitalis, Lanoxin, etc).

SODIUM AND CHLORIDE are regulated by the kidneys and adrenal glands. They are important for the functioning of nerves, muscles, and most cells. If one, but not the other, is outside expected ranges and all other values are within expected ranges, there is probably a processing error and further evaluation is not needed.

CALCIUM AND PHOSPHORUS are controlled by the parathyroid glands and the kidneys. These minerals are found mostly in bone but are also important for proper blood clotting and nerve cell activity. Processing errors may affect these values, but any elevated calcium or low phosphorus should be evaluated by your doctor.

ALT & AST (Liver enzymes) are abbreviations for proteins called enzymes which aid various chemical activities within cells. Injuries to cells release these enzymes into the blood. They are found in muscles, the liver and the heart. Damage from alcohol and a number of diseases are reflected in high values and should be evaluated by your doctor. Low values are not significant.

ALKALINE PHOSPHATASE is an enzyme found primarily in bones and the liver. Expected values are higher for those who are growing (children, pregnant women, etc.) or when damage to bones or liver has occurred. Low values are probably not significant.

BILIRUBIN is the primary pigment in bile. Although low levels are generally not significant, high bilirubin values may indicate liver disease or some other disorder which reduces the normal flow of bile, or produces an increase in bile itself.

BLOOD UREA NITROGEN (BUN) is a waste product produced in the liver and excreted by the kidneys. High values may mean that the kidneys are not working as well as they should. BUN is also affected by high protein diets and/or strenuous exercise which raise levels. Dehydration and pregnancy can lower BUN.

CREATININE is a waste product. The amount present is not affected by the quantity of protein you eat. High values require medical evaluation, especially with high BUN levels. Low values are not significant.

BUN/CREATININE RATIO is a ratio between BUN and Creatinine. Values outside expected ranges are of no importance if both BUN and Creatinine are within the expected ranges.

URIC ACID is normally excreted in urine. High values are associated with gout, arthritis, kidney problems, and the use of some diuretics; evaluation by your doctor is indicated. Low values are probably not significant.

CHOLINESTERASE is an enzyme that is critical to the functioning of the human nervous system. Exposure to some pesticides can decrease the amount of cholinesterase in the body. The normal range is 9572 to 15031 IU/L.

TSH (THYROID STIMULATING HORMONE) causes the thyroid gland to produce two hormones: triiodothyronine (T3) and thyroxine (T4). T3 and T4 help control your body's metabolism. Elevated TSH (>4.50 mIU/L) could represent an under active thyroid gland (hypothyroidism), which can cause symptoms such as weight gain, tiredness, dry skin, constipation, a feeling of being too cold or frequent menstrual periods. Low TSH (< 0.40mIU/L) could represent an overactive thyroid (hyperthyroidism), which can cause symptoms such as weight loss, rapid heart rate, nervousness, diarrhea, a feeling of being too hot, or irregular menstrual periods.

PSA (men>50years old): Prostate specific antigen is a protein produced by the cells of the prostate gland. It may be found in an increased amount in the blood of men who have prostate cancer, benign prostatic hyperplasia, or infection or inflammation of the prostate. The higher a man's PSA level, the more likely it is that cancer is present.

Non-prescription drugs (aspirin, cold medication, vitamins, etc.), prescription drugs and alcohol intake often affect blood test results. Your health care provider must have a complete and honest picture of your use of medication in order to effectively find out what's wrong, if anything. If your doctor has this information from the beginning, time and money will be saved.

Donold Duck

1962-06-03 DOB	38 Age	3 Visit	2007-09-09 Visit date	EXE Department	Division	Station	MEDFIT Procedure

138	100	19	105
4.5	24	1	

Summary of Lab Results: Blood/UA /Micro/GUIAC

SPECIMEN # 0			Collected	
REQUISITION 0			Reported	
	Out of Range	Test Result	Units	Reference Range
LIPID PANEL				
CHOLESTEROL, TOTAL		253	mg/dL	< 200
HDL CHOLESTEROL		77	mg/dL	=> 40
TRIGLYCERIDES		72	mg/dL	< 150
LDL CHOLESTEROL		162	mg/dL (calc)	< 130
CHOL/HDLC RATIO		3.3	(calc)	< 5.0
COMPREHENSIVE METABOLIC PANEL				
GLUCOSE		105	mg/dL	65-99
UREA NITROGEN (BUN)		19	mg/dL	7-25
CREATININE		1	mg/dL	[illegible]
eGFR			mL/min/m2	=> 60
BUN/CREATININE RATIO		19	(calc)	6-25
SODIUM		138	mmol/L	135-146
POTASSIUM		4.5	mmol/L	3.5-5.3
CHLORIDE		100	mmol/L	98-110
CARBON DIOXIDE		24	mmol/L	21-33
CALCIUM		10.2	mmol/L	8.5-10.4
PROTEINS/ENZYMES				
PROTEIN, TOTAL		7.9	g/dL	6.0-8.3
ALBUMIN		5	g/dL	[illegible]
GLOBULIN		2.9	g/dL (calc)	2.2-4.2
BUMIN/GLOBULIN RATIO		1.7	(calc	0.8-2.0
LIRUBIN, TOTAL		0.6	mg/dL	0.2-1.5
ALKALINE PHOSPHATASE		52	U/L	40-115
AST		17	U/L	3-50
ALT		25	U/L	3-60
TSH			mIU/L	0.4 - 4.5
PSA			ng/mL	< 4
CBC (INCLUDES DIFF/PLT)				
WHITE BLOOD CELL COUNT		7.4	THOUS/uL	3.8-10.8
RED BLOOD CELL COUNT		5.11	THOUS/uL	4.20-5.80
HEMOGLOBIN		16.5	g/dL	13.2-17.1
HEMATOCRIT		48.6	%	38.5-50.0
MCV		95.1	fL	80.0-100.0
MCH		32.3	pg	27.0-33.0
MCHC		34	g/dL	32.0-36.0
RDW		13.2	%	11.0-15.0
PLATELET COUNT		258	THOUS/uL	140-400
ABSOLUTE NEUTROPHILS			CELLS/uL	1500-7800
ABSOLUTE LYMPHOCYTES			CELLS/uL	850-3900
ABSOLUTE MONOCYTES			CELLS/uL	200-950
ABSOLUTE EOSINOPHILS			CELLS/uL	15-500
ABSOLUTE BASOPHILS			CELLS/uL	0-200
NEUTROPHILS			%	
LYMPHOCYTES			%	
MONOCYTES			%	
EOSINOPHILS			%	
BASOPHILS			%	
URINALYSIS				
LEUKOCYTE			[illegible]	
NITRITE			[illegible]	
UROBILINOGEN			U/dL	0.2-1.0
PROTEIN			(- TR + ++ +++ ++++)	
pH				5-7
BLOOD			(TR Mod HTR + ++ +++)	
			[illegible]	

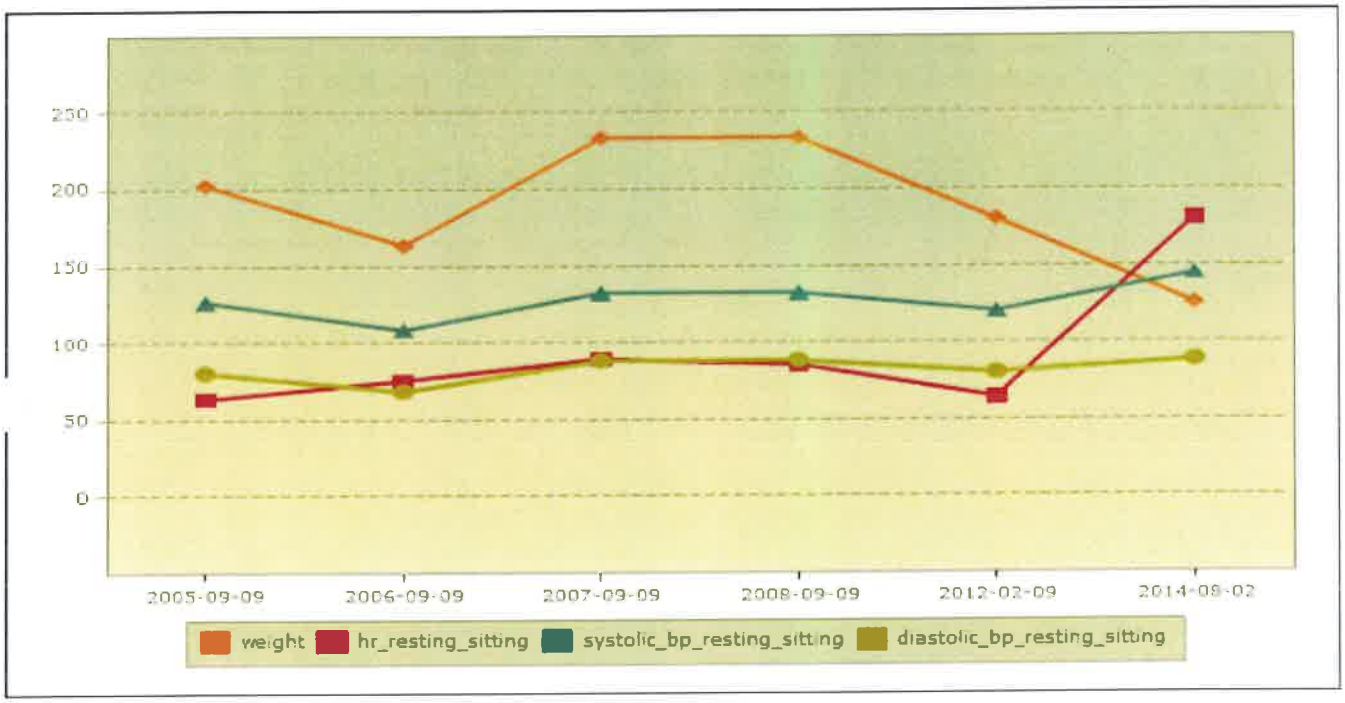
AMENDMENT OVERRIDE HAS BEEN ENABLED ON THIS PAGE. 2015-03-19 16:31:42

Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure	

Medical Data

Date	Weight	HR	BP	FVC	FVC (pred)	FEV1	FEV1 (pred)	FEV1 FVC	FEV1 FVC (pred)
2014-08-02	125	180	144 | 88	3.73	3.34	3.36	2.9	0.9	0.88
2012-02-09	180	64	120 | 80	5.41	5.6	4.37	5.1	0.9	0.85
2008-09-09	233	85	132 | 88	5.15	5.98	4.19	5.16	0.83	0.85
2007-09-09	233	89	132 | 88	5.91	5.83	4.83	4.73	0.82	0.82
2006-09-09	163	75	108 | 68	5.45	5.76	4.58	4.63	0.84	0.81
2005-09-09	202.5	63	126 | 80	5.62	6.1	4.16	5.01	0.74	1



Vision HX

Date	Left Eye	Right Eye	Bilateral Vision	Vision correction
2014-08-02	20|13	20|13	20|10	Uncorrected
2012-02-09	20|25	20|30	20|25	Uncorrected
2008-09-09	20|20	20|20	20|20	Uncorrected
2007-09-09	20|20	20|30	20|20	Uncorrected
2006-09-09	20|25	20|20	20|15	Uncorrected
2005-09-09	20|20	20|20	20|20	Uncorrected

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant

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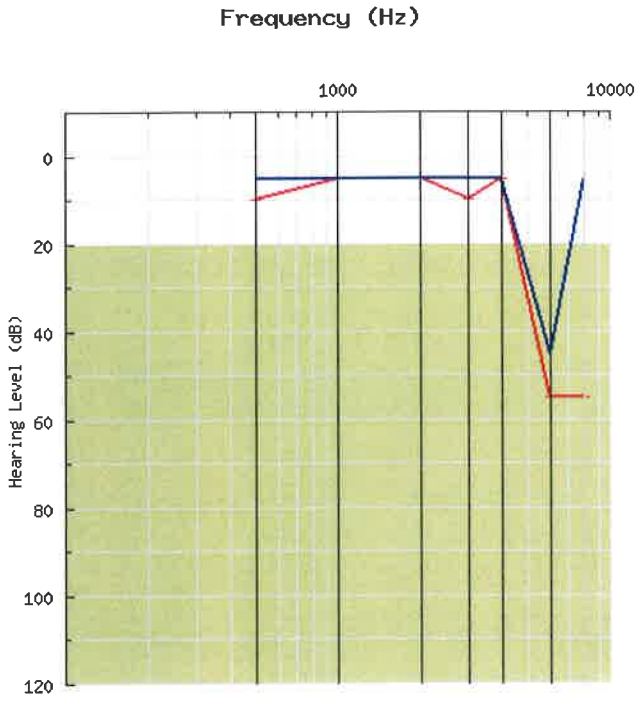
Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure

Medical / Audiometry

Hearing	LEFT	RIGHT
500 Hz	10	5
1000 Hz	5	5
2000 Hz	5	5
3000 Hz	10	5
4000Hz	5	5
6000 Hz	55	45
8000 Hz	55	5
Evaluation	Moderate hearing loss	
Freq range		

Last updated 2014-08-19 12:09
Becki McClintock (Exercise Physiologist)



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Donold Duck

DOB	Age	Visit	Visit date	Department	Division	Station	Procedure
1962-06-03	53	6	2014-08-02				MEDFIT

URINALYSIS TEST RESULTS

9548		Reference Range
LEUKOCYTE	Pos ++	0
NITRITE	Neg -	0
UROBILINOGEN	0.2	0.2-1.0 U/DL
PROTEIN	TR	0
pH	6.0	5-7
BLOOD	HTr	0
SPECIFIC GRAVITY	1.025	1.002-1.03
KETONE	Neg -	0
BILIRUBIN	Neg -	0
GLUCOSE	Neg	0

Cancel

Last updated 2014-08-02 10:00
Steve Birch, Ph D (Uber Gruber)

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AMENDMENT OVERRIDE HAS BEEN ENABLED ON THIS PAGE. 2015-03-19 16:32:58

Donold Duck

1962-06-03	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure

Medical: PULMONARY FUNCTION

9548	Baseline best	Predicted
FVC (L)	3.73	3.34
FEV1 (L)	3.36	2.9
FEV1/FVC	0.9	0.88
PEF (L/min)	443	378
FEF25 75(L/s)	2.1	3.5
FET (s)	3.48	
Baseline	FEV1 Var =	FVC Var =
Baseline	0.06	0.00
Interpretation NLHEP	Reduced FEF 25-75 (L/s)	

Medical letter Notes

- 60% of predicted value

Submit

% PREDICTED

ENC Id	9548
FVC	112
FEV1	116
FEV1/FVC	102
PEF	117
FEF25-75	60

Last updated 2014-08-19 12:06
Becki McClintock (Exercise Physiologist)

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant

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10001287 - 9548

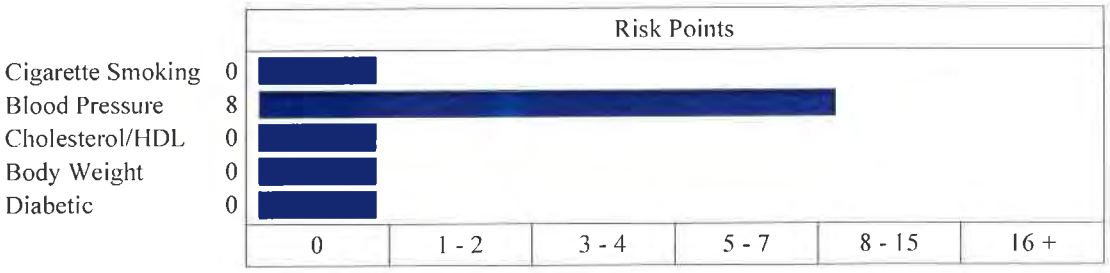
HEART DISEASE

Coronary heart disease is the most common form of heart disease and the leading cause of death in the United States. In this country, it is estimated that 550,000 people die each year from coronary heart disease, and that one American in four currently suffers from some type of heart or blood vessel disease. Many of these deaths could be avoided by simply understanding the risk factors associated with coronary heart disease and what steps you can take to reduce your risk.

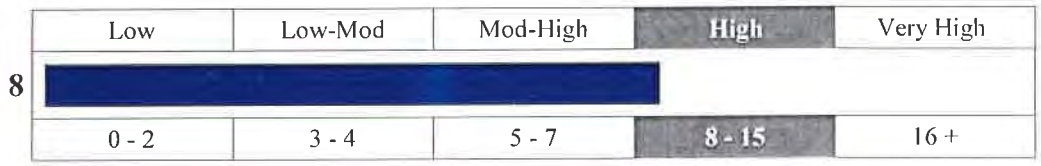
Primary Risk Factors: Cigarette smoking, high blood cholesterol, hypertension (high blood pressure) and physical inactivity.

Secondary Risk Factors: Age (risk increases with age), excess body fat, male sex and family history of heart disease.

YOUR RISK FACTORS



YOUR RISK FOR HEART DISEASE



Donold, from the graph you can see that you have a High risk of developing heart disease for a 52 year old male, follow the recommendations below to reduce your risk.

RECOMMENDATIONS

- Continue to avoid smoking. Smoking would add up to 9 risk points to your score.
- Have your blood pressure checked regularly. If your systolic blood pressure is above 155 for men and 161 for women, you have high blood pressure and should follow your doctor's advice.
- To keep your cholesterol from becoming elevated, avoid foods high in saturated fats and cholesterol (whole milk, cheese, eggs, butter, fatty foods and fried foods).
- Continue to maintain a healthy weight.
- Stay physically active. Physical inactivity, besides being a risk factor for heart disease, contributes to other risk factors including obesity, high blood pressure and a low level of HDL cholesterol.
- Remember to take your blood pressure medication.

CARDIOVASCULAR

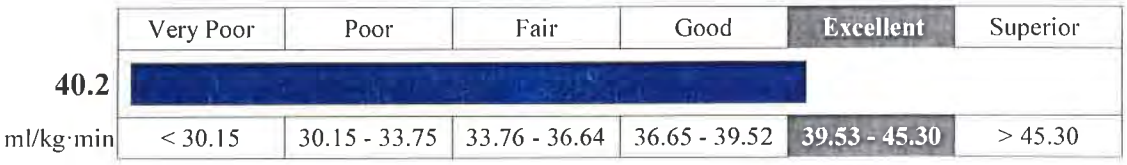
Cardiovascular fitness is the ability of the heart, lungs and circulatory system to supply oxygen and nutrients to working muscles efficiently, and allows activities that involve large muscle groups (walking, running, swimming, biking, etc.) to be performed over long periods of time. From a health standpoint, cardiovascular or aerobic fitness is generally considered to be the most important of the fitness components.

Cardiovascular Assessment

Protocol: Direct Value Max VO2: 40.2

Donold, from the results of the Direct Value assessment, your maximum oxygen consumption is calculated to be 40.2 ml/kg·min. Maximum oxygen consumption (abbreviated Max VO2) is a measurement of the maximum rate your body can consume and process oxygen during exercise. The higher your Max VO2, the better your cardiovascular fitness.

YOUR RANKING



Comparing your results with other males between the ages 50 - 59, places you in the 75th percentile and the Excellent cardiovascular fitness classification.

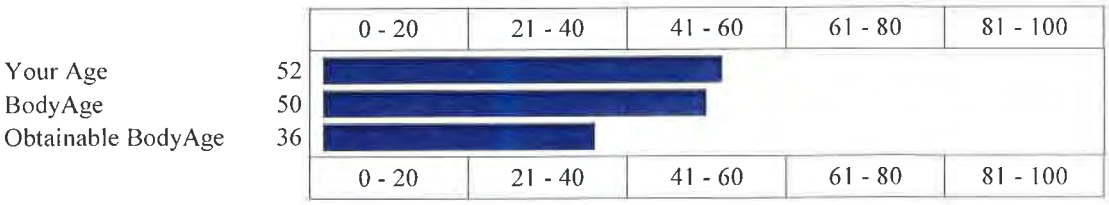
Donold, in order to reach the Superior classification, you would need to increase your max VO2 to 45.31 ml/kg·min or a 12.7% improvement.

REGULAR CARDIOVASCULAR EXERCISE CAN

- Reduce your risk of heart disease
- Lower elevated blood pressure
- Reduce blood cholesterol
- Increase circulation and improve performance of your heart and lungs
- Help you look and feel better

BodyAge

Donold, your BodyAge is 50 compared to your chronological age of 52. BodyAge is calculated from the results of your assessments and how you compare with others of your same age and sex. Ideally, your BodyAge should be at least the same as your Chronological Age. Your obtainable BodyAge is what you can realistically reach with a well-rounded wellness program. Consult with your fitness trainer to set realisticgoals in fitness and lifestyle changes to reach your obtainable BodyAge.



RECOMMENDATIONS

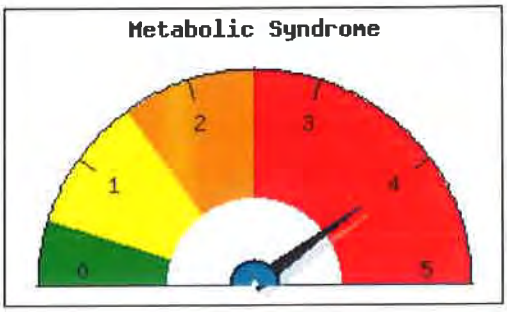
Donold, the following are factors that will improve your BodyAge. By improving these factors and following a well-rounded wellness program, it is possible for you to reach a BodyAge of 36

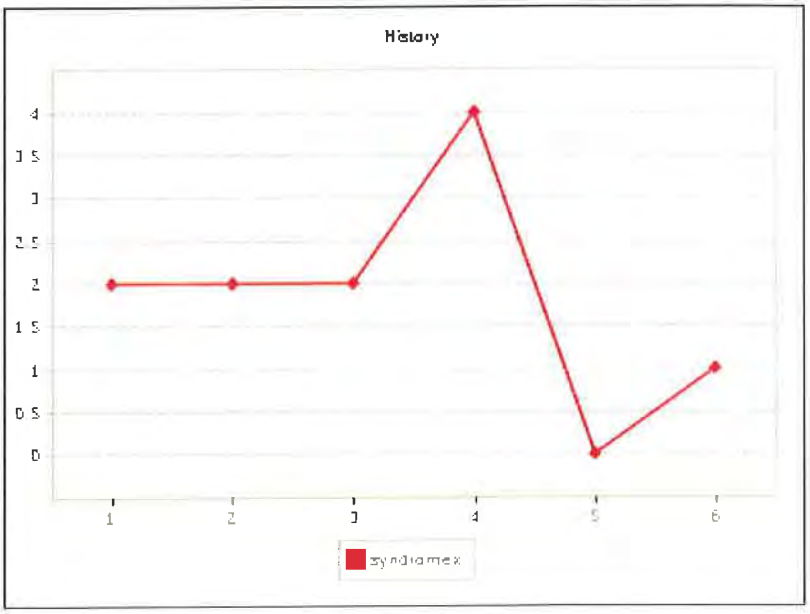
- Improving your Heart Disease Health Risk Appraisal score from High to Low-Mod will improve your BodyAge by 3 years.
- Lowering your Systolic Blood Pressure from 144 to below 130 will improve your BodyAge by 2 years.
- Improving your Strength ranking from Fair to Good will improve your BodyAge by 2 years.
- Lowering your Diastolic Blood Pressure from 88 to below 85 will improve your BodyAge by 1 year.
- Improving your Body Composition from 25% to 16.09% will improve your BodyAge by 5 years.
- Improving your Cardiovascular VO2 score from 40.2 to 45.31 will improve your BodyAge by 1 year.

Donold Duck

1962-06-03 DOB	39 Age	4 Visit	2008-09-09 Visit date	Department	Division	Station	MEDFIT Procedure	

Metabolic Syndrome	
ENC Id	3989
Elevated waist circumference	1
Elevated triglycerides	1
Reduced HDL-C	0
Elevated BP	1
Elevated Glucose	1
SYDROME X RISK FACTORS	4 / 5





Dysmetabolic Syndrome X / ICD(9) 277.7
American Heart Association / Updated NCEP

Requires at least three of the following :

- **Elevated waist circumference**
  (men >= 40, women >=35 inches)
- **Elevated triglycerides** (>= 150 mg/dl)
- **Reduced HDL** (men <40, women <50 mg/dl)
- **Elevated BP** (>= 130 | >= 85)
- **Elevated fasting glucose** (>= 100 mg/dl)
  Use of hypertension medication
  Use of hyperglycemia medication

This page is part of a multi page document

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Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure

Framingham Risk Assessment : male

Age	Tot Chol	Hdl Chol	Sys BP	HTN	Cig	DM	RF	Risk %
53	195	83	144	Y 1.99881	N 0	N 0	**-0.09**	**10.18**

MALES

Risk= 100 * (1 - 0.88936^e^(RiskFactors))

RiskFactors= (ln(Age) * 3.06117) + (ln(TotalChol) * 1.12370) - (ln(HDLChol) * 0.93263) + (ln(SysBP) * HTN) + Cig + DM - 23.9802

where HTN (on hypertension medication) (current complaint with treatment) YES = 1 99881 NO = 1 93303
where Cigarette smoker = cigarette smoker or cigar/pipe smoker YES = 0 65451 NO = 0
where Diabetes present (current complaint, with or without treatment) YES = 0 57367 NO = 0

Notes
This risk assessment tool is based on the Cox regression model of proportional hazards.
Cardiovascular disease includes coronary disease, cerebrovascular disease, peripheral vascular arterial disease and heart failure.
It may be applied to men who have had no prior history of cardiovascular disease.
References
D'Agostino RB Sr, Vasan RS, Pencina MJ, et al. General Cardiovascular Risk Profile for Use in Primary Care. The Framingham Heart Study. Circulation. 2008 Jan 22.

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BODY COMPOSITION

Body Composition refers to the relative proportions of body weight in terms of lean body mass and body fat. Lean body mass represents the weight of muscle, bone, internal organs and connective tissue. Body fat represents the remaining fat tissue. Body fat serves three important functions:

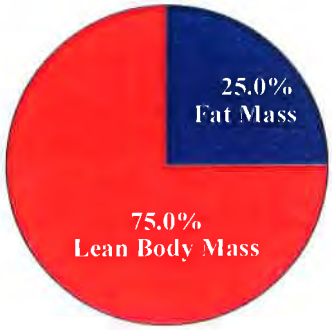
1) insulator to conserve heat
2) metabolic fuel for the production of energy
3) body fat serves as padding to cushion your internal organs

It's essential to maintain some body fat, but an excess level poses a serious health risk. High levels of body fat are associated with high blood pressure, increased levels of blood fats and cholesterol, heart disease, stroke, diabetes and certain cancers. In contrast, very low body fat can cause the development of such medical conditions as heart damage, gastrointestinal problems, shrinkage of internal organs, immune system abnormalities, disorders of the reproductive system, loss of muscle tissue, damage to the nervous system, abnormal growth and even death. Body fat is expressed as a percentage of total body weight.

Protocol: 7 Site Skinfold

Chest: 16 mm	Midaxillary: 25 mm	Tricep: 13 mm
Subscapular: 32.5 mm	Abdomen: 35 mm	Suprailiac: 16.5 mm
Thigh: 20 mm		

YOUR BODY COMPOSITION



Body Weight: 125 lbs.

Lean Body Mass: 93.8 lbs.

Fat Mass: 31.2 lbs.

Basal Metabolic Rate: 1333

Donold, your body weight of 125 lbs. is made up of 93.8 lbs. of lean mass (bone, muscle and connective tissue), and 31.2 lbs. of fat mass. BMR is the number of calories your lean tissue uses each day.

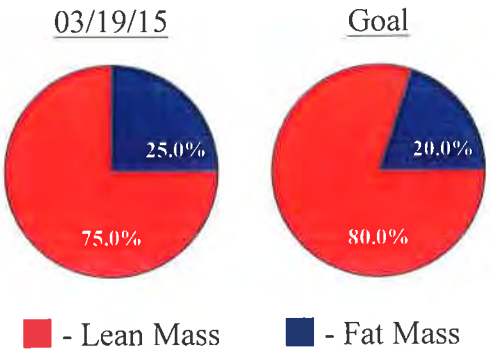


Donold , you are in the Moderate percent body fat range. This is slightly over your ideal body fat which gives you a slightly higher risk for developing many serious health problems listed above. Use exercise and good nutrition to effectively and safely reduce your body fat. Reducing your body fat to the good range of 16.1 - 21.5 percent will reduce your weight to 111.8 - 119.6 pounds.

YOUR PERSONAL PROGRAM

Donold, your Personal Program is based on your results from the fitness evaluation. The focus of the program is to reduce your body fat through sound nutrition, strength and cardiovascular programs.

BODY COMPOSITION GOALS



	03/19/15	Goal	Change
Body Fat (%):	25.0	20.0	-5.0
Lean Mass (lbs):	94	94	0
Fat Mass (lbs):	31	24	-7
Body Weight (lbs):	125	118	-7

Donold, by following the nutrition and exercise plan, you will reach your goal body fat of 20% and goal body weight of 118 lbs in 9 weeks.

NUTRITION GOALS

Donold, at complete rest your lean body mass will burn 1333 calories each day. This is known as your basal metabolic rate (BMR). In addition to your BMR, you will burn approximately 400 calories by processing food and through normal daily activities. Using this information and your personal goals, the following is recommended:

Daily Caloric Intake : 1333 Calories
Number of Daily Meals : 3
Number of Daily Snacks: 2

EXERCISE CALENDAR

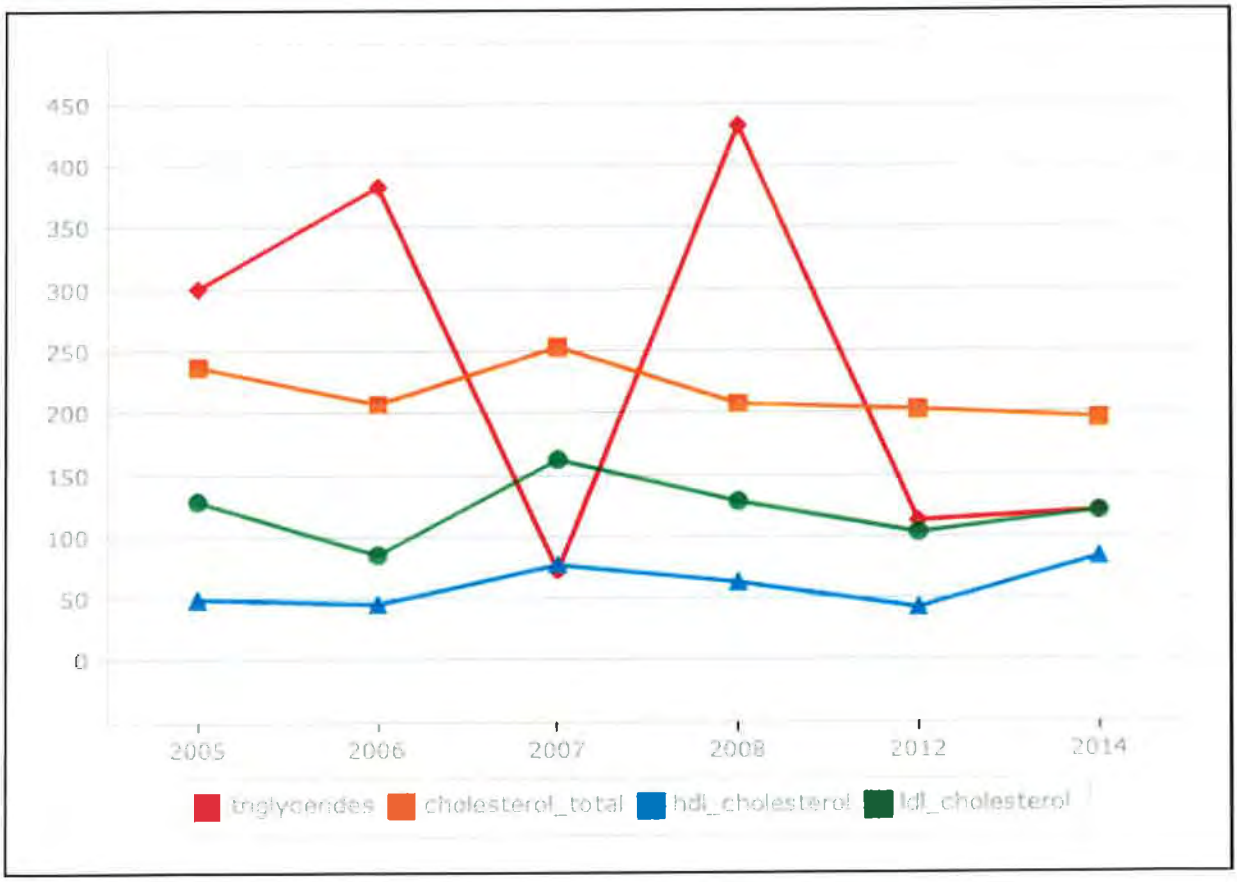
	MON	TUE	WED	THR	FRI	SAT	SUN	TOTAL FOR WEEK
Cardiovascular:		20 min			20 min		20 min	60 min

Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure	

LIPID PANEL

Date	Triglycerides	Cholesterol Total	HDL Chol	LDL Chol	Chol:HDL Ratio	Body fat	Weight
	mg/dl	mg/dl	mg/dl	mg/dl		%	lbs
2014-08-02	120	195	83	120	2.7	24	125
2012-02-09	112	202	42	103	3.5	23	180
2008-09-09	432	207	63	128	3.3	24	233
2007-09-09	72	253	77	162	3.3	27	233
2006-09-09	383	207	45	85	4.6	20	163
2005-09-09	300	237	49	128	4.8	21	203



Chem-7

Date	Glucose	BUN	Creatinine	BUN/CR ratio	Sodium	Chloride	Potassium	Calcium	Carbon Dioxide
	mg/dL	mg/dL	mg/dL		mmol/L	mmol/L	mmol/L	mmol/L	mmol/L
2014-08-02	87	15	1.06	14	143	108	4.5	9	22
2012-02-09	96	21	1.2	17	136	102	4.6	9.2	28
2008-09-09	115	13	0.95	14	140	102	4.5	9.8	25
2007-09-09	105	19	1	19	138	100	4.5	10.2	24
2006-09-09	106	15	1	15	142	105	4.3	9.2	26
2005-09-09	118	16	1.1	15	138	102	4.2	9.1	25

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Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure

Overall Risk: Low point(s)



Diet Risk: Low 1 risk point(s)



Diet Risk Level	# Diet Risk Factors	RISK POINTS
High	≥ 10	4
Moderate	6 - 9	2
Low	4 - 5	1
None	≤ 3	0

th Risk: Moderate .sk point(s)



Health Risk Level	# Health Risk Factors	RISK POINTS
High	≥ 4	4
Moderate	2 - 3	2
Low	1	1
None	0	0

Overall Nutrition Risk

Your overall nutrition risk is determned by adding your diet risk points and health risk points as determined below

OVERALL RISK LEVEL	Diet + Health RISK POINTS
High	≥ 6
Moderate	4 - 5
Low	2 - 3
None	0 - 1

Diet Risk Factors

9548 In an average week, do you consume ...	YES	
less than 1 cup per day of fruit ?	☐	**Fruit**
less than 1.5 cups per day of vegetables ?	☐	**Vegetables**
less than 3 servings per day of whole grains ?	☐	**Whole Grains**
less than 2 cups per day dairy products ?	☐	**Low Fat Dairy**
whole milk, cream, regular cheese, etc ?	☑	**High Fat Dairy**
beef/bacon/sausage/etc more than 5 times per week ?	☑	**High Fat Meat**
more than 1 serving of desserts/sweets per day ?	☑	**Desserts**
more than 2 alcohol beverages per day ?	☐	**Alcohol**
more than 2 caffeine beverages per day ?	☑	**Caffeine**
more than 1 serving of snack foods per day	☑	**Snack Foods**
high salt foods more than once per day ?	☐	**High Salt Diet**
more than 10 grams of hydrogenated fats per day ?	☐	**Trans Fats**
more than 12 ounces per day of sugar beverages ?	☐	**Sugar Drinks**
less than 2 servings per week of fish ?	☐	**Fish**
less than 1 cup per week of legumes (beans) ?	☐	**Legumes**

Last updated 2014-08-02 10:17
Steve Birch, Ph D (Uber Gruber)

Health Risk Factors

	Male	Fem	Risk
Heart Disease	Family HX		●
Blood Pressure (mmHg)	> 130|85		●
Waist Circumference (in)	>40	>35	
Body Composition (%)	>20	>25	●
Triglycerides (mg/dl)	>150		
HDL Cholesterol (mg/dl)	<40	<50	
LDL Cholesterol (mg/dl)	>130		
Chol/HDL Ratio	>3.2		
Blood Glucose (mg/dl)	>100		

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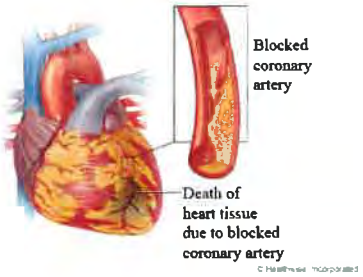
Nutrition Fact Sheet

Triglycerides

- Elevated triglycerides may contribute to the hardening of the arteries or thickening of the artery walls (atherosclerosis) — which increases the risk of **stroke, heart disease, and heart attack.**



- Elevated triglycerides is associated with increased risk of developing **diabetes mellitus**.

What are Triglycerides?

Triglycerides are the storage form of fat that circulate in the blood and make up adipose tissue (fat tissue).





After you eat your body converts any calories into triglycerides that you don't need to use immediately for energy.

Triglycerides are mainly used for energy, unlike cholesterol, whose main purpose is to protect the integrity of cell membranes. Hormones are released to break down triglycerides when the body needs energy.

However, like cholesterol, when triglycerides circulate the blood in excess, cardiovascular health becomes compromised.

What triglyceride level* is considered too high?

Normal	Below 150 mg/dL
High	150-499 mg/dL
Very High	Above 500 mg/dL

* These are fasting levels adapted from the Mayo Clinic

What causes triglycerides to become elevated?

- Being overweight
- Physical inactivity
- Poor diet that includes:
  - Excess alcohol**
  - Refined carbohydrates (sweets, flour tortillas, white rice, sweetened beverages)
- Uncontrolled diabetes mellitus
- Uncontrolled hypothyroidism
- Liver or kidney disease
- Certain medications (beta-blockers, diuretics, birth control pills)

**Binge drinking (of alcohol) can cause dangerous spikes in triglyceride levels that can trigger inflammation of the pancreas (pancreatitis)

How to Lower Triglycerides

Lifestyle Changes: Recommended by doctors as the most effective way to reduce triglycerides

Lose excess pounds

Cut back on calories



Limit saturated fat (less than 15g/day based on a 2,000 calorie diet) Meats, eggs, whole milk, butter, cream

Avoid refined carbohydrates

Sugar and foods made with white flour, can cause a sudden increase in insulin production, causing an in-

Choose healthy fats

Nuts, avocados, fish, beans, olive oil, peanut oil





Exercise regularly

Try to accumulate 30 minutes of moderate physical activity a minimum of 5 days per week to help lower your triglycerides.



Avoid alcoholic beverages

Alcohol is high in calories and sugar and has a particularly potent effect on triglycerides. Even small amounts of alcohol can raise triglyceride levels.



Supplements: Supplementing may help reduce triglycerides in addition to dietary changes

Omega-3 fatty acids*



Suggested Dose: 2 to 4 grams of EPA+DHA per day provided as capsules under a physician's care.

*see Omega-3 fatty acids handout for more detailed information on usage and dosing.

Medication: If healthy lifestyle changes aren't enough to control high triglycerides, your doctor may recommend medication.

Cholesterol medications such as niacin or fibrates (gemfibrozil or fenofibrate) are often effective for lowering triglycerides. If you also have low high-density lipoprotein (HDL), or "good" cholesterol, or high low-density lipoprotein (LDL), or "bad" cholesterol, your doctor may prescribe cholesterol-lowering statins or a combination of a statin and nicotinic acid or fibrates.

If your doctor prescribes medication to lower your triglycerides, don't forget the healthy lifestyle changes you've made. Drug therapy can help, but lifestyle matters, too!

Additional Information on Triglyceride-Lowering Medication

Drug & Dose	Omega-3 (4 g/d)	Niacin (1-2 g/d)	Gemfibrozil	Fenofibrate
Price (30 d)	$ 154	$121-241	$16	$118
Effect on Triglycerides	45% decrease	20-50% decrease	20-50% decrease	20-50% decrease

Nutrition Fact Sheet

LDL *"The Bad Cholesterol"*

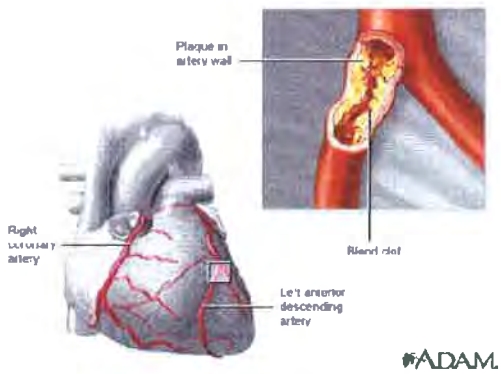
- LDL is a type of cholesterol transporter that moves cholesterol away from the liver and out to peripheral tissues. Dietary intake of saturated and trans fats, as well as cholesterol can increase LDL.
- When too much LDL cholesterol circulates in the blood, it can slowly build up in the inner walls of the arteries that feed the heart and brain, making them narrow. If a clot forms and blocks a narrowed artery, a **heart attack** or **stroke** can result.



How can LDL cause disease?

Blood vessels in the body are constantly exposed to sheer stress caused by blood flow, which can lead to inflammation. The body's immune response to inflammation attracts LDL to the injury site, which can lead to plaque formation or atherogenesis.

Because inflammation is common, persons with elevated levels of LDL are at increased risk for narrowing arteries in the heart (**coronary artery disease**), brain (leading to **stroke**), or even in the extremities (**peripheral arterial disease**). Unfortunately, once plaque formation has begun, the immune response continues to attract LDL to the injury site, unless cardiovascular risks factors are aggressively reduced, or surgical intervention is employed.



Recommend Range for LDL*

Less than 70 mg/dL	Optimal**
Less than 100 mg/dL	Ideal
100 to 129 mg/dL	Slightly Elevated
130 to 159 mg/dL	Moderately Elevated
160 to 189 mg/dL	Severely Elevated
190 mg/dL and above	Yikes!!!

*Data from the American Heart Association
**Recommended range for persons with more than 2 risk factors for heart disease, known cardiovascular disease, and/or diabetes mellitus

What causes LDL to elevate?

1. **Foods you eat**: saturated fats, trans fats, and cholesterol - examples include egg yolks, meat, cheese, cream, fried foods
2. **Being overweight**: body fat is highly correlated with elevated LDL
3. **Lack of physical activity**: sedentary lifestyle can lead to weight gain, which can elevate your LDL
4. **Genetics**: Genetic predisposition (family history) can cause elevated LDL
5. **Age**: LDL levels elevate in both men and women as they age.

Treating LDL

Lifestyle!
Doctors recommend diet and exercise for patients with elevated LDL. Adopting a healthier lifestyle can help lower LDL, and bring most people into the ideal range (less than 100 mg/dL).

Nutrition Recommendations

Eat More Fiber (25-30g/day)

Vegetables
Carrots
Corn
Broccoli
Green Beans
Green peas
Lettuce
Mushrooms
Raw Spinach
Potatoes

Beans
Kidney
Pinto
Garbanzo



Fruits
Apple
Avocado
Banana
Blackberries



Blueberries
Orange
Peach
Strawberries



Nuts
Almonds
Peanuts
Walnuts

Eat More Good Fats (30g/day)

Monounsaturated Fats
Avocados
Peanuts
Almonds
Canola Oil
Olive Oil
Peanut Oil



Polyunsaturated Fats
Safflower Oil
Corn Oil
Flaxseed Oil
Fatty Fish
Seeds
Nuts



Exercise Recommendations

Type: Aerobic Exercise

Frequency: At least 5 days/week

Intensity: Moderate
(40-70% Heart Rate Reserve Maximum*)
Note: Refer to packet for personal HR range

*To get Heart Rate Reserve Max:
1. Max HR - Resting HR (estimate max HR if unknown: 220 - age)
2. Multiply by Desired Percentage (40-70%)
3. Add to Resting Heart Rate

Time: 40-60 min, 200-300 min/week

Calories to Burn: More than 2,000/week



Know Your Limits! (based on a 2,000 cal diet)

- **Less than 15g saturated fat/day** - whole milk, cream, ice cream, cheeses, butter, meats **(2 pieces of bacon = 17g!)**
- **Less than 200mg cholesterol/day** - meats, egg, yolks, dairy **(1 egg yolk = 215mg!)**
- **Eliminate trans fats!** - cookies, crackers, cakes, french fries, donuts, fried foods

Dietary Supplements

Herbal supplements are another option to help reduce LDL if your risk for heart disease is low.

Red Yeast Rice - (effective dose = 1,200mg/day) contains small amounts of a statin. Red Yeast Rice is not a proven method; refer to handout on Red Yeast Rice for more detailed information.

Plant Sterols - (effective dose = 2g/day) help reduce absorption of cholesterol. Sources include avocados & sunflower seeds. Plant sterols are added to some orange juice, smoothie, & margarine brands.

Medication

Doctors use this route when lifestyle changes are not enough to lower LDL. Below are the types of medications your doctor might prescribe.

Medication Class	Brand Name	Effect on LDL
Statins	Pravachol, Mevacor, Lipitor, Lescol, Crestor, Zocor	Most effective in lowering LDL
Bile Acid Sequestrants	Questran, Welchol, Colestid	Mild to modest effect in lowering LDL
Cholesterol Absorption Inhibitors	Zetia	
Statin + Absorption Inhibitor Complex	Vytorin (Zocor + Zetia)	Most effective, with low dose of each ingredient

Flexibility Screen

Reveals the limitations or asymmetries in individuals that can cause potential injuries

The Flexibility Screen is designed to look at each area of the body and assess its flexibility relative to the normal range of motion. Range of motion can be limited due to many factors and its important to realize a well rounded approach, to muscle flexibility, joint mobility and tissue health will create the best possible improvements.

These limitations can rob the body of ***efficiency,*** and are very often hidden by individuals who learn to ***compensate*** and ***substitute with other movement patterns***. If these compensations continue, then poor movement patterns will be reinforced leading to poor biomechanics.

A poor score on this screen will significantly increase the risk of chronic injuries. Removing any weaknesses, imbalances, and inflexibilities reduces your injury risks and helps improve overall health, and **most importantly body function on the job.**

Your Score:

90

out of 120*

Score	Injury Risk
Score of 120- 100	Low Risk
Score of 95 - 75	Mild Risk
Score of 70 - 50	Moderate Risk
Score below 45	High Risk

*It is important to remember that every score is different. The reasoning why one firefighter received a score of 90 might be completely different from why another firefighter received a score of 90. For example, you may have received a 90 due to poor rotational stability while someone else received a 90 due to poor shoulder mobility.

Areas to work on

☑	Shoulder Mobility	Distance R 12 L 13 Asymmetry NO
☐	Balance	Asymmetry NO
☐	Trunk Mobility	Distance R ✓ L ✓ Asymmetry NO
☐	Rotational Stability	Asymmetry NO
☑	Hamstring Flexibility	Location 75° Asymmetry NO
☑	Quad Flexibility	Distance R 5 L 6 Asymmetry NO
☐	Lat Flexibility	Distance R ✓ L ✓ Asymmetry NO
☐	Ankle Mobility	Distance R 6 L 6 Asymmetry NO

Kayli Gibbs x 172 | Becki McClintock x 173 | Mia Green x 145

Matt Downs x 173 | Ivan Esparza x 146

DONOLD DUCK

FLEXIBILITY IN ACTION



TEST 1: SHOULDER MOBILITY

The shoulder mobility screen assesses bilateral shoulder range of motion.

Work example:
Shoulder mobility allows one to lift and place a BA on his/her back quickly and safely.

TEST 2: BALANCE

This test assesses balance of mobility and stability within the body.

Work example:
The need of balance of is important for instances when you are in awkward positions and require proper musculoskeletal control.



TEST 3: TRUNK MOBILITY

This test assesses one's ability to rotate the thoracic spine through a normal range of motion without compensation.

Work example:
Rotation is important when one is attempting to reach behind them to grab something or to be able to rotate while carrying a gurney or other heavy object.

TEST 4: ROTARY STABILITY

This test is a complex movement requiring proper neuromuscular coordination and energy transfer from one segment of the body to another through the torso.



Work example:
Proper energy transfer through the torso is vital while moving and carrying heavy equipment or objects.

TEST 5: ACTIVE STRAIGHT-LEG RAISE

Assesses hamstring and gastroc/soleus flexibility while maintaining a stable pelvis and extension of the opposite leg.



Work example:
Flexibility of the lumbar-pelvic complex and lower extremity muscles gives maintenance of torso and pelvic stability during awkward positions during a fire or rescue operation.

TEST 6: QUADRICEP/ HIP FLEXOR FLEXIBILITY

Assesses quadriceps and hip flexor flexibility in a passive state.

Work example:
Flexibility of the quadriceps and hip flexors are important in a proper squat and to also allow correct pelvic alignment went lunging or lifting from the hips.

TEST 7: LAT FLEXIBILITY

This test evaluates lat flexibility as well as scapular mobility in the upper back.



Work example: Lifting a ladder overhead or climbing requires enough lat flexibility to be able to get in a proper anatomical position.

TEST 8: ANKLE MOBILITY

This test evaluates flexion of the ankle which requires mobility of the calf, Achilles and also the bottom of the feet.



Work example: Any squatting motion requires proper ankle mobility in order to fully use your legs.

Vertical Jump Test

A vertical jump test may be offered as an optional alternative to the static leg strength assessment. It should be noted that the results of the vertical jump are not directly comparable to the results of the static leg strength assessment. The static assessment evaluates muscular *strength*. The vertical jump evaluates leg *power* by estimating the rate of force produced by the legs and hips in propelling the body vertically. For safety and data collection purposes, strength measurements will be conducted using static handgrip, leg, and arm dynamometer measures, or the optional vertical jump assessment. These tests have been determined to be safe, valid, and reliable methods for evaluating muscular strength and/or power. In order to measure maximal strength or power the individual must execute a maximal muscular contraction.



Leg power is required for many essential emergency service tasks including:

- Lifting and carrying equipment
- Forcing entry
- Climbing and negotiating ladders and stairs
- Pulling and operating hose lines
- Lifting patients

Any deviations from the above techniques cannot be counted, and the individual must repeat the trial.

The following are examples of situations that require a re-evaluation:

1. The individual fails to land with both feet on the mat.
2. The individual tucks the legs instead of extending them while jumping. A tip to help maintain extension of the legs is to suspend a target object above the mat for the individual to reach for as they jump.

Results

Vertical Jump 41 In. Category Superior %Rank 90th

Power formula:

6840 (watts) = [(60.7×jump height (cm)) + (45.3×body weight (kg))] – 2055

Vertical Jump Scores	
Sport / Position	**In.**
NCAA Div I College Football	
Split ends, strong safetys, offensive and defensive backs	31.5
wide receivers, outside linebackers	31
linebackers, tight ends, safetys	29.5
Quaterbacks	28.5
Offensive guards	27
High School Football Players	
Backs, receivers	24
Linebackers, tight ends	22
Linemen	20
NCAA Div I College Basketball Players (men)	28
College basketball players (women)	21
College baseball players (men)	23
College tennis players (men)	23
College tennis players (women)	15
Recreational college athletes (men)	24
Recreational college athletes (women)	15
Sedentary college students (men)	16-20.5
Sedentary college students (women)	8-14

FITNESS DIALS

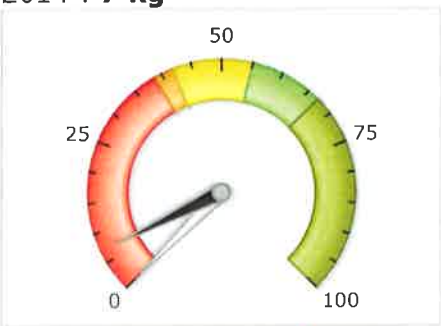
Name: Donold Duck

Test dates: **2014-08-02** 2012-02-09

' eft Grip Strength

.012 : 0

2014 : **7 kg**

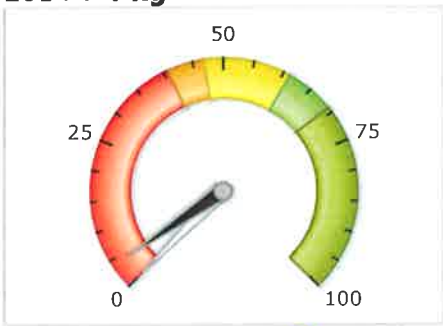


< 38.90	Poor	43.00 55.00	Average		
39.00-42.00	Fair	56.00 67.00	Good		
		> 67.10	Excellent		

Right Grip Strength

2012 : 0

2014 : **4 kg**



< 40.90	Poor	48.00 61.00	Average		
41.00-47.00	Fair	62.00 69.00	Good		
		> 69.10	Excellent		

Pushups

2012 : 36

2014 : **11 reps**

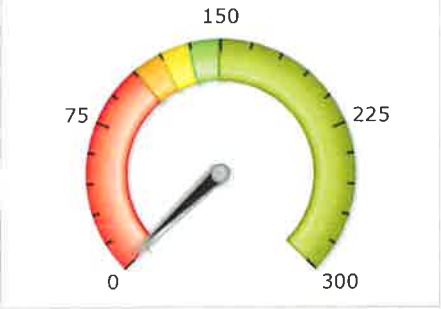


< 7.90	Poor	15.00 24.00	Average		
8.00-14.00	Fair	25.00 34.00	Good		
		> 34.10	Excellent		

Leg Strength

2012 : 0

2014 : **3 kg**

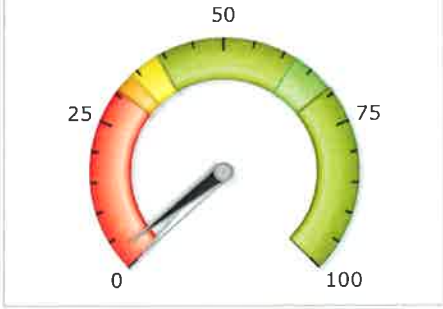


< 105.90	Poor	121.00 134.00	Average		
106.00-120.00	Fair	135.00 149.00	Good		
		> 149.10	Excellent		

Arm Strength

2012 : 0

2014 : **3 kg**



< 30.90	Poor	35.00 39.00	Average		
31.00-34.00	Fair	40.00 43.00	Good		
		> 43.10	Excellent		

Situps

2012 : 45

2014 : **12 reps**

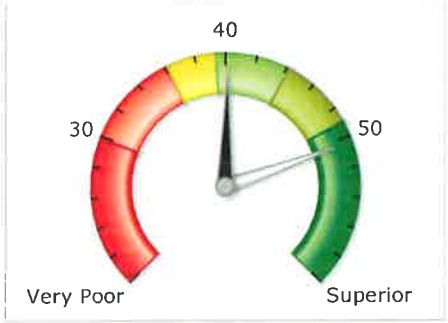


< 14.90	Poor	19.00 24.00	Average		
15.00-18.00	Fair	25.00 29.00	Good		
		> 29.10	Excellent		

AEROBIC CAPACITY MAX VO2

2012 : 50.4

2014 : 40.2 ml/kg min



< 29.89	Very_Poor	39.40 44.19	Good		
29.90-36.19	Poor	44.20 48.99	Excellent		
36.20-39.39	Fair	> 49.00	Superior		

FLEXIBILITY

2012 : 14.50

2014 : 14.00 in



< 8.80	Poor	9.70 11.50	Average		
8.90-9.70	Fair	11.60 13.30	Good		
		> 13.40	Excellent		

BACK ENDURANCE

2012 : 220

2014 : 41 sec



< 94.90	Poor				
95.00-197.00	Normal				
> 197.00	Good				

FLEXIBILITY

Shoulder Mobility



The shoulder joint allows for the most movement in the human body and often pays the biggest consequence. Shoulders are held in place by a network of muscles and any imbalance can lead to injury. Due to overuse and poor posture our shoulders often become anteriorly rotated causing poor movement mechanics and lots of joint stress. A well rounded warm up and stretches that emphasis loosening the chest and anterior shoulders while also strengthening the scapular muscles will help prevent injury.

Wall Slides

1) Get up against the wall with your feet out so you are in a half squat position
2) Keep your low back, shoulder blades, elbows and wrist against the wall in a field goal position.
3) Slide your arms up while actively pushing against the wall, ensuring that you keep all points of contact.

Perform for 1-2 minutes to prime your shoulder for exercise.



Upper Back Foam Rolling

1) Lay on a foam roller with your legs bent at 90 and your feet firmly planted.
2) Push your feet into the ground lifting your hips up off the ground and placing all your weight in your upper back.
3) Cross your arms to further expose the tissues in your upper back.
4) Roll up and down paying attention to any areas that are tight or sensitive. **Roll for 1-2 minutes.**



FLEXIBILITY

Band Pull Aparts



1) Stand upright with a resistance band in your hands.
2) Pinch your scapula together so you shoulders are retracted back.
3) Pull the band apart as far as you can while keeping your arms straightened.
4) Slowly let the band come back to the starting position.

How close your hands are will affect the resistance. Repeat for 10-15 repetitions.

Foam Roller Angels



1) Begin lying on your back with a foam roller lengthwise along your spine and your head supported.

2) Try to get your wrists and elbows in contact with the ground while keeping your low back in contact with the foam roller.

3) Keeping your arms close to the ground slide them up above your head and then pull your elbows down in underneath you.

Use this as a warm-up before exercise. Perform for 1-2 minutes.

Towel Stretch



1) Hold a towel or rope behind the back.

2) Pull up gently with the upper hand until you feel stretching in the shoulder.

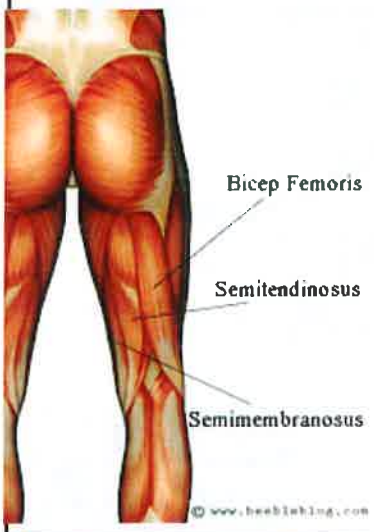
Door Stretch



1) Place inside of bent arm on surface of wall. Position bent elbow shoulder height.
2) Step forward with leg closest to the wall. Hold stretch and repeat with opposite arm.

Hamstring Flexibility

FLEXIBILITY



The action of the hamstring muscles is to bend the knee and help extend the hip joints. Several factors play a role in tightening this muscle group. For instance, prolonged sitting holds these muscles in a contracted state, causing them to lose their flexibility. If these muscles become tight, they become more susceptible to tearing and injury. In addition, they can cause low back, groin, and leg pain. Spending only a couple of minutes a day a few times a week can prevent these painful consequences.

Lying Hamstring Stretch Press

1) Lie on your back with one leg straight and the other leg bent, and drawn into your chest.
2) Wrap a band around your foot ensuring it won't slide off. Press out until your leg is fully extended so that you feel the stretch in the hamstring. **Hold for 5 seconds.**
3) Relax and allow the knee to be pulled back into your chest. **Repeat 10-15 times.**





* You may modify this stretch by placing the bottom foot on the ground and bending your bottom knee.

Kneeling Hamstring Stretch



1) Begin in a kneeling position. Place your left leg out straight and lean forward. Keep your toe flexed back towards you.
2) Lean forward just at your hips, do not round your lower back.
3) You should feel the stretch in the back of your straightened leg. Rotate your foot inside and out to activate all parts of the hamstring.

FLEXIBILITY

Leg-lowering Progression with Support





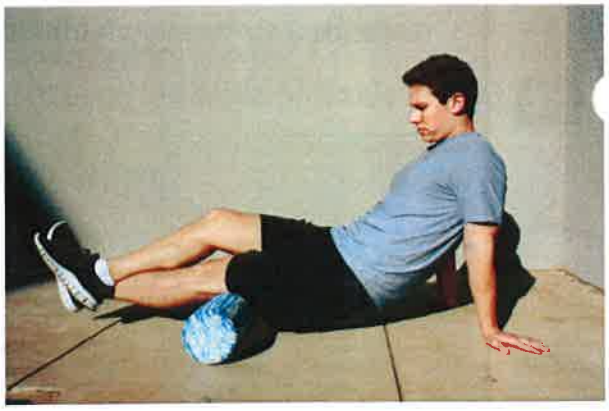
1) Lie on your back in a doorway, with one leg on the wall and one leg able to extend through the doorway.

2) Slowly lower the leg through the doorway until you feel a pull in your active hamstring, your static leg begins to lift up or extend out– if your back begins to come away from the floor.

3) Use a box under your active foot as needed and work your less flexible side 3 more times than your more flexible side

Hamstring Foam Rolling

1) Begin with one leg on top of the other on a foam roller and your hands behind you for support.



2) Lift your hips up so all your weight is placed on one hamstring.

3) Roll back and forth over the hamstring paying attention to any tender areas. You can also use a lacrosse ball for a deeper tissue massage.

Roll for 1-2 minutes on each leg.

Three Way Hamstring Stretch



1) Place the heel of the foot on the chair. Pull your toes toward your body, with a slight bend in your knee. Keeping your back straight, maintain a good width with your feet for balance

2) Lean forward with your hips and pelvis, not with your back. Go until a stretch is felt in your hamstring , and hold for 10-15 seconds. You can rotate your hip internally or externally to change the angle of the stretch in the hamstring.

3) Lean back to your normal starting position. Perform the stretch at least 5 -6 times. Try not to hike your hip.

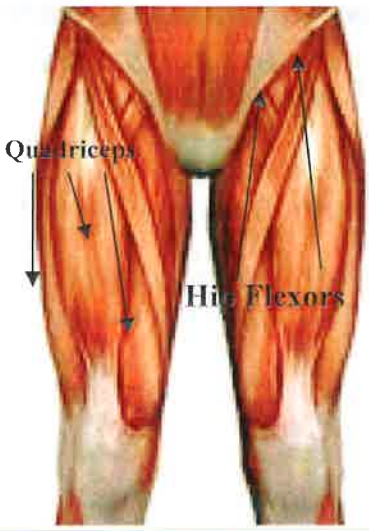
FLEXIBILITY

Quad/ HF Flexibility

The hip flexors are a group of muscles that includes:

- Rectus femoris
- Psoas major and minor
- Iliacus

Theses muscles flex the femur at the hip, i.e. pull the knee upward. The hip flexors can become tight when placed in a shorten position for an extended period of time or when they are overused during certain activities.



The quadriceps are a group of muscles that includes:

- Rectus Femoris
- Vastus Lateralis
- Vastus Medialis
- Vastus Intermedius

The quadriceps are responsible for extending and straightening the leg. The rectus femoris also flexes the hip. These muscles become tight from overuse and also from injury due to trauma.

Kneeling Quad Stretch

1) Kneel down with one leg at 90 degrees in front of you and the other one bent behind you and propped up on a ledge or physioball.

2) Lean back until you feel the stretch in your quadriceps.

3) Keep your torso upright and hold the stretch for 30-45 seconds on each leg.



Quadriceps Foam Rolling



1) Lay face down in a plank position with a foam roller placed in mid-thigh.
2) Put your right foot up on top of your left, so all your weight is on one leg.
3) Slowly roll up and down your leg trying to pay special attention to any tight or painful areas.
4) Perform for 1-2 minutes on each leg before exercise or to aid in recovery.

FLEXIBILITY

Standing Quadriceps Stretch



1) Stand up and use a wall for support. Grab your right leg right below your ankle and pull it up as high as you can.

2) Do not allow your leg to veer away from the midline of your body. Keep your knees together.

3) Pull to the point of tension but never pain. Hold the stretch for 30-45 seconds after exercise.

Kneeling Hip Flexor Stretch

1) Get into a kneeling position with a pad under your knee.

2) Squeeze your glute and push your hip forward while simultaneously leaning back. You should feel the stretch right above your quad.

3) Bring the arm up on the same side as the kneeling leg and reach as high as you can to involve the psoas muscles.

Hold this stretch for 30-45 seconds.



Standing Hip Flexor Stretch

1) Place one foot flat on a chair, and internally rotate the other foot that is flat on the floor. Sit up tall with your back, and have a wide base for balance. Contract your glutes and quadriceps.

2) Lean forward with your hips and pelvis, not with your back. Keep your knee inline with your toes. Try to keep your heel on the ground, and lean forward until you feel a stretch. Make sure to control your breathing. Hold the stretch for 30 to 45 seconds.

3) Lean back to the starting position to relax the tension on the muscle. Continue to perform the stretch, trying to increase the range with each repetition. Perform the stretch 5 to 6 times.



Donold Duck								
1962-06-03	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure	

Phoenix Fire Department Health Center Tiers
to Assess Need for Health/Wellness Intervention

Current data		Tier1	Tier2	Tier3	Tier4
Body Fat	23.6 %		●		
Blood Pressure	144/88		●		
FEV1/FVC	0.9	●			
METS	11.5				●
Blood Glucose	87	●			

You are in Tier

4

Health Standards	Tier 1	Tier 2	Tier 3	Tier 4
Body Fat (Male)	< 20%	20-24%	25-30%	> 30%
Body Fat (Female)	< 24%	24-29%	30-34%	> 34%
Blood pressure	< 140/90	> 140/90	> 150/100	> 160/110
FEV1/FVC	≥ 0.75	< 0.75	< 0.65	< 0.59
METS	> 14.0	13.0-13.9	12.0-12.9	< 12.0
Blood Glucose HbA1c	65-99 < 6.5	100-199 6.5-7.4	200-299 > 7.5	> 300 8.0

Tier 1: Minimal health parameters to which fire members should maintain for field conditioning.
Tier 2: Health issues noted where interventional support or change is recommended.
Tier 3: Health issues sufficient for mandatory referral for wellness/fitness intervention,but removal from field not yet required.
Tier 4: Health issues sufficient to mandate removal from field and mandatory referral for wellness/fitness intervention

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant

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WELLNESS CENTER LOCATION & CONTACT INFORMATION

Wellness Center Location

San Diego Firefighters Regional
Wellness Center
6699 Alvarado Road, Suite 101
San Diego, CA 92120

Davina Oropeza
Office: (619) 286-SDFD (7333)
Fax: (619) 229-3919
davinao@sdsm.com

Website: www.sdsm.com

Physicians

Richard Parker, D.O. FAOASM

Jeffrey Anthony, DO, FAAFP, FAOASM

Stephen Rohrer, DO

Katie Rusk, PA-C, MA

Contact a Physician: (619) 229-3909
doctors@sdsm.com

Medical Assistants

Brittany Davis — (619) 814-5400 ext.176
bjohannsen@sdsm.com

Registered Dietitian

Kate Machado, RD — (619) 559-0488
kate.s.machado@gmail.com

Exercise Physiologists / Nutritionists

Matt Downs, M.S. — (619) 814-5400 ext.172
mattd@sdsm.com

Mia Green, M.S. — mia@sdsm.com

Becki McClintock, M.S. — beckim@sdsm.com

Kayli Gibbs, M.S. — kayli@sdsm.com

Nutrition Assessment

NAME: _____ **DATE:** _____

Do you drink alcohol? ☐ Yes ☐ No
If so, give a range of an on-shift week vs. 4 or 6 days off ? _____

Do you drink caffeine? ☐ Yes ☐ No **If so, how many 8 oz. drinks per day?** _____

Do you use tobacco? ☐ Yes ☐ No **If so, what kind and how often?** _____

Your exercise habits:
30 minutes of moderate intensity of *Cardio*: _____/week
20 minutes of *Resistance/Strength training*:_____/week
10 minutes of *Flexibility/Stretching*:_____/week

Please circle a number from 1 to 5 to indicate how interested you are in talking to a nutritionist (where 1 is not interested at all and 5 is very interested). **1 2 3 4 5**

What would you most like to talk about in nutrition today? _____

Are you more interested in discussing nutrition for the station or for home? _____

Please circle a number from 1 to 5 that best describes how the following statements apply to you when you are at the station and at home:

Where: **1** never; **2** seldom *(1-2 times/week)*; **3** sometimes *(3-4 times/week)*; **4** often *(5-6 times/week)*; **5** always *(everyday)*

AT THE STATION						AT HOME				
1	2	3	4	5	I tend to skip meals.	1	2	3	4	5
1	2	3	4	5	I tend to eat large portions.	1	2	3	4	5
1	2	3	4	5	I tend to snack frequently.	1	2	3	4	5
1	2	3	4	5	When grocery shopping, I have a meal plan in advance and a shopping list.	1	2	3	4	5
1	2	3	4	5	When grocery shopping, I like to look at the food labels & make healthy choices.	1	2	3	4	5
1	2	3	4	5	When grocery shopping, I prefer to buy what's on sale even if it's not the healthiest choice.	1	2	3	4	5
1	2	3	4	5	I eat 5 servings of fruit/veggies a day.	1	2	3	4	5
1	2	3	4	5	Before I eat/drink something, I think of how many calories are in it.	1	2	3	4	5
1	2	3	4	5	I drink at least 8 glasses of water/day.	1	2	3	4	5
1	2	3	4	5	I tend to binge eat when I'm stressed or upset.	1	2	3	4	5

Nutrition Assessment

NAME: _____ **DATE:** _____

Weight: _____ **Goal Weight:** _____

How interested are you in discussing your diet and eating habits with a nutritionist?
☐ Not very ☐ A little bit interested ☐ Quite interested

Your eating habits: _____**# of meals/day** _____**# of snacks/day**

Do you keep portions in mind while eating? _____**Yes** _____**No**

How many calories do you feel you eat in a typical day? _____

Do you drink alcohol? ☐ Yes ☐ No
If so, give a range of an on-shift week vs. 4 or 6 days off ? _____

Do you drink caffeine? ☐ Yes ☐ No **If so, how many 8 oz. drinks per day?** _____

Do you use tobacco? ☐ Yes ☐ No **If so, what kind and how often?**_____

Your exercise habits:
30 minutes of moderate intensity of *Cardio*: _____**/week**
20 minutes of *Resistance/Strength training*:_____**/week**
10 minutes of *Flexibility/Stretching*:_____**/week**

Please recall what you have eaten in the last 24 hours and list below

Meal	List ***ALL*** Food or Drink Items with serving sizes* *See back for serving size pictures Please be VERY DETAILED	H (home), R (restaurant), O (other)
Example:	2 slices of whole wheat bread with ~2Tbsp of peanut butter and ~2 Tbsp jelly. 3 scrambled eggs with 1/4 cup of shredded cheddar cheese. 1 8 oz. glass of O.J.	H
Breakfast		
Mid-morning		
Lunch		
Mid-day		
Dinner		
After dinner/ late evening		

Examples of visual ways to size up your serving sizes:



Fist= ~1 cup
Tennis ball= ~¾ cup



Palm of hand= ~5 ounces



Deck of cards= 3 ounces



½ cup cooked pasta (=1 ounce)

Grains



1 slice (=1 ounce) whole wheat bread



¾ cup (=1 ounce) whole grain cereal



1½ cups (=3 ounces) cooked beans/corn

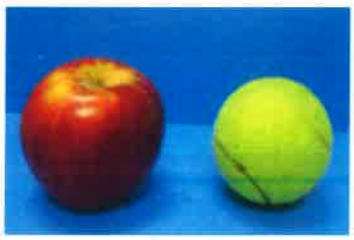


2 cups cooked (=4 ounces)

Fruit



1 cup



1 cup



1 cup



1/4 cup dried fruit



6 ounces 100% fruit juice

Vegetables



1/2 cup



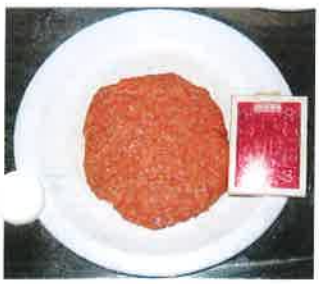
3 cups

Dairy



8 oz. milk

Protein



8 ounces



1 oz cheese,



3 ounces of cooked meat/poultry



1/4 cup

THE NUTRITION QUIZ



Version # 2

Which of the following is NOT true about Vitamin C?

A. It is abundant in bell peppers, kale, broccoli and cauliflower
B. It is needed every day
C. It can be stored in the body
D. It helps heal cuts and bruises

Which of the following is NOT true about Vitamin C?

C. It can be stored in the body

Vitamin C is a water soluble vitamin – the body retains it for a maximum of 4 hours– excess is either oxidized or excreted in urine.
We need to consume Vitamin C on a daily basis, preferably in small, divided doses.

Which of the following is NOT true about Vitamin C?

A. It is abundant in bell peppers, kale, broccoli, cauliflower

Which of the following is NOT true about Vitamin C?

B. It is needed every da

Yes - we need to consume Vitamin C on a daily basis, preferably in small, divided doses.

Which of the following is NOT true about Vitamin C?

D. It helps heal cuts and

Vitamin C boosts collagen production in the skin, helps protect the skin against sun and free radical damage.

All of the following are high in calcium, EXCEPT...

A. Strawberry yogurt
B. Low-fat milk
C. Leafy green vegetables
D. Poached egg

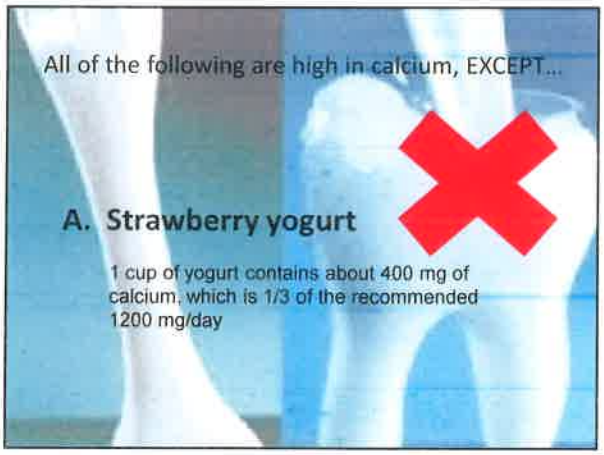
All of the following are high in Calcium, EXCEPT...

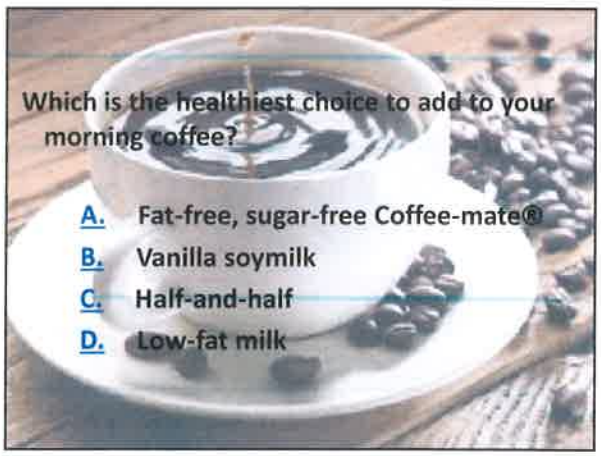
D. Poached egg

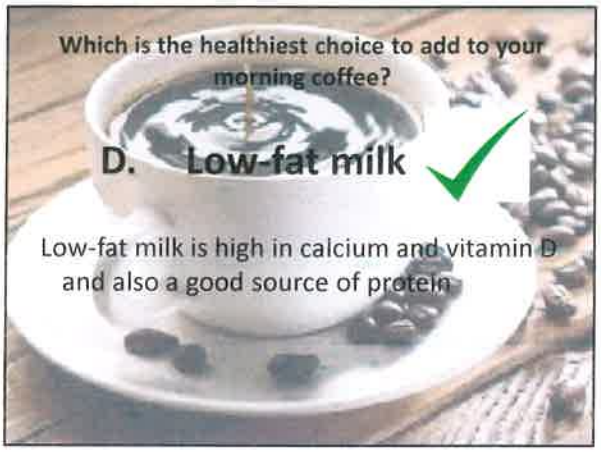
Eggs don't contain any calcium. However, egg yolks are rich in Vitamins A, D, E, K, folate and the B-vitamins

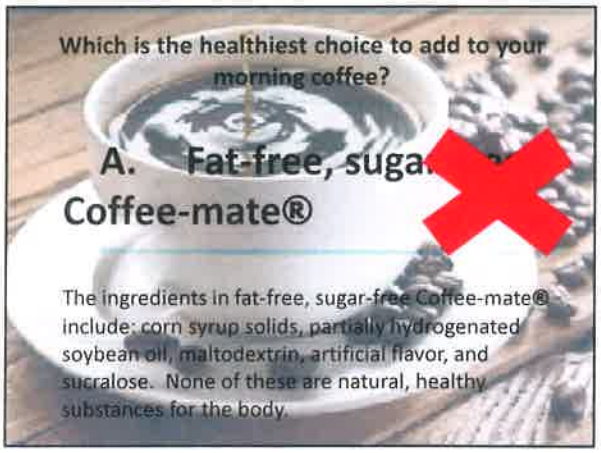

All of the following are high in calcium, EXCEPT...
B. Low-fat milk
1 cup of low-fat milk contains about 300 mg of calcium, which is ¼ of the recommended 1200 mg/day

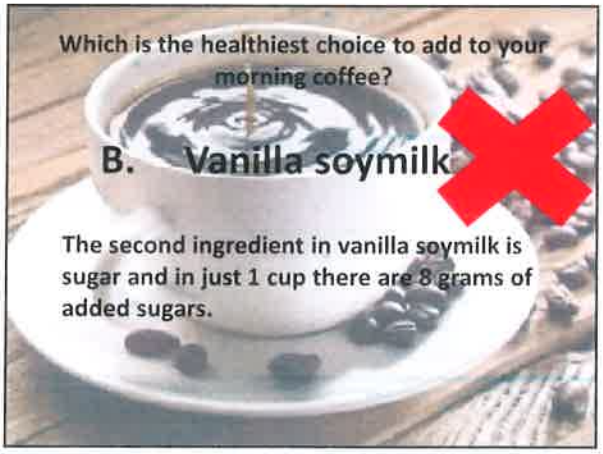

All of the following are high in calcium, EXCEPT...
C. Leafy green vegetables
1 cup of *cooked* leafy greens contains between 250-320 mg of calcium, which is one-fourth to one-fifth of the recommended 1200 mg/day

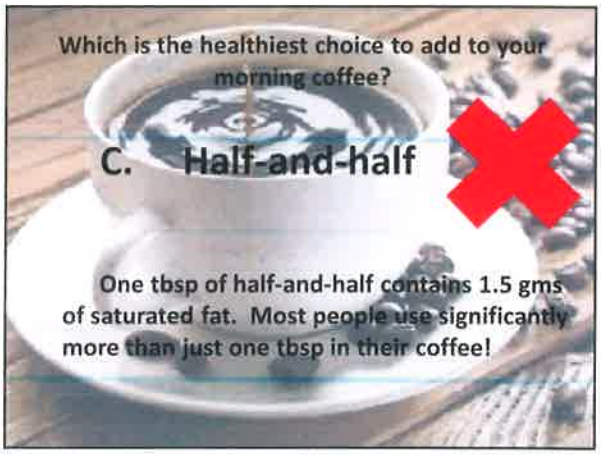

All of the following are high in calcium, EXCEPT...
A. Strawberry yogurt
1 cup of yogurt contains about 400 mg of calcium, which is 1/3 of the recommended 1200 mg/day

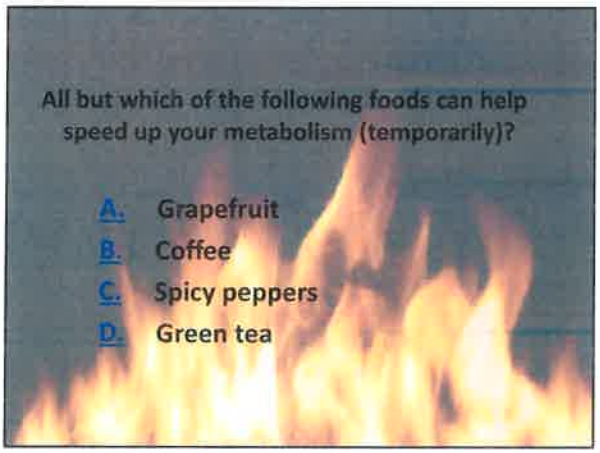

Which is the healthiest choice to add to your morning coffee?
A. Fat-free, sugar-free Coffee-mate®
B. Vanilla soymilk
C. Half-and-half
D. Low-fat milk

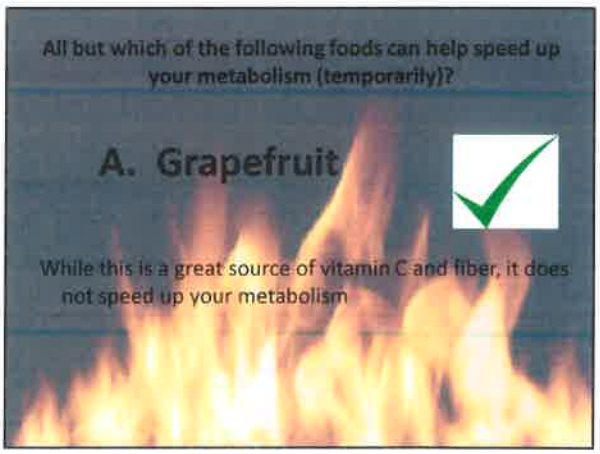

Which is the healthiest choice to add to your morning coffee?
D. Low-fat milk
Low-fat milk is high in calcium and vitamin D and also a good source of protein

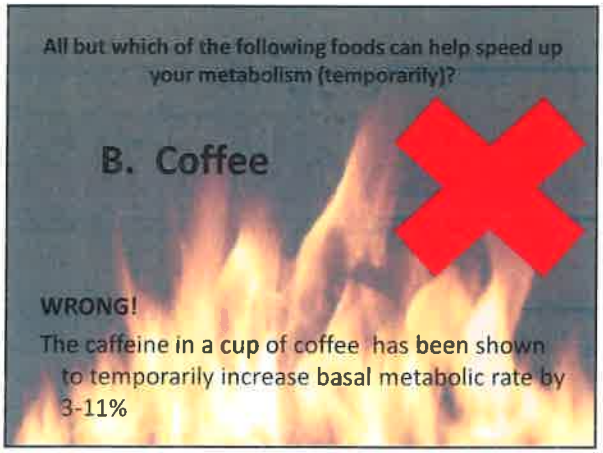

Which is the healthiest choice to add to your morning coffee?
A. Fat-free, suga
Coffee-mate®
The ingredients in fat-free, sugar-free Coffee-mate® include: corn syrup solids, partially hydrogenated soybean oil, maltodextrin, artificial flavor, and sucralose. None of these are natural, healthy substances for the body.

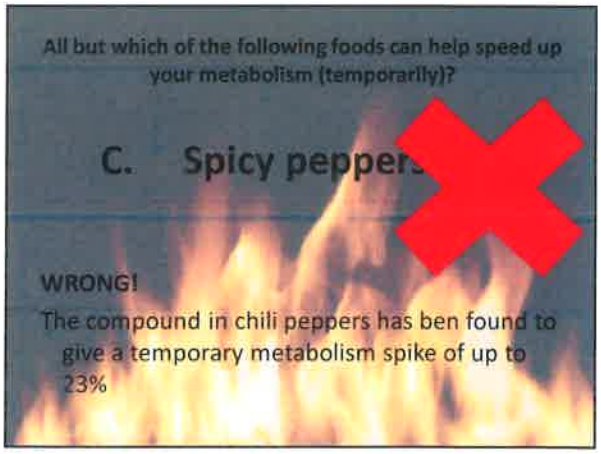

Which is the healthiest choice to add to your morning coffee?
B. Vanilla soymilk
The second ingredient in vanilla soymilk is sugar and in just 1 cup there are 8 grams of added sugars.


Which is the healthiest choice to add to your morning coffee?
C. Half-and-half
One tbsp of half-and-half contains 1.5 gms of saturated fat. Most people use significantly more than just one tbsp in their coffee!


All but which of the following foods can help speed up your metabolism (temporarily)?
A. Grapefruit
B. Coffee
C. Spicy peppers
D. Green tea


All but which of the following foods can help speed up your metabolism (temporarily)?
A. Grapefruit
While this is a great source of vitamin C and fiber, it does not speed up your metabolism


All but which of the following foods can help speed up your metabolism (temporarily)?
B. Coffee
WRONG!
The caffeine in a cup of coffee has been shown to temporarily increase basal metabolic rate by 3-11%


All but which of the following foods can help speed up your metabolism (temporarily)?
C. Spicy peppers
WRONG!
The compound in chili peppers has ben found to give a temporary metabolism spike of up to 23%

All but which of the following foods can help speed up your metabolism (temporarily)?

D. Green tea

WRONG!

2-4 cups per day could burn an extra 50 calories due to the compound EGCG, a powerful anti-oxidant that can bring about some of the same calorie-burning effects as caffeine

For someone with hyperglycemia/pre-diabetes, which would be the best snack?

A. A banana
B. Whole-wheat bread with fruit preserves
C. Crackers with hummus
D. A handful of almonds and string cheese

For someone with hyperglycemia/pre-diabetes, which would be the best snack?

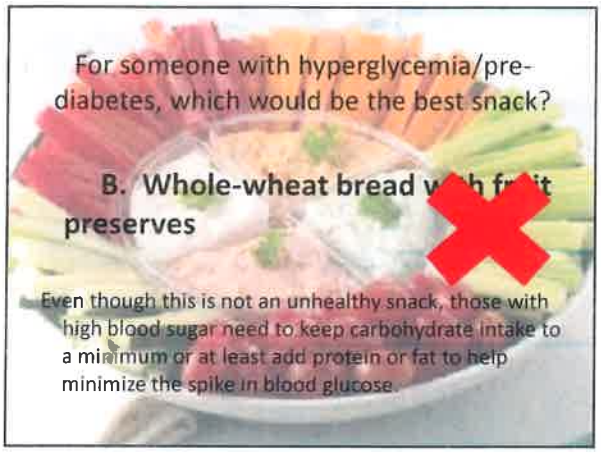
D. Handful of almonds and string cheese

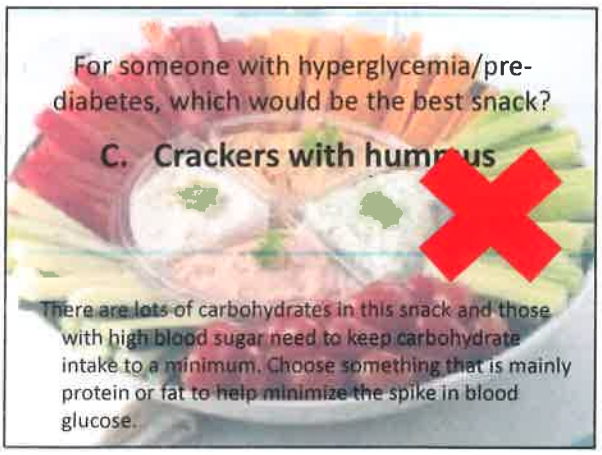
Those with high blood sugar need to keep their carbohydrate intake lower, as carbs can increase blood sugars even further. Therefore, snacks with fat or protein are the best choice.

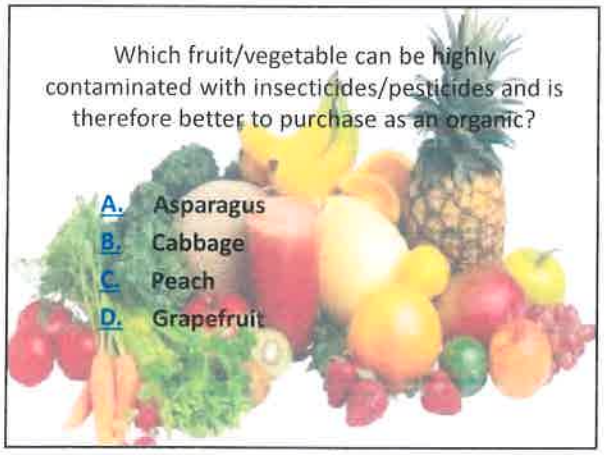
For someone with hyperglycemia/pre-diabetes, which would be the best snack?

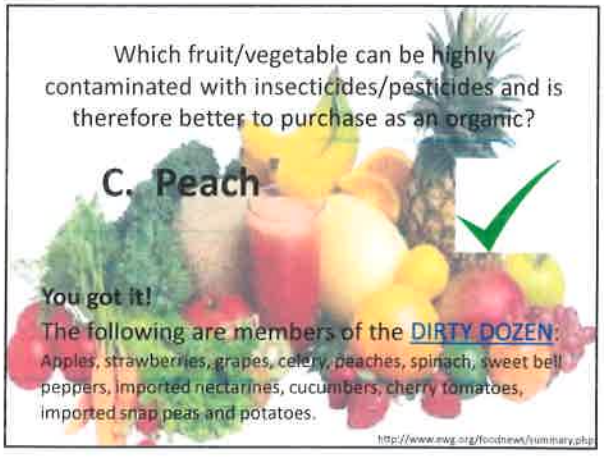
A. A banana

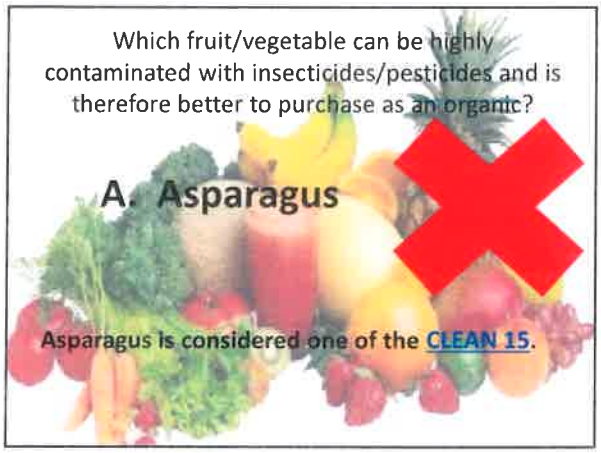
While a banana is healthy, those with high blood sugar need to keep carbohydrate intake to a minimum (bananas are mainly carbohydrates) or at least add protein or fat to help minimize the spike in blood glucose.

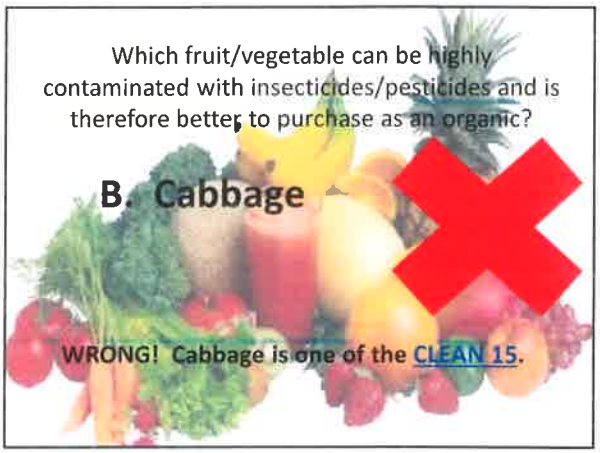

For someone with hyperglycemia/pre-diabetes, which would be the best snack?
B. Whole-wheat bread with fruit preserves
Even though this is not an unhealthy snack, those with high blood sugar need to keep carbohydrate intake to a minimum or at least add protein or fat to help minimize the spike in blood glucose.

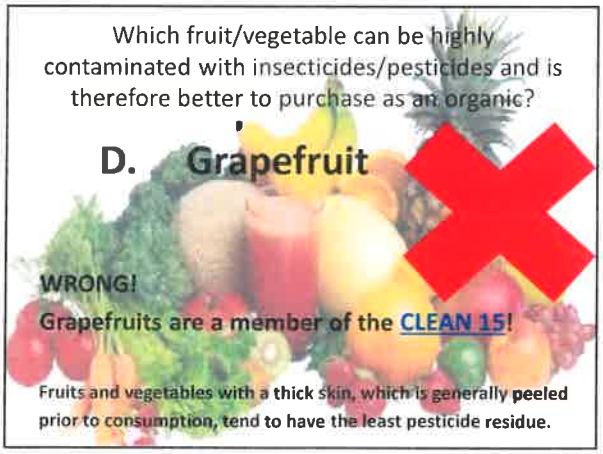

For someone with hyperglycemia/pre-diabetes, which would be the best snack?
C. Crackers with hummus
There are lots of carbohydrates in this snack and those with high blood sugar need to keep carbohydrate intake to a minimum. Choose something that is mainly protein or fat to help minimize the spike in blood glucose.


Which fruit/vegetable can be highly contaminated with insecticides/pesticides and is therefore better to purchase as an organic?
A. Asparagus
B. Cabbage
C. Peach
D. Grapefruit


Which fruit/vegetable can be highly contaminated with insecticides/pesticides and is therefore better to purchase as an organic?
C. Peach
You got it!
The following are members of the DIRTY DOZEN:
Apples, strawberries, grapes, celery, peaches, spinach, sweet bell peppers, imported nectarines, cucumbers, cherry tomatoes, imported snap peas and potatoes.
http://www.ewg.org/foodnews/summary.php


Which fruit/vegetable can be highly contaminated with insecticides/pesticides and is therefore better to purchase as an organic?
A. Asparagus
Asparagus is considered one of the CLEAN 15.


Which fruit/vegetable can be highly contaminated with insecticides/pesticides and is therefore better to purchase as an organic?
B. Cabbage
WRONG! Cabbage is one of the CLEAN 15.


Which fruit/vegetable can be highly contaminated with insecticides/pesticides and is therefore better to purchase as an organic?
D. Grapefruit
WRONG!
Grapefruits are a member of the CLEAN 15!
Fruits and vegetables with a thick skin, which is generally peeled prior to consumption, tend to have the least pesticide residue.


CLEAN FIFTEEN (2014)
1. Avocados
2. Sweet corn
3. Pineapples
4. Cabbage
5. Frozen sweet peas
6. Onions
7. Asparagus
8. Mangoes
9. Papayas
10. Kiwis
11. Eggplant
12. Grapefruit
13. Cantaloupe
14. Cauliflower
15. Sweet potatoes
Produce, which is the least likely to hold pesticide residues
http://www.ewg.org/foodnews/summary.php

DIRTY DOZEN (2014)

1. Apples
2. Strawberries
3. Grapes
4. Celery
5. Peaches
6. Spinach
7. Sweet bell peppers
8. Imported nectarines
9. Cucumbers
10. Cherry tomatoes
11. Imported snap peas
12. Potatoes

These contained a number of different pesticide residues and showed high concentrations of pesticides relative to other produce items.



http://www.ewg.org/foodnews/summary.php

Which of the drinks below would be the healthiest choice?

A. V8 Fusion (fruit & vegetable juice)
B. Gatorade
C. Naked® Strawberry Banana juice
D. Sparkling water

Which of the drinks below would be the healthiest choice?

D. Sparkling water



You are right!

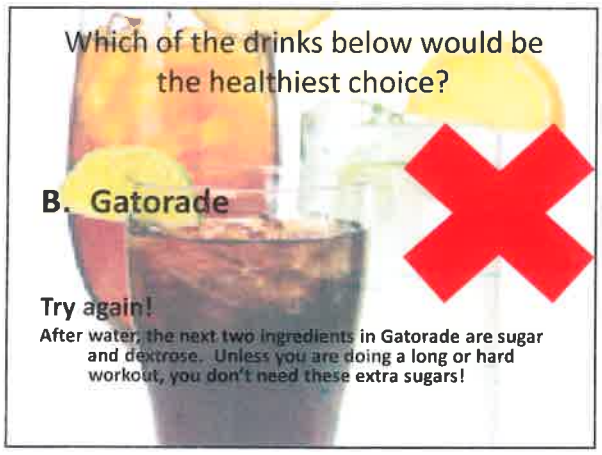
Which of the drinks below would be the healthiest choice?

A. V8 Fusion



Try again.
In 8 oz., there are 31 gms of sugar!

Which of the drinks below would be the healthiest choice?



B. Gatorade

Try again!

After water, the next two ingredients in Gatorade are sugar and dextrose. Unless you are doing a long or hard workout, you don't need these extra sugars!

Which of the drinks below would be the healthiest choice?



C. Naked® Strawberry Banana juice

Sorry – wrong answer.

One bottle contains no fiber and 46 gms of sugar. That's more sugar than is recommended for an entire day!

Which food does NOT contain Omega-3 Fatty acids?

A. Trout

B. Salmon

C. Walnuts

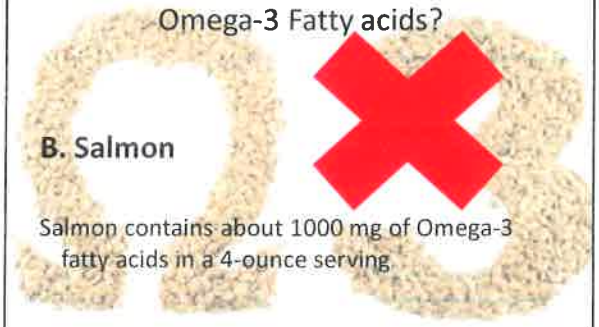
D. Almonds

Which food does NOT contain Omega-3 Fatty acids?

D. Almonds

While almonds do contain good, unsaturated fats, they do not contain Omega-3's.

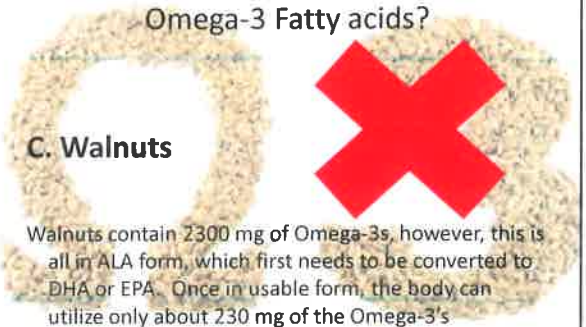
Which food does NOT contain Omega-3 Fatty acids?



B. Salmon

Salmon contains about 1000 mg of Omega-3 fatty acids in a 4-ounce serving

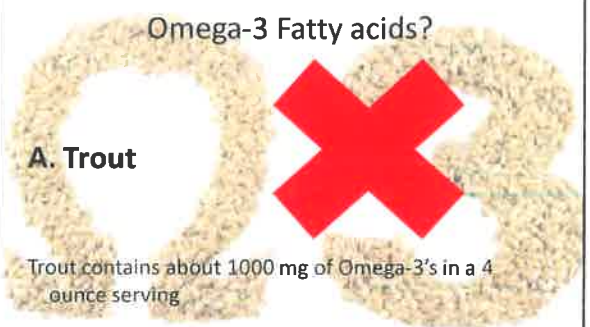
Which food does NOT contain Omega-3 Fatty acids?



C. Walnuts

Walnuts contain 2300 mg of Omega-3s, however, this is all in ALA form, which first needs to be converted to DHA or EPA. Once in usable form, the body can utilize only about 230 mg of the Omega-3's

Which food does NOT contain Omega-3 Fatty acids?



A. Trout

Trout contains about 1000 mg of Omega-3's in a 4 ounce serving

Vitamin D is also known as the "Sunshine Vitamin". Which food also provides us with Vit D?

A. Quinoa
B. Egg yolks
C. Egg whites
D. Kale

Vitamin D is also known as the "Sunshine Vitamin". Which food also provides us with Vit D?

B. Egg Yolks



One egg yolk contains 22 IU of Vitamin D, which is about 4% of the recommended 600 IU we need daily

Vitamin D is also known as the "Sunshine Vitamin". Which food also provides us with Vit D?

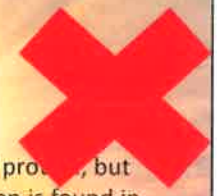
A. Quinoa



While it provides lots of other vitamins and minerals, Vitamin D is not one that is in quinoa

Vitamin D is also known as the "Sunshine Vitamin". Which food also provides us with Vit D?

C. Egg Whites



Egg whites are a great source of protein, but otherwise, most of the nutrition is found in the yolk

Vitamin D is also known as the "Sunshine Vitamin". Which food also provides us with Vit D?

D. Kale



Kale is rich in Vitamin A and Vitamin C but does not contain any Vitamin D

True or false: BMI and Body fat percent are the same thing.

A. True

B. False

True or false: BMI and Body fat percent are the same thing.

B. False

- BMI assesses a person's weight relative to his/her height
- Body fat percentage is the total mass of fat divided by total body mass, and is measured either by calipers, hydrostatic weighing, DEXA scan, or bioelectric impedance. This is a more accurate assessment of a person's health status in regards to body composition.

True or false: BMI and Body fat percent are the same thing.

- True

- BMI assesses a person's weight relative to his/her height
- Body fat percentage is the total mass of fat divided by total body mass, and is measured either by calipers, hydrostatic weighing, DEXA scan, or bioelectric impedance. This is a more accurate assessment of a person's health status in regards to body composition.

CONGRATULATIONS!

You have completed the 2015 nutrition quiz ☺



ABDOMINAL ENDURANCE CRUNCH TEST

Curl-up muscle endurance evaluations shall use the Wellness-Fitness Initiative Protocol for Curl-ups. Equipment used for this evaluation includes a gym mat, a metronome, and a stopwatch.

(1) Conduct pre-evaluation procedures.

(2) The individual is advised that the evaluation is a series of curl-ups performed in a 3-minute time period. The individual is informed that the evaluation is initiated from the supine position with knees bent at a 90-degree angle, hands cupped from the supine position with knees bent at a 90-degree angle, hands cupped over the ears or at the temples, and with hand and arm position maintained for the entire duration of the evaluation. The individual is advised that their feet will be secured by a bar or a second administrator, but the holding or bracing of the knees and/or ankles is not allowed. The individual is instructed that the curl-up is initiated by flattening the lower back followed by actively contracting the abdominal muscles and then continuing the movement until the trunk reaches a 45-degree angle with respect to the floor. This is followed by curling down of the trunk with the lower back fully contacting the mat before the upper back and shoulders. A rocking or bouncing movement is not permitted and the buttocks must remain in contact with the mat at all times. The individual is instructed to continue performing curl-ups in time with the cadence of the metronome, one beat up and one beat down. Inform the individual that if at any time during the evaluation they experience back pain, chest pain, light-headedness, ataxia, confusion, nausea or clamminess, they should terminate the evaluation.

(3) The metronome is set at a speed of 60, allowing for 30 curl-ups per minute.

(4) The individual has a 3-minute time limit to successfully complete a maximum of 90 curl-ups.

(5) The administrator shall observe the evaluation from the side to ensure that each curl-up is performed correctly and shall stop the evaluation when the individual does any of the following:

(a) Reaches 90 curl-ups

(b) Performs three consecutive incorrect curl-ups

WFI PRONE STATIC PLANK — CORE STABILIZATION ASSESSMENT

Equipment:
- Stopwatch
- Exercise Mat

Figure 5.19



ASSESSMENT:
The purpose of this assessment is to evaluate the muscular endurance of the core stabilizer muscles of the trunk.

- Conduct the pre-evaluation procedures.
- Instruct the participant to lay prone, keeping upper body elevated and supported by the elbows. Raise hips and legs off the floor, supporting the body on forearms and toes. Position elbows directly under the shoulders. Maintain straight body alignment from shoulder through hip, knee and ankle.
- The ankles should maintain a 90° angle, the scapulae should remain stabilized with elbows at 90°. The spine should remain in a neutral position throughout the assessment.
- Once the feet are in position, the participant then extends the knees, lifting off the floor. Start the stopwatch at this time.
- Instruct the participant to contract the abdominals so that the back will remain flat in the neutral position for the duration of the assessment.
- Any deviations from the above posture will warrant 2 verbal warnings. If a 3rd infraction occurs stop the watch and terminate the assessment.
- The assessor shall terminate the evaluation when the participant:
  - Reaches 4 minutes; or
  - Is unable to maintain proper form after the 2nd warning,
- Once the assessment termination criteria are met, stop the watch and record the time.

WFI PUSH-UP

Equipment
Five inch prop (i.e. cup; sponge)
Metronome
Stopwatch

Figure 5.20



Figure 5.21



ASSESSMENT
The purpose of this assessment is to evaluate muscular endurance of the upper body.

- Conduct Pre-Evaluation Procedures.
- Advise the participant that the evaluation is a series of push-ups performed in a 2-minute time period, for a maximum of 80 push-ups. The evaluation is initiated from the "up" position (hands are shoulder width apart, back is straight, and head is in neutral position).

Advise the participant of the following:
- It is not permitted to prop feet against a wall or other stationary object.
- Back must be straight at all times (neutral position).
- Arms must be fully extended during the up-phase.
- Cadence with the metronome must be maintained, (one beat up and one beat down).
- Position the 5-inch prop on the ground beneath the participants chin.
- The metronome is set at a speed of 80 bpm, allowing for 40 push-ups per minute, and a maximum of 80 push-ups in 2 minutes.
- The participant must lower the body toward the floor until the chin touches the prop.

The assessor shall terminate the evaluation when the participant:
- Reaches 80 push-ups;
- Performs 3 consecutive incorrect push-ups; or
- Fails to maintain continuous motion with the metronome cadence.
- Once the assessment is complete, record the highest number of successfully completed push-ups.

* Participants with a history of shoulder and/or wrist injury that could be exacerbated by performing the conventional push-up protocol may perform the WFI alternate grip push-up evaluation.

OPTIONAL ASSESSMENT: WFI ALTERNATE GRIP PUSH-UP TEST

Equipment:

- Push-up handles
- Metronome
- Stopwatch
- Prop – 5", plus the height of the handles

Figure 5.22



Figure 5.23



ASSESSMENT:

The purpose of this assessment is to evaluate muscular endurance of the upper body. The alternate grip push-up (with stands) is an optional assessment for participants who experience muscular/skeletal discomfort in the performance of the standard WFI push-up.

- Conduct the pre-evaluation procedures.
- Advise the participant that the evaluation is a series of push-ups performed in a 2-minute time period to complete a maximum of 80 push-ups. The evaluation is initiated from the "up" position (hands are shoulder width apart, back is straight, and head is in neutral position).
- Advise the participant of the following:
  - It is not permitted to prop feet against a wall or other stationary object.
  - Back must be straight at all times (neutral position).
  - Arms must be fully extended during the up-phase.
  - Cadence with the metronome must be maintained, (one beat up and one beat down).
- Instruct the participant to grasp the push up stands, and assume the "up" position. (Caution: hex dumbbells may roll)
- Place the modified prop so that the chin of the participant will contact the prop during the lowering phase. (Prop height = 5" plus the height of stands).
- Set the metronome at a speed of 80 bpm, allowing for 40 push-ups per minute for 2 minutes.
- The assessor shall terminate the evaluation when the participant:
  - Reaches 80 push-ups;
  - Performs three consecutive incorrect push-ups; or
  - Fails to maintain continuous motion with the metronome cadence.
- Once the assessment is complete, record the highest number of successfully completed push-ups.

WFI GRIP STRENGTH

Equipment

- JAMAR Hydraulic Hand dynamometer
- Towel

Figure 5.14



ASSESSMENT

The purpose of this assessment is to evaluate the maximum isometric muscular strength of the flexor muscles of the hands. There is a strong correlation between hand grip strength and upper body strength.

- Conduct Pre-Evaluation Procedures.
- Instruct the participant to towel-dry hands.
- Place the dynamometer in the participant's hand to be sized for assessment. Ensure that the hand grip is adjusted to fit snugly in the first proximal interphalangeal joint. Prior to commencing the assessment, set the dynamometer to "zero" by rotating the red peak force indicator counterclockwise.
- Advise the participant that the evaluation is a series of 6 trails, 3 for each hand, alternating hands with each attempt.
- The participant will maintain the following positions for the duration of the assessment:
  - Stand upright with spine in neutral alignment.
  - Flex elbow at a 90° angle.
  - Adduct shoulder and place hand in neutral grip position (hand shake position).
- The participant will squeeze the device with maximum force for 3 seconds while exhaling.
- The participant will slowly release grip. The needle will automatically record the highest force exerted.
- Measure both hands, alternating between right and left, completing three trails per hand.
- Reset the peak-hold needle to zero before obtaining new readings.
- Record the scores for each trail in each hand to the nearest kilogram.
- Record the highest score for each hand.

WFI ARM STRENGTH

Equipment

- Jackson Strength Evaluation System with *or* verified equivalent dynamometer
- Straight Handlebar
- Towel

Figure 5.15



ASSESSMENT

The purpose of this assessment is to evaluate the maximum isometric strength of the flexor muscles of the arm.

- Conduct Pre-Evaluation Procedures.
- Participant will towel-dry hands.
- Advise the participant that the evaluation is a series of 3 trials in which the he will "ease into" the isometric arm contraction and release slowly, without moving the arms or jerking hands.
- Place the dynamometer base plate on a level and secure surface.
- Have the participant stand upon the dynamometer base plate, with feet shoulder width apart and equal distance from the chain. The chain should travel vertically from the base to the hands.
- The participant will stand erect with knees straight and arms flexed at 90° in the sagittal plane.
- The participant will hold the bar with a wide grip and bend elbows at 90° .
- Participants must stand erect without arching back.
- Adjust the chain so that the bar can be held in the hands while the arms are flexed at 90° in the sagittal plane.
- Ensure that elbows remain adducted.
- Verify this position and ensure the chain is taut.
- The participant must not shrug shoulders, bend back, or perform any other motion other than biceps flexion in an attempt to move the handlebar in a vertical direction.
- The participant will flex maximally for 3 seconds.
- After 3 seconds, the participant will slowly relax arms, and remain at a standing rest for 30 seconds.
- Once the participant has completed the 30-second recovery period, begin the 2nd trial.
- Repeat evaluation for the 3rd trial using the same procedure.
- Record the three trials to the nearest kilogram.
- Record the highest trial.

Note: Digital readout will display both the peak force ("p") and the average force ("a") achieved during the three evaluations.

WFI LEG STRENGTH

Equipment

- Jackson Strength Evaluation System *or* Verified equivalent dynamometer
- V-Grip Handlebar
- Towel
- Weight lifting belt (optional)

Figure 5.16



ASSESSMENT

- The purpose of this assessment is to evaluate the maximum isometric strength of the lower body by performing a static dead lift.
- Conduct Pre-Evaluation Procedures.
- The participants will towel-dry hands.
- The participant may use weight-lifting belts for support.
- Advise the participant that the evaluation is a series of 3 trials.
- Place the dynamometer base plate on a level and secure surface. Have the participant stand upon the dynamometer base plate, with feet spread shoulder width apart and equal distance from the lifting chain. Inform the participant to notify the assessor if he/she experiences any pain or discomfort, especially around the spine. If notified, terminate the assessment.
- Instruct the participant to stand erect with knees straight.
- Adjust the chain so the upper (inside) edge of the bottom cross-member of the V-grip handlebar is at the top of the participant's patella; legs are straight). Verify this position.
- Instruct the participant to:
  - Flex at knees and hips until he/she can reach the handle.
  - Hold the bar and look straight ahead with neck in the neutral position.
  - Fully extend arms and maintain a straight (neutral) back.
- Ensure the participant maintains the following positions:
  - The hips are directly over the feet, with trunk and knees slightly bent.
  - The shoulders are "set" or retracted to ensure that the spine is neutral (cervical, thoracic and lumbar.)
  - The elbows are extended
- Advise the participant to "ease into" the isometric leg extension and release it slowly, without bending at the waist, flexing the arms, or jerking the hand.
- Instruct the participant to extend legs, using proper form and technique. Encourage the participant to limit the first trial to approximately 50% of maximal effort.
- Participant will apply — 50% force for a maximum of 3 seconds while exhaling.
- After 3 seconds, instruct the participant to slowly relax arms and legs, and to remain at a standing rest for 30 seconds. The device will record the peak force exerted.
- Once the participant has completed the 30-second recovery period, begin the 2nd trial.
- The participant should use maximum effort during the 2nd and 3rd trials.
- Record the two trials to the nearest kilogram.
- Record the highest trial.

Note: Digital readout will display the peak force ("p") and the average force ("a") achieved during the three evaluations.

WFI VERTICAL JUMP — Optional Assessment
LEG POWER ASSESSMENT

Equipment:

- Pressure Mat - "Just Jump" Probotics
- Safety Tape - or any object that can be suspended above the mat to act as a target
- Calculator

Figure 5.17



Figure 5.18



ASSESSMENT

- The purpose of this assessment is to estimate peak power produced in the lower body.
- Collect the participant's body weight and record in kilograms (# lbs ÷ 2.2 = kg).
- Conduct pre-evaluation procedures.
- Place the jumping mat on a level surface. Connect the cord attached to the jumping mat to the handheld computer port.
- With the participant off the mat, turn the computer on. Choose "One Jump" on the computer menu. The display should read "Step on Mat".
- Have the participant squat to a position where the knees are at a 90° angle and the hands by the sides (momentary pause @ 90°).
- Instruct the participant to jump straight up as high as he/she can, reaching toward the ceiling or a target object, without tucking the legs, and land with both feet on the mat.
- When the participant has completed the jump, the display will read the hang time and vertical jump in inches. The vertical jump mode resets automatically.
- Have the participant perform a series of 3 jumps and record the highest distance in inches.
- Convert the highest jump achieved in inches to centimeters (# inches × 2.54 = cm).
- Use the power formula provided below with the jump height (cm) and body weight (kg) to estimate leg power.

Any deviations from the above techniques cannot be counted, and the participant must repeat the trial.
The following are examples of situations that require a re-evaluation:

- The participant fails to land with both feet on the mat.
- The participant tucks the legs instead of extending them while jumping. Note: Administrators can minimize the tendency of participants to tuck the legs by suspending a target object above the mat for the participant to attempt to touch.

Power formula:

Leg Power (watts) = [(60.7×jump height (cm)) + (45.3×body weight (kg))] – 2055

Use the following conversions:
Height in inches to centimeters (# inches × 2.54 = cm)
Body weight in pounds to kilograms (# lbs ÷ 2.2 = kg)

WFI FLEXIBILITY EVALUATION

Equipment

- Novel Acuflex I or equivalent trunk flexibility test device

Figure 5.24



Figure 5.25



ASSESSMENT

The purpose of this assessment is to evaluate generalized flexibility of the shoulders, trunk, and hips.

- Conduct Pre-evaluation Procedures.
- Advise the participant that the evaluation is a series of 3 trails that evaluate the flexibility of the shoulders, trunk and hips.
- Advise the participant that the flexion required during this evaluation must be smooth and slow, as she advances the slide on the measuring device to the most distal position possible.
- Instruct the participant to sit on the floor ensuring the head, upper back, and lower back are in contact with the wall.
- The participant should then place legs together, fully extended.
- The administrator should position the sit-and-reach box flat against the feet.
- The participant should maintain head and upper/lower back in contact with the wall, scapulae retracted, while establishing arm length.
- Then, extend arms fully in front of the body with one hand over the other. (Check scapular retraction.)
- The assessor then sets the guide to 0.0 inches at the tips of the middle fingers.
- Instruct the participant to exhale continuously while stretching slowly forward, bending at the waist, and pushing the measuring device with the middle fingers. The participant will maintain full extension of the legs, and shoulders flexed, and fingers in contact with the gauge throughout the stretch. The participant will momentarily hold the stretch at the endpoint.
- The participant will perform three trials, resting for 30 seconds between trials.
- Once the assessment is complete, record the greatest reach distance from among the three trials (rounded to the nearest 1/4 inch).
- The trial must be repeated if the participant bounces, flexes knees or uses momentum to increase distance.



Test #1 Shoulder Mobility©

Purpose - The Shoulder Mobility test is used to assess bilateral shoulder range of motion combining internal rotation with adduction and external rotation with abduction.

Description - The tester first determines the athlete's hand length by measuring the distance from the distal wrist crease to the tip of the third digit. The athlete is instructed to make a fist with each hand, placing the thumb inside the fist. They are then asked to assume a maximally adducted and internally rotated position with one shoulder, and a maximally abducted and externally rotated position with the other. During the test the hands should remain in a fist and they should be placed on the back in one smooth motion. The tester then measures the distance between the two fists. Perform the Shoulder Mobility test as many as 3 times bilaterally.

Clinical Implications for Shoulder Mobility

The ability to perform the Shoulder Mobility test requires shoulder mobility in a combination of motions including abduction/external rotation and adduction/internal rotation. Shoulder mobility allows one to lift and place a BA on his/her back quickly and safely. It also allows for one to maintain proper shoulder position while lifting a ladder or pulling a hose.



Test #2 Balance Drill

Purpose – The balance drill is used to assess multi-planar stability while the athlete is balancing on one leg.

Description – The individual stands on one leg with their hand on their hip and their opposite leg off the ground and arm in the air above their head in a fist. The individual is then instructed to bend at the hip and reach across their body (10 o'clock position), in front of their support leg (12 o'clock position) and inside of their support leg (2 o'clock position). This is performed with the individual returning to the starting position after each successful touch of the floor.

Clinical Implications for Balance



The ability to perform the balance drill correctly requires stability and coordination of the lower limbs, while the posterior chain is activated and engaged. The ability to engage the glutes and hamstrings while maintaining proper alignment from the floor up is an important aspect of any single leg movement. If the lower limbs do not have adequate stability it places the ankle, knee, hip and lower back under undo stress. This becomes even more difficult when carrying an extra load (e.g. BA, Turnouts, hose, etc.) up stairs or ladders. Any unilateral instability under normal conditions will be magnified once put under a load.



Test #3 Thoracic Mobility

Purpose- The thoracic mobility test is used to assess an individual's thoracic rotation in both directions while their low back and hips are stabilized.

Description- The individual sits in a chair with their knees bent at 90 degrees. The individual's knees and ankles will straddle and stay in contact with a door frame throughout the movement. The individual holds a dowel perpendicular to their torso at the level of the clavicle. While maintaining a neutral spine, the patient rotates in each direction as far as they comfortably can with their knees maintaining contact with the doorframe. The distance from the doorframe is measured or is given a score of passing if contact is made with the frame.

Clinical Implications for Thoracic Mobility

The ability for an individual to rotate efficiently without compromising lower back integrity is important for any rotational movement. These movements may range from a golf swing to the swing of a sledgehammer. If the thoracic spine lacks mobility, it forces the low back to compensate and ultimately become more susceptible to injury. This is very apparent in rotational movements under load, such as moving a patient from a bed to a gurney.



Test#4 Rotational Stability

Purpose - The Rotational Stability test is used to assess multi-planar stability while a combined upper and lower extremity motion is performed.

Description - The individual assumes the starting position of a push-up with their shoulders and feet in contact with a 2x6. The individual then without allowing the pelvis to rotate extends their opposite arm and leg out so that they stay inline with their body. The individual then attempts to bring their knee and elbow in contact with one another above the 2x6. The individual then extends back to the starting position and then returns to the original push up position. The individual is graded on the fluidity of movement as well as the amount of hip hike, rotation, and pelvic instability noted.

Clinical Implications for Rotational Stability

The ability to perform the Rotational Stability test requires asymmetric trunk stability in both sagittal and transverse planes during asymmetric upper and lower extremity movement. Many functional activities in sport require the trunk stabilizers to transfer force asymmetrically from the lower extremities to the upper extremities and vice versa. Carrying a load on one side such as a charged hose or a chainsaw requires this type of stability to maintain proper low back alignment.



Test #5 Active Straight Leg Raise©

Purpose - The Active Straight Leg Raise test is used to assess active hamstring and gastroc/soleus flexibility, while maintaining a stable pelvis.

Description - The individual first assumes the starting position by lying supine with his/her arms at their sides, palms up and head flat on the floor. The 2x6 is placed under the knees of the athlete. The tester then identifies the athlete's anterior superior iliac spine (ASIS) and mid-point of the patella. Next, the athlete

is instructed to lift the test leg with a dorsi-flexed ankle and an extended knee. During the test the opposite knee should remain in contact with the 2x6 and head should remain flat on the floor. Once the athlete has achieved their end range position, a dowel is aligned along the medial malleolus of the test leg, perpendicular to the floor. The Active Straight Leg Raise test should be performed as many as 3 times bilaterally.

Clinical Implications For Active Straight Leg Raise

The ability to perform the Active Straight Leg Raise test requires functional hamstring flexibility. This flexibility is the true flexibility an athlete has available during training and competition, as opposed to passive flexibility, which is most often assessed. The athlete is also required to demonstrate adequate passive iliopsoas flexibility of the opposite leg as well as lower abdominal stability.

Poor performance during this test can be the result of several factors. First, the athlete may have poor functional hamstring flexibility. Secondly, inadequate passive mobility of the opposite hip may be the result of iliopsoas tightness associated with an anterior tilted pelvis. If this limitation is gross, true active hamstring flexibility will not be realized. A combination of both these factors will demonstrate an athlete's relative bilateral, asymmetric hip mobility. This relative lack of flexibility is important in addressing back issues, as tight hamstrings are a concurrent problem with most back injury issues.



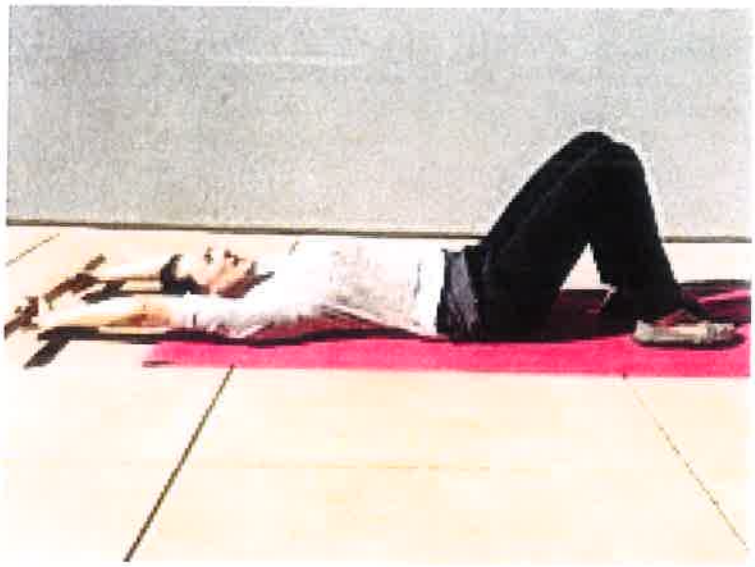
Test #6 Quadriceps Flexibility

Purpose- The quad flexibility test is used to examine the individual's passive quadriceps length as well as any hip flexor abnormalities.

Description- The individual lies supine with their legs straight, feet together and their arms crossed under their forehead. The athlete's lower limb is then brought up towards the glutes until the passive range of motion in the quadriceps is reached. This is the point at which all slack is removed and further movement becomes a stretch for the individual. The individual is then evaluated by measuring the distance from the heel to the individual's glutes. The individual's hip is also evaluated during the movement for any upward movement or lateral movement that would indicate hip flexor tightness.

Clinical Implications for Quadriceps Flexibility

The ability for the quadriceps to be flexible enough for the heel to reach the glutes is necessary for a proper squat as well as lunge. This also is important in alleviating constant tension on the patella. The ability of the hips to stay grounded when put under tension, exhibits the hip flexors ability to allow the pelvis to stay in a neutral position. If the pelvis is pulled out of alignment then the low back is forced to into extension to compensate. This will cause unnecessary tension in the low back that is further aggravated by lifting and squatting.



Test #7 Overhead Range of Motion

Purpose - The overhead range of motion test evaluates the individual's ability to maintain a neutral spine while reaching overhead.

Description - The individual assumes a sit-up position with their feet flat on the ground and their knees bent at 90°. A dowel is then placed in their hands with the shoulders at shoulder width apart. The individual is then instructed to push their low back into the ground engaging their core while the instructor places their hand under their back to ensure contact. While maintaining this low back position the individual then brings their arms over their head without bending their elbows. The individual attempts to maintain a neutral spine and stable shoulder position. The distance from the floor is measured or a passing score is assigned if the knuckles touch the floor.

Clinical Implications for Overhead Range of Motion

The ability to reach over ones head without compromising the lower spine is important in any overhead movement. If the shoulders fail to have enough mobility to get into a fully extended position, the low back then has to compromise and is forced into hyperextension. Subsequently if the thoracic spine lacks extension this will force the low back into extension at rest and during movement. This hyperextension once under load becomes a possible mechanism for a bulging or herniated disc.



Test #8
Ankle Mobility

Purpose – The ankle mobility tests assess' an individual's range of motion in the ankle joint and surrounding tissues.

Description – The individual places their left foot 2 inches from the wall with their right foot off to the side or slightly behind them, whichever allows for maximal flexion. The individual then attempts to drive their knee forward until it touches the wall while keeping their heel firmly pressed into the ground. If the individual completes the movement they gradually move their foot farther from the wall until they can no longer complete the movement without having to lift their heel. The next foot is then evaluated in the same manner to identify any asymmetries. The individual is then given a passing grade based on the final distance in relationship to their height.

Clinical Implications for Ankle Mobility

The ability of the ankle to properly track and move through a full range of motion is a cumulative effort of the joint as well as the Achilles tendon and soleus muscle. A limited range of motion puts the individual at a greater risk of knee injury. If the ankles range of motion is limited then proper squatting position as well as the ability to properly progress through the stages of a normal running gait are compromised. This abnormality in the ankle leads to changes in the knee range of motion and patellar tracking, which can lead to overuse injuries.



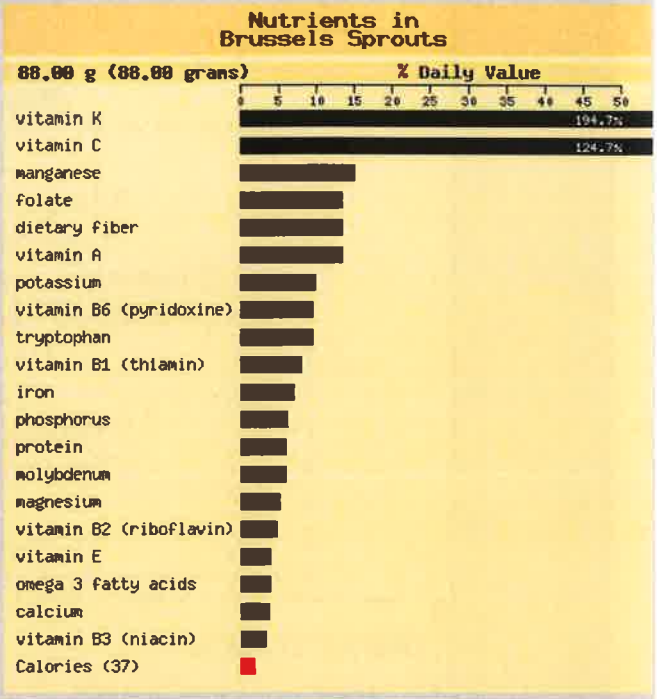
"Brussels Sprouts"

BASICS

- Brussels Sprouts resemble miniature cabbages, with diameters of about 1 inch.
- They belong to the **Brassica family** (which includes cabbage, collards, and kale).
- They are typically **sage green** in color, although some varieties feature a red hue.
- Perfectly cooked Brussels Sprouts have a crisp, dense texture and a slightly sweet, bright, and "green" taste.
- Brussels Sprouts are available year-round, however, their peak growing season is autumn through early spring.

BENEFITS OF BRUSSELS SPROUTS

- Along with other Brassica vegetables, Brussels Sprouts are also a source of indole-3-carbinol, a **chemical which boosts DNA repair in cells** and appears to **block the growth of cancer cells**.
- **Brussels Sprouts are an important dietary source of many antioxidants**:
- vitamins C, E, and A (in the form of beta-carotene), and manganese to name a few.
- Vitamin K, along with glucosinolates and Omega-3 found in Brussels Sprouts help to regulate the body's inflammatory/anti-inflammatory system and **prevent chronic, excessive inflammation**.
- Due to their high fiber content, Brussels Sprouts have a **cholesterol-lowering benefit** as well as **provides digestive support**.



STORAGE

- Choose Brussels Sprouts that are **firm, compact, and vivid green**. They should be **free of yellowed or wilted leaves** and should not be puffy or soft in texture.
- **Avoid** those that have perforations in their leaves; this may indicate that they have aphids.
- Keep unwashed and untrimmed Brussels Sprouts in a plastic bag; store in the refrigerator for up to 10 days. If you want to freeze them, blanch them first for between 3-5 minutes; they will keep for up to one year.

PREPARATION

- **Before washing**, remove stems and any yellow or discolored leaves. Wash tem well under running water or soak them in a bowl of water to remove any insects that may reside in the inner leaves.
- To allow heat to permeate throughout all the leaves, cut an "X" in the bottom of the stem before cooking or cut into quarters. **Steam for 5 minutes** for maximum nutrition and flavor.
- Toss with a Honey Mustard sauce; season with salt and pepper to taste; **OR** combine with sliced red onions, walnuts, and goat cheese or feta and toss with olive oil and balsamic vinegar for an exceptionally healthy side dish or salad.

For more information on the benefits of, or ideas for cooking with Brussels Sprouts visit the following websites:
http://whfoods.org/genpage.php?tname=foodspice&dbid=10
http://whfoods.org/genpage.php?tname=recipe&dbid=244



Balsamic Roasted Vegetables

Serves: 4



INGREDIENTS:

1 large red onion, cut into chunks
3 carrots, cut into 1-inch lengths
2 parsnips, peeled and cut into 1-inch lengths
2 cups **BRUSSELS SPROUTS**, trimmed and halved
2 cups cauliflower florets
4 garlic cloves, peeled
3 Tablespoons extra virgin olive oil
4 Tablespoons balsamic vinegar (or regular balsamic)
Salt and Pepper to taste

DIRECTIONS:

1. Preheat oven to 400°.
2. In large bowl, toss the vegetables with the oil and vinegar. Spread on two rimmed baking sheets.
3. Sprinkle with salt and pepper to taste.
4. Roast for 30-40 minutes until nicely browned and tender to your liking

SERVING RECOMMENDATIONS:

Serve roasted vegetables:

- Over cooked brown rice or quinoa
- With a piece of grilled chicken or fish
- With crumbles of goat cheese
- In a sandwich or pita bread pocket alone or with grilled chicken

*More recipes found at: http://www.foodnetwork.com/topics/brussels-sprout/index.html, http://vegweb.com/index.php?board=445.0;sort=rating;desc

Nutrition Recipe Box

Turkey and Spinach Quinoa Casserole



Makes 8 servings

Ingredients:

- 2 cups dry quinoa
- 2 lbs extra lean ground turkey
- 1 medium onion, chopped
- 4 medium garlic cloves, crushed
- 4-5 large handfuls spinach, chopped
- 2 cups tomato sauce
- 1 cup whole wheat bread crumbs
- 3 cups light cheddar or mozzarella cheese, shredded
- 1/4 tsp thyme, dry
- 2 tsp basil, dry
- Salt & ground black pepper to taste
- Cooking spray
- Green onions and diced tomatoes for garnish (optional)

Directions:

1.) Cook quinoa as per package instructions and undercook by 4 minutes. Add to a large mixing bowl.

2.) Preheat oven to 375 F degrees and spray 9 x 13 baking dish with cooking spray. Set aside.

3.) Preheat skillet on medium heat and spray with cooking spray. Add turkey and sautee for 5 minutes breaking into pieces with the spatula. Drain the excess liquid and add to the bowl with quinoa.

4.) Return skillet to the heat and spray with cooking spray again. Add garlic and onions, and fry until golden brown. Add spinach and sauté until it's wilted. Transfer to a bowl with quinoa and turkey.

5.) Into the same bowl, add tomato sauce, bread crumbs, 2 cups of cheese, thyme, basil, salt and ground pepper to taste. Mix enough to combine.

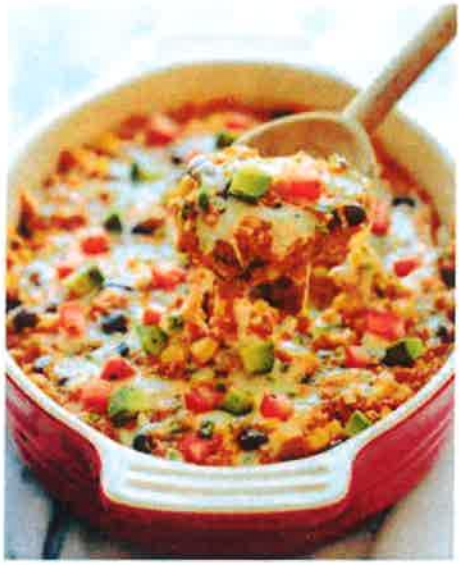
6.) Transfer the mixture in a baking dish, sprinkle with remaining 1 cup of cheese and bake for 25 minutes. Serve immediately, no need to let the casserole cool down.

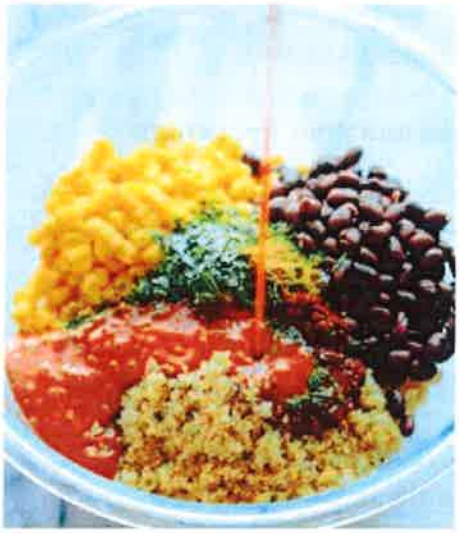
Optional: sprinkle with diced tomatoes, green onions, a dollop of Greek yogurt or salsa.

Storing Instructions: Refrigerate in an airtight container for up to 3 days. Freeze divided into individual portions, in an air tight container for up to 1 month.

Recipe from: www.ifoodreal.com

Nutrition Recipe Box







Quinoa Enchilada Casserole

Makes 6 servings

Ingredients:

- 1 cup quinoa
- 1 (10-ounce) can Old El Paso™ mild enchilada sauce
- 1 (4.5-ounce) can Old El Paso™ chopped green chiles, drained
- 1/2 cup corn kernels, frozen, canned or roasted
- 1/2 cup canned black beans, drained and rinsed
- 2 tablespoons chopped fresh cilantro leaves
- 1/2 teaspoon cumin
- 1/2 teaspoon chili powder
- Kosher salt and freshly ground black pepper, to taste
- 3/4 cup shredded cheddar cheese, divided
- 3/4 cup shredded mozzarella cheese, divided
- 1 avocado, halved, seeded, peeled and diced
- 1 Roma tomato, diced
- Add 1 lb. or ground turkey if desired

Directions:

In a large saucepan of 2 cups water, cook quinoa according to package instructions; set aside.

Preheat oven to 375 degrees F. Lightly oil an 8x8 or 2 quart baking dish or coat with nonstick spray.

In a large bowl, combine quinoa, enchilada sauce, green chiles, corn, black beans, cilantro, cumin and chili powder; season with salt and pepper, to taste. Stir in 1/2 cup cheddar cheese and 1/2 cup mozzarella cheese.

Spread quinoa mixture into the prepared baking dish. Top with remaining cheeses. Place into oven and bake until bubbly and cheeses have melted, about 15 minutes.

Serve immediately, garnished with avocado and tomato, if desired.

Recipe from: wwwdamndelicious.net/2014/07/07/quinoa-enchilada-casserole/

PHYSIOBALL

Core Exercises

STABILITY BALL PIKES



Start on floor in full plank position, balancing on palms with shins resting atop center of stability ball. Keep your abs tight.

Keeping your legs straight and strong, pull feet toward your chest. The ball will roll forward as your hips pike upward toward the ceiling, creating a "V" shape with the body.



Your legs, torso and arms should all be straight and strong. Keep your neck long and your head between your arms. You can point your toes but always keep your toes connected to the top of the ball.

Slowly lower yourself back towards the floor, returning to starting position.

Repeat 8 - 12 times.

STIR THE POT

Get into a plank position on a physioball.

The wider your feet the easier the movement will be.

Slowly rotate your arms clockwise without allowing your hips to rise.

Perform 10 then switch directions.

The smaller the physioball the harder the exercise becomes.



DANCING BUG

Lie face up on floor with arms and legs extended up, palms and shins pressed into a stability ball.

Lower left arm and right leg toward floor, getting As close as you can without touching down.

Return to start, then lower right arm and left leg.

Do 25 to 30 reps alternating sides.



CORE STABILIZATION

PHYSIOBALL HAND OFF

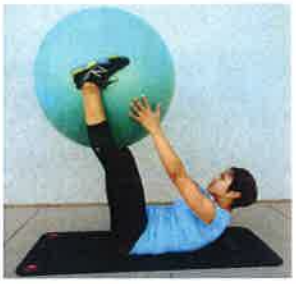
Lie on your back with your arms stretched overhead holding the exercise ball as illustrated.

Legs are straight and feet hip width apart.

Raise legs up to 80-90 degrees. Simultaneously lift your straight arms with the ball up to meet your feet.

Hand off the ball to your feet and lower the ball to the floor while also lowering your arms.

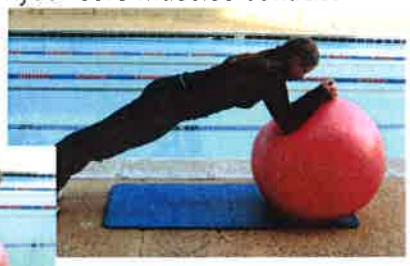
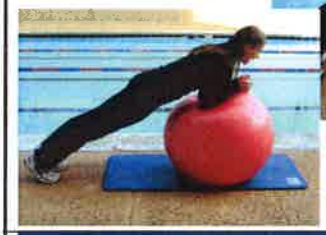
Pass the ball back to your hands to complete 1 repetition. Repeat for 10-15 reps.


ROLL OUTS

Start in plank position with forearms on a exercise ball. Maintain a straight line from shoulder through the torso, hips and knees. Roll the ball out away from the body until you feel your core muscles contract then return to start.

3 sets of 10-15 reps.

PHYSIO FOOT DROP

Begin in a push up position with your feet firmly planted on a physioball. Keep core tight and glutes squeezed to prevent any excess movement in your hips. While preventing movement in the ball, slowly bring your left foot off and lower it to the ground. Touch your toes to the ground and then slowly bring them back up and place them back on the ball.

Repeat with your right foot.



ROLLING PIN

Start facing the floor in full plank position, balancing on palms with shins resting atop center of stability ball. Lift left leg several inches off the ball, then bend right knee in toward chest, rolling ball forward.

Straighten right leg and repeat. Do 8-10 reps. Switch sides and repeat.

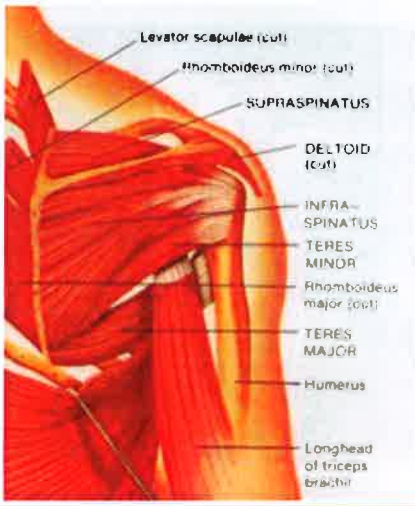
Make it easier by keeping both shins on the ball as you roll it forward.





FLEXIBILITY

Shoulder Mobility



The shoulder joint allows for the most movement in the human body and often pays the biggest consequence. Shoulders are held in place by a network of muscles and any imbalance can lead to injury. Due to overuse and poor posture our shoulders often become anteriorly rotated causing poor movement mechanics and lots of joint stress. A well rounded warm up and stretches that emphasis loosening the chest and anterior shoulders while also strengthening the scapular muscles will help prevent injury.

Wall Slides

1) Get up against the wall with your feet out so you are in a half squat position
2) Keep your low back, shoulder blades, elbows and wrist against the wall in a field goal position.
3) Slide your arms up while actively pushing against the wall, ensuring that you keep all points of contact.



Perform for 1-2 minutes to prime your shoulder for exercise.

Upper Back Foam Rolling

1) Lay on a foam roller with your legs bent at 90 and your feet firmly planted.
2) Push your feet into the ground lifting your hips up off the ground and placing all your weight in your upper back.
3) Cross your arms to further expose the tissues in your upper back.
4) Roll up and down paying attention to any areas that are tight or sensitive. **Roll for 1-2 minutes.**



FLEXIBILITY

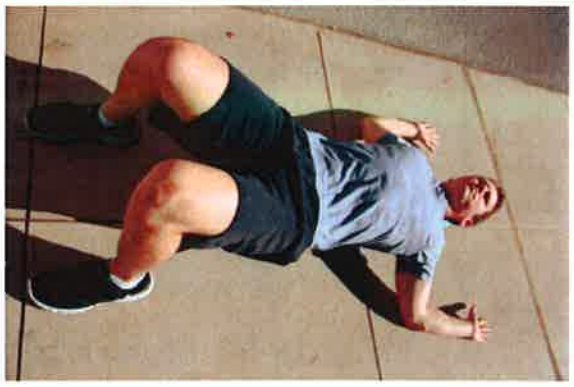
Band Pull Aparts



1) Stand upright with a resistance band in your hands.
2) Pinch your scapula together so you shoulders are retracted back.
3) Pull the band apart as far as you can while keeping your arms straightened.
4) Slowly let the band come back to the starting position.

How close your hands are will affect the resistance. Repeat for 10-15 repetitions.

Foam Roller Angels



1) Begin lying on your back with a foam roller lengthwise along your spine and your head supported.

2) Try to get your wrists and elbows in contact with the ground while keeping your low back in contact with the foam roller.

3) Keeping your arms close to the ground slide them up above your head and then pull your elbows down in underneath you.

Use this as a warm-up before exercise. Perform for 1-2 minutes.

Towel Stretch



1) Hold a towel or rope behind the back.

2) Pull up gently with the upper hand until you feel stretching in the shoulder.

Door Stretch



1) Place inside of bent arm on surface of wall. Position bent elbow shoulder height.
2) Step forward with leg closest to the wall. Hold stretch and repeat with opposite arm.

Low Back Exercises

STRENGTH



- When one has back pain or an injury, rest is usually the go-to cure. While this approach is understandable, it can undermine the overall healing process. Active forms of back exercises are a more effective way to rehabilitate the spine and help alleviate back pain.
- A balanced back workout should include a combination of stretching, strengthening, and low impact aerobic conditioning.
- Warm-up before back exercises: Before performing back exercises begin with 5-minutes of walking, or bike, elliptical trainer. Warm-up exercises prepare your back for strength exercises by increasing circulation to the muscles.

The Bridge

Lie flat on back; bend knees at 90-degree angle, feet flat on floor. Tighten abs. Raise buttocks off floor, keeping abs tight. Shoulder to knees should be in a straight line. Hold for a count of five. Slowly lower buttocks to floor.
3 sets of 8 reps.



*Added difficulty: Straighten one leg during lift

The Plank

Lying face down, shoulders elevated supported on elbows. Raise hips & legs off floor, body supported on elbows and toes. Straight line from shoulder through hip, knee, and ankle.
3 sets of 30 sec hold



The Side Plank

Lying on side, shoulder elevated supported by elbow. Raise hips and legs, body supported on elbow and ankle. Straight line down spine, hips, and legs.
3 sets 30 sec hold per side



The Wall Sit

Stand with your back against a wall, heels about 18 inches from the wall, feet shoulder-width apart. Tighten abs. Slide slowly down the wall until knees are bent at (or close to) a 90 degree angle.

Hold for 30-60 sec, 3 sets with 60 sec in between each set.



Low Back

Stability Ball Roll-up

Start in push up position with knees on stability ball. Flex the hips and knees to draw the ball beneath you. Extend the hips and knees to return to the start position.

3 sets of 15 reps.

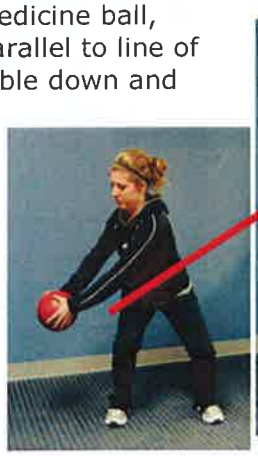




Wood Choppers

Start in standing position, feet 3-4 ft. apart. Holding a medicine ball, shoulders parallel to line of pull. Pull cable down and across body toward floor outside of opposite ankle, arms straight.

2 sets 15 reps per side.





Back Extensions

Start face down on "Roman chair" or bench, hips supported on bench. Bend at waist until torso is 60 to 75 degrees from horizontal, return to start position. Easiest with hands at base of spine. Hardest with hands extended overhead.





10-50 reps
Goal: 50 reps

Leg & Arm Raises

Lie on stomach, arms reached out past your head with palms and forehead on floor. Tighten abs. Lift one arm (as you raise your head and shoulders) and the opposite leg at the same time, stretching them away from each other.

Hold for 10-20 seconds. Switch sides.



Roll Outs

Start kneeling with hands on the medicine ball. Maintain a straight line from shoulder through the torso, hips and knees. Roll the ball out away from the body as far as possible and back to start.

3 sets of 15 reps.





Russian Twist

Start sitting, knees bent 90-degrees, torso reclining 45-degrees. Hands together, arms extended. Twist torso to side touching floor, repeat to opposite side.

3 sets of 15 reps per side.



two tailed t-test results
lipids
Males ALL AGES
2005 vs 2014

cholesterol_total

test	year	avg	sd	var	cnt	se
cholesterol_total	2005	**197.17**	39.77	1,581.75	728	2.17
cholesterol_total	2014	**190.62**	34.00	1,156.00	717	1.61

SIGNIFICANT DECREASE
99% confidence level

T test result **3.366 > 2.576** at alpha = 0.01
df= 1443

hdl_cholesterol

test	year	avg	sd	var	cnt	se
hdl_cholesterol	2005	**54.20**	12.04	145.00	728	0.20
hdl_cholesterol	2014	**56.87**	14.20	201.69	717	0.28

SIGNIFICANT INCREASE
99% confidence level

T test result **3.853 > 2.576** at alpha = 0.01
df= 1443

triglycerides

test	year	avg	sd	var	cnt	se
triglycerides	2005	**119.52**	102.15	10,434.84	728	14.33
triglycerides	2014	**106.20**	82.34	6,780.37	717	9.46

SIGNIFICANT DECREASE
99% confidence level

T test result **2.730 > 2.576** at alpha = 0.01
df= 1443

ldl_cholesterol

test	year	avg	sd	var	cnt	se
ldl_cholesterol	2005	**119.40**	33.82	1,143.63	713	1.60
ldl_cholesterol	2014	**113.00**	29.86	891.90	710	1.26

SIGNIFICANT DECREASE
99% confidence level

T test result **3.785 > 2.576** at alpha = 0.01
df= 1421

cholesterol_hdlc_ratio

test	year	avg	sd	var	cnt	se
cholesterol_hdlc_ratio	2005	**3.81**	1.10	1.21	728	0.00
cholesterol_hdlc_ratio	2014	**3.54**	1.03	1.06	716	0.00

SIGNIFICANT DECREASE
99% confidence level

T test result **4.703 > 2.576** at alpha = 0.01
df= 1442

Reference:
t-distribution critical values

2 tails α	0.200	0.100	0.050	0.020	0.010
df= ∞	1.282	1.645	1.960	2.326	2.576

two tailed t-test results
Pulmonary Function Testing
Males ALL AGES
2005 vs 2014

fvc

test	year	avg	sd	var	cnt	*se*
fvc	2005	**100.79**	12.15	147.63	726	0.20
fvc	2014	**104.57**	13.44	180.69	745	0.24

SIGNIFICANT INCREASE
99% confidence level

T test result **5.659 > 2.576** at alpha = 0.01
df= 1469

fev1

test	year	avg	sd	var	cnt	*se*
fev1	2005	**99.05**	12.82	164.38	726	0.23
fev1	2014	**100.35**	13.04	169.92	745	0.23

SIGNIFICANT INCREASE
90% confidence level

T test result **1.933 > 1.645** at alpha = 0.1
df= 1469

fev1_fvc

test	year	avg	sd	var	cnt	*se*
fev1_fvc	2005	**98.22**	7.28	52.98	726	0.07
fev1_fvc	2014	**96.11**	6.88	47.40	745	0.06

SIGNIFICANT DECREASE
99% confidence level

T test result **5.721 > 2.576** at alpha = 0.01
df= 1469

pef

test	year	avg	sd	var	cnt	*se*
pef	2005	**104.65**	16.77	281.09	724	0.39
pef	2014	**107.29**	18.38	337.94	745	0.45

SIGNIFICANT INCREASE
99% confidence level

T test result **2.875 > 2.576** at alpha = 0.01
df= 1467

fef2575

test	year	avg	sd	var	cnt	*se*
fef2575	2005	**97.42**	28.09	788.84	726	1.09
fef2575	2014	**92.12**	25.28	638.92	745	0.86

SIGNIFICANT DECREASE
99% confidence level

T test result **3.800 > 2.576** at alpha = 0.01
df= 1469

Reference:
t-distribution critical values

2 tails α	0.200	0.100	0.050	0.020	0.010
df= ∞	1.282	1.645	1.960	2.326	2.576

two tailed t-test results
weight
Males ALL AGES
2005 vs 2014

height

test	year	avg	sd	var	cnt	se
height	2005	**70.38**	2.61	6.83	729	0.01
height	2014	**70.55**	2.57	6.58	747	0.01

T test result **1.242**
df= 1474

INCREASE
not statistically significant

weight

test	year	avg	sd	var	cnt	se
weight	2005	**199.32**	30.67	940.71	729	1.29
weight	2014	**197.91**	30.19	911.36	747	1.22

T test result **0.892**
df= 1474

DECREASE
not statistically significant

BMI

test	year	avg	sd	var	cnt	se
BMI	2005	**28.27**	3.95	15.60	729	0.02
BMI	2014	**27.94**	3.83	14.63	747	0.02

T test result **1.661 > 1.645** at alpha = 0.1
df= 1474

SIGNIFICANT DECREASE
90% confidence level

body_fat

test	year	avg	sd	var	cnt	se
body_fat	2005	**21.36**	6.92	47.94	728	0.07
body_fat	2014	**19.75**	6.22	38.74	694	0.06

T test result **4.618 > 2.576** at alpha = 0.01
df= 1420

SIGNIFICANT DECREASE
99% confidence level

Reference:
t-distribution critical values

2 tails α	0.200	0.100	0.050	0.020	0.010
df= ∞	1.282	1.645	1.960	2.326	2.576

two tailed t-test results
fitness
Males ALL AGES
2005 vs 2014

endurance_pushup

	year	avg	sd	var	cnt	*se*
	2005	**33.69**	12.03	144.73	711	0.20
	2014	**41.08**	13.42	179.97	577	0.31

SIGNIFICANT INCREASE
99% confidence level

T test result **10.283 > 2.576** at alpha = 0.01
df= 1286

endurance_curlup

	year	avg	sd	var	cnt	*se*
	2005	**31.43**	14.50	210.24	706	0.30
	2014	**45.05**	20.98	440.04	559	0.79

SIGNIFICANT INCREASE
99% confidence level

T test result **13.078 > 2.576** at alpha = 0.01
df= 1263

flexibility_sit_reach

	year	avg	sd	var	cnt	*se*
	2005	**12.34**	3.25	10.56	721	0.01
	2014	**14.35**	3.12	9.75	647	0.02

SIGNIFICANT INCREASE
99% confidence level

T test result **11.635 > 2.576** at alpha = 0.01
df= 1366

aerobic_capacity

	year	avg	sd	var	cnt	*se*
	2005	**45.55**	7.74	59.97	722	0.08
	2014	**48.68**	7.71	59.38	701	0.08

SIGNIFICANT INCREASE
99% confidence level

T test result **7.643 > 2.576** at alpha = 0.01
df= 1421

max_mets

	year	avg	sd	var	cnt	*se*
	2005	**13.04**	2.14	4.60	719	0.01
	2014	**13.91**	2.20	4.85	701	0.01

SIGNIFICANT INCREASE
99% confidence level

T test result **7.485 > 2.576** at alpha = 0.01
df= 1418

body_fat

	year	avg	sd	var	cnt	*se*
	2005	**21.36**	6.92	47.94	728	0.07
	2014	**19.75**	6.22	38.74	694	0.06

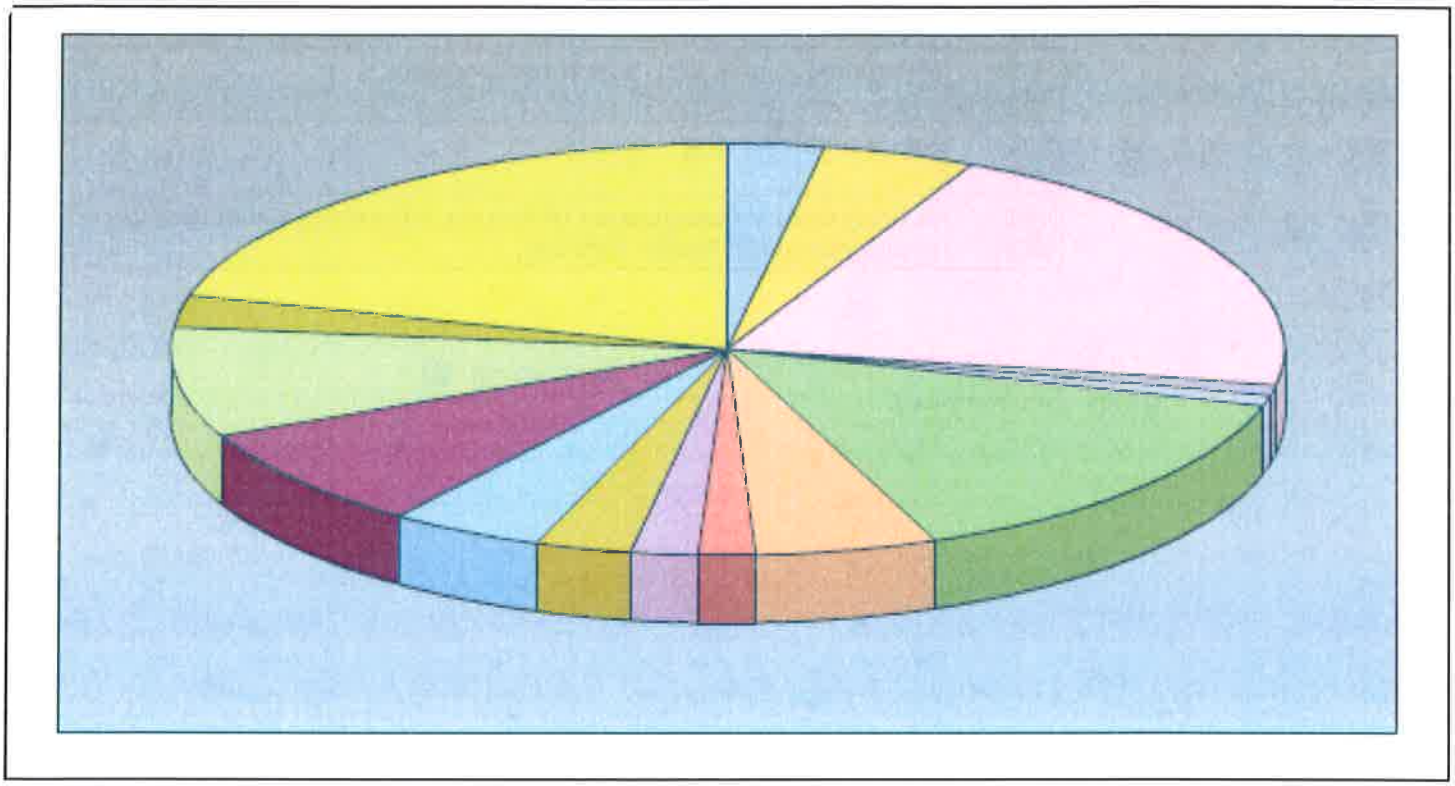
SIGNIFICANT DECREASE
99% confidence level

T test result **4.618 > 2.576** at alpha = 0.01
df= 1420

Reference:
t-distribution critical values

2 tails α	0.200	0.100	0.050	0.020	0.010
df= ∞	1.282	1.645	1.960	2.326	2.576

SAN DIEGO FIREFIGHTERS
REGIONAL WELLNESS CENTER



Year 2014

Entity
FIRE

Department
San Diego City

Search

Total DX **6625**

DX Distribution for year 2014

ICD9	Description	Tally
001-139	Infectious and Parasitic Diseases	119
140-239	Neoplasms	187
240-279	Endocrine, Nutritional and Metabolic Diseases, and Immunity Disorders	827
280-289	Diseases of Blood and Blood-Forming Organs	38
290-319	Mental Disorders	34
320-389	Diseases of the Nervous System and Sense Organs	575
390-459	Diseases of the Circulatory System	211
460-519	Diseases of the Respiratory System	77
520-579	Diseases of the Digestive System	78
580-629	Diseases of the Genitourinary System	110
	Diseases of the Skin and Subcutaneous Tissue	186

680-709		
710-739	Diseases of the Musculoskeletal System and Connective Tissue	324
740-759	Congenital Anomalies	2
780-799	Symptoms, Signs, and ill-Defined Conditions	339
800-999	Injury and Poisoning	98
V01-V83	Supplementary Classification of Factors Influencing Health Status and Contact with Health Services	808

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2015-03-20

Number of Clients per Risk Factor Category

METABOLIC SYNDROME

Zero Factors	1 Factor	2 Factors	3 Factors	4 Factors	5 Factors	Total Clients
[redacted]	198	71	24	[redacted]	[redacted]	805

=

CLIENTS WITH 5 / 5 SynX FACTORS

[redacted]	[redacted]	[redacted]	[redacted]	5	2013-09-11
[redacted]	[redacted]	[redacted]	[redacted]	5	2013-09-16

CLIENTS WITH 4 / 5 SynX FACTORS

[redacted]	[redacted]	[redacted]	[redacted]	4	2013-09-19
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-09-11
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-11-25
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-02-13
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-02-21
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-12-16
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-04-17
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-09-11
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-06-25
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-06-20
[redacted]	[redacted]	[redacted]	[redacted]	4	2013-10-16

CLIENTS WITH 3 / 5 SynX FACTORS

[redacted]	[redacted]	[redacted]	3	2013-12-09
[redacted]	[redacted]	[redacted]	3	2013-03-11
[redacted]	[redacted]	[redacted]	3	2013-02-13
[redacted]	[redacted]	[redacted]	3	2013-01-17
[redacted]	[redacted]	[redacted]	3	2013-12-18
[redacted]	[redacted]	[redacted]	3	2013-10-02
[redacted]	[redacted]	[redacted]	3	2013-01-09
[redacted]	[redacted]	[redacted]	3	2013-10-10
[redacted]	[redacted]	[redacted]	3	2013-04-08
[redacted]	[redacted]	[redacted]	3	2013-10-07
[redacted]	[redacted]	[redacted]	3	2013-06-18
[redacted]	[redacted]	[redacted]	3	2013-09-18
[redacted]	[redacted]	[redacted]	3	2013-05-29
[redacted]	[redacted]	[redacted]	3	2013-08-05
[redacted]	[redacted]	[redacted]	3	2013-12-12
[redacted]	[redacted]	[redacted]	3	2013-05-30
[redacted]	[redacted]	[redacted]	3	2013-03-25
[redacted]	[redacted]	[redacted]	3	2013-01-09
[redacted]	[redacted]	[redacted]	3	2013-02-11
[redacted]	[redacted]	[redacted]	3	2013-05-20
[redacted]	[redacted]	[redacted]	3	2013-04-22
[redacted]	[redacted]	[redacted]	3	2013-07-18
[redacted]	[redacted]	[redacted]	3	2013-06-05
[redacted]	[redacted]	[redacted]	3	2013-06-05

HELP

Search

StudyGroup (*) San Diego City

Year 2014

Search

WhoHas-Syndrome X Search Query Tool

Select search criteria for query of subjects presenting with Metabolic Syndrome X.

Number of Clients per Risk Factor Category

			METABOLIC SYNDROME			
Zero Factors	1 Factor	2 Factors	3 Factors	4 Factors	5 Factors	Total Clients
463	236	91	39	14	5	848

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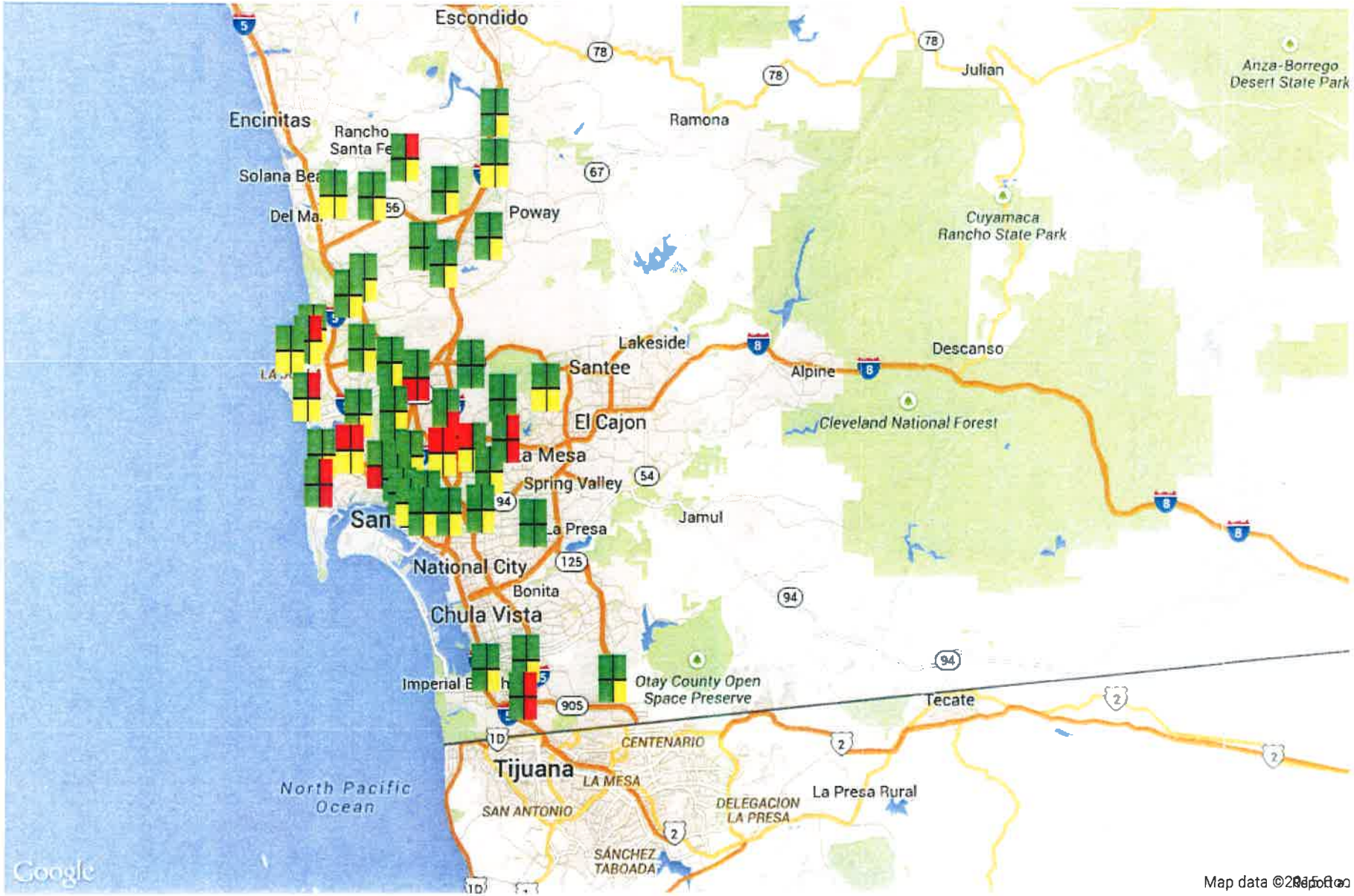
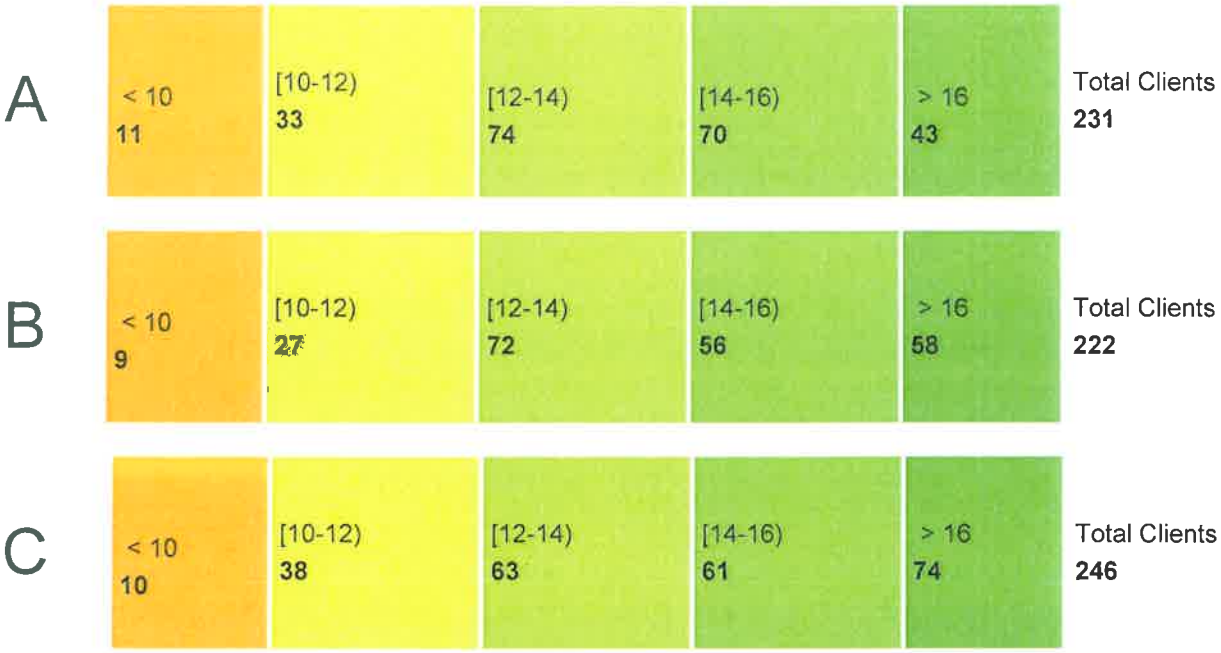
2014 | San Diego City | Search



Map of male lipid scores by station number - you need to stipulate station locations (lat/long) by Dept/Station Number at the backend

StudyGroup (*) San Diego City
Year 2014
Search

MaxMets by Division
(Fire Dept Specific Report)
This report determines the number of participants fror Fire Department Divisions (A,B,C) with MaxMets scor as indicated.
<10
[10-12) [12-14) [14-16)
>16



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Donold Duck

1962-06-03 3	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure	

Framingham Risk Assessment : male

Age	Tot Chol	Hdl Chol	Sys BP	HTN	Cig	DM	RF	Risk %
53	195	83	144	Y 1.99881	N 0	N 0	-0.09	10.18

MALES

Risk= 100 * (1 - 0.88936^e^(RiskFactors))

RiskFactors= (ln(Age) * 3.06117) + (ln(TotalChol) * 1.12370) - (ln(HDLChol) * 0.93263) + (ln(SysBP) * HTN) + Cig + DM - 23.9802

where HTN (on hypertension medication) (current complaint with treatment) YES = 1.99881 NO = 1.93303
where Cigarette smoker = cigarette smoker or cigar/pipe smoker YES = 0.65451 NO = 0
where Diabetes present (current complaint, with or without treatment) YES = 0.57367 NO = 0

Notes
This risk assessment tool is based on the Cox regression model of proportional hazards.
Cardiovascular disease includes coronary disease, cerebrovascular disease, peripheral vascular arterial disease and heart failure.
It may be applied to men who have had no prior history of cardiovascular disease.
References
D'Agostino RB Sr, Vasan RS, Pencina MJ, et. al. General Cardiovascular Risk Profile for Use in Primary Care. The Framingham Heart Study. Circulation. 2008 Jan 22.

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant



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San Miguel Wild Land Hydration Study

Evaluation of Physiological Responses of Firefighters During Wildland Fire Training

By Katie Rusk, Physician Assistant
Colleen O'Flaherty, Exercise Physiologist

Introduction

- Performing strenuous physical activity in the heat can be very taxing on the cardiovascular and thermoregulatory systems
- Long duration of physical activity in the heat without proper re-hydration, or release of heat can lead to heat illnesses.
- In 2008 there were several incidents of dehydration during Firefighting Tasks

Wild Land Fire Hydration Study Goals

- Gain insight
- Monitor temperature regulation
- Monitor heart rate
- Monitor fluid intake
- Monitor fluid output
- Monitor workload during wild land fire drills
- Hydration status
- Educate firefighters
- Develop strategies to decrease incidence and severity of heat related illnesses
- Better prepare firefighters to work under extreme conditions



Definitions

- Heat Exhaustion
  - More common and less extreme
  - Core temperature = 37°C (98.6°F) to 40°C (104°F)
  - Symptoms:
    Dizziness, thirst, weakness, headache, and malaise, nausea
- Heatstroke
  - Heat exhaustion can lead to heatstroke
  - Core temperature = above 40°C
  - Symptoms:
    Hot, dry skin, irritability, ataxia, and confusion
  - Must receive medical treatment following any signs or symptoms
  - Risk – WGBT, Exercise intensity and duration

Heat Exchange

- **Conduction** = direct contact with cooler object
- **Convection** = cool air passes over exposed skin
- **Radiation** = release of heat from the body directly into environment
- **Evaporation** = perspiration

Pathophysiology

- **Hyperthermia**
  - Muscle-generated heat accumulates faster than heat can dissipates from the body through sweating
- **Factors that limit heat dissipation**
  - Environmental conditions, i.e. heat from fire, humidity
  - Physical activity intensity
  - Clothing
- **Physiological limitations**
  - Volume depletion
  - Poor cardiovascular fitness
  - Lack of acclimatization

Predisposing Factors

- Strenuous exercise in hot/humid environment
- Lack of heat acclimatization
- Poor physical fitness level
- Dehydration
  - Improper fluid ingestion before and during exercise
- Protective Clothing
- Age
- History of heat illnesses
- Medications

Medications

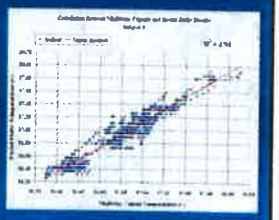
- Sodium Depletion
  - Anti-Hypertensive
- Potassium Depletion
  - Salicylates (asprin)
- Potassium & Magnesium Depletion
  - Antacids
  - Anti-Inflammatory
  - Gout Medications
  - Laxatives
  - Antibiotics
  - Birth Control
  - Cardiac Glycosides
  - Vasodilators
  - Loop Diuretics
  - Thiazide Diuretics

Study Description

- Performed during the Wildland Fire Training session on April 21-23
- 24 FF volunteered to participate
- Each day involved the same protocol with the three different divisions
- Workstations included:
  - Hose Lays
  - Line Construction
  - Structure Protection
  - 3 Classroom sessions
- Measurements were taken at the beginning, throughout each work station, and at the end of training session
- Measurements involved:
  - Height, nude weight, blood pressure, HR, activity level, core temperature, urine specific gravity, urine output
- Fluid intake was monitored

Temperature Monitor





Actiheart





















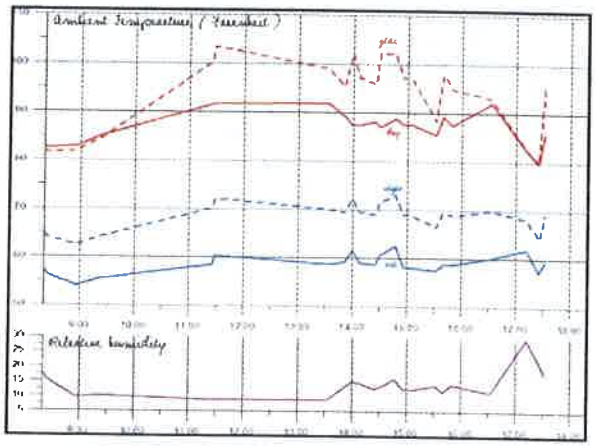




RESULTS

Physical Characteristics

- Age = 39.8 years old
- Weight = 196.2 lbs
- Height = 70.9 in.

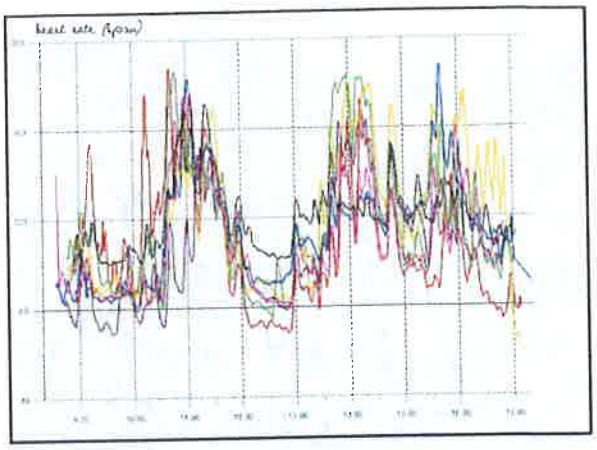


Heart Rate

Average Maximum Heart Rate during Drills (bpm)					
	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	189	102	171	170	126
22-Apr	171	99	169	157	104
23-Apr	163	84	167	160	93

Average Heart Rate during Drills (bpm)					
	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22-Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23-Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

*21-Apr performed the drills on the hottest day out of the three days.
*22-Apr and 23-Apr performed a different order of drills than on 21-Apr. The order of drills during these two days was class, line construction, structural protection, class, and then hose lays.



AVERAGE HEART RATE

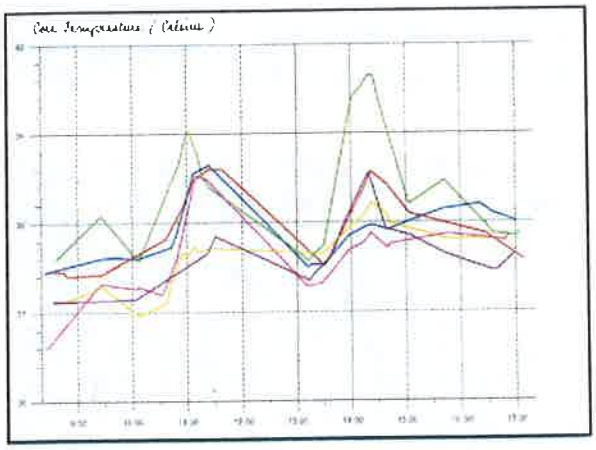
Type of Reading	Average Heart Rate (Beats per Minute)
Resting Heart Rate	77
During Live Fire Drill	164 / 173
During Fire Skills Drill	179
After 5 Minutes of Rest	162
After 20 Minutes of Rest	102
Average Maximum Heart Rate	180 / 189

Core Temperature

Average Core Temperature during Drills (°C)					
	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	38.13	37.49	38.27	37.94	37.78
22-Apr	37.56	37.22	38.01	37.72	37.19
23-Apr	37.84	37.29	38.10	37.75	37.53

Average Maximum Core Temperature during Drills (°C)					
	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	38.37	37.51	38.48	38.01	37.84
22-Apr	38.08	37.26	38.29	37.84	37.24
23-Apr	38.03	37.36	38.38	37.90	37.68

*1 individual reached a maximum core temp **above 39.5** (103.1°F) (on 04/21)



PEAK CORE BODY TEMPERATU

Peak Core Body Temperature (Degrees Fahrenheit)	Percentage of Participants
Between 100–102	56
Between 102.1–103	33
Between 103.1–104	8
Between 104.1–105	1
Above 105	2

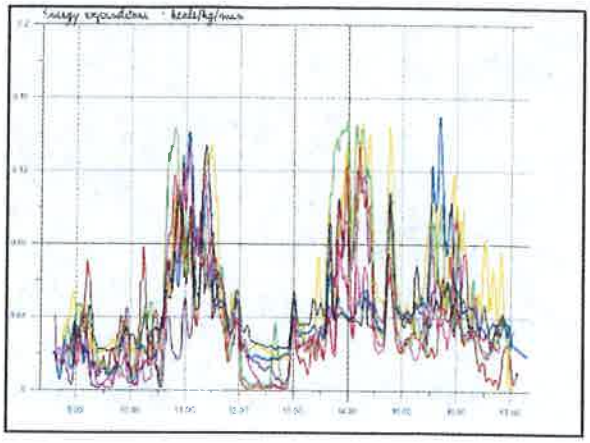
Workload (METs) During Drills

Average Workload (METs) during Drills

	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	4.05	0.85	3.94	3.22	1.77
22-Apr	2.85	0.46	3.74	2.62	0.91
23-Apr	3.49	0.34	4.26	2.14	0.77

Average Maximum Workload (METs) during Drills

	Hose Lays	Class	Line Construction	Structural	Class
21-Apr	8.51	2.01	7.54	7.12	2.64
22-Apr	7.13	1.05	7.44	6.55	2.91
23-Apr	8.12	0.84	7.73	6.67	1.40





Urine Specific Gravity and Body Weight

Post-Training:
7 individuals were categorized as dehydrated (SG ≥1.020)
0 individuals had BP >140 and/or >90

	Number of individuals with weight loss during the day	Number of individuals with >1% body weight loss	Average fluid intake	Average weight change	Average difference of fluid intake (L) vs. fluid output (L)
21-Apr	5	2	4.35	-0.875	2.57
22-Apr	5	2	3.18	-0.929	1.43
23-Apr	2	1	4.22	0.2	2.06

2 individuals (1 on 21-Apr, 1 on 22-Apr) had 3% body weight loss

HYDRATION STATUS PRIOR TO START OF DRILLS

Hydration Status	Specific Gravity of Urine	Percentage of Participants
Well Hydrated	Under 1.010	9
Minimally Dehydrated	Between 1.010–1.020	65
Significantly Dehydrated	Between 1.020–1.030	22
Seriously Dehydrated	Over 1.030	4

FLUID LOSS

Fluid Loss	% of Participants	Potential Effect
1% body weight	3	↓ heat transfer from contracting muscles to skin surface where heat can be dissipated to the environment
1–2 % body weight	39	↑ heart rate; ↓ blood pressure
2–3% body weight	53	↓ muscle endurance; ↓ energy level
> 3% body weight	5	↓ concentration and ability to focus

Conclusions

- 52% of firefighters had weight loss during the day predisposing them to dehydration
- 22% of firefighters at the end of day had >1% body weight loss, an indicator they were minimal dehydrated. 2 individuals met one criteria for dehydration (3% body weight loss).
- 30% of individuals were considered dehydrated based on USG (>1.020) before training session.
- 7 different individuals post-training were considered dehydrated (>1.020)
- It should be noted during all three days fluid intake was greater than fluid output, possibly indicating a level of dehydration.



Recommendations

- Firefighters be educated in weight change from dehydration/overhydration. Recommended for stations to have a set of scales for firefighters to weigh in at start and end of shift, especially during the hot weather months.
- Firefighters to be educated in the use of urine dip sticks for urine analysis for specific gravity measurements. Each station will monitor hydration status of their first void in the morning and prior to deployment on wild land fires. During long-term deployment continuous monitoring should be performed.
- Awareness of fluid intake should be noted. See handout.

Recommendations Continued

- Captain should inform crew of ambient temperature and humidity (wet bulb temperature exceeding 82°F). To ensure proper preparation for hydration and cooling.
- All crew members should be educated on heat related signs and symptoms.
- Preparation of cooling techniques is established.
- Individuals with history of heat related illnesses be carefully monitored in future high heat events for fluid intake, diet, duration and intensity of physical activity.
- Consider monitoring high risk individuals with a history of exertional heat exhaustion or stroke using wireless sensors that measure core body temperature.

Safety Recommendations

- Education of Firefighters
- Heat Acclimatization
- Level of fitness
- Monitoring firefighters in multiple day or multiple session work events for heat related illness
- Application for most effective cooling therapy
- Monitoring Environmental conditions

Hyponatremia

- General Recommendations
  - Drink half a quart of fluid 2-3 hours before exertion
  - Drink a pint of fluid (water and sport drink) 10 to 20 minutes before exercise
  - Replace fluids – 6-12 oz of fluid (water and sport drink) every 15 – 20 minutes
  - During meals, long breaks, and after exertion, replace fluids to restore fluid balance, electrolytes and CHO
  - Eat salty foods (i.e. pretzels, cheese sticks, peanuts)
  - Use Sport drinks for 1/3 to ½ of fluid needs
  - YOU CAN DRINK TOO MUCH WATER

Pre-Incident Hydration

Hydrated	
1% body weight	Drink 32 ounces of immediately
1-2 % body weight	Drink 32 ounces of immediately; 16 ounces every ½ hour
2-3% body weight	
>3% body weight	Drink 32 ounces immediately; 16 ounces every 15 minutes

Hydration Rehab

- During an Incident
  - 0 to 30 minutes water only
  - 30-60 minutes electrolyte supplement
    - Gatorade
    - Accelerade
    - Cytomax
  - 60 minute plus glucose supplement, meal replacement and caloric intake
    - Met-Rx Protein Plus Bar
    - EAS Myoplex Lite
    - Muscle Milk
- Amount depends on: hydration status, fitness level, individual sweat rate, age, medication



Fluid Replacement Recommendations – Pre-Exercise

- 1. Goal is to start exercise with normal hydration
- 2. If not at normal hydration – initiate prehydration program

Electrolyte	Function	RDA (mg)
Sodium	Muscle contraction Nerve transmission	2400
Chloride	Peak muscle function	
Potassium	Muscle contraction Nerve transmission Glycogen formation	3500
Magnesium	Glycogen conversion Muscle relaxation ATP production	310 - 420
Calcium	Muscle contraction ATP production nerve transmission	1,000 - 1,200

San Diego Fire Rescue Department
Academy
Low Back Injury Prevention Workshop Proposal

Introduction: Low back pain is the #1 cause of disability in people under 45. Eight percent (80%) of people in the United States will someday have a significant low back injury. Low back pain is a leading cause of missed workdays, second only to the common cold. Low back injuries also account for 25% of all disability claims, and for most workplaces, is the leading cost of worker's compensation injuries.

These facts, as well as the fact that our country spends 70 billion dollars per year on low back injuries, have motivated employers and health experts to look for so9lutions. Our experience over the past ten years indicates that a well designed preventive program that emphasizes correct body mechanics, functional strengthening exercises and awareness can reduce the frequency and severity of low back injuries and therefore reduce the cost to the employer.

Most low back injuries are the results of an overuse process, constant wearing down of the supporting tissues until there is an injury (the "last straw on the camels' back phenomenon). One of the goals of this program is to reduce the factors for those "accidents waiting to happen".

Our program combines easy to understand, educational and entertaining lectures with practical hands on workshops to teach preventive exercise to the employees.

Goals:

1. Improve the fitness (strength, flexibility and endurance) of the low back
2. Heighten the employee's awareness of proper posture, biomechanics and lifting techniques to the point that it becomes habitual.
3. Reduce other risk factors that contribute to low back strain and injury including stress, increased weight and poor nutrition.

The Program:

Worksite Evaluation: A Physical therapist will evaluate specific tasks done by firefighters at the fire stations and discuss potential training sessions with Academy trainers, Recommendations will be made from this evaluation throughout the program on ways to improve biomechanics, lifting techniques and other preventive practices for specific work related tasks.

Session 1: Lecture

Educational lecture featuring back anatomy, biomechanics, risk factors for back injury and specific back injuries will be discussed. An overview of the specific exercises being taught in the workshops and preparatory stretches and exercises will be presented.

Instructor:	Physician
Duration of session	1 ½ hours

Session 2: Flexibility Workshop

Overview of risk factors for low back injury will be discussed and reviewed (poor flexibility, weakness, overuse, body mechanics, etc). Flexibility and range of motion of lower extremities will be addressed. Specific low back stretching exercises will be demonstrated and participants will perform exercises and be evaluated on proper technique.

Instructor:	Physical Therapist
Duration of session	1 hour

Session 3: Back and Core Stabilization Workshop

Overview of back stabilization exercises (strengthening exercises for core musculature) and the concept of "neutral" will be introduced. Back stabilization exercises will be demonstrated and taught to participants. Instructors will evaluate individual's ability to perform exercises properly.

Instructor:	Physical Therapist
Duration of Session	1 hour

Session 4: Biomechanics and Functional Exercises

Overview of posture, lifting techniques and biomechanics will be discussed.. Participants will learn proper body position, lifting techniques and functional strengthening exercises for specific job related tasks for fire related work tasks.

Instructor:	Physical Therapist
Duration	2 hour

Session 5: Nutrition and Other Contributing Factors to Prevention of Back Injury

Overview of other contributing fact ors that increase risk and severity of back injuries with focus on diet and exercise, maintaining ideal body weight, stress and other safety related issues.

Instructors:	Physician and Nutritionist
Duration:	1 ½ hours

SAN DIEGO FIRE RESCUE DEPARTMENT

LOW BACK INJURY PREVENTION PROGRAM REFRESHER COURSE

UNIFORMED PERSONNEL

DOCTOR	**Lecture – featuring back anatomy, biomechanics, causes of low back injuries.**
DOCTOR	**Lecture – Other contributing factors for back problems, stress, nutrition, weight, exercise and other related safety issues**
Physical Therapist	**Workshop: Flexibility and back stabilization The importance of flexibility and range of motion of lower extremities and the concept of "neutral" will be addressed. Flexibility and back stabilization exercises will be demonstrated and taught to firefighters**
Physical Therapists	**Workshop: Overview of posture, lifting techniques and biomechanics will be addressed. Participants will learn proper body position, and lifting techniques for specific work related tasks for firefighters at San Diego Fire Rescue Department**
Time Frame:	**2-3 hours**
Setting:	**IST, Battalion meetings, Station visits**

FIREFIGHTERS WEIGH TO WIN

6-Weeks to a Smarter & Healthier You

- *6-Weeks of 45 minute classes*
- *Personalized Assessment Quiz*
- *Weight and Body Fat Analysis taken at each class*

Weigh to Win is 6 weeks of comprehensive classes on diet, nutrition and weight management. With jobs, families, hobbies, school, etc., eating healthy can be another added challenge in our already busy lives. Weigh to Win will teach class participants to successfully manage their eating habits around an active lifestyle. Each class will discuss topics such as body composition, journaling, emotional eating, organization, portion sizes, visual clues, food labels, supplementation, fats, proteins, carbohydrates, grocery shopping tips and eating away from home. In addition, the program includes weekly weigh-ins and bi-weekly circumference measurements.

Week 1:

- Quiz
- Establish Basal Metabolic Rate
- Weigh in and Measurements
- Goal Setting

Weeks to follow (depending on the pace of the class):

- Emotional eating and strategies to combat it
- Planning for success with food choices when you are short on time
- Fats, carbs, proteins, and calories...determining what is right
- Meal planning
- Grocery Shopping
- Stock a Healthy Kitchen
- Eating out successfully
- Foods to Include—trend, myth, or truly healthy?
- How to Eat to Fuel Your Workouts (explore pre- and post-workout nutrition ideas)

Donold Duck

1962-06-03 DOB	53 Age	6 Visit	2014-08-02 Visit date	Department	Division	Station	MEDFIT Procedure

Patient Health Care Questionaire PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following problems ?	Not at all	Several days	More than half	Nearly everyday
01. Little interest or pleasure in doing things	☑	☐	☐	☐
02. Feeling down, depressed, irritable or hopeless	☑	☐	☐	☐
03. Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☑
04. Feeling tired or having little energy	☐	☐	☑	☐
05. Poor appetite, weight loss, or overeating	☑	☐	☐	☐
06. Feeling bad about yourself - or that you are a failure or have let yourself or your family down	☐	☐	☐	☑
07. Trouble concentrating on things, such as school work, reading or watching television	☑	☐	☐	☐
3. Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	☑	☐	☐	☐
09. Thoughts that you would be better off dead, or of hurting yourself in some way	☐	☐	☐	☑
10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people	○ Not difficult at all ○ Somewhat difficult ○ Very difficult ◉ Extremely difficult			
				954

Score and Interpretation

Total score	**11 / 27**
Severity	**Moderate depression**
Ideation	REVIEW SUICIDALITY
Impact	REVIEW IMPACT ON FUNCTIONING

Last updated 2014-12-17 11:53
tie Rusk, PA-C (Physician's Assistant)

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant



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10001287 - 9548 visit# 6 Date: 2014-08-02 update review

Donold Duck MEDFIT

Files Sticky

PHYSICIAN SIGNED RECORD | I wish to amend this page for the following reason ... | Unlock Page

Primary Care PTSD Screen

In your life, have you ever had an experience that was so frightening, horrible, or upsetting that, in the past month, you ....

1. have had nightmares about it or thought about it when you did not want to ?	○ Yes ◉ No
2. tried hard not to think about it or went out of your way to avoid situations that reminded you of it ?	◉ Yes ○ No
3. were constantly on guard, watchful or easily startled ?	◉ Yes ○ No
4. felt numb or detached from others, activities or your surroundings ?	◉ Yes ○ No
	9548

Changed LDL 1
(Steve Birch, Ph.D 2

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(Steve Birch, Ph D 2

Score and Interpretation

Total score	**3 / 4**
PC-PTSD	**POSITIVE**

Current research suggests that the results of the PC-PTSD should be considered positive if a patient ansers "yes" to any three (3) items.

Last updated 2014-12-09 16:13
Steve Birch, Ph.D (Uber Gruber)

HELP

This encounter record was signed 2014-08-21 12:56 by Katie Rusk, PA-C / Physician's Assistant

Welnet v15 0117
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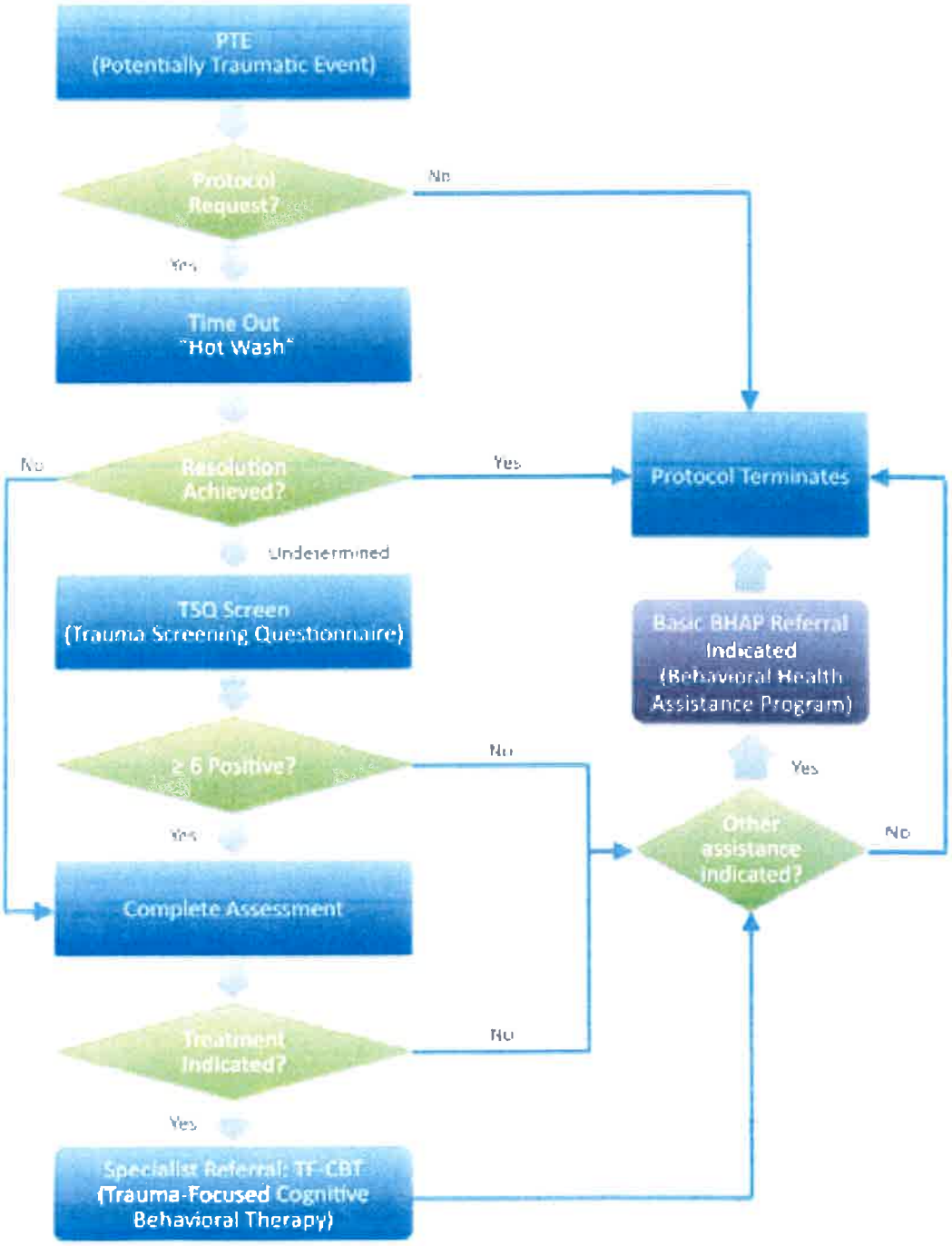
Occupational Stress Exposure

Recommended Protocol

Firefighter Life Safety Initiative #13:
Firefighters and their families must have access to counseling and psychological support.





Over

Recommended Protocol for Exposure to Occupational Stress

The stress to firefighters that is created by exposure to traumatic events is very real. These kinds of experiences happen with unfortunate regularity because they are an essential part of what the fire service does. No matter the size or type of the organization, it is important that firefighters be prepared to deal with the impacts of these exposures, and that fire departments provide access to resources that can make a difference.

The actions recommended in the model shown in the flowchart (on Page 1) reflect best practices based on current research, and should fit easily into the operations and support systems that most fire departments have in place. The key elements of this model include:

Determination of a Potentially Traumatic Event (PTE): A trauma for one responder may be a routine event for another. Reaction to a trauma is subjective, driven by an individual's experience, sensibilities and personal situation. After exposure to a PTE, members should be asked if they require assistance. If so what type? If not, expression of support may be all that is required.

Time out/hot wash: This concept is borrowed from the military as an element of After Action Review (AAR). It is a mechanism that allows those affected by an event to review what happened, what was successful, what could have gone better and how they might improve the next time they respond to a similar situation. This post-incident assessment will often help firefighters put the event into perspective. After a brief "time out," they may elect to return to service.

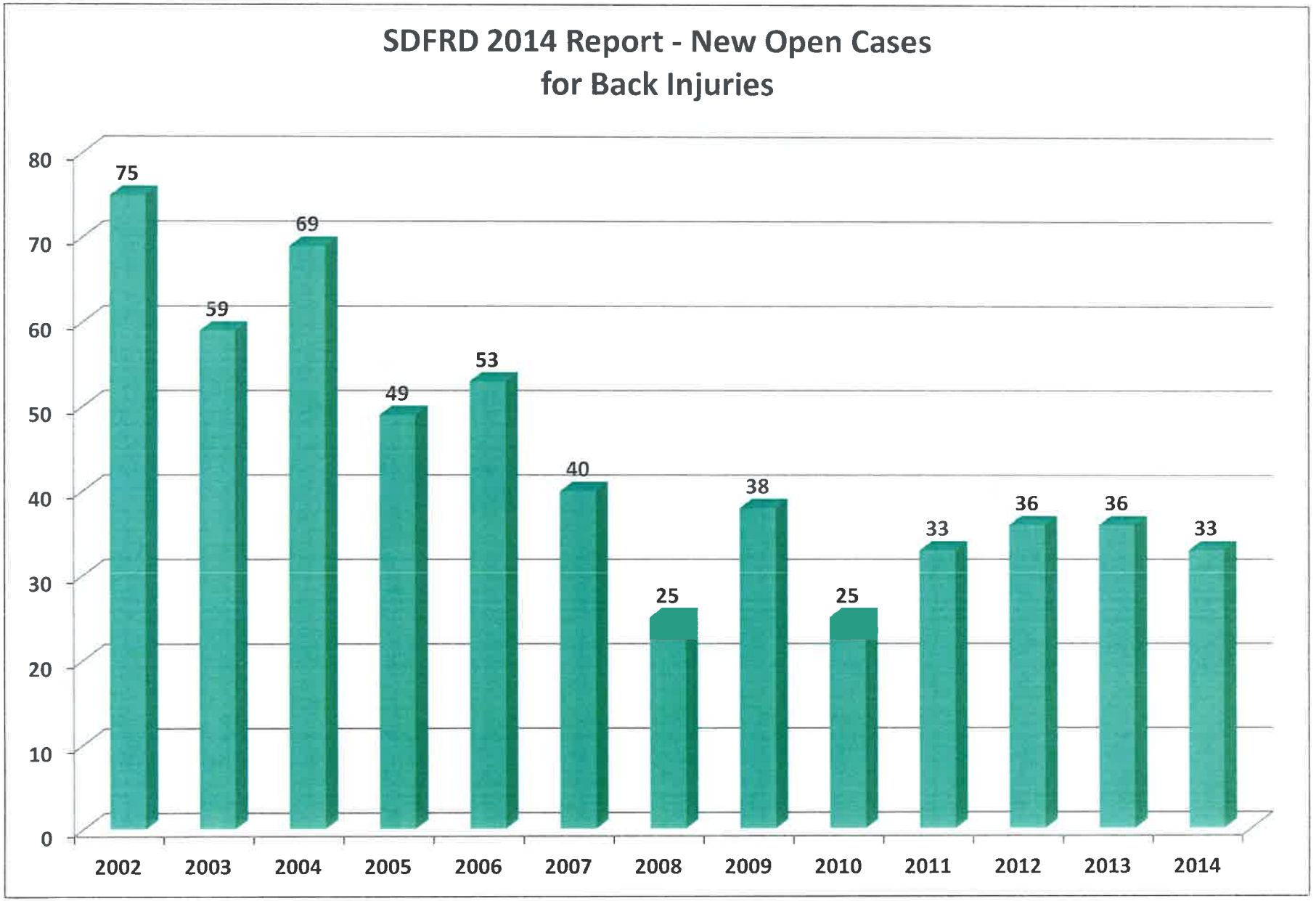
TSQ screening: The *Trauma Screening Questionnaire (TSQ)* is a straightforward and easily scored instrument to identify who is progressing well, and who may need additional help down the road. Used 3-4 weeks after the PTE, it consists of ten simple questions about recent symptoms. More than six positive responses suggest that a more complete screening by a competent behavioral health professional may be warranted.

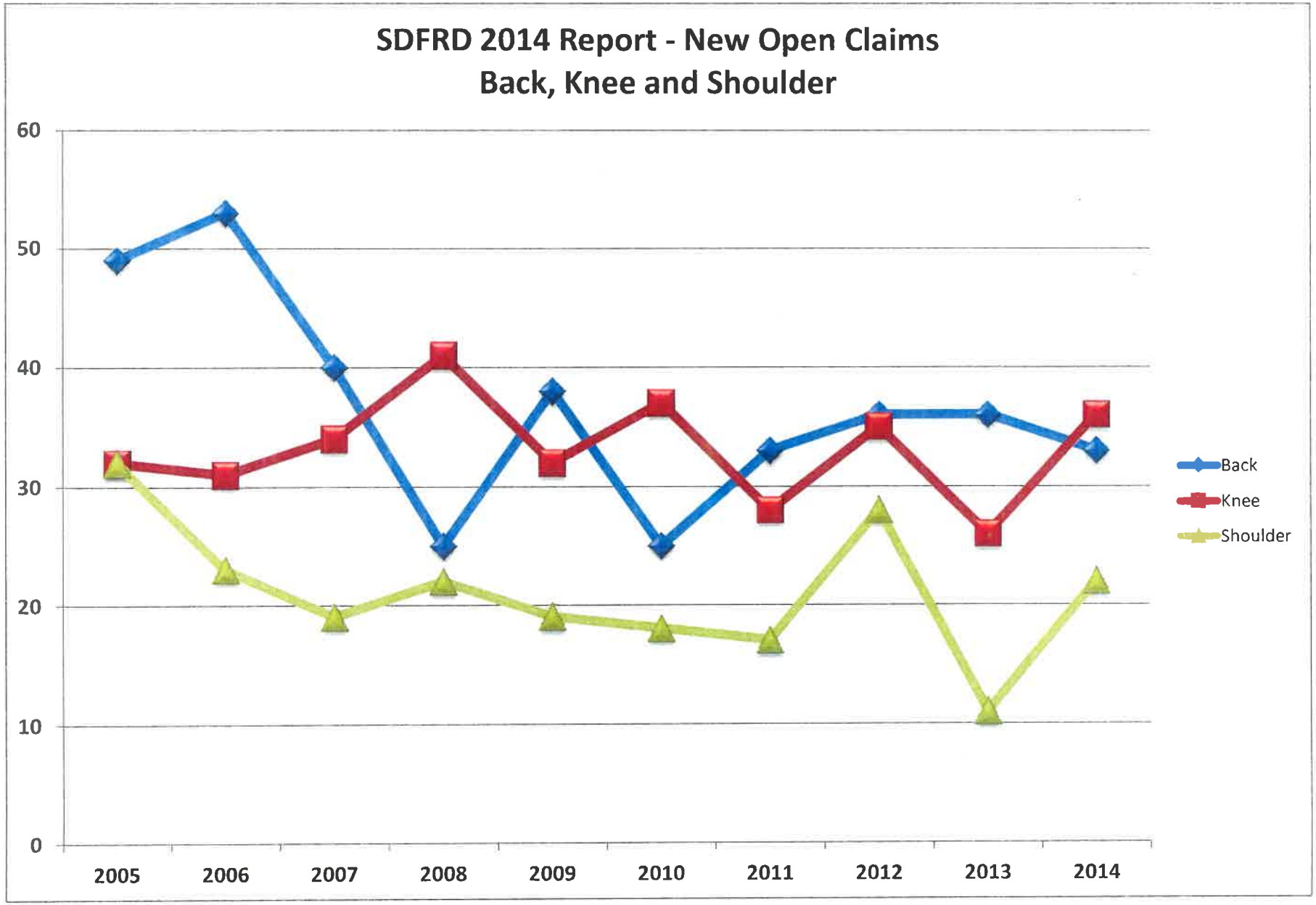
Complete assessment: This can typically be accomplished by a referral to a department or jurisdiction's Behavioral Health Assistance Program (BHAP) or other competent behavioral health professional. BHAP counselors can often help with managing specific symptoms and dealing with other non-event related stressors of daily living (such as marital problems, financial issues, etc.) that might be interfering with a member's recovery from exposure to a traumatic event.

Treatment by specialty clinician: If more intensive care is needed, it should be provided by a specialist (psychiatrist, doctoral-level psychologist, licensed clinical social worker or licensed professional counselor) with advanced training and supervised clinical experience in specific evidence-based treatment for PTSD, anxiety disorders and depression.

Firefighter Life Safety Initiative #13:
Firefighters and their families must have access to counseling and psychological support.

To learn more about the National Fallen Firefighters Foundation's FLSI #13 Behavioral Health Protocol and for information regarding training in its use, visit http://www.everyonegoeshome.com.


SDFRD 2014 Report - New Open Cases for Back Injuries
80
70
60
50
40
30
20
10
0
75
59
69
49
53
40
25
38
25
33
36
36
33
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


SDFRD 2014 Report - New Open Claims
Back, Knee and Shoulder
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Back
Knee
Shoulder

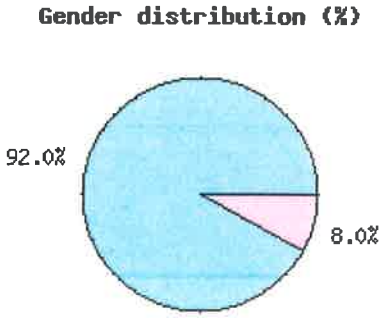
SAMPLE
DATA REPORT

1 Demographics

1.1 GENERAL

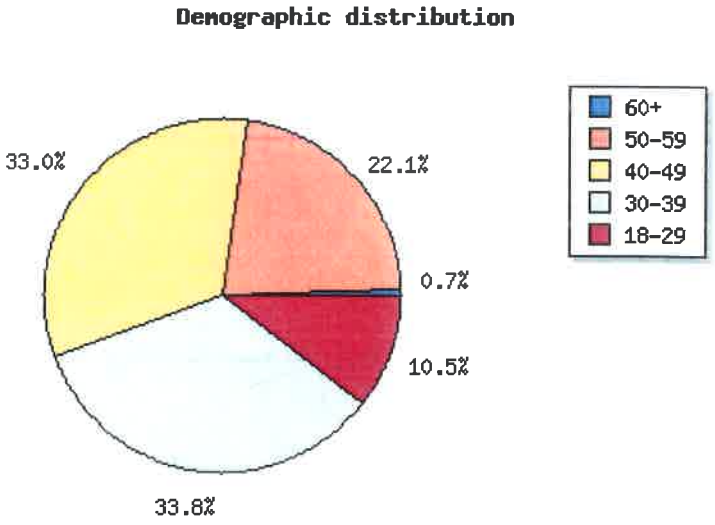
746 fitness exams
686 males,60 females

Age (yr)
Avg: 41.4
Min: 22
Max: 61



1.2 AGE DISTRIBUTION

[Age]	Number of subjects
[18-29]	78
[30-39]	252
[40-49]	246
[50-59]	165
[60+]	5



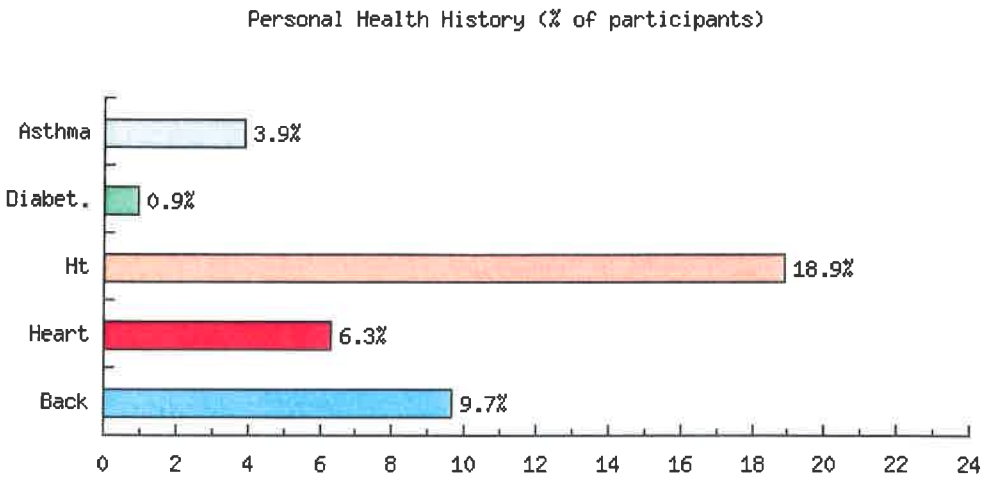
2. Current Diagnosis and Current Habits

2.1 Diagnosis

No.(%) of subjects with

Asthma
(3.89 %)
Diabetes
7 (0.94 %)
Hypertension
141 (18.90 %)
Heart disease
47 (6.30 %)
Lower Back
72 (9.65 %)

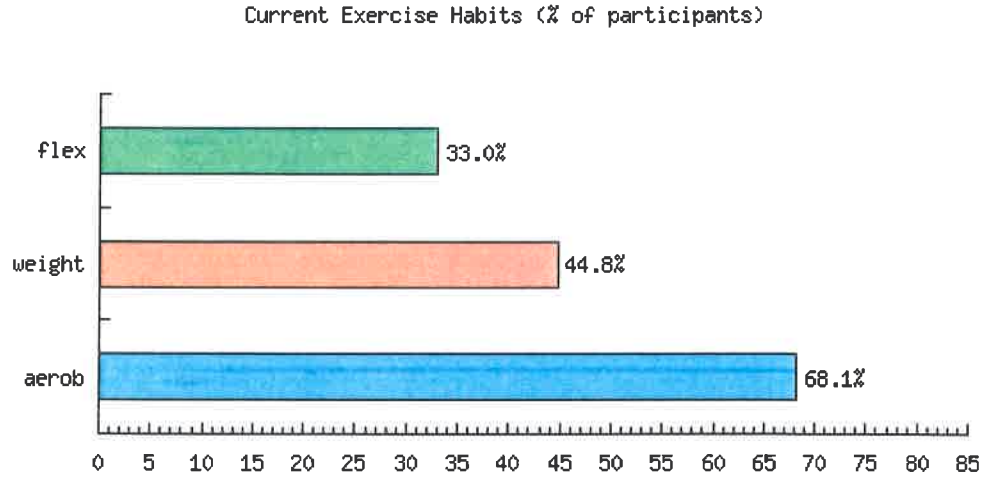
out of 746 total subjects



2.2 EXERCISE

Number of subjects who currently perform exercise at least 3 times per week

Flexibility 246
Weight lifting 334
Aerobic Exercise 508



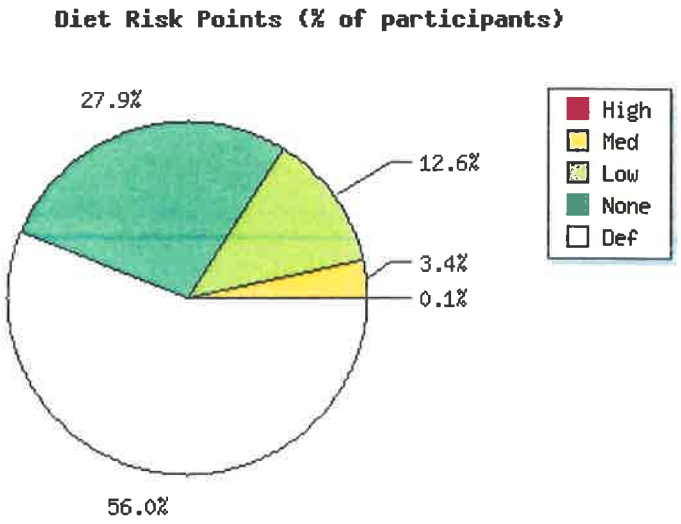
2.3 NUTRITION

Risk: Number of subjects

None: 208 <=3 points
Low : 94 4-5 points
Med : 25 6-9 points
High: 1 >10 points

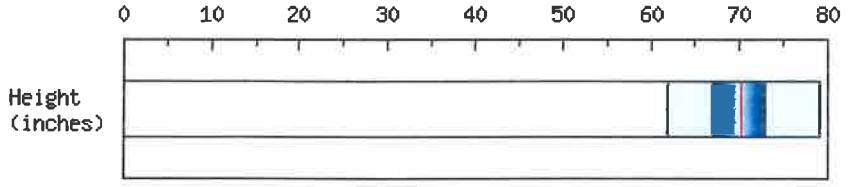
Total 328
Defer 418 no data submitted

Study 746

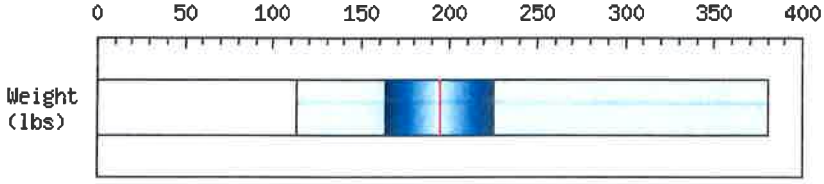


3. Medical

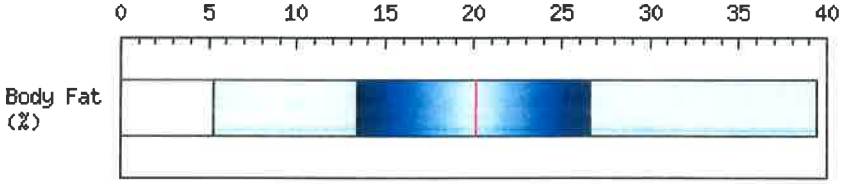
Height (in)
Avg: 70.1
Low: 62
High: 79
StdDev: 2.8



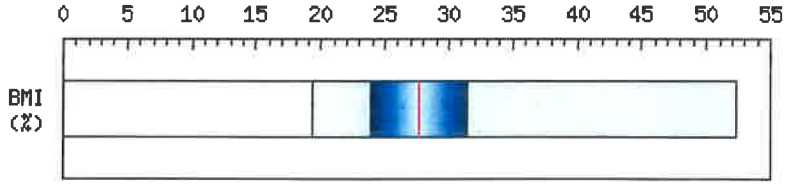
Weight (lbs)
Avg: 194.2
Low: 113.0
High: 380.0
StdDev:30.5



Body Fat (%)
Avg: 20.1
Low: 5.2
High: 39.4
StdDev:6.5



BMI
Avg: 27.7
Low: 19.4
High: 52.3
StdDev: 3.8



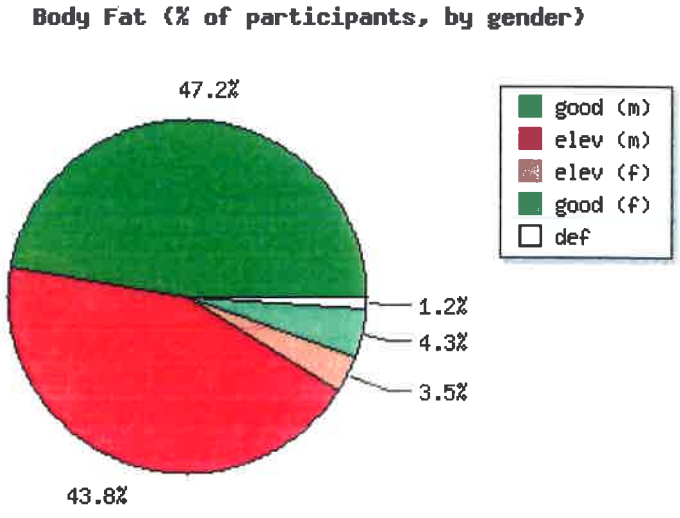
BODY FAT
number of subjects

Males
good 352 | elevated 327

Females
good 32 | elevated 26

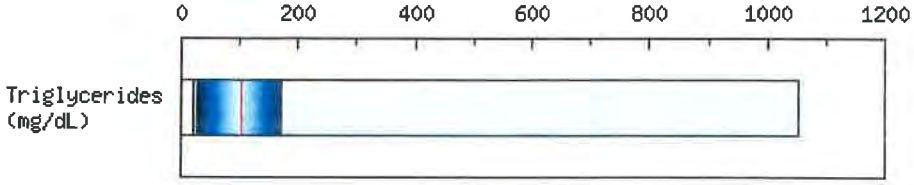
Deferred 9

Good body fat
M:<20% F:<25%
Elevated body fat
M:≥20% F:≥25%

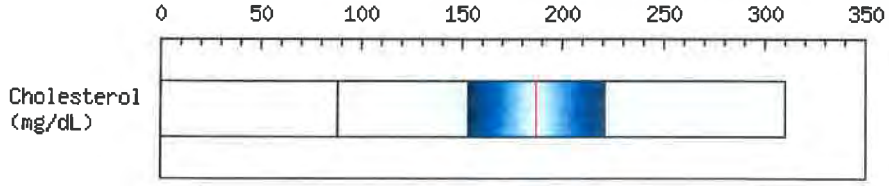


4. Blood Lab

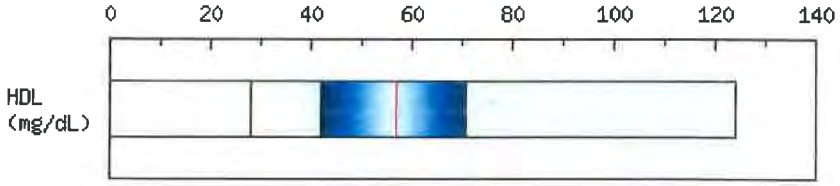
Triglycerides (mg/dL)
vg: 103.1
Low: 21
High: 1054
StdDev:69.8



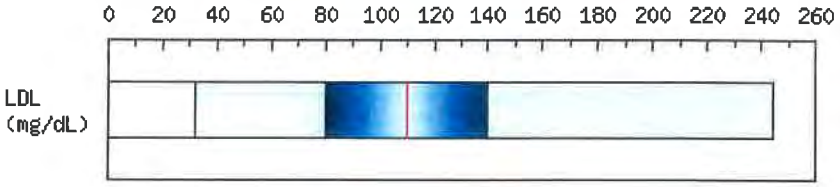
Cholesterol (mg/dL)
Avg: 187.3
Low: 88
High: 310
StdDev: 33.4



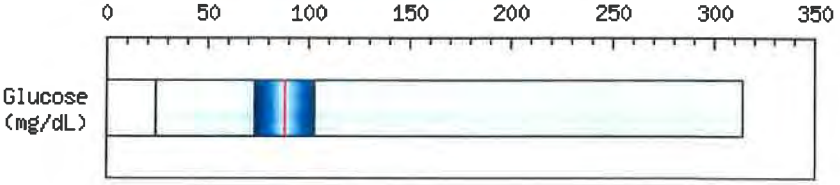
HDL (mg/dL)
Avg: 56.8
Low: 28
High: 124
StdDev: 14.1



LDL (mg/dL)
Avg: 110.1
Low: 32
High: 244
StdDev:29.3

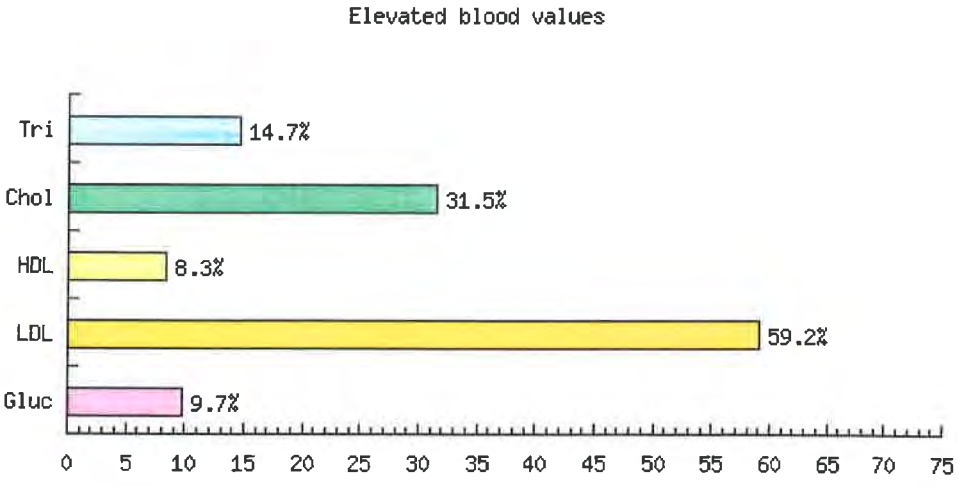


Glucose (mg/dL)
Avg: 87.9
Low: 24
High: 314
StdDev:14.7



Elevated blood values

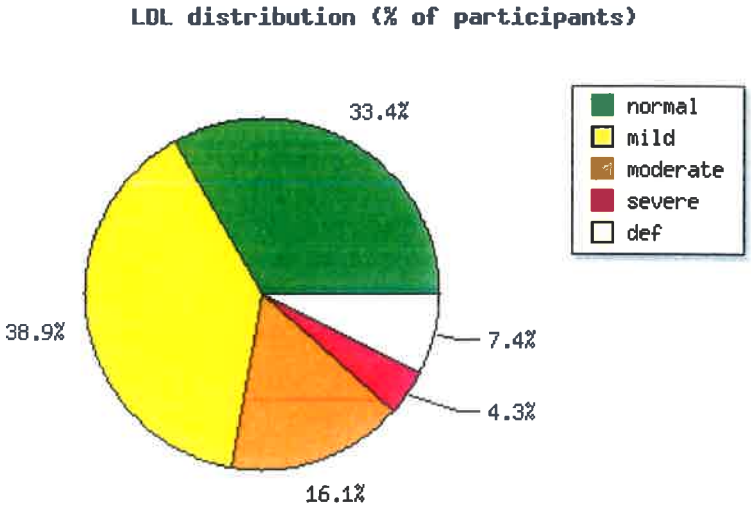
Number (%) of subjects
Triglycerides >150mg/dl
110 (14.7 %)
Cholesterol >200mg/dl
235 (31.5 %)
HDL <40mg/dl
62 (8.3 %)
LDL >100mg/dl
442 (59.2 %)
Glucose >100mg/dl
72 (9.7 %)



LDL DISTRIBUTION

Number of subjects
NORMAL 249
(<100 mg/dl)
[illegible]LD 290
[illegible]-130 mg/dl)
MODERATE 120
(131-160 mg/dl)
SEVERE 32
(>160 mg/dl)

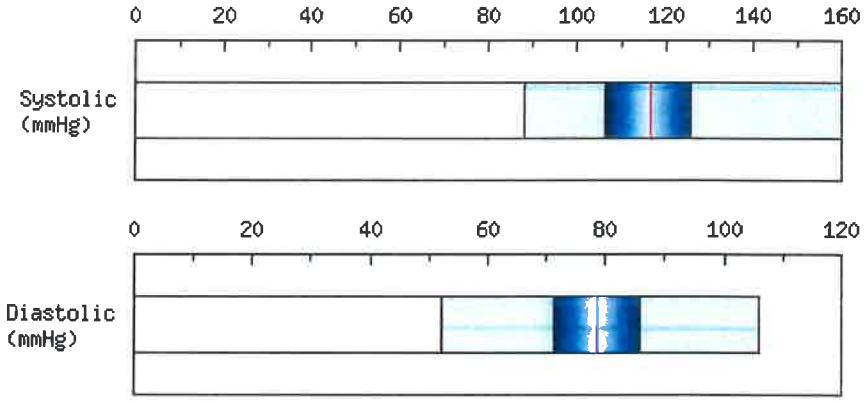
TOTAL 691
Defer 55



BLOOD PRESSURE

Systolic (mmHg)
Avg: 116.6
Low: 88
High: 160
SdtDev:9.3

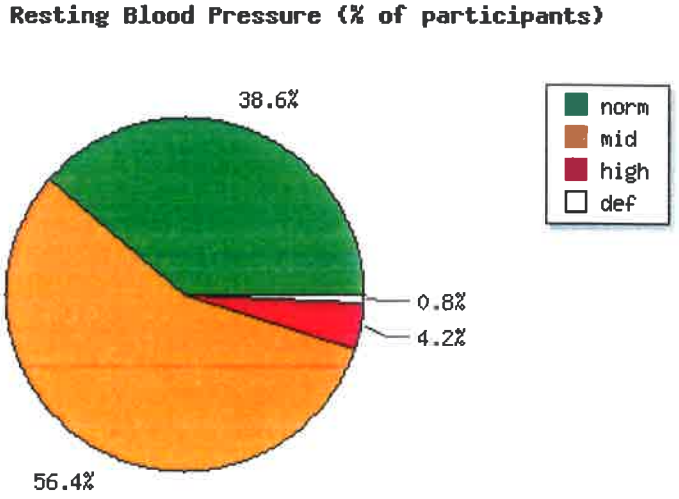
[illegible]stolic (mmHg)
Avg: 78.6
Low: 52
High: 106
SdtDev:7.1



RESTING BLOOD PRESSURE

Number of subjects
NORMAL 288
(<120|80)
HIGH-NORMAL 421
(120-139)|(80-90)
HIGH 31
(>140|90)
Deferred 6

Number of subjects
<120 <80 :: 288
<120 [80-90] :: 160
<120 >90 :: 2
[120-139] <80 :: 84
[120-139] [80-90] :: 177
[120-139] <80 :: 18
>140 <90 :: 6
>140 <90 :: 5



5. Fitness

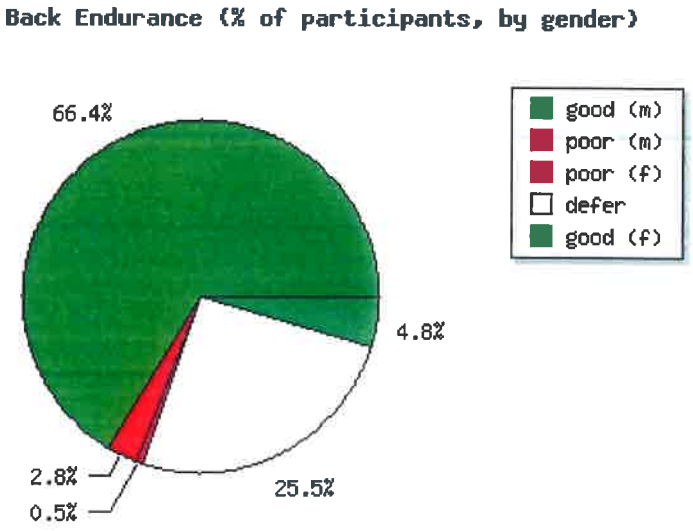
	Average	Standard Deviation	HIGH
PushUps (# reps)	33.1	18.80	103
SitUps (# reps)	36.8	26.21	134
Sit & Reach Flexibility (in)	14.0	4.82	22.00
Back Endurance (sec)	130.3	85.60	370
Cardiovascular fitness (ml/kg/min) VO2max	47.4	7.60	74.0

BACK ENDURANCE

Number of subjects

Males
good 495 | poor 21
defer 170
Females
good 36 | poor 4
defer 20

Good back endurance score
M:>95sec F:>129sec
Poor back endurance score
M:<95sec F:<129sec

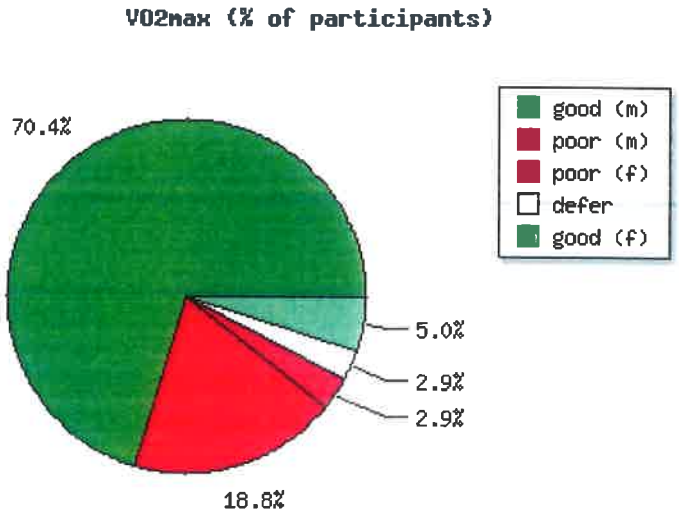


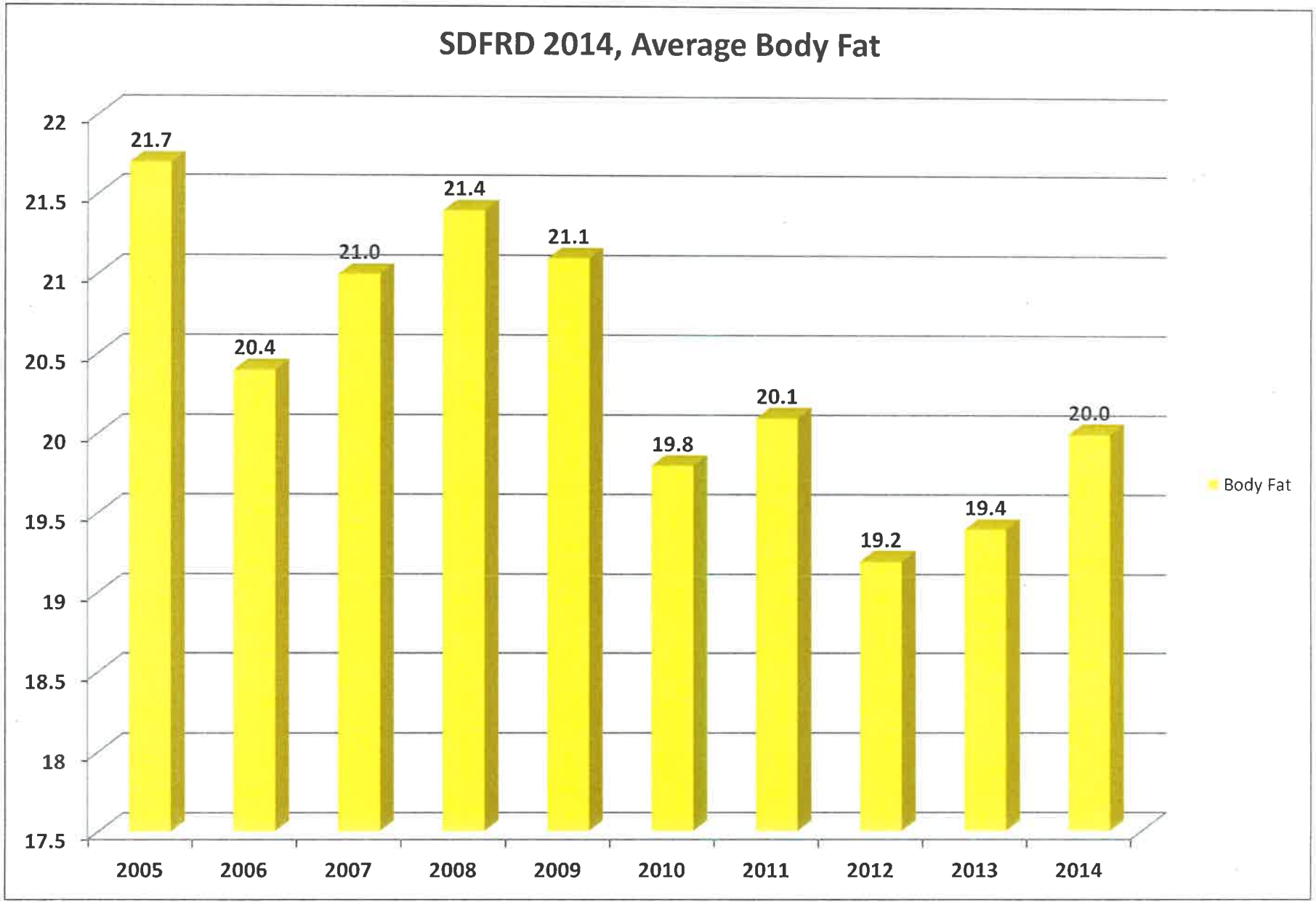
CARDIOVASCULAR FITNESS

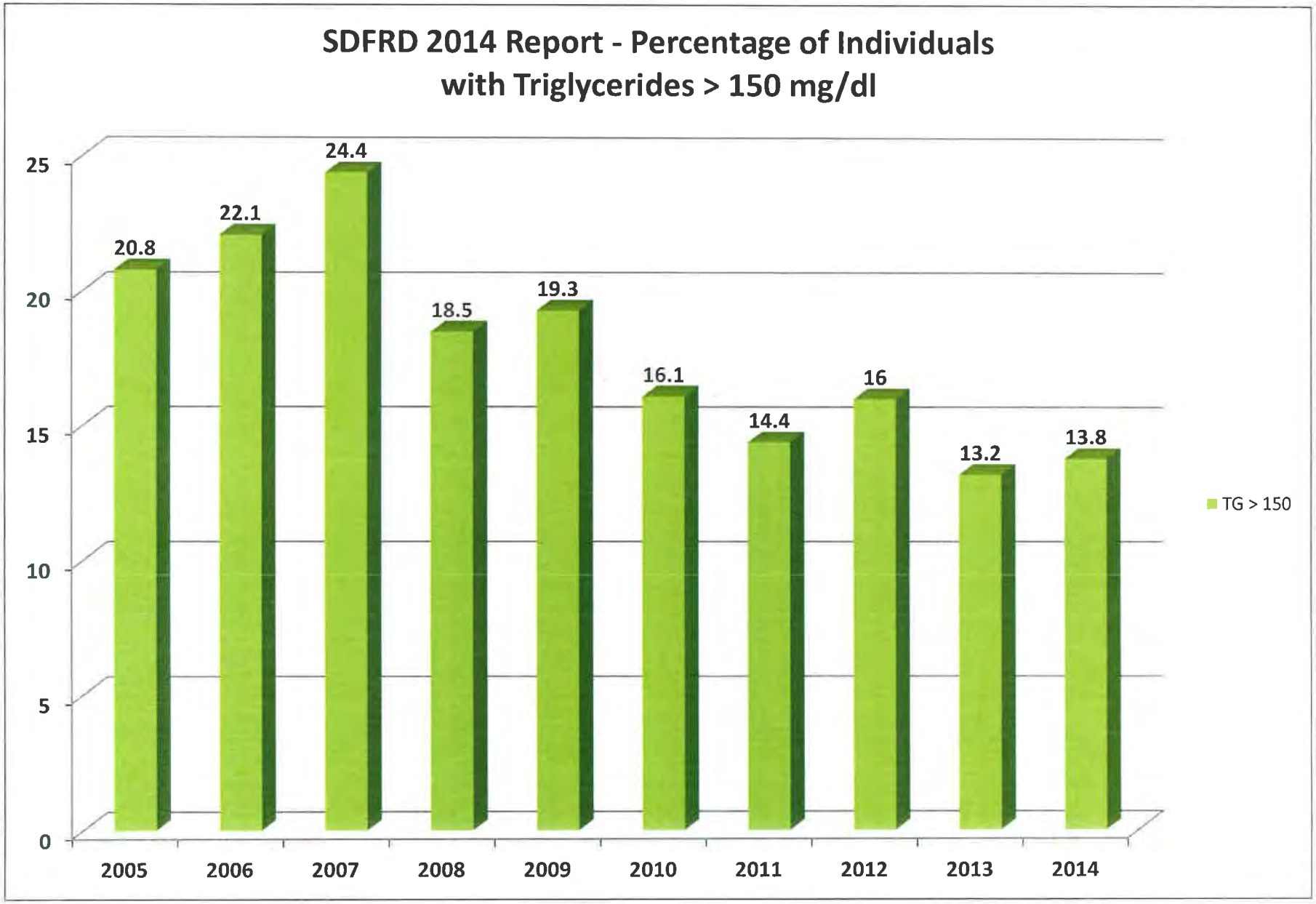
Number of subjects

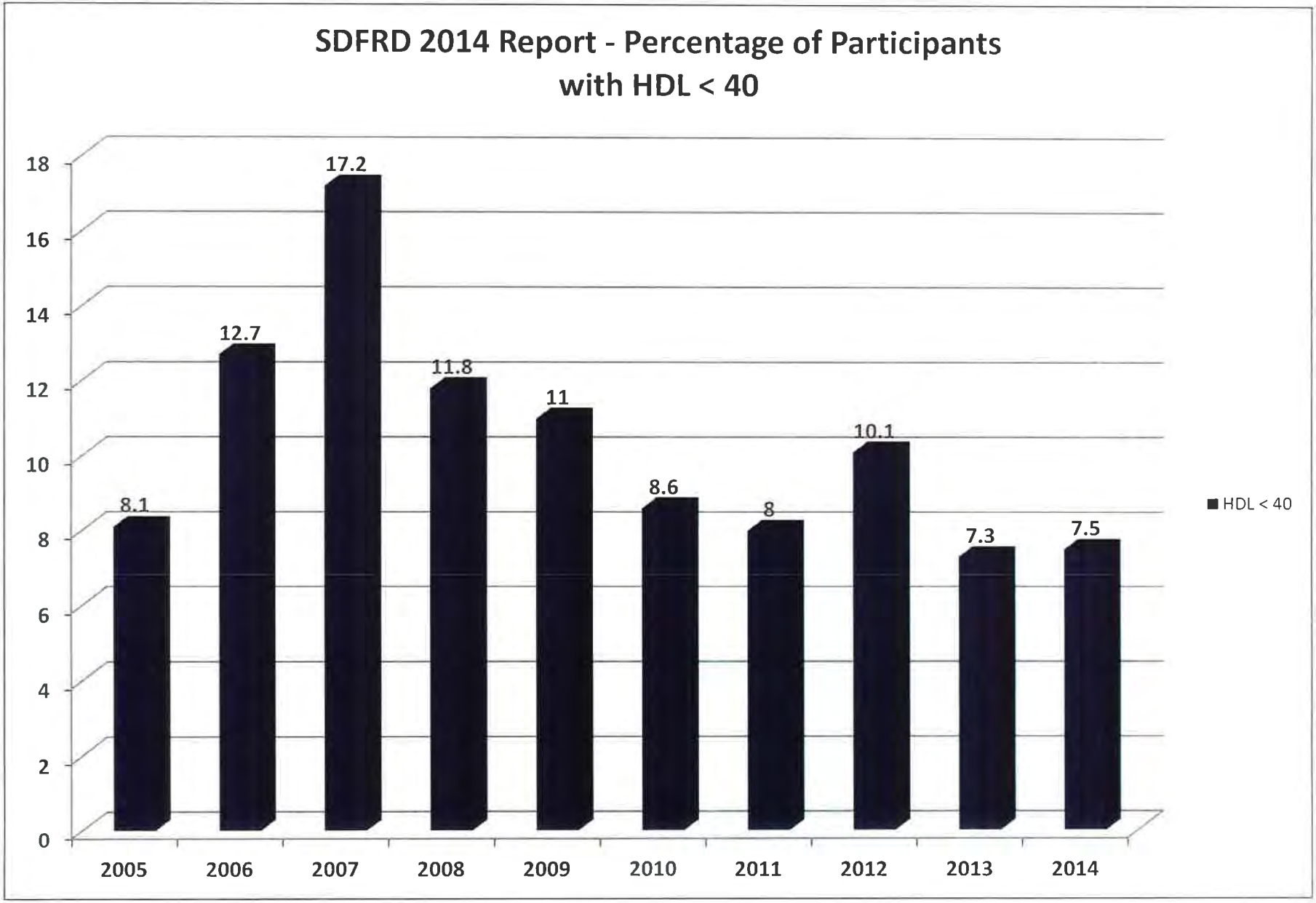
Males
good 525 | poor 140
defer 21
Females
good 37 | poor 22
defer 1

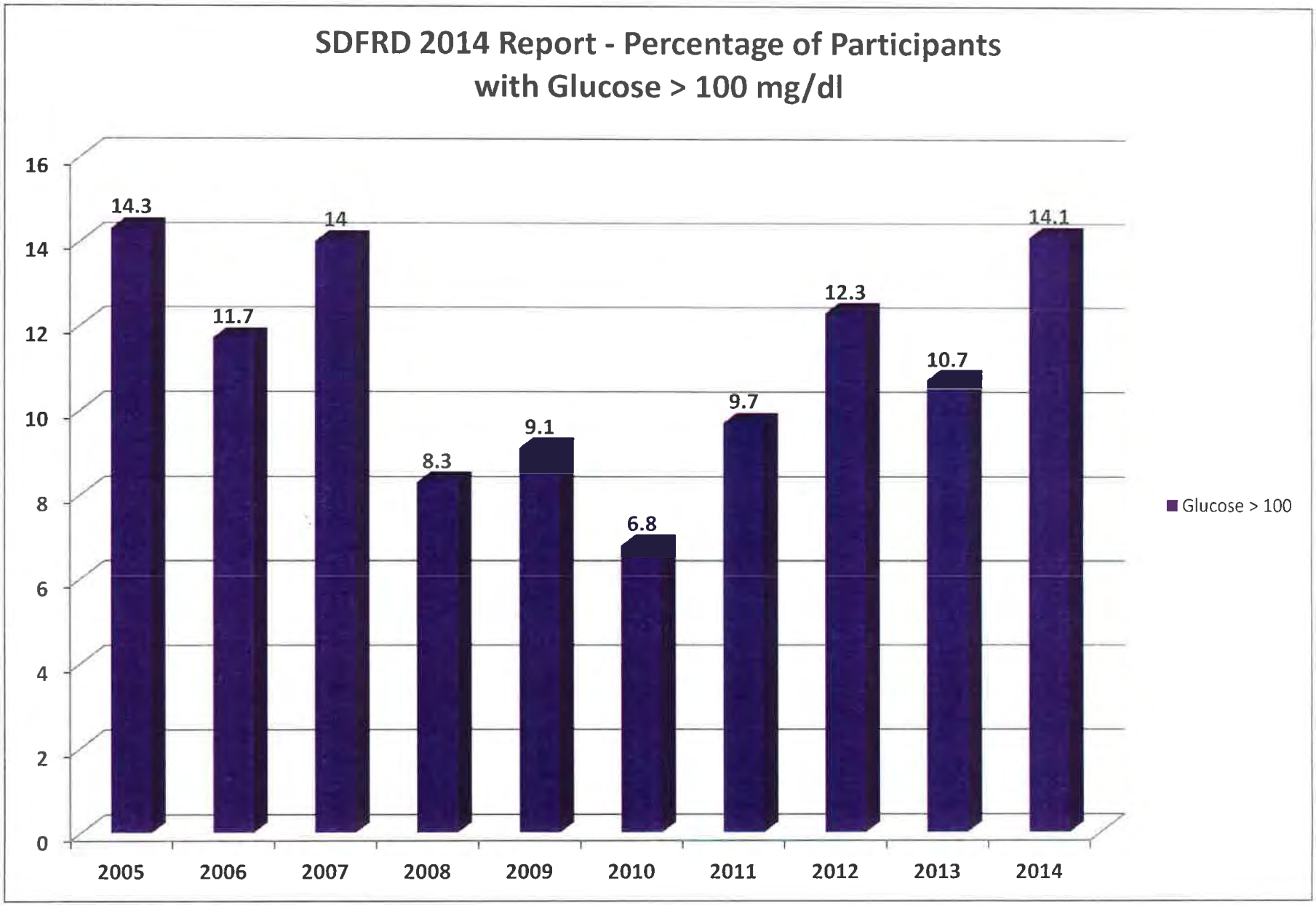
The Fire Service Joint Labor Management Wellness/Fitness Initiative 2nd edition recomends a maximal oxygen uptake of at least 42 ml/kg/min in order to meet the aerobic demands required for necessary firefighter duties

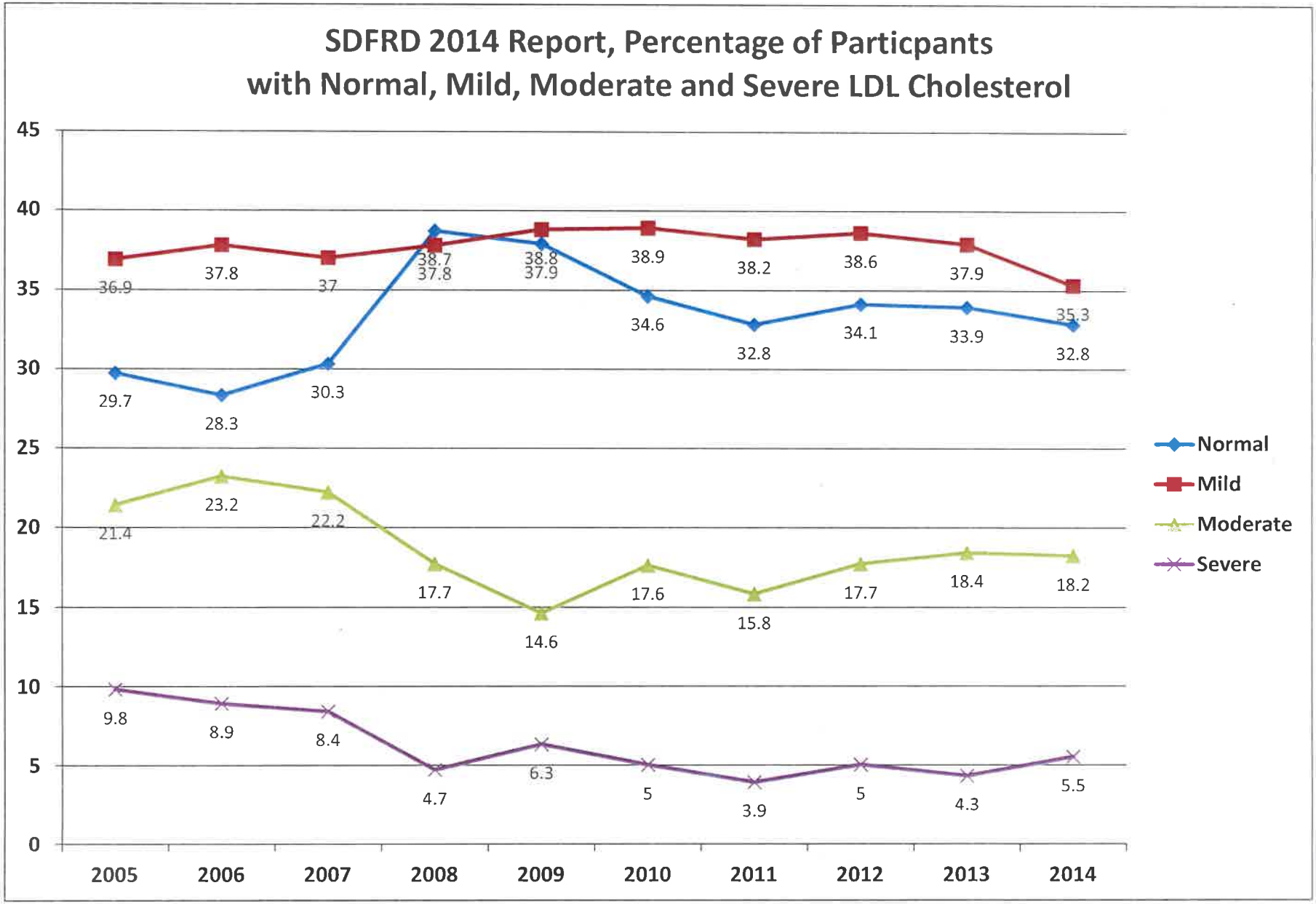


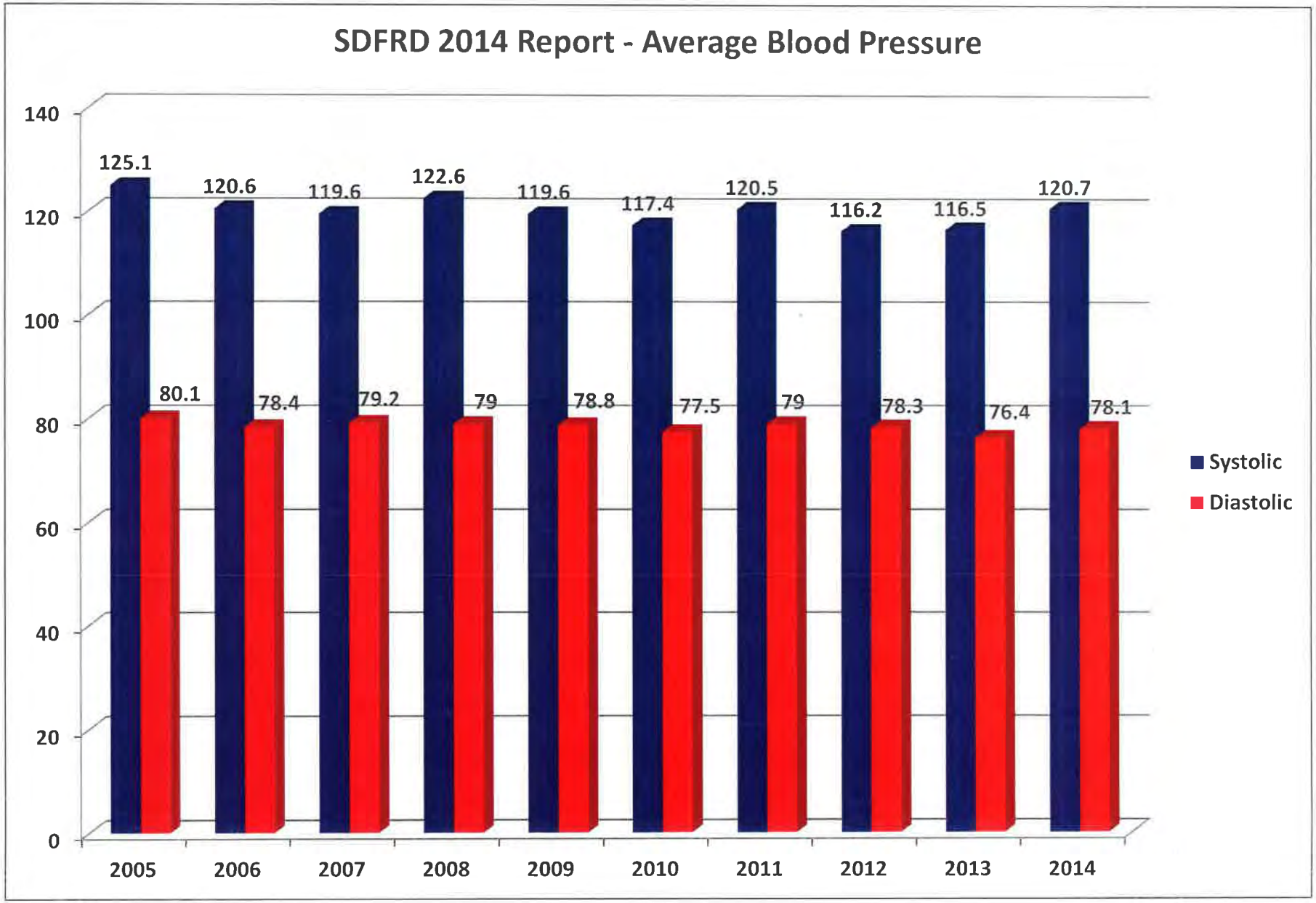

SDFRD 2014, Average Body Fat
22
21.5
21
20.5
20
19.5
19
18.5
18
17.5
21.7
20.4
21.0
21.4
21.1
19.8
20.1
19.2
19.4
20.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Body Fat

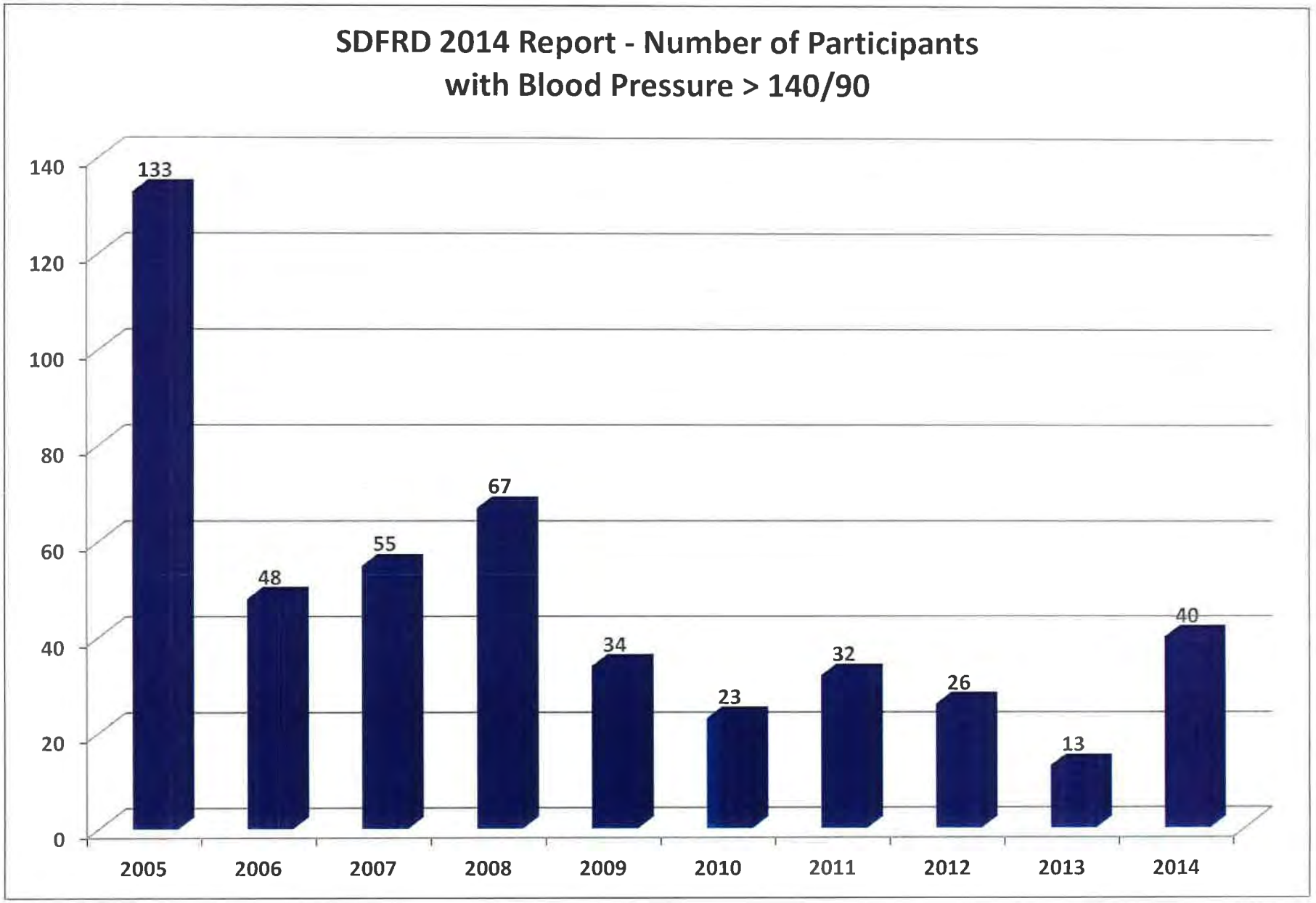

SDFRD 2014 Report - Percentage of Individuals with Triglycerides > 150 mg/dl
25
20
15
10
5
0
20.8
22.1
24.4
18.5
19.3
16.1
14.4
16
13.2
13.8
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
TG > 150

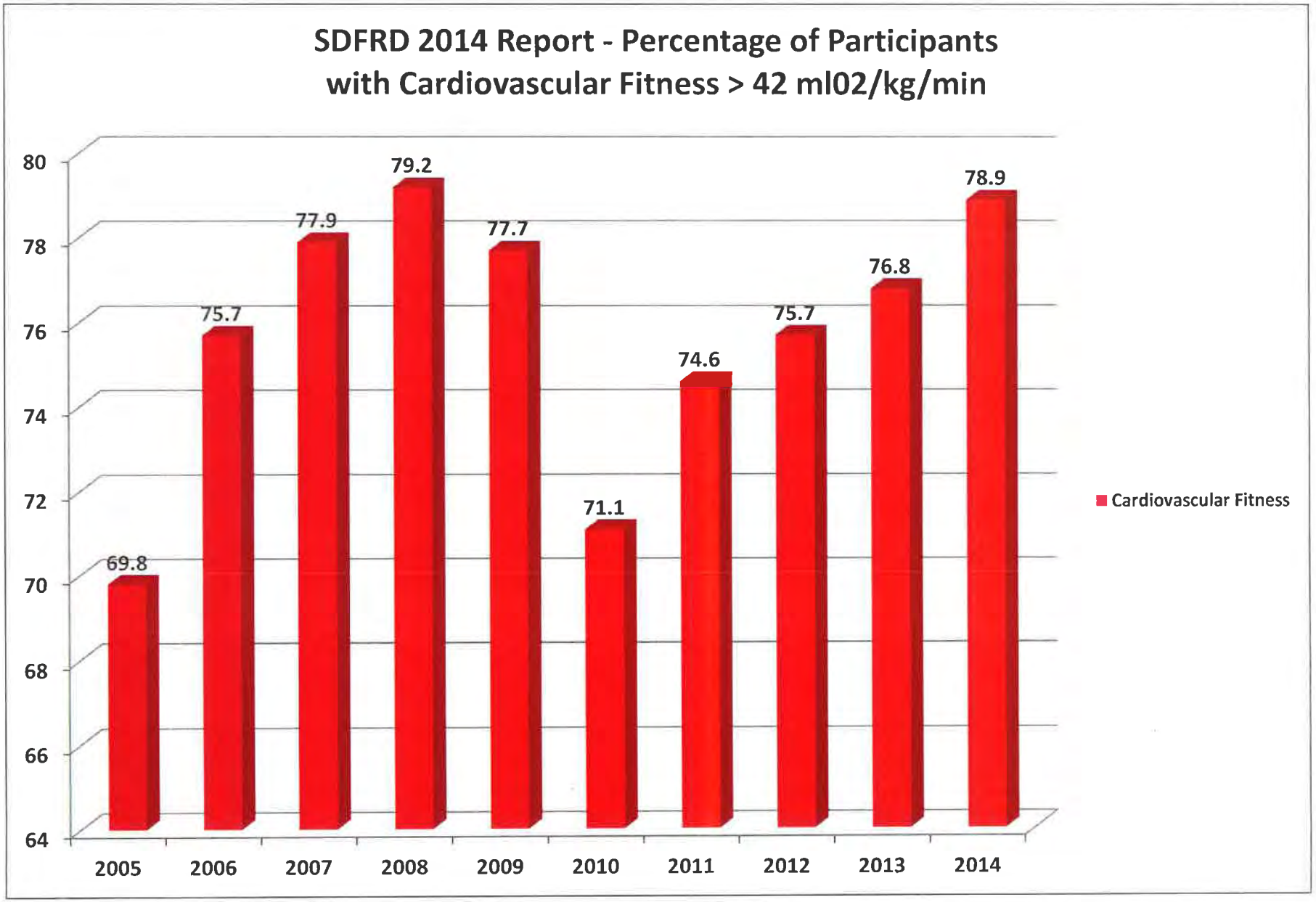

SDFRD 2014 Report - Percentage of Participants with HDL < 40
18
16
14
12
10
8
6
4
2
0
8.1
12.7
17.2
11.8
11
8.6
8
10.1
7.3
7.5
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
HDL < 40

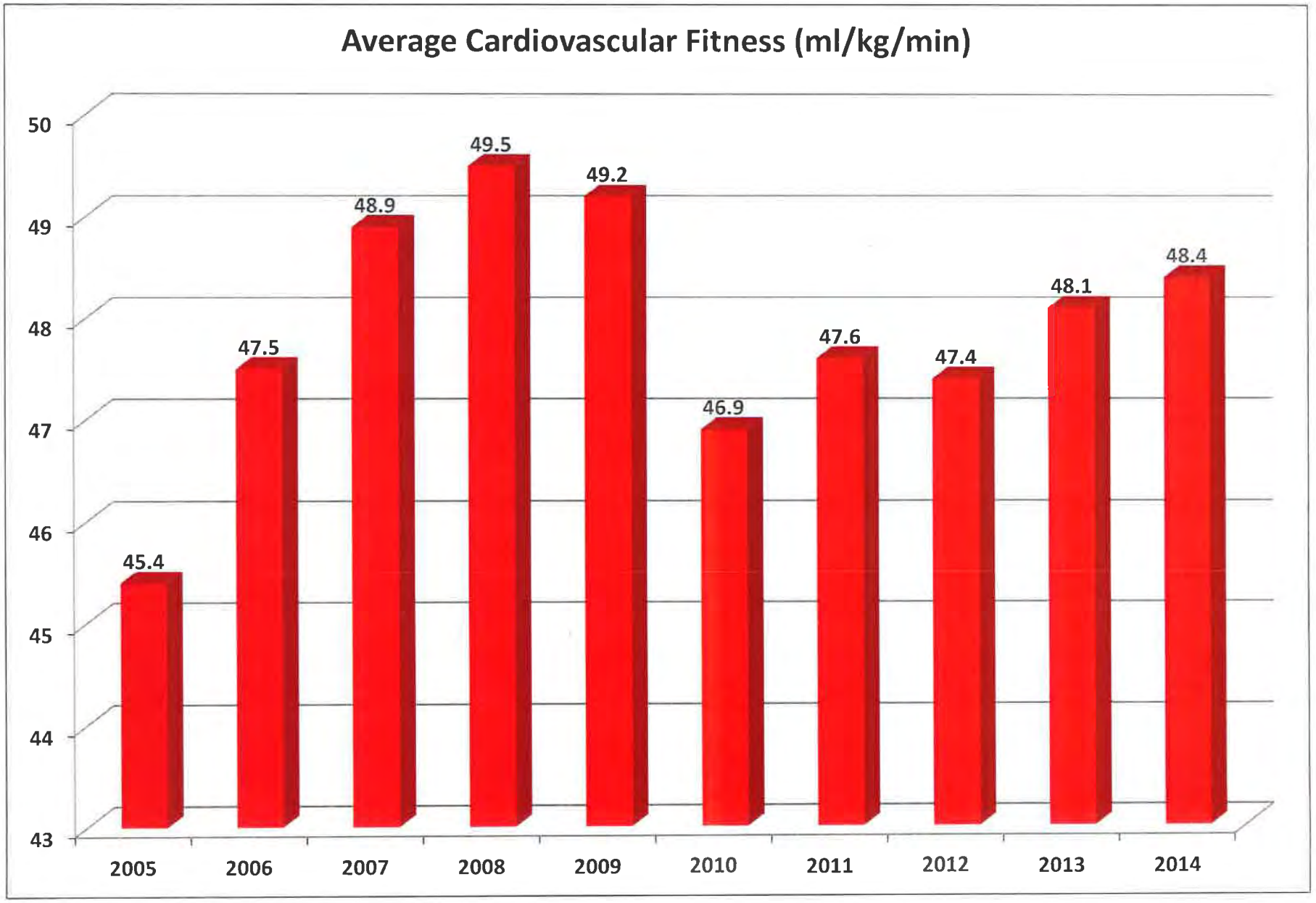

SDFRD 2014 Report - Percentage of Participants with Glucose > 100 mg/dl
16
14
12
10
8
6
4
2
0
14.3
11.7
14
8.3
9.1
6.8
9.7
12.3
10.7
14.1
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Glucose > 100

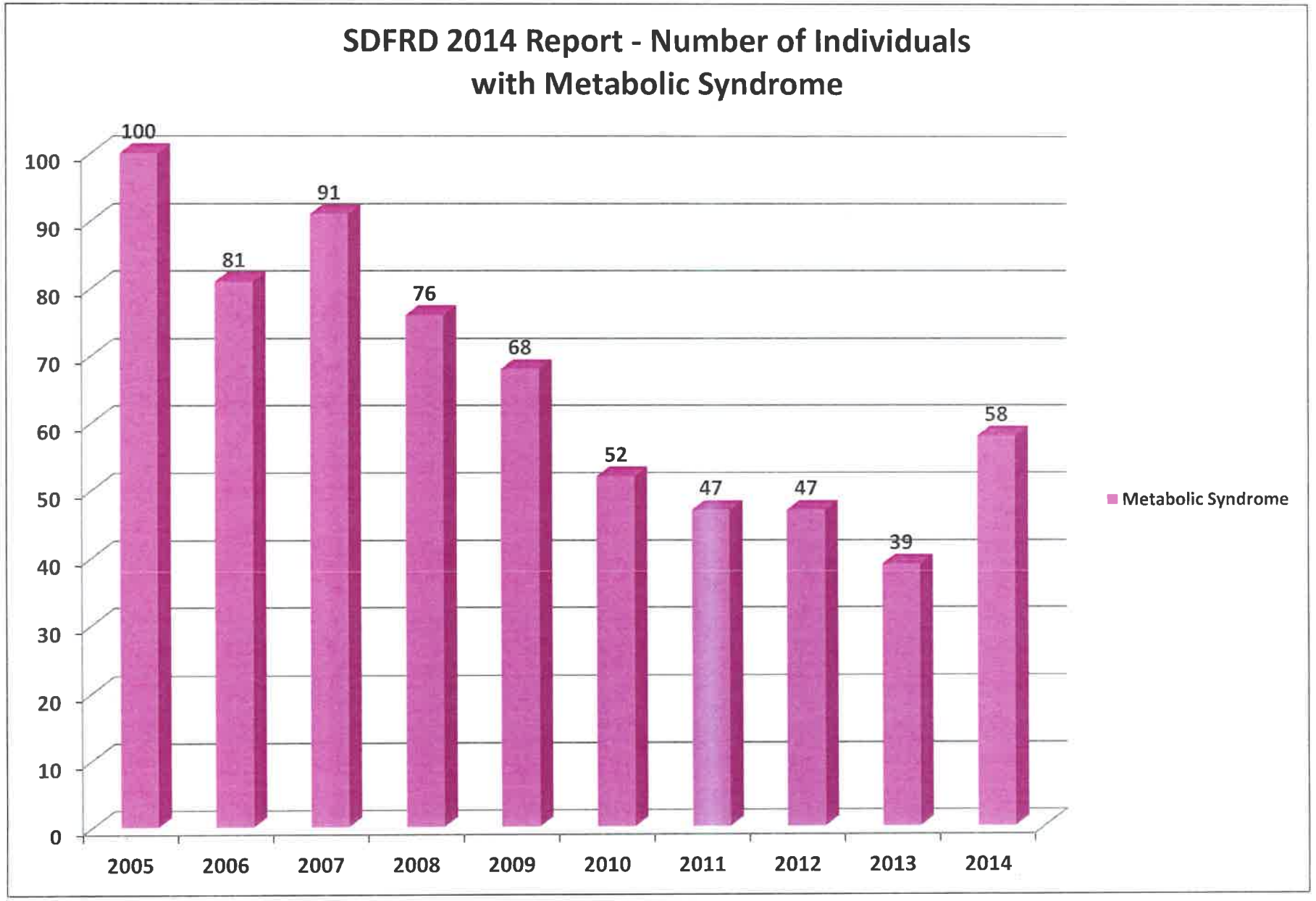

SDFRD 2014 Report, Percentage of Particpants
with Normal, Mild, Moderate and Severe LDL Cholesterol
45
40
35
30
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Normal
Mild
Moderate
Severe
36.9
37.8
37
38.7
37.8
38.8
37.9
38.9
38.2
38.6
37.9
35.3
29.7
28.3
30.3
34.6
32.8
34.1
33.9
32.8
21.4
23.2
22.2
17.7
14.6
17.6
15.8
17.7
18.4
18.2
9.8
8.9
8.4
4.7
6.3
5
3.9
5
4.3
5.5

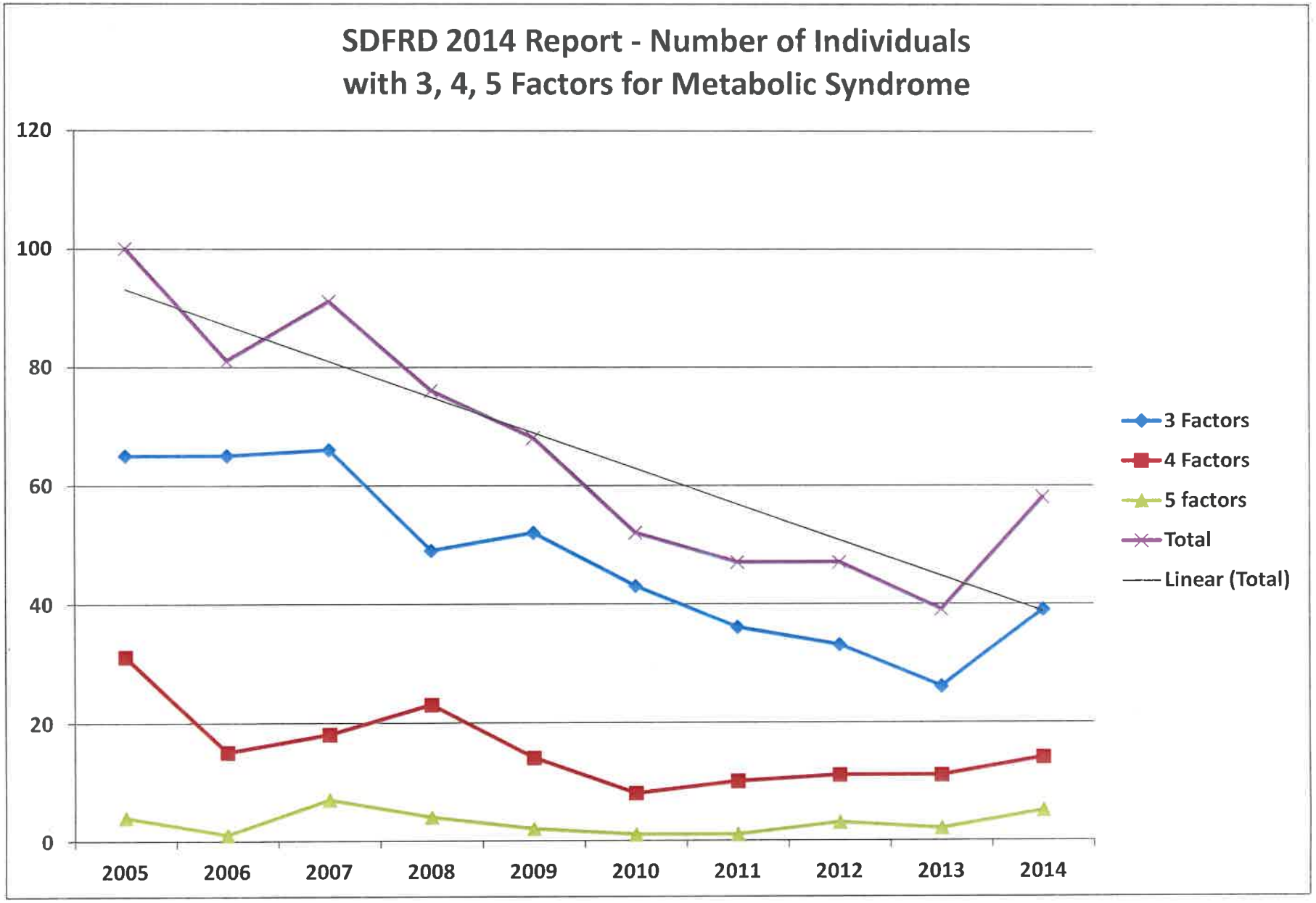

SDFRD 2014 Report - Average Blood Pressure
140
120
100
80
60
40
20
0
125.1
120.6
119.6
122.6
119.6
117.4
120.5
116.2
116.5
120.7
80.1
78.4
79.2
79
78.8
77.5
79
78.3
76.4
78.1
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Systolic
Diastolic


SDFRD 2014 Report - Number of Participants
with Blood Pressure > 140/90
140
120
100
80
60
40
20
0
133
48
55
67
34
23
32
26
13
40
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

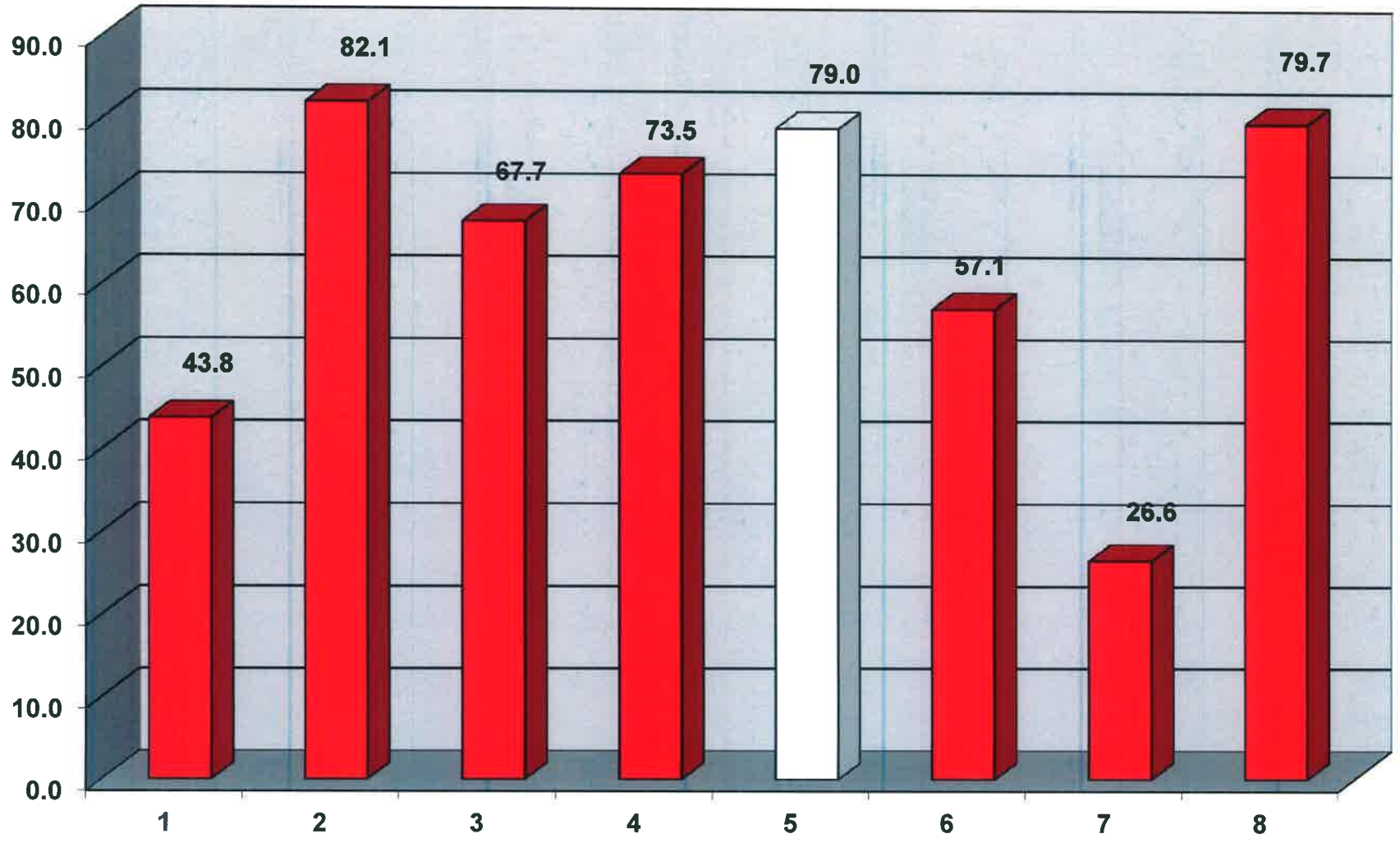

SDFRD 2014 Report - Percentage of Participants with Cardiovascular Fitness > 42 ml02/kg/min
80
78
76
74
72
70
68
66
64
69.8
75.7
77.9
79.2
77.7
71.1
74.6
75.7
76.8
78.9
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Cardiovascular Fitness


Average Cardiovascular Fitness (ml/kg/min)
50
49
48
47
46
45
44
43
45.4
47.5
48.9
49.5
49.2
46.9
47.6
47.4
48.1
48.4
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

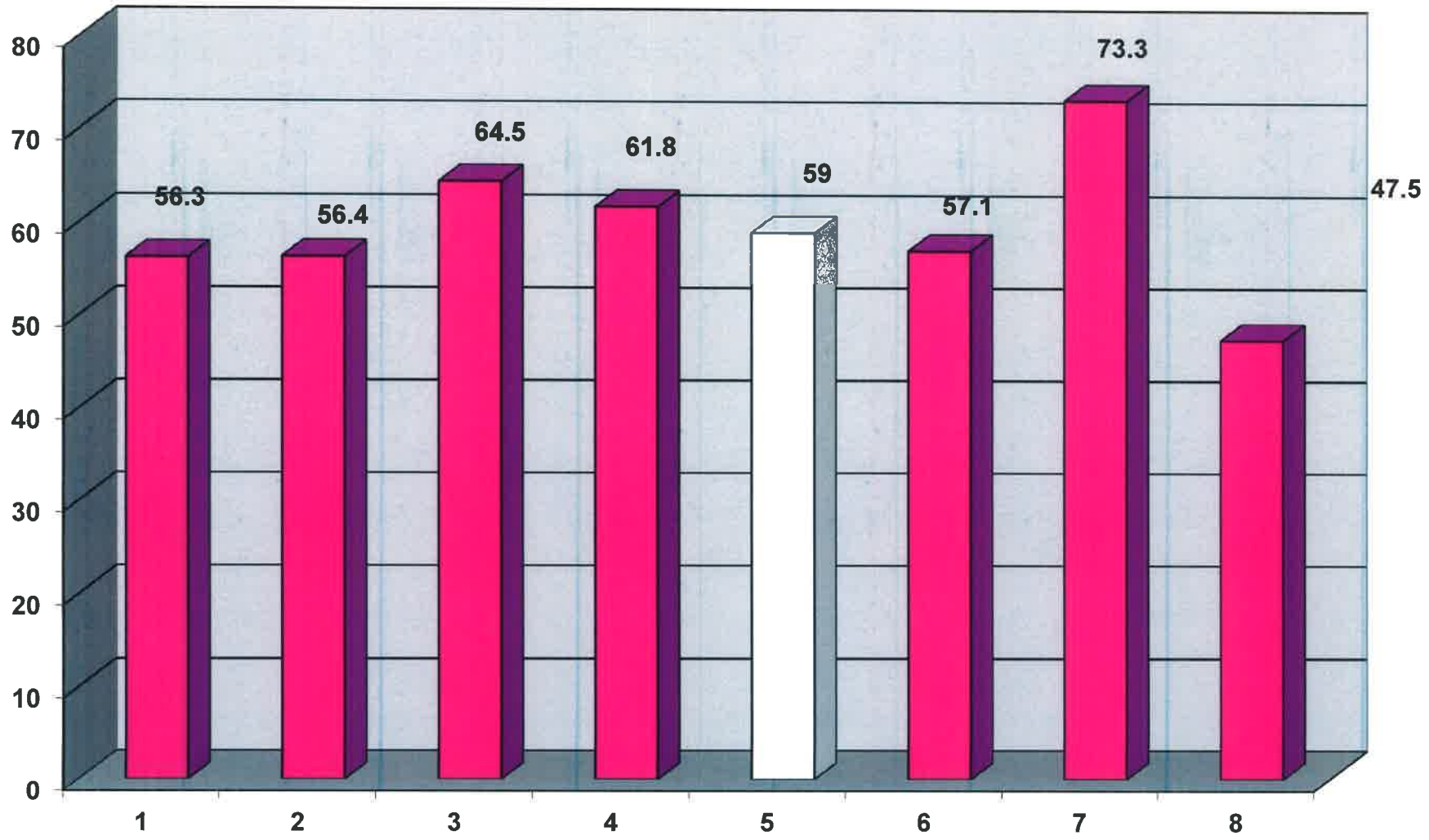

SDFRD 2014 Report - Number of Individuals with Metabolic Syndrome
100
91
81
76
68
52
47
47
39
58
0
10
20
30
40
50
60
70
80
90
100
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Metabolic Syndrome

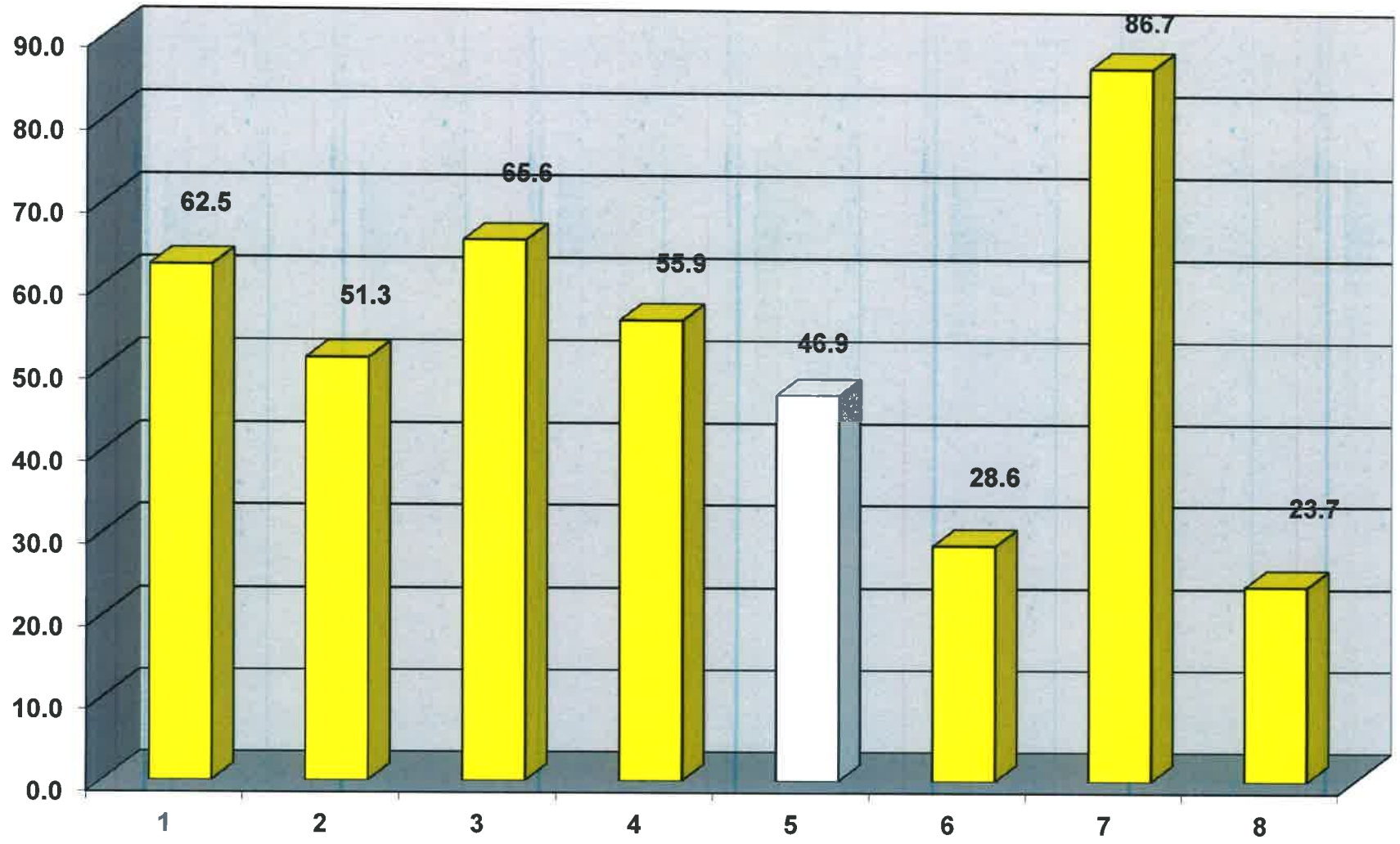

SDFRD 2014 Report - Number of Individuals with 3, 4, 5 Factors for Metabolic Syndrome
120
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
3 Factors
4 Factors
5 factors
Total
Linear (Total)

San Diego Fire Departments - 2014
% of
Participants with CV Fitness above 42 ml/kg/min



San Diego Fire Departments - 2014
% of
Participants with LDL Cholesterol >100 mg/dl




San Diego Fire Departments - 2014
% of
Participants with Body Fat >20%
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
62.5
51.3
65.6
55.9
46.9
28.6
86.7
23.7
1
2
3
4
5
6
7
8

REPEAT PARTICIPANTS

Repeat Participants are those individuals that have been in the program from the inception. There are presently 345 individuals that have participated in the program from 2005 to 2014. The following reports and graphs illustrate their collective data over the past 10 years of a sampling of different biometric measurements.

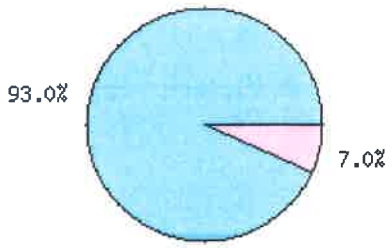
1. Demographics

1.1 GENERAL

345 fitness exams
321 males,24 females

Age (yr)
Avg: 45.8
Min: 31
Max: 60

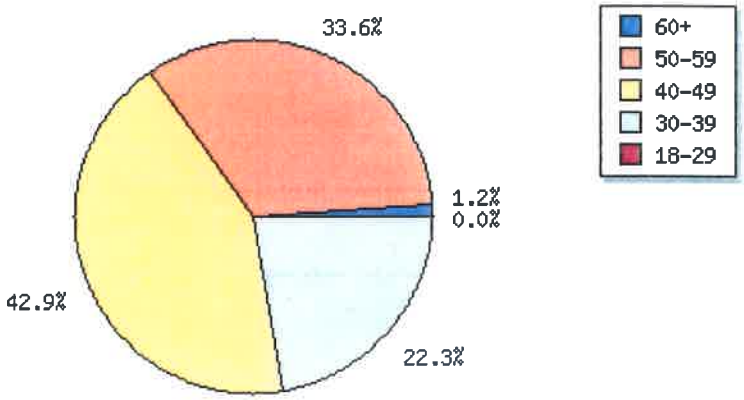
Gender distribution (%)



1.2 AGE DISTRIBUTION

[Age]	Number of subjects
[18-29]	0
[30-39]	77
[40-49]	148
[50-59]	116
[60+]	4

Demographic distribution

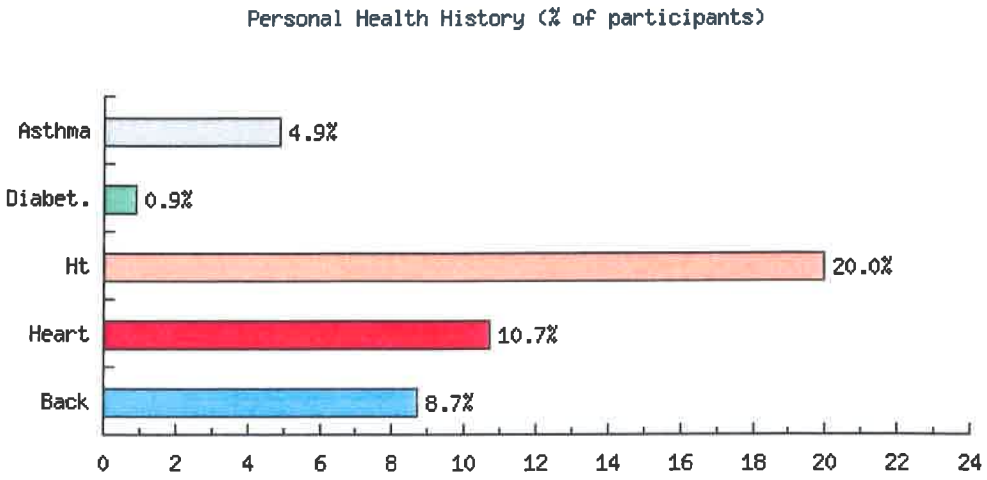


2. Current Diagnosis and Current Habits

Diagnosis
(%) of subjects with

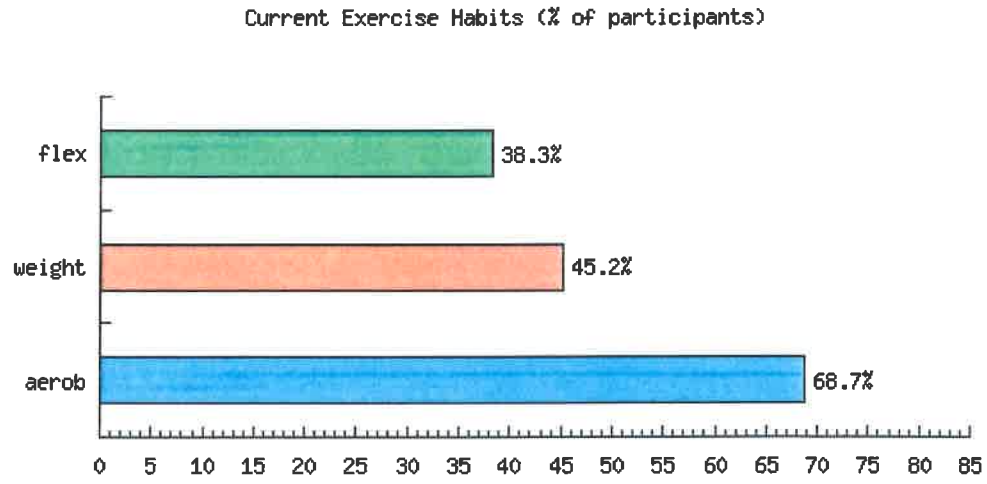
Asthma
17 (4.93 %)
Diabetes
3 (0.87 %)
Hypertension
69 (20.00 %)
Heart disease
37 (10.72 %)
Lower Back
30 (8.70 %)

out of 345 total subjects



2.2 EXERCISE
Number of subjects who currently perform exercise at least 3 times per week

Flexibility 132
eight lifting 156
robic Exercise 237

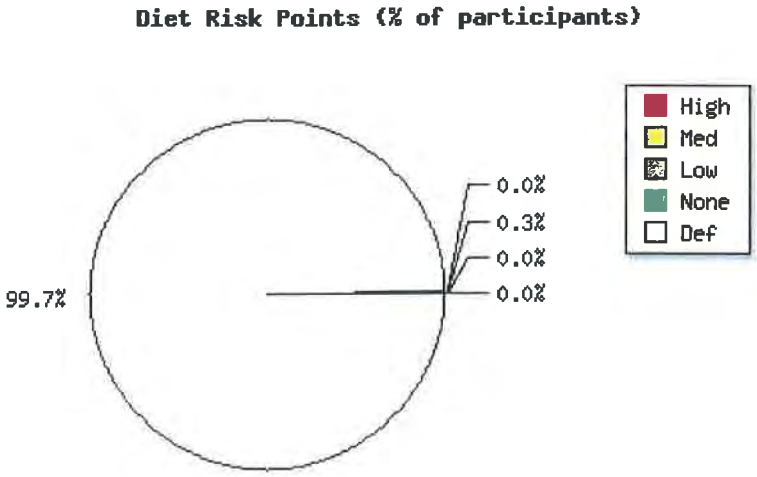


2.3 NUTRITION
Risk: Number of subjects

None: 0 <=3 points
Low : 1 4-5 points
Med : 0 6-9 points
High: 0 >10 points

Total 1
efer 344 no data submitted

Study 345



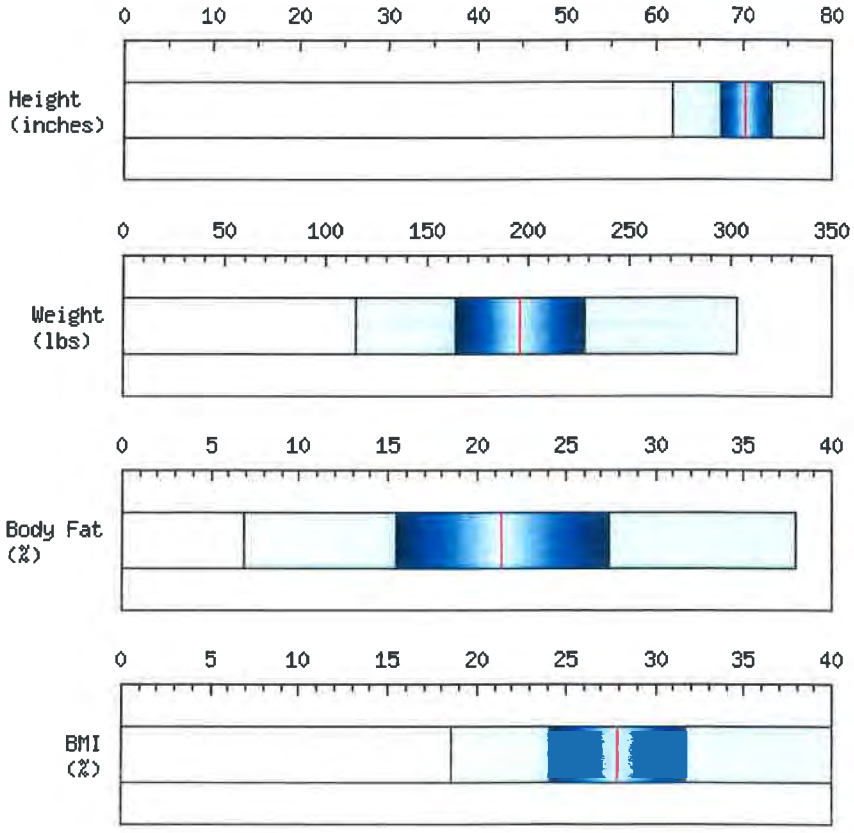
3. Medical

Height (in)
Avg: 70.2
Low: 62
High: 79
StdDev: 2.9

Weight (lbs)
Avg: 196.4
Low: 115
High: 303
StdDev:31.2

Body Fat (%)
Avg: 21.4
Low: 6.9
High: 37.9
StdDev:6.0

BMI
Avg: 27.9
Low: 18.5
High: 40.0
StdDev: 3.8

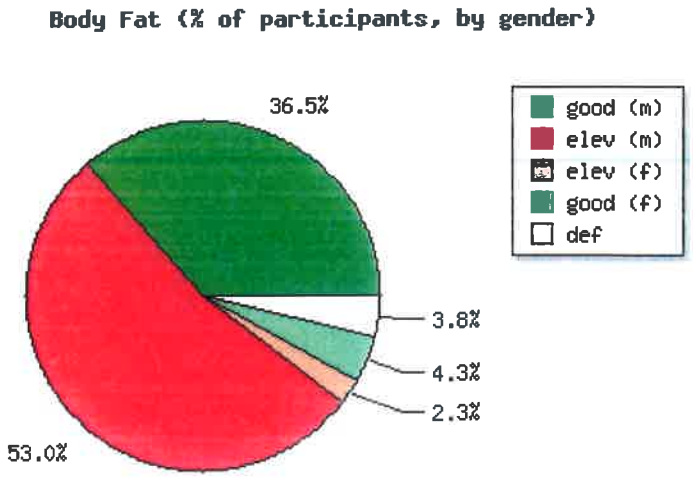


BODY FAT
number of subjects
Males
good 126 | elevated 183

Females
good 15 | elevated 8

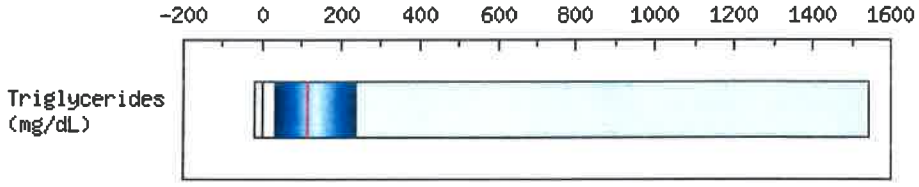
eferred 13

Good body fat
M:<20% F:<25%
Elevated body fat
M:>20% F:>25%

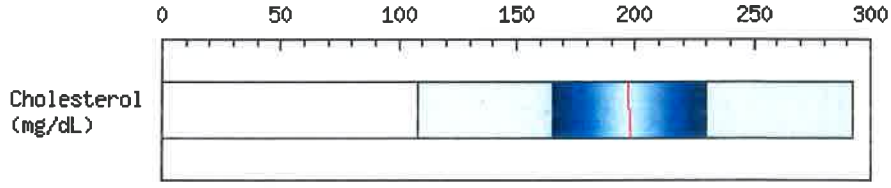


4. Blood Lab

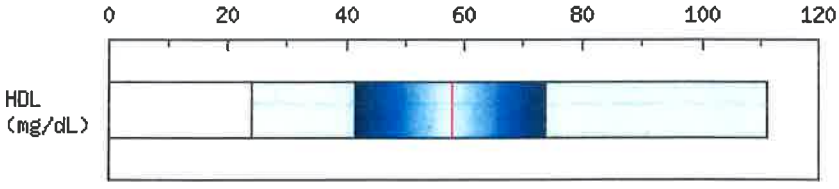
Triglycerides (mg/dL)
Avg: 115.8
Low: 32
High: 1524
StdDev:102.2



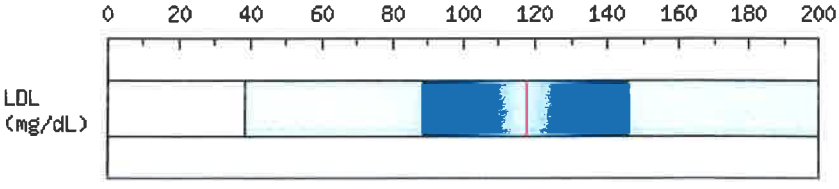
Cholesterol (mg/dL)
Avg: 197.6
Low: 108
High: 292
StdDev: 32.3



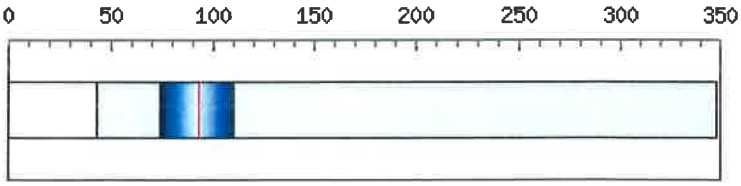
HDL (mg/dL)
Avg: 57.8
Low: 24
High: 111
StdDev: 15.9



LDL (mg/dL)
Avg: 117.6
Low: 38
High: 200
StdDev:28.2

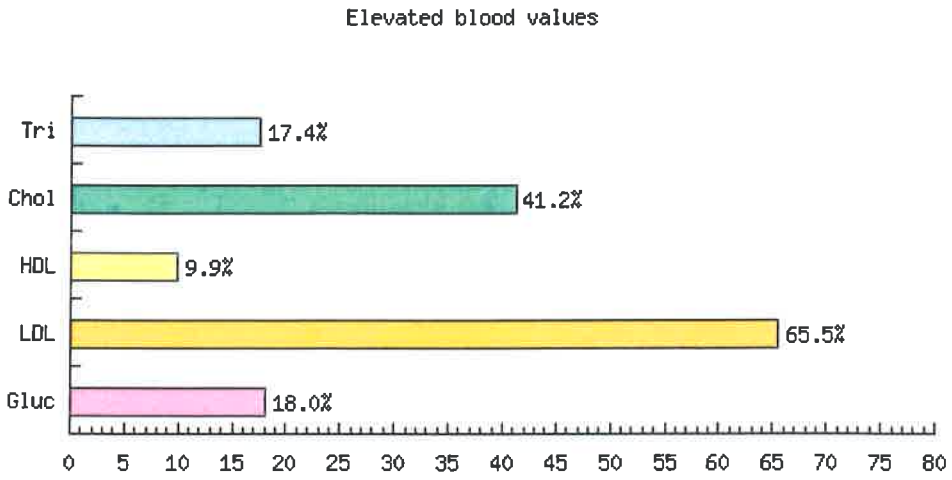


Glucose (mg/dL)
Avg: 92.8
Low: 43
High: 348
StdDev:17.2



Elevated blood values

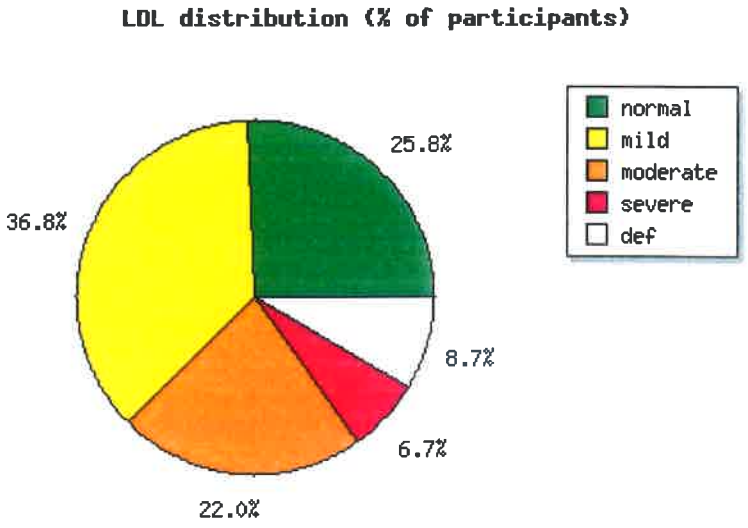
nber (%) of subjects
glycerides >150mg/dl
60 (17.4 %)
Cholesterol >200mg/dl
142 (41.2 %)
HDL <40mg/dl
34 (9.9 %)
LDL >100mg/dl
226 (65.5 %)
Glucose >100mg/dl
62 (18.0 %)



LDL DISTRIBUTION

Number of subjects
NORMAL 89
0 mg/dl)
LD 127
(100-130 mg/dl)
MODERATE 76
(131-160 mg/dl)
SEVERE 23
(>160 mg/dl)

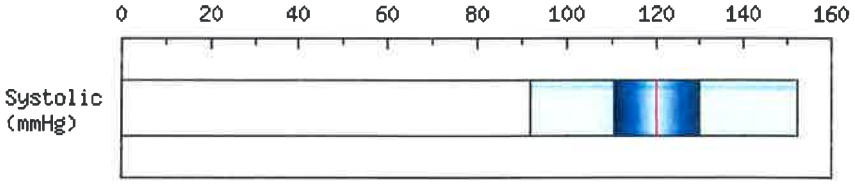
TOTAL 315
Defer 30



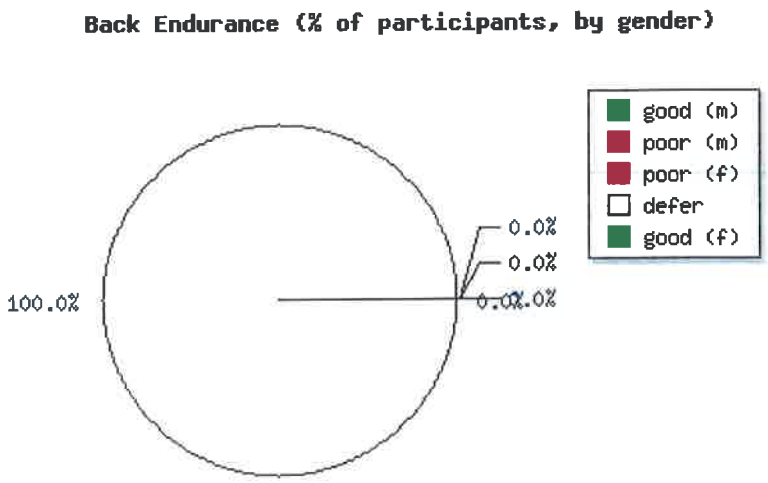
BLOOD PRESSURE

Systolic (mmHg)
Avg: 120.4
Low: 92
High: 152
SdtDev:9.2

astolic (mmHg)
Avg: 78.1
Low: 60
High: 108
SdtDev:6.7



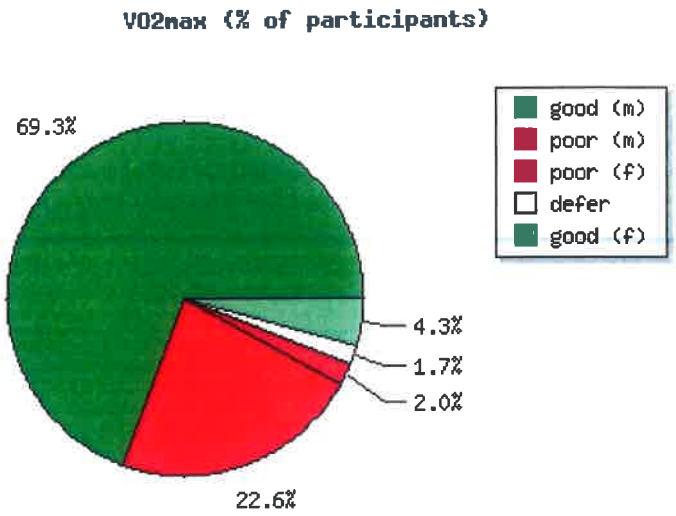
Good back endurance score
M:>95sec F:>129sec
Poor back endurance score
M:<95sec F:<129sec



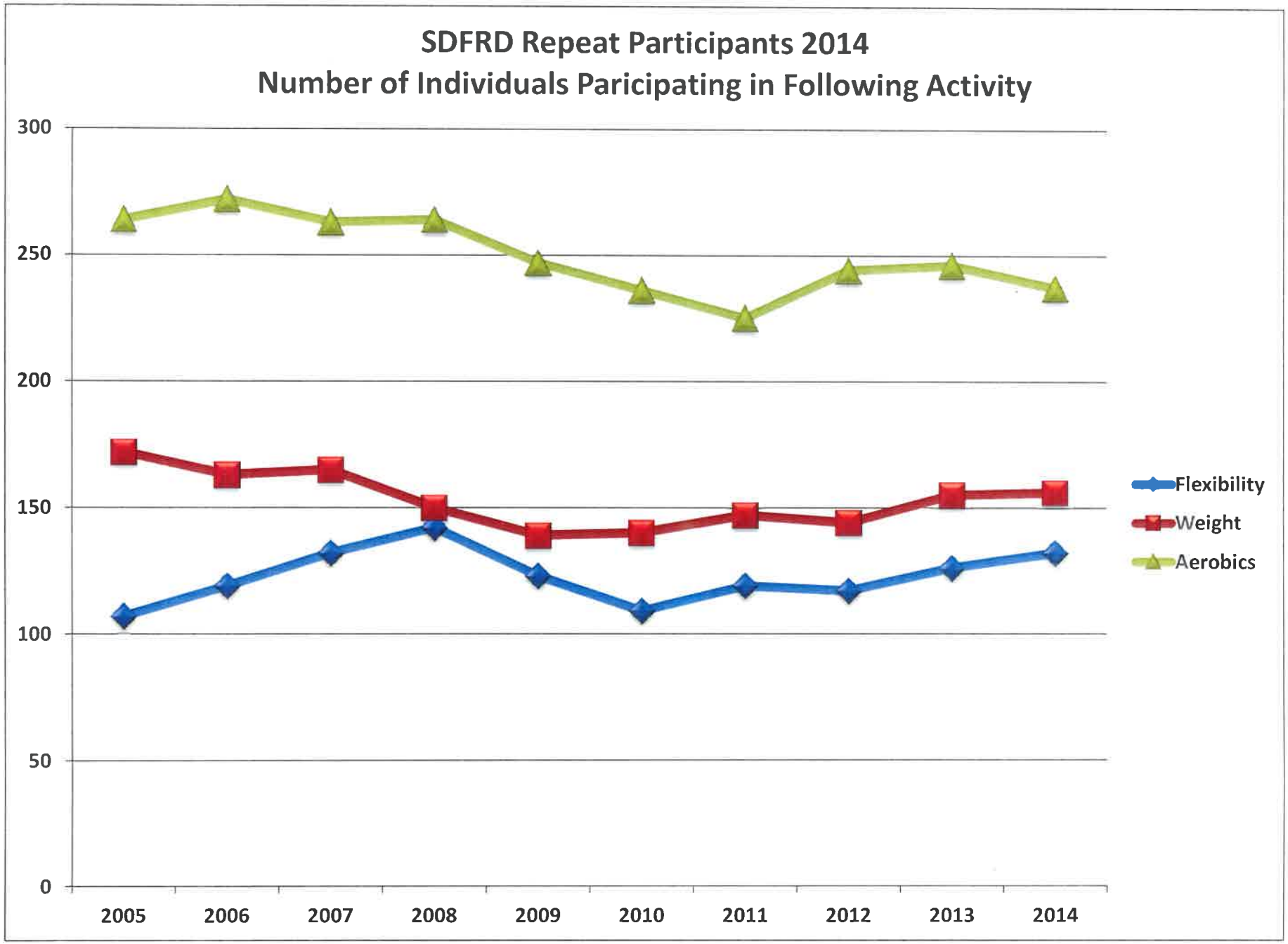
CARDIOVASCULAR FITNESS

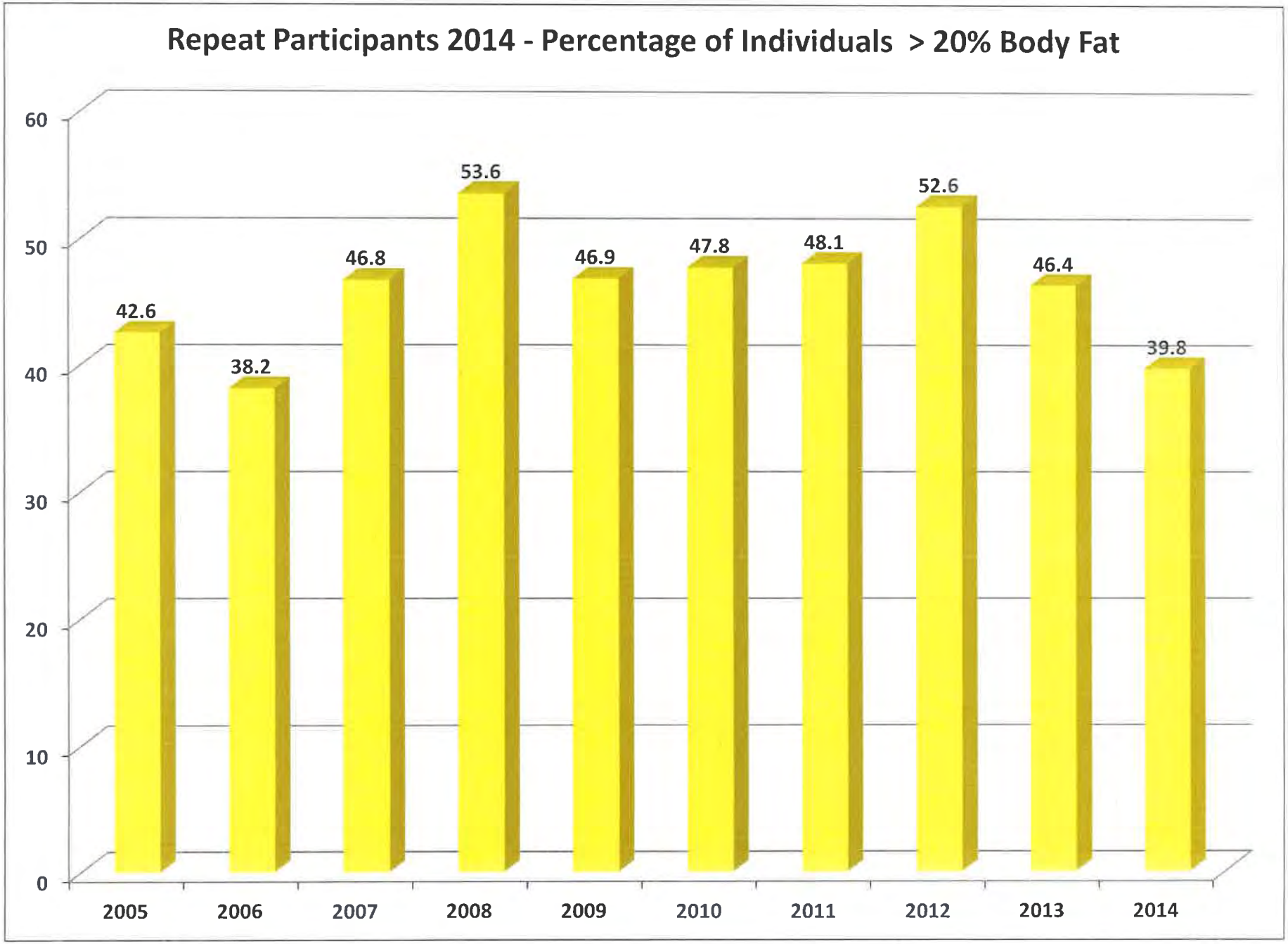
Number of subjects

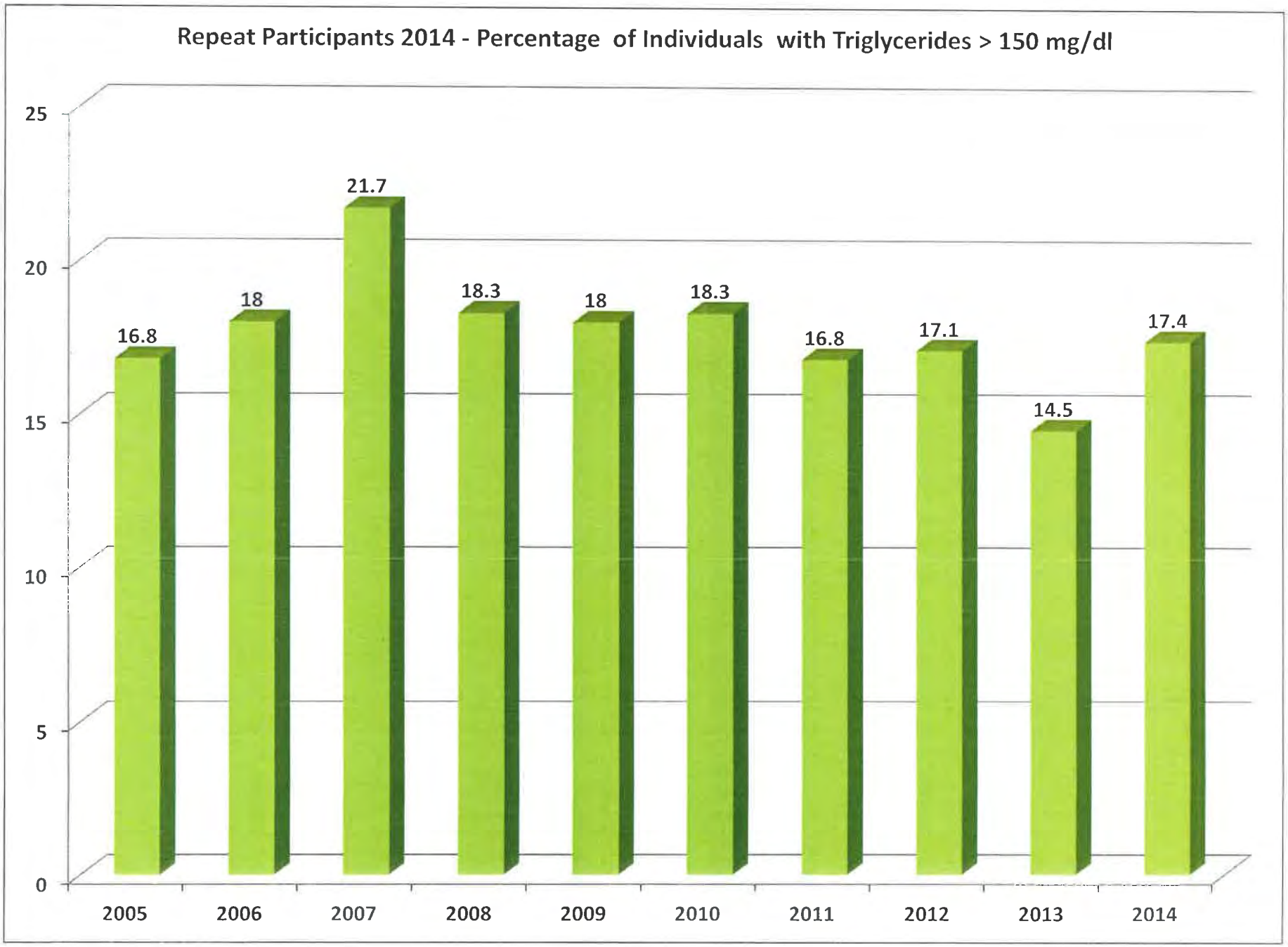
Males
good 239 | poor 78
defer 4
Females
good 15 | poor 7
defer 2

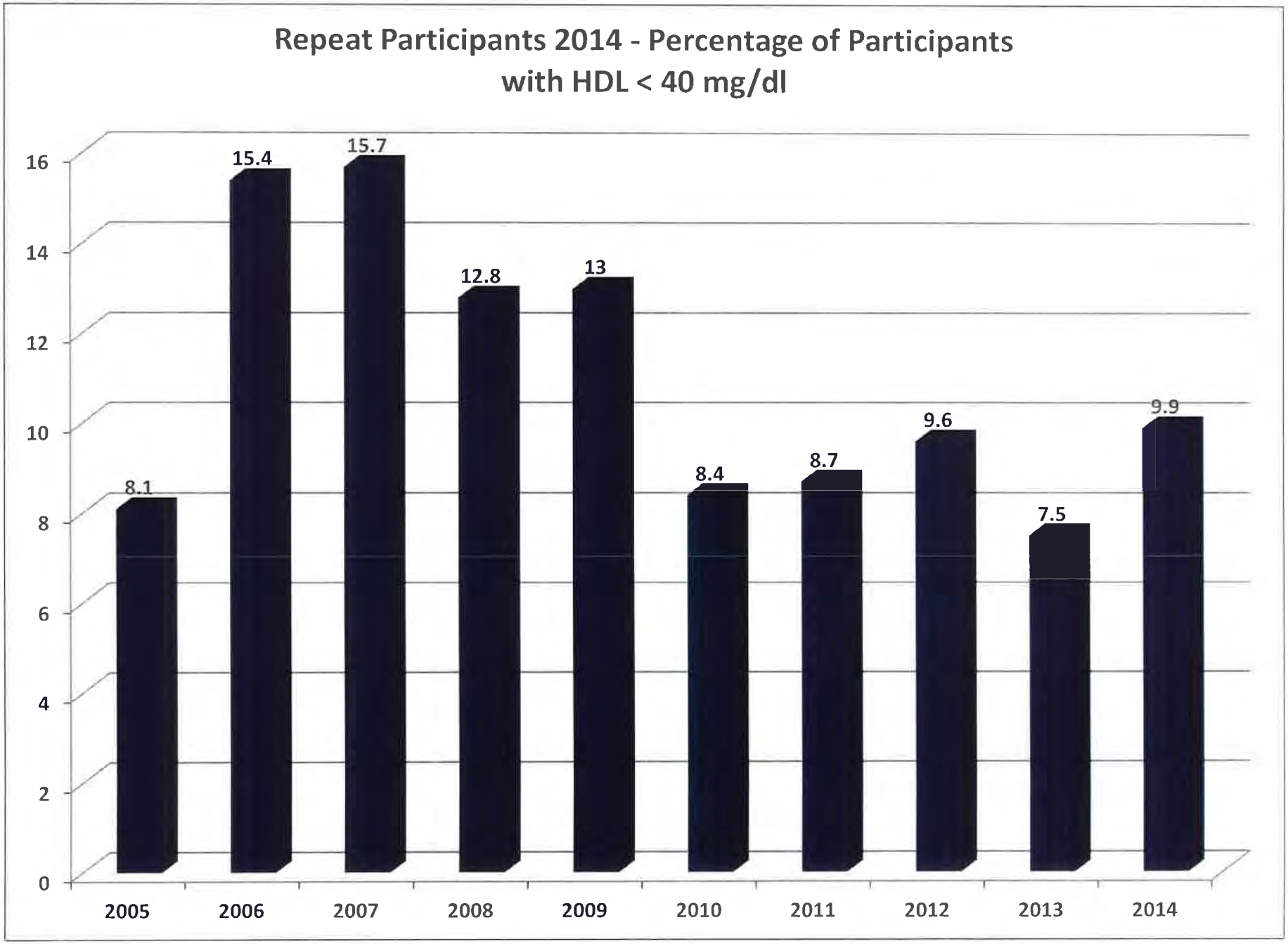


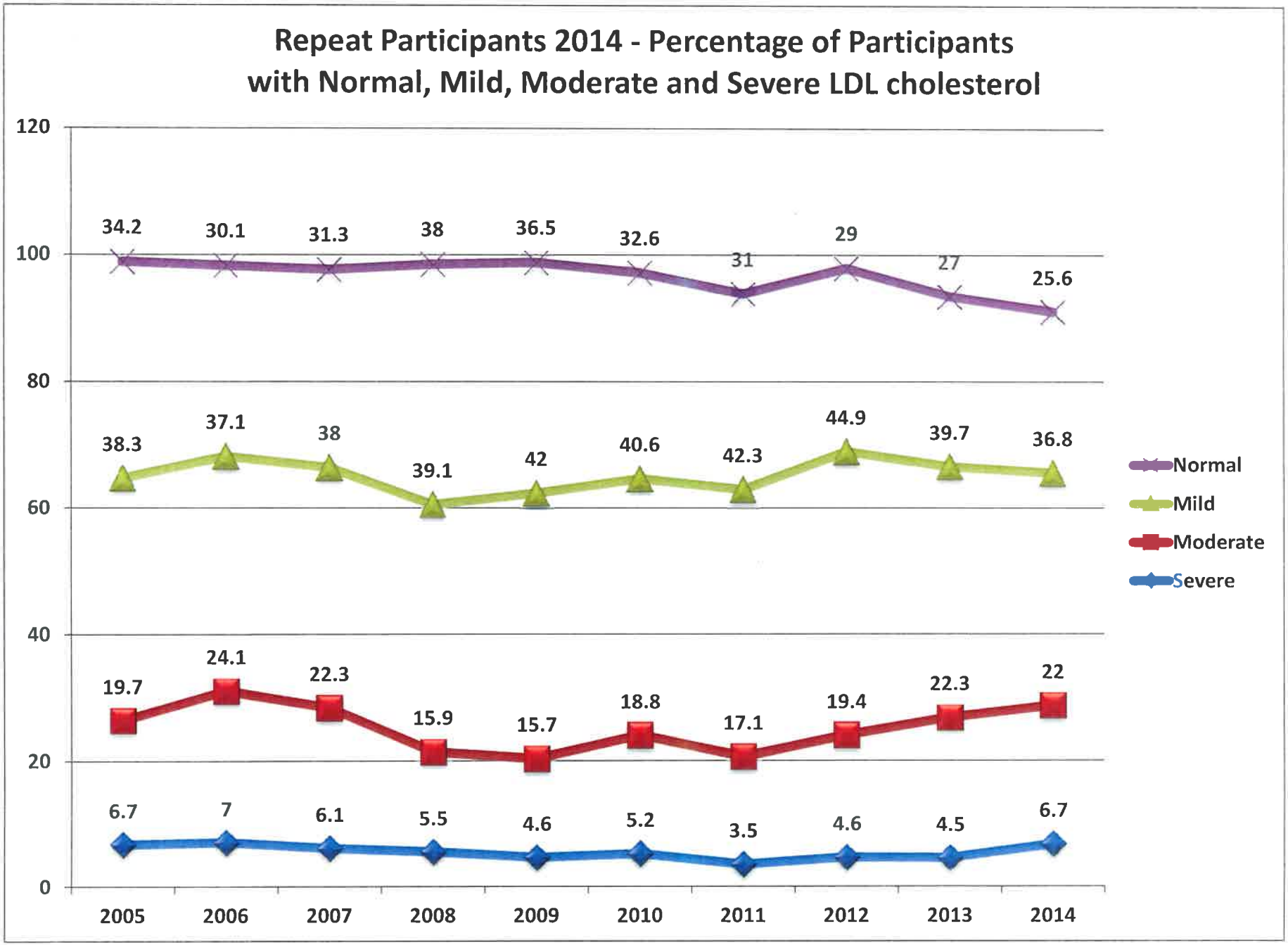
The Fire Service Joint Labor Management Wellness/Fitness Initiative 2nd edition
mends a maximal oxygen uptake of at
t 42 ml/kg/min in order to meet the
obic demands required for necessary firefighter duties

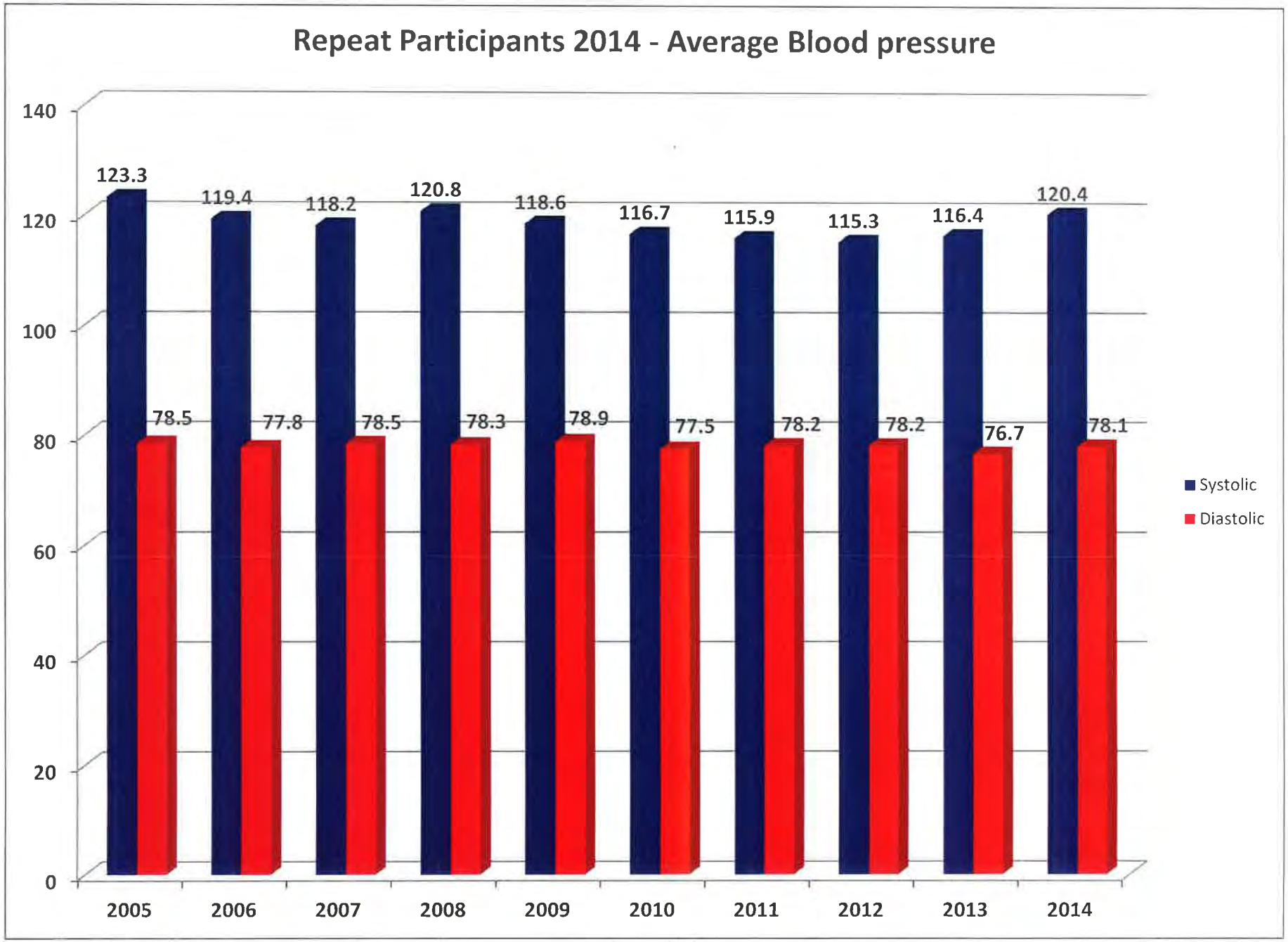

SDFRD Repeat Participants 2014
Number of Individuals Paricipating in Following Activity
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Flexibility
Weight
Aerobics

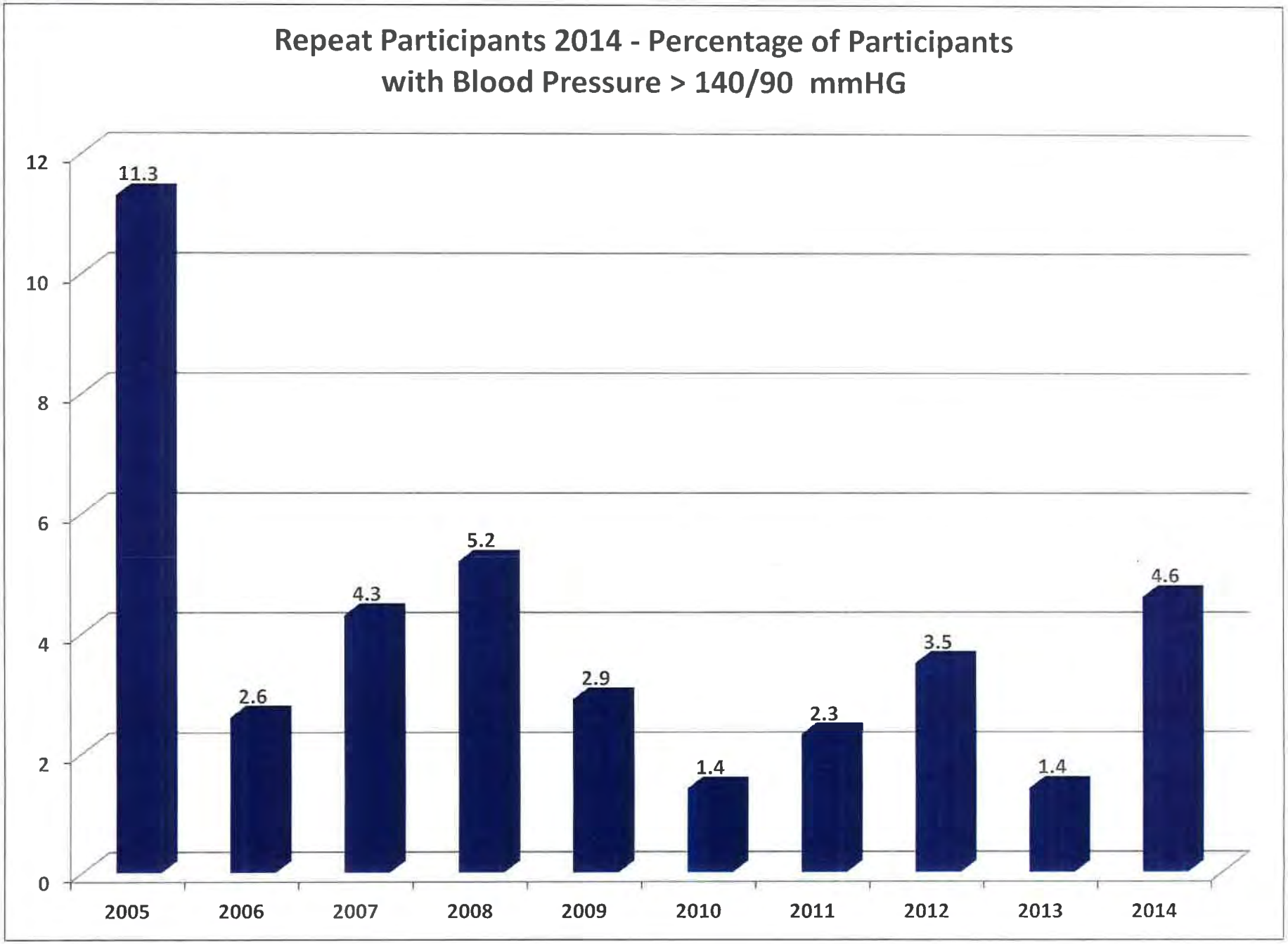

Repeat Participants 2014 - Percentage of Individuals > 20% Body Fat
60
50
40
30
20
10
0
42.6
38.2
46.8
53.6
46.9
47.8
48.1
52.6
46.4
39.8
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

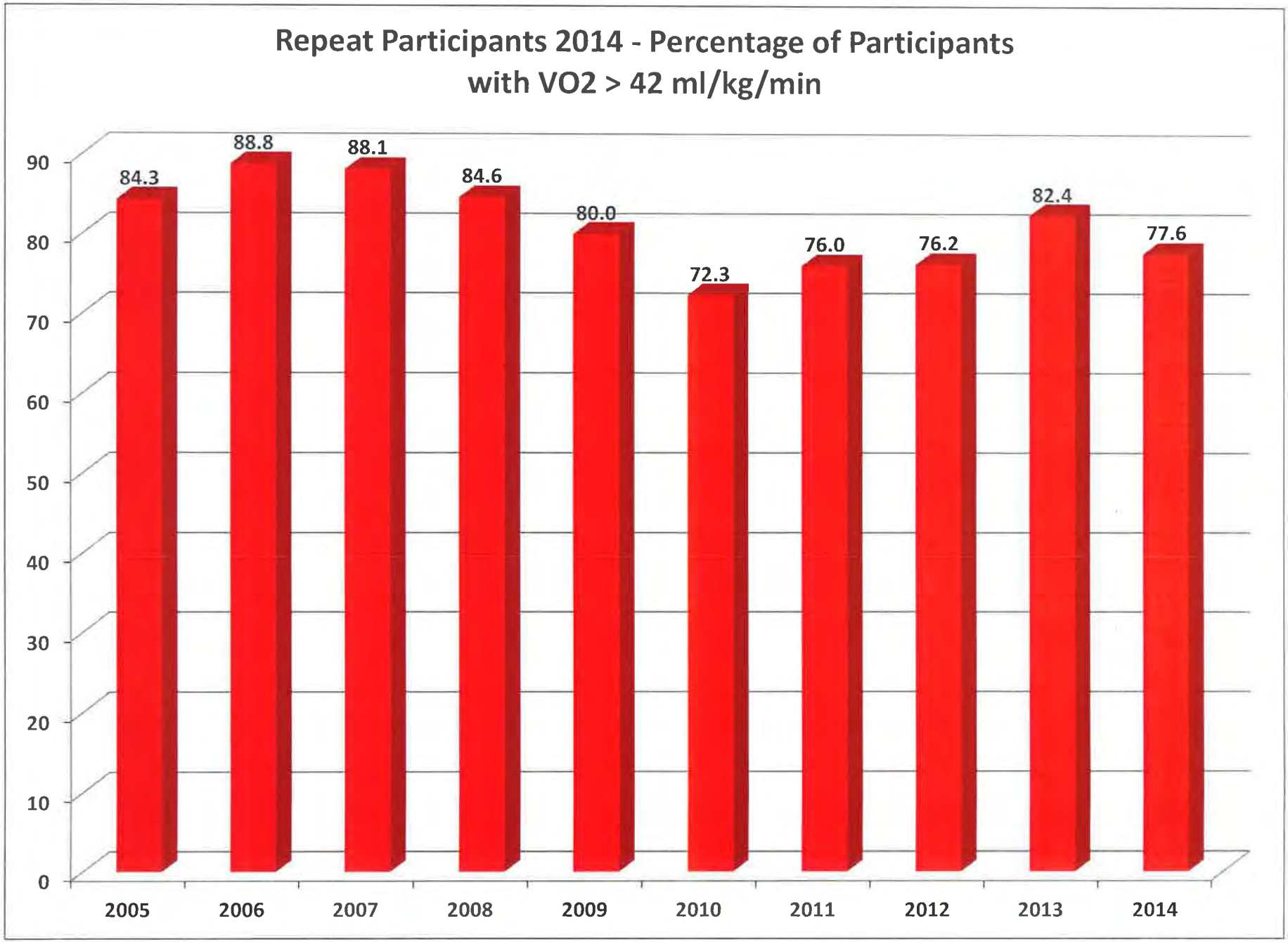

Repeat Participants 2014 - Percentage of Individuals with Triglycerides > 150 mg/dl
25
20
15
10
5
0
16.8
18
21.7
18.3
18
18.3
16.8
17.1
14.5
17.4
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


Repeat Participants 2014 - Percentage of Participants with HDL < 40 mg/dl
16
14
12
10
8
6
4
2
0
8.1
15.4
15.7
12.8
13
8.4
8.7
9.6
7.5
9.9
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


Repeat Participants 2014 - Percentage of Participants with Normal, Mild, Moderate and Severe LDL cholesterol
120
100
80
60
40
20
0
34.2
30.1
31.3
38
36.5
32.6
31
29
27
25.6
38.3
37.1
38
39.1
42
40.6
42.3
44.9
39.7
36.8
19.7
24.1
22.3
15.9
15.7
18.8
17.1
19.4
22.3
22
6.7
7
6.1
5.5
4.6
5.2
3.5
4.6
4.5
6.7
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Normal
Mild
Moderate
Severe


Repeat Participants 2014 - Average Blood pressure
140
120
100
80
60
40
20
0
123.3
119.4
118.2
120.8
118.6
116.7
115.9
115.3
116.4
120.4
78.5
77.8
78.5
78.3
78.9
77.5
78.2
78.2
76.7
78.1
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Systolic
Diastolic


Repeat Participants 2014 - Percentage of Participants with Blood Pressure > 140/90 mmHG
12
10
8
6
4
2
0
11.3
2.6
4.3
5.2
2.9
1.4
2.3
3.5
1.4
4.6
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


Repeat Participants 2014 - Percentage of Participants with VO2 > 42 ml/kg/min
90
80
70
60
50
40
30
20
10
0
84.3
88.8
88.1
84.6
80.0
72.3
76.0
76.2
82.4
77.6
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Demographic

Males 30-39 yr

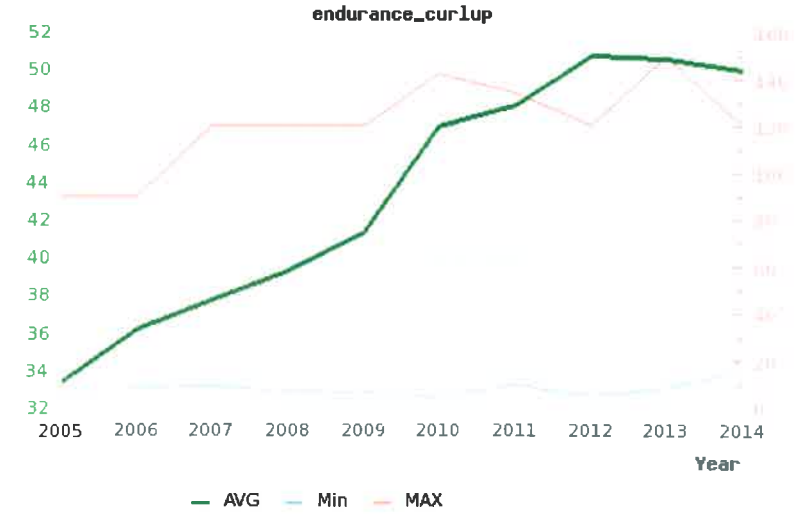
Result set

endurance_curlup

Years attended

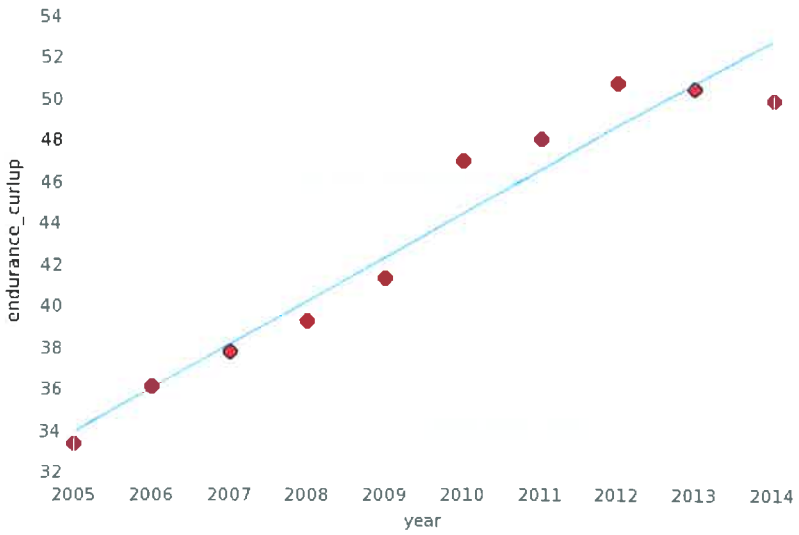
2005,2006,2007,2008,2009,2010,2011,2012,2013,2014

year	max	min	avg	sd	*n*
2005	90.0	6.0	**33.3**	14.14	*195*
2006	90.0	8.0	**36.1**	15.21	*197*
2007	120.0	9.0	**37.7**	17.03	*192*
2008	120.0	7.0	**39.2**	19.93	*208*
2009	120.0	6.0	**41.3**	20.31	*215*
2010	142.0	4.0	**46.9**	24.64	*200*
2011	134.0	10.0	**48.0**	23.73	*215*
2012	120.0	5.0	**50.7**	24.17	*222*
2013	150.0	8.0	**50.5**	22.96	*230*
2014	120.0	15.0	**49.9**	21.72	*242*



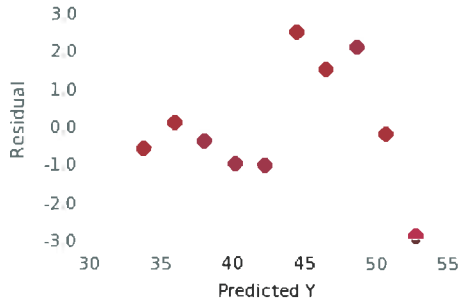
Linear Regression Data Summary :endurance_curlup

Year	Value	Predicted	Residual	Lower %	Upper %
1	33.3	33.89	-0.59	33.89	33.89
2	36.1	36.00	0.10	36.00	36.00
3	37.7	38.10	-0.40	38.10	38.10
4	39.2	40.20	-1.00	40.20	40.20
5	41.3	42.31	-1.01	42.31	42.31
6	46.9	44.41	2.49	44.41	44.41
7	48.0	46.52	1.48	46.52	46.52
8	50.7	48.62	2.08	48.62	48.62
9	50.5	50.72	-0.22	50.72	50.72
10	49.9	52.83	-2.93	52.83	52.83



Analysis Of Variance

Source	df	Sum Of Squares	Mean Square	F Value
Model	1	365.30	365.30	**122.34**
Error	8	23.89	2.99	
Total	9	389.18		



Parameter Estimates

Variable	Estimate	Std Error	T Value	Prob > T
Slope	2.10	0.19	11.06	0.00000
Intercept	31.79	1.18	26.93	0.00000

endurance_curlup = 31.79 + (2.10 * Year)

Correlation Coefficients

R	R Squared
0.97	0.94

Demographic

Males 30-39 yr

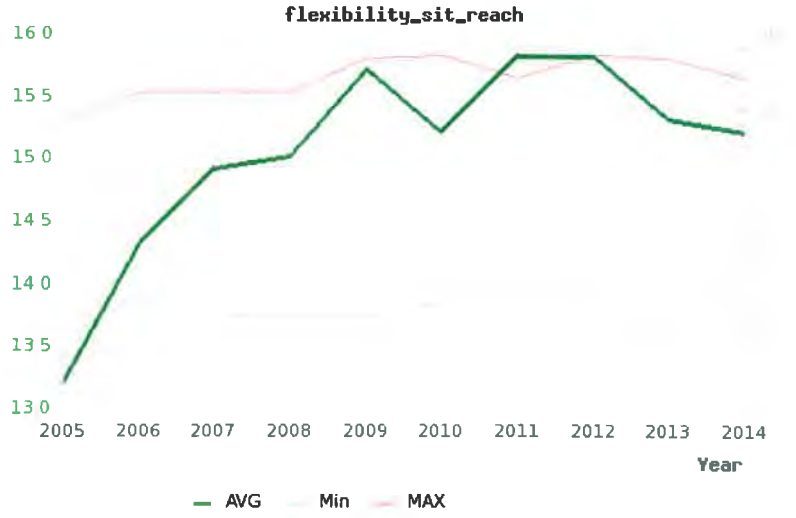
Result set

flexibility_sit_reach

Years attended

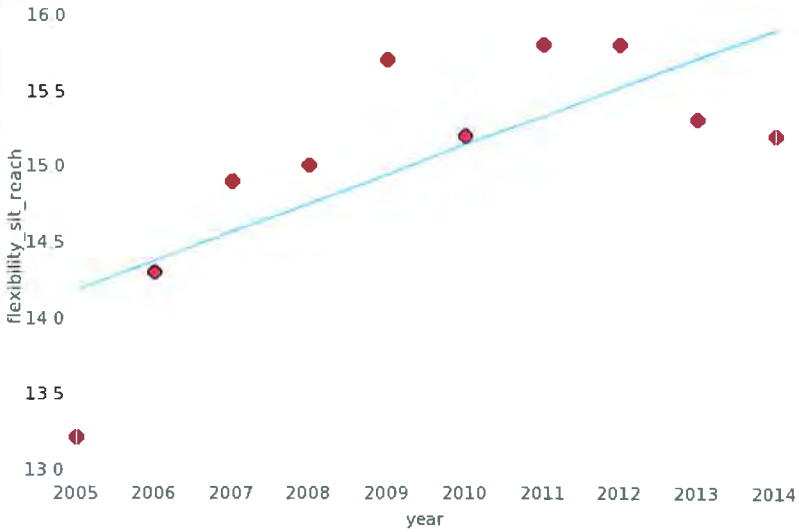
2005,2006,2007,2008,2009,2010,2011,2012,2013,2014

year	max	min	avg	sd	*n*
2005	19.0	4.5	**13.2**	3.05	*198*
2006	21.0	7.5	**14.3**	2.77	*199*
2007	21.0	6.3	**14.9**	2.63	*199*
2008	21.0	6.0	**15.0**	2.63	*216*
2009	23.3	6.0	**15.7**	2.93	*229*
2010	23.5	7.0	**15.2**	3.15	*217*
2011	22.0	9.0	**15.8**	2.69	*229*
2012	23.5	6.5	**15.8**	2.99	*230*
2013	23.3	5.3	**15.3**	2.88	*250*
2014	22.0	8.0	**15.2**	2.91	*267*



Linear Regression Data Summary :flexibility_sit_reach

Year	Value	Predicted	Residual	Lower %	Upper %
1	13.2	14.18	-0.98	14.18	14.18
2	14.3	14.37	-0.07	14.37	14.37
3	14.9	14.56	0.34	14.56	14.56
4	15.0	14.75	0.25	14.75	14.75
5	15.7	14.94	0.76	14.94	14.94
	15.2	15.14	0.06	15.14	15.14
	15.8	15.33	0.47	15.33	15.33
8	15.8	15.52	0.28	15.52	15.52
9	15.3	15.71	-0.41	15.71	15.71
10	15.2	15.90	-0.70	15.90	15.90



Analysis Of Variance

Source	df	Sum Of Squares	Mean Square	F Value
Model	1	2.99	2.99	**8.93**
Error	8	2.68	0.33	
Total	9	5.66		

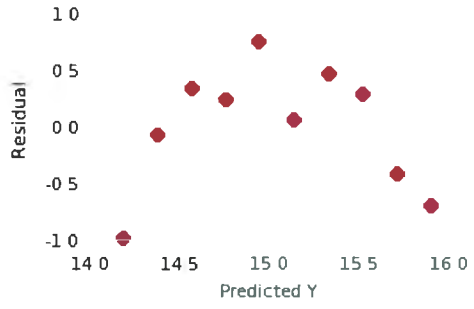
Parameter Estimates

Variable	Estimate	Std Error	T Value	Prob > T
Slope	0.19	0.06	2.99	0.01737
Intercept	13.99	0.40	35.42	0.00000

flexibility_sit_reach = 13.99 + (0.19 * Year)

Correlation Coefficients

R	R Squared
0.73	0.53



Demographic

Males 30-39 yr

Result set

aerobic_capacity

Years attended

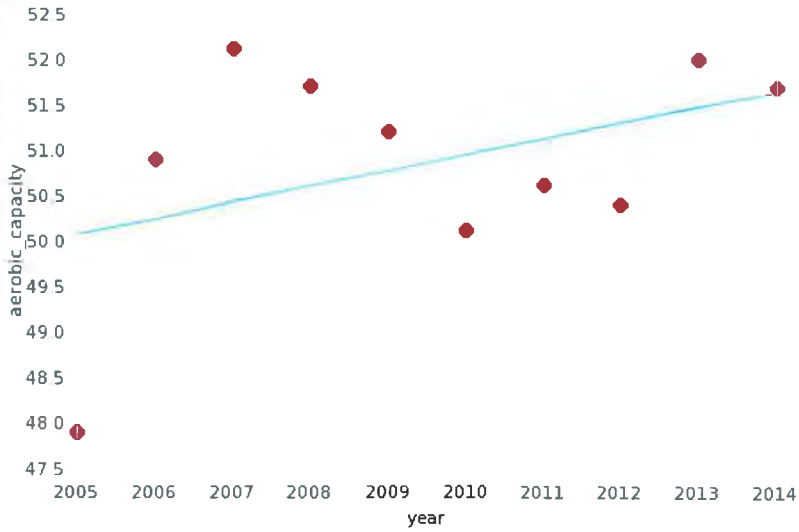
2005,2006,2007,2008,2009,2010,2011,2012,2013,2014

year	max	min	avg	sd	*n*
2005	72.8	11.4	**47.9**	7.30	*198*
2006	70.0	28.7	**50.9**	6.34	*199*
2007	70.3	32.5	**52.1**	7.26	*200*
2008	73.5	19.0	**51.7**	8.02	*217*
2009	75.6	29.4	**51.2**	8.05	*232*
2010	70.0	24.8	**50.1**	7.12	*243*
2011	67.2	33.2	**50.6**	6.92	*233*
2012	69.3	19.2	**50.4**	7.39	*241*
2013	67.9	29.4	**52.0**	6.79	*260*
2014	71.9	30.8	**51.7**	6.82	*282*



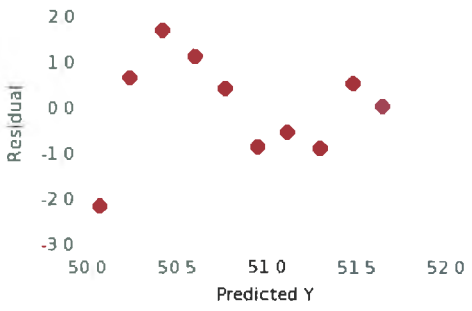
Linear Regression Data Summary :aerobic_capacity

Year	Value	Predicted	Residual	Lower %	Upper %
1	47.9	50.07	-2.17	50.07	50.07
2	50.9	50.24	0.66	50.24	50.24
3	52.1	50.42	1.68	50.42	50.42
4	51.7	50.60	1.10	50.60	50.60
5	51.2	50.77	0.43	50.77	50.77
	50.1	50.95	-0.85	50.95	50.95
.	50.6	51.12	-0.52	51.12	51.12
8	50.4	51.30	-0.90	51.30	51.30
9	52.0	51.48	0.52	51.48	51.48
10	51.7	51.65	0.05	51.65	51.65



Analysis Of Variance

Source	df	Sum Of Squares	Mean Square	F Value
Model	1	2.55	2.55	**1.78**
Error	8	11.44	1.43	
Total	9	13.98		



Parameter Estimates

Variable	Estimate	Std Error	T Value	Prob > T
Slope	0.18	0.13	1.34	0.21854
Intercept	49.89	0.82	61.09	0.00000

aerobic_capacity = 49.89 + (0.18 * Year)

Correlation Coefficients

R	R Squared
0.43	0.18

Demographic

Males 30-39 yr

Result set

max_mets

Years attended

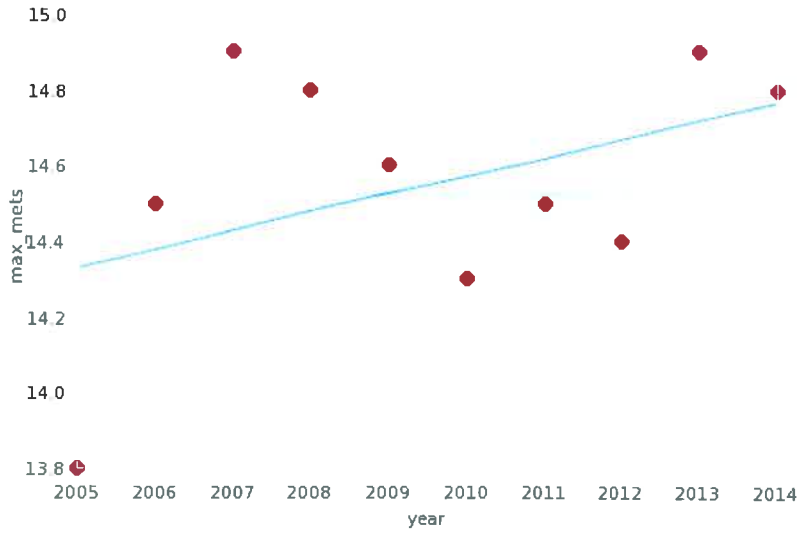
2005,2006,2007,2008,2009,2010,2011,2012,2013,2014

year	max	min	avg	sd	n
2005	20.8	7.7	**13.8**	1.84	*197*
2006	20.0	8.2	**14.5**	1.81	*198*
2007	20.1	9.3	**14.9**	2.07	*200*
2008	21.0	5.4	**14.8**	2.29	*217*
2009	21.6	8.4	**14.6**	2.30	*232*
2010	20.0	7.1	**14.3**	2.04	*243*
2011	19.2	9.5	**14.5**	1.98	*233*
2012	19.8	5.5	**14.4**	2.11	*242*
2013	19.4	8.4	**14.9**	1.94	*260*
2014	20.5	8.8	**14.8**	1.95	*282*



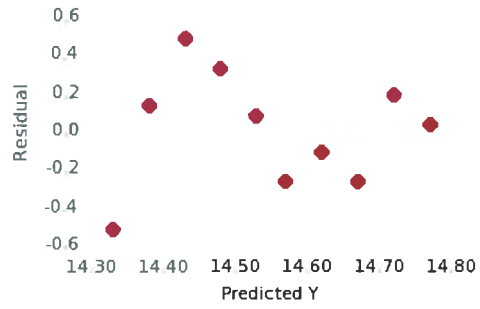
Linear Regression Data Summary :max_mets

Year	Value	Predicted	Residual	Lower %	Upper %
1	13.8	14.33	-0.53	14.33	14.33
2	14.5	14.38	0.12	14.38	14.38
3	14.9	14.43	0.47	14.43	14.43
4	14.8	14.48	0.32	14.48	14.48
5	14.6	14.53	0.07	14.53	14.53
	14.3	14.57	-0.27	14.57	14.57
	14.5	14.62	-0.12	14.62	14.62
8	14.4	14.67	-0.27	14.67	14.67
9	14.9	14.72	0.18	14.72	14.72
10	14.8	14.77	0.03	14.77	14.77



Analysis Of Variance

Source	df	Sum Of Squares	Mean Square	F Value
Model	1	0.20	0.20	**1.93**
Error	8	0.83	0.10	
Total	9	1.02		



Parameter Estimates

Variable	Estimate	Std Error	T Value	Prob > T
Slope	0.05	0.04	1.39	0.20271
Intercept	14.28	0.22	65.05	0.00000

max_mets = 14.28 + (0.05 * Year)

Correlation Coefficients

R	R Squared
0.44	0.19

Demographic

Males 30-39 yr

Result set

body_fat

Years attended

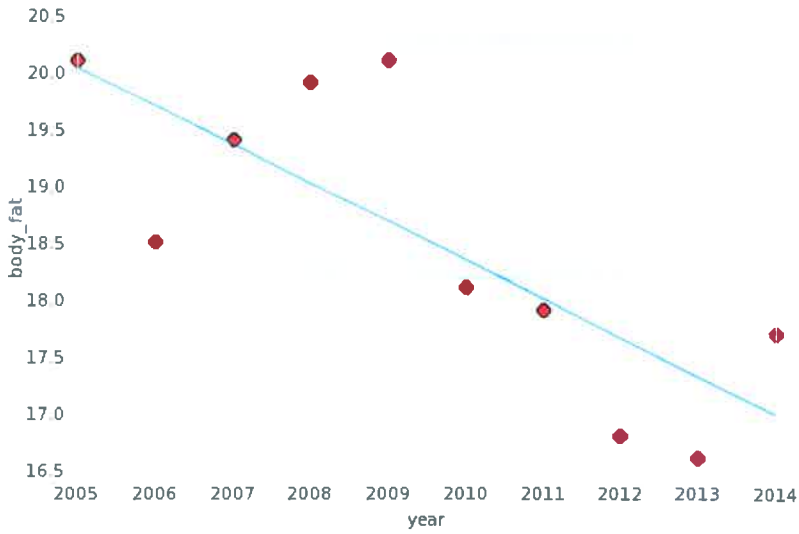
2005,2006,2007,2008,2009,2010,2011,2012,2013,2014

year	max	min	avg	sd	n
2005	39.1	7.0	**20.1**	6.69	*200*
2006	36.1	6.8	**18.5**	5.27	*200*
2007	33.1	7.9	**19.4**	5.57	*201*
2008	37.3	6.9	**19.9**	5.66	*218*
2009	37.5	6.2	**20.1**	6.26	*231*
2010	34.2	5.3	**18.1**	6.37	*248*
2011	33.5	5.2	**17.9**	6.27	*238*
2012	33.9	5.2	**16.8**	5.69	*244*
2013	33.5	4.5	**16.6**	5.69	*262*
2014	33.7	5.3	**17.7**	5.96	*281*



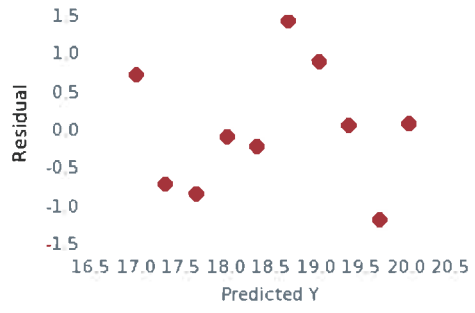
Linear Regression Data Summary :body_fat

Year	Value	Predicted	Residual	Lower %	Upper %
1	20.1	20.03	0.07	20.03	20.03
2	18.5	19.70	-1.20	19.70	19.70
3	19.4	19.36	0.04	19.36	19.36
4	19.9	19.02	0.88	19.02	19.02
5	20.1	18.68	1.42	18.68	18.68
	18.1	18.34	-0.24	18.34	18.34
	17.9	18.00	-0.10	18.00	18.00
8	16.8	17.66	-0.86	17.66	17.66
9	16.6	17.32	-0.72	17.32	17.32
10	17.7	16.99	0.71	16.99	16.99



Analysis Of Variance

Source	df	Sum Of Squares	Mean Square	F Value
Model	1	9.47	9.47	**12.46**
Error	8	6.08	0.76	
Total	9	15.55		



Parameter Estimates

Variable	Estimate	Std Error	T Value	Prob > T
Slope	-0.34	0.10	-3.53	0.00773
Intercept	20.37	0.60	34.21	0.00000

body_fat = 20.37 + (-0.34 * Year)

Correlation Coefficients

R	R Squared
-0.78	0.61

Table 9
Physician Services Expenditures; Levels, Percent Change, and Percent Distribution, by Source of Funds: Selected Calendar Years 1998-2013

Year	Total[1]	Out of Pocket	Health Insurance[2]	Health Insurance[2]				Other Third Party Payers[4]
				Private Health Insurance	Medicare	Medicaid	Other Health Insurance Programs[3]	
				Amount in Billions				
1998	$205.8	$25.1	$162.4	$105.3	$46.3	$8.8	$2.0	$18.4
1999	217.8	25.9	172.2	110.6	49.6	9.1	2.9	19.8
2000	236.0	28.0	187.3	119.6	54.2	9.9	3.6	20.8
2001	258.9	29.4	206.8	132.3	58.8	11.4	4.3	22.7
2002	280.7	31.3	225.8	145.6	62.1	12.6	5.4	23.6
2003	304.1	33.1	244.8	158.0	67.4	13.0	6.4	26.1
2004	325.3	35.0	263.3	167.9	74.2	14.4	6.7	27.0
2005	344.7	37.5	279.6	178.7	78.9	15.3	6.7	27.7
2006	361.6	39.2	295.8	188.1	84.2	16.1	7.5	26.6
2007	379.1	41.0	310.3	196.2	88.6	17.1	8.4	27.8
2008	398.2	42.4	328.6	204.3	96.2	18.3	9.8	27.2
2009	409.0	42.0	342.0	207.2	103.6	20.1	11.0	25.0
2010	419.8	44.5	348.5	208.2	107.1	21.7	11.5	26.8
2011	435.2	46.6	362.0	215.3	113.1	21.7	11.8	26.6
2012	453.2	46.7	376.0	223.3	118.5	22.3	11.9	30.5
2013	470.0	47.9	389.5	230.5	121.5	25.6	11.9	32.6
				Average Annual Percent Change from Previous Year Shown				
1999	5.8%	3.2%	6.0%	5.0%	7.2%	3.2%	43.0%	7.8%
2000	8.3	8.2	8.8	8.1	9.2	8.7	26.6	4.8
2001	9.7	5.2	10.4	10.7	8.5	15.0	18.2	9.2
2002	8.4	6.2	9.2	10.1	5.7	11.0	25.6	4.2
2003	8.3	5.9	8.4	8.5	8.5	3.0	18.2	10.5
2004	7.0	5.7	7.5	6.3	10.0	10.9	6.2	3.3
2005	6.0	7.1	6.2	6.4	6.4	6.0	-1.0	2.5
2006	4.9	4.5	5.8	5.3	6.7	4.9	11.7	-3.7
2007	4.8	4.7	4.9	4.3	5.2	6.6	12.7	4.2
2008	5.1	3.6	5.9	4.1	8.6	6.8	17.1	-2.1
2009	2.7	-1.0	4.1	1.5	7.6	10.2	12.2	-8.0
2010	2.6	5.9	1.9	0.4	3.4	7.6	4.4	7.2
2011	3.7	4.8	3.9	3.4	5.6	0.1	2.5	-1.0
2012	4.1	0.1	3.9	3.7	4.7	2.9	0.5	14.7
2013	3.7	2.5	3.6	3.2	2.5	14.9	0.0	7.1
				Percent Distribution				
1998	100.0%	12.2%	78.9%	51.1%	22.5%	4.3%	1.0%	8.9%
1999	100.0	11.9	79.0	50.8	22.8	4.2	1.3	9.1
2000	100.0	11.9	79.3	50.7	23.0	4.2	1.5	8.8
2001	100.0	11.4	79.9	51.1	22.7	4.4	1.7	8.8
2002	100.0	11.1	80.4	51.9	22.1	4.5	1.9	8.4
2003	100.0	10.9	80.5	52.0	22.2	4.3	2.1	8.6
2004	100.0	10.8	80.9	51.6	22.8	4.4	2.1	8.3
2005	100.0	10.9	81.1	51.8	22.9	4.4	1.9	8.0
2006	100.0	10.8	81.8	52.0	23.3	4.4	2.1	7.4
2007	100.0	10.8	81.9	51.8	23.4	4.5	2.2	7.3
2008	100.0	10.7	82.5	51.3	24.2	4.6	2.5	6.8
2009	100.0	10.3	83.6	50.7	25.3	4.9	2.7	6.1
2010	100.0	10.6	83.0	49.6	25.5	5.2	2.7	6.4
2011	100.0	10.7	83.2	49.5	26.0	5.0	2.7	6.1
2012	100.0	10.3	83.0	49.3	26.1	4.9	2.6	6.7
2013	100.0	10.2	82.9	49.0	25.8	5.5	2.5	6.9

[1] Total expenditures equals the sum of out of pocket, health insurance, and other third party payers.

[2] Includes Private Health Insurance, Medicare, Medicaid and other health insurance programs.

[3] Other health insurance programs may include Children's Health Insurance Program (Titles XIX and XXI), Department of Defense, and Department of Veterans Affairs.

[4] Other third party payers may include worksite health care, other private revenues, Indian Health Service, workers' compensation, general assistance, maternal and child health, vocational rehabilitation, other federal programs, Substance Abuse and Mental Health Services Administration, other state and local programs, and school health.

[5] Average annual growth from 1960-1970.

NOTE: Numbers and percents may not add to totals due to rounding. Dollar amounts shown are in current dollars. Percent changes and percent distributions are calculated from unrounded data. "—" Not applicable; Medicare and Medicaid became effective July 1966. The Children's Health Insurance Program became effective in 1998.

CURRICULUM VITAE

RICHARD ALLEN PARKER, D.O., F.A.O.A.S.M.

OFFICE ADDRESS:

San Diego Sports Medicine
and Family Health Center
6699 Alvarado Road, Suite 2100
San Diego, California 92l20
(6l9) 229-3909

EDUCATION:

High School

East Longmeadow High School
East Longmeadow, Massachusetts

College

Springfield College
Springfield, Massachusetts
Years Attended: 1976 - l980
Degree Received: B.A. Biology

Medical School

Kirksville College of Osteopathic Medicine
Kirksville, Missouri
Years Attended: 1980 - 1984
Degree Received: D.O.

POST GRADUATE TRAINING:

Rotating Internship - Sun Coast Hospital
Largo, Florida
July 1, 1984 - June 30, 1985

Fellowship - Sports Medicine/Family Medicine
San Diego Sports Medicine Center
San Diego, California 92120
September 1, 1985 - August 31, 1987

MEDICAL STAFF:

Alvarado Hospital Medical Center
San Diego, California
Active Staff

Mission Valley Heights Surgery Center
San Diego, California
Courtesy Staff

Oasis Health South Surgery Center
San Diego, California
Courtesy Staff

LICENSE:

California Physician and Surgeon's
Certificate -20A5181

CERTIFICATION:

Board Certified, Primary Care Sports Medicine granted by the American Osteopathic Board of Family Practice on recommendation by the American Osteopathic Conjoint Sports Medicine Examination Committee, 1993

Board Certified, Family Practice granted by the American Osteopathic Board of Family Practice, 1991

FELLOWSHIP:

Fellow, American Osteopathic Academy of Sports Medicine, 1997

HONORS:

San Diego Top Doctor 2014, San Diego County Medical Society

John P. Wood, D.O. Meritorious Service Award, 2008, given for excellence in Teaching, Leadership and Mentorship by the American Osteopathic Academy of Sports Medicine

W. S. McCymonds Memorial Scholarship - Outstanding Scholastic Achievement and Professional Promise - 1983 & 1984

Connecticut Osteopathic Soceity Scholarship – 1980

Magnum Cum Laude – Springfield College

N.C.A.A. All American, Swimming

MEDICAL SOCIETY MEMBERSHIPS:

American Osteopathic Association

American Osteopathic Academy of Sports Medicine

Galen Society (Certificate of Competence in Sports Medicine)

San Diego County Medical Society.

ACADEMIC POSITIONS:

Program Director, Primary Care Sports Medicine Fellowship Program, San Diego Sports Medicine and Family Health Center, (2008-Present)

Voluntary Associate Clinical Professor, University of California, San Diego, Department of Family and Preventive Medicine (2006 - Present)

Clinical Professor of Family Medicine and Sports Medicine, Western University of Health Sciences, College of Osteopathic Medicine of the Pacific, Pomona, California, (2013-Present)

Adjunct Professor, Department of Athletics, San Diego State University, San Diego, California (1988 - Present)

ACADEMIC POSITIONS CONTD:

Chairman, American Osteopathic Conjoint Sports Medicine Examination Committee (2009-2013)

Chairman, Education Committee
American Osteopathic Academy of Sports Medicine, (1995-2000)

Program Chairman, AOASM
Sports Medicine Clinical Conference
New Orleans, Louisiana (1993)

Program Chairman, AOASM, American Osteopathic Association
94th Annual Convention and Scientific Seminar, (1989)

Program Chairman, AOASM
Sports Medicine Clinical Conference
Palm Springs, California (1988)

Co-Director, Primary Care Sports Medicine
Fellowship Program, San Diego Sports Medicine and Family Health Center
(1990 – 2008)

Clinical Faculty, University of California, San Diego, Department of Family and Preventive Medicine (1992 - 2005)

Assistant Clinical Professor of Sports and Family Medicine College of Osteopathic Medicine of the Pacific. Pomona, California (1987 - 2013)

Advisory Board Member, The Industrial Athlete
Medical and Scientific Advisory Board (2003 - 2008)

Editorial Reviewer, The Physician and SportsMedicine,
McGraw Hill, publisher (1992-2000)

Pfizer Speakers Bureau
Sports Medicine Panel (1989 - 1994)

LEADERSHIP POSITIONS:

President, CEO, San Diego Sports Medicine and Family Health Center, San Diego, California (2004 - Present)

Medical Director, San Diego Regional Firefighters Wellness Program, (2005 - Present)

Co-Chairman, UCSD Health Physicians Network Advisory Board (2014-Present)

CEO, Welltivia LLC, (2009-Present)

LEADERSHIP POSITIONS CONTD:

President, American Osteopathic Academy of Sports Medicine, (2003-2004)

Member, Board of Directors American Osteopathic Academy of Sports Medicine
(1988 – 1994/1995-2013)

Member, Board of Directors Mid County Physicians Medical Group
(2003-Present)

Chief Financial Officer, San Diego Sports Medicine and Family Health Center, San Diego, California (1989 - 2003)

SPORTS MEDICINE POSTIONS:

Team Physician, San Diego State University
Varsity Athletics (1985 - Present)

Attending Physician, Unlimited Racing Commission
San Diego Hydroplane Regatta (1985 - Present)

Attending Physician, Downhill Skiing Venue, 2002 Winter Olympics, Salt Lake City, UT

Assistant Team Physician
San Diego Chargers Football Club (1986 - 1990)

Team Physician, USA Men's and Women's National Volleyball Team
(Olympic Team) (1986 - 1996)

Team Physician, Oracle BMW Racing, American Syndicate,
America's Cup Challenge, Auckland, NZ (2002)

Team Physician, One Australia, Australian Syndicate
America's Cup Challenge (1994-1995)

Team Physician, IL Moro Di Vensia, Italian Syndicate
America's Cup Challenge (1991-1992)

Team Physician, San Diego Gulls Hockey Club
International Hockey League (1990 - 1995)

Team Physician, San Diego Soccers
Major Soccer League (1991 - 1995)

Team Physician, USA Synchronized Swimming
(Olympic Team) (1990 - 1994)

Medical Director, Heart of San Diego Marathon
(1985 & 1987)

Team Physician, Hoover High School
San Diego, California (1985 - 1991)

SPORTS MEDEICINE POSITIONS CONTD:

Team Physician, Heartland Swim Association
San Diego, California (1986 - 1992)

Charter Member, Circuit of Reebok Professionals and Specialists (1991 - 1994)

Member, Novartis Consulting Network (2000-2005)

PUBLICATIONS:

"Musculoskeletal Injuries Plague Frequent Swimmers," Journal of American Osteopathic Association, May 1989

Reviewer: "Common Sports Injuries," Personal Trainer Manual. Published by American Council on Exercise, San Diego, CA

"Cervical Spine Injuries," Sports Medicine Secrets, Morris B. Mellion, M.D., Editor

"Principles of Manual Sports Medicine," Football Chapter, Lippincott, Williams & Wilkins, 2004

RESEARCH:

Sub-Investigator, "An Open Label 52-Week Study To Evaluate The Safety and Efficacy of Tegaserod (6 mg. BID and 12 mg OD) Given Orally For The Treatment of Opioid-Induced Constipation (OIC) In Patients With Chronic Non-Cancer Pain", Novartis Pharmaceuticals, 2007

Sub-Investigator, "A Randomized, Double-Blind, Active-Controlled, Multicenter Study To Compare The Effect of 24 Weeks Treatment With A Fixed Combination Therapy of Vildagliptin and Metformin To The Individual Monotherapy Components In Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals, 2007

Sub-Investigator, "A Phase 3, Randomized, Multicenter, Double-Blind, Allopurinol-Controlled Study Assessing The Efficacy and Safety of Oral Febuxostat In Subjects With Gout", TAP Pharmaceutical Products, Inc., 2007

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Phase III Study of The Efficacy, Tolerability and Safety of Ketoprofen Topical Patch, 20% (KTP) In The Treatment of Pain Associated With Tendonitis or Bursitis of The Shoulder, Elbow, or Knee", Endo Pharmaceuticals, Inc., 2006

Sub-Investigator, "An 8-Week, Multicenter, Randomized, Double-Blind, Parallel-Group Study To Evaluate The Efficacy and Safety of The Combination of Valsartan/HCTZ/Amlodipine Compared To Valsartan/HCTZ, Valsartan/Amlodipine, and HCTZ/Amlodipine In Patients With Moderate To Severe Hypertension", Novartis Pharmaceuticals, 2006

RESEARCH CONTD:

Sub-Investigator, Randomized, Double-Blind Trial of The Combination of Carisprodol 250 mg. Tablets and Diclofenac 50 mg. Tablets Compared To Placebo and Either Product Alone In Patients With Acute, Painful Musculoskeletal Spasm of The Lower Back", MedPointe Pharmaceuticals, 2006

Sub-Investigator, "A Randomized, Double-Blind, Multicenter Study Comparing The Effects of Carvedilol Modified Release Formulation (Coreg ™ MR) and Atenolol In Combination With and Compared To An Angiotensin Converting
Enzyme Inhibitor (Lisinopril) On Left Ventricular Mass Regression In Hypertensive Patients With Left Ventricular Hypertrophy (LVH)", GlaxoSmithKline, 2006

Sub-Investigator, "Randomized, Double-Blind Trial of Carisoprodol 250 mg. Tablets Compared To Placebo In Patients With Acute, Painful Musculoskeletal Spasm of The Lower Back", Endo Pharmaceuticals, 2005

Sub-Investigator, "A Double-Blind, Placebo-Controlled Evaluation of The Safety and Efficacy of Three Doses of Topically Applied Ketoprofen Transfersome ® Gel (KTG) In Comparison To Oral Naproxen For The Treatment of The Signs and Symptoms of Osteoarthritis of The Knee", McNeil Consumer & Specialty Pharmaceuticals, 2005

Sub-Investigator, "Pulmonary Outcomes Within A 2-Year Period In Subjects With Diabetes Mellitus Treated With Technosphere ®/Insulin or Usual Antidiabetic Treatment and In Subjects Without Abnormalities In Glucose Control", Mannkind Corporation, 2005

Sub-Investigator, "An 8-Week Randomized, Double-Blind, Parallel Group, Multicenter, Placebo and Active Controlled Dose Escalation Study To Evaluate The Efficacy and Safety of Aliskiren (150 mg. and 300 mg.) Administered Alone and In Combination With Valsartan (160 mg. and 320 mg.) In Patients With Hypertension", Novartis Pharmaceuticals, 2005

Sub-Investigator, "A 6-week, Multicenter, Randomized, Double-Blind, Parallel-Group Study to Evaluate The Combination of Valsartan/HCTZ (160/12.5 mg. With Forced Titration To A Maximum Dose of 320/25 mg.) Compared To Valsartan Monotherapy (160 mg. With Forced Titration to 320 mg.) As Initial Therapy In Patients with Severe
Hypertension," Novartis Pharmaceuticals, 2005

Sub-Investigator, "A Multicenter, Randomized, Double-Blind Study To Compare The Effects of 24 Weeks Treatment With LAF237 (50 mg. QD, 50 mg. BID or 100 mg. OD) To Placebo in Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals, 2005

RESEARCH CONTD:

Sub-Investigator, "A Randomized, Double Blind, Placebo-Controlled, Multicenter, Phase III Study of Rosuvastatin (Crestor ®) 20 mg. In The Primary Prevention of Cardiovascular Events Among Subjects With Low Levels of LDL-Cholesterol and Elevated Levels of C-Reactive Protein", Astra Zeneca, 2005.

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group, Multicenter Study To Compare Clinical Health Outcomes of Telithromycin Versus Azithromycin In Out Patients With Community-Acquired Lower Respiratory Tract Infections", Aventis, Inc., 2004

Sub-Investigator, "Lilly's Emotional and Physical Symptoms of Depression Study", Eli Lilly and Company, 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy to Glimepiride in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled Study Evaluating Acetaminophen Extended Release (3900 mg/day) in the Treatment of Osteoarthritis of the Hip or Knee", Chiltern International, Inc., 2004

Sub-Investigator, "A Randomized, Open-Label Study Comparing the Efficacy and Safety of Lidocaine 5% Patch with Celecoxib 200 mg in Patients with Chronic Axial Low Back Pain", Endo Pharmaceuticals, 2004

Sub-Investigator, "To Compare the Effects of Continuous Low-Level Heat Wrap Therapy Alone and Combined with Active Exercise Versus Active Exercise Alone on the Functional Ability of Acute Low Back Pain Patients", Proctor & Gamble Company, U. S. Spine & Sport Foundation, 2004

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group, Active-Controlled, Placebo-Controlled, Multicenter Trial to Study the Efficacy and Safety of Cyclobenzaprine HCL Modified-Release (CMR) 15 mg and 30 mg in Subjects with Pain Due to Muscle Spasms of Local Origin", Omnicare Clinical Research, 2003

CURRICULUM VITAE

Jeffrey P. Anthony, D.O., F.A.A.F.P., F.A.O.A.S.M.

OFFICE ADDRESS: San Diego Sports Medicine and Family Health Center
6699 Alvarado Road, Suite 2100
San Diego, CA 92120
(619) 229-3909

EDUCATION:

College:

University of California, Santa Barbara
September 1975 - June 1979
B.A. - Physiology/Cell Biology
Achievements: CA State Scholarship
Dean's List - Who's Who Award

Post-Graduate:

USC - LA County Medical Center
August 1979 - July 1980
Cardiopulmonary Technology
Certified - March 1980
Cardiopulmonary technologist July 1980 – July 1981

Medical School:

University of Osteopathic Medicine and Health Sciences
Des Moines, Iowa
July 1981 - June 1985
Degree - Doctor of Osteopathy (D.O.)
Class Ranking - Top Quartile
Achievements: President, Sports Medicine Club
Senior Class Osteopathic Manipulation Award
Who's Who Award

Medical Post-Graduate:

Rotating Internship
Phoenix General Hospital
Phoenix, Arizona
July 1985 - July 1986

Residency - General Practice
Phoenix General Hospital - Chief Resident
Phoenix, Arizona
August 1986 - September 1987

Fellowship - Sports Medicine and Family Medicine
San Diego Sports Medicine Center
San Diego, California
September 1987 - August 1988

SPORTS MEDICINE POSITIONS:

Private practice: Senior Partner
San Diego Sports Medicine and Family Health Center
San Diego, California
(1987 - Present)

Team Physician, Olympic Training Center, Chula Vista, CA
(2009-Present)

Team Physician - San Diego State University
Athletic Department (SDSU)
San Diego, California
(1987 – 2012)

Consulting Physician - San Diego State University
Athletic Department (SDSU)
San Diego, California
(2012-present)

Team Physician, San Diego State University Club Sports
(2014-Present)

Team Physician - San Diego Sockers,
Professional Indoor Soccer League
San Diego, California
(1989 -1996; 2002 - 2005)

Head Team Physician and Campus Physician
Grossmont College
San Diego, California
(1992 - 2001)

Grossmont College Supervising Physician
San Diego, California
(1992 - Present)

Head Team and Campus Physician
San Diego Christian College
San Diego, California
(1992 - Present)

Team Physician
Cuyamaca College
(2009- present)

SPORTS MEDICINE POSITIONS-CONTINUED:

Team Physician, Santa Fe Christian High School
San Diego, California
(2009 - Present)

Team Physician
Challenged Athletes Foundation
Annual Million Dollar Challenge
San Diego, California
(2008 – Present)

Assistant Team Physician
San Diego Gulls, Professional Hockey
San Diego, California
(1992 - 2002)

Assistant Team Physician
U.S.A. Men's Olympic Volleyball Team
San Diego, California
(1987 - 1997)

Associate Team Physician
National Hydroplane Races
San Diego, California
(1987 - 2002)

Medical Director
Heartland Firefighter Preventative Back Program
San Diego, California
(1992 - 2003)

Team Physician, Bud Light Pro Beach Volleyball
Men's and Women's Teams
San Diego, California
(1995 - 2000)

Team Physician, Copper Bowl
San Diego, CA (1993)

Team Physician, California State Games
San Diego, California

SPORTS MEDICINE POSITIONS-CONTINUED:

Consulting Physician – San Diego Spirit, Pro Women's Soccer
San Diego, California
(2001 - 2002)

Consulting Physician – Wildfire, Professional Basketball
San Diego, California
(2000 - 2001)

Medical Director of High School Programs/A.T.C. Programs
San Diego, California
(1989 - 2003)

ACADEMIC POSITIONS:

Voluntary Clinical Instructor
University of California at San Diego (UCSD)
Department of Family and Preventive Medicine
(1991 - Present)

Adjunct Professor
San Diego State University
San Diego, California
(1988 - Present)

Clinical Faculty
Family Practice, Sports Medicine
Sharp/Grossmont Hospital Family Practice Residency Program
(1993 - 2001)

Clinical Assistant Professor of Family Medicine
Western University of Health Sciences
Pomona, California
(May, 1988 – 2008)

ADVISORY BOARDS:

Member, Board of Directors
San Diego Academy of Family Practice
(1996 - 1999)

ADVISORY BOARDS CONTINUED:

Member, Board of Advisors
American Osteopathic Society for Sports Medicine
(1990 - 1996, 1996 - 2000)

Member, Governing Board, Alvarado Hospital & Medical Center,
(1999 - 2003)

Member, Advisory Board, UCSD Extension Exercise
Science Program, (1999 – 2001)

Reebok University, Advisory Board, Reebok International
(1998 – 2001)

Chief of Family Practice, Alvarado Hospital & Medical Center
(1994-1996)

Member/Board of Advisors/Lecturer
IDEA, International Association of Fitness Professionals
San Diego, California (1990 - 1994)
4 Star Presenter

Member, Family Practice Supervisory Committee
Alvarado Hospital, Medical Center
Family Practice/Orthopedics (1993 - 1997)

Charter Member
Circuit of Reebok Professionals and Specialists (C.O.R.P.S.)

CERTIFICATIONS/LICENSES:

Board Certified, American Academy of Osteopathic
Family Practice
Cert. #3046

Fellow, American Academy of Family Practice
(F.A.A.F.P.) 1996

Board Certified, Sports Medicine
#096, AOASM (1997)
Certificate of Competence (1992), Recertification (2007)

Fellow, American Academy of Osteopathic
Sports Medicine (F.A.O.A.S.M.)

CERTIFICATIONS/LICENSES CONTINUED:

California State Physicians and Surgeons
Cert. #20A5400

Qualified Medical Examiner (Q.M.E.)
State of California (1992)

Advanced Cardiac Life Support (1987-2003)

MEDICAL SOCIETY MEMBERSHIPS:

American Osteopathic Association
Osteopathic Physicians and Surgeons of California
American Academy of Family Physicians (Fellow)
American Academy of Osteopathic Family Practice
American Osteopathic Academy of Sports Medicine (Fellow)

HONORS

San Diego Magazine, San Diego County Medical Society, Physicians of Excellence, "Top Doctor" in Family Medicine", 2014

HOSPITAL STAFF AFFILIATIONS:

Supervising Physician Workman's Comp, Alvarado Hospital & Medical Center, (1999 – Present)

Alvarado Hospital & Medical Center (Active)
San Diego, California
Chief of Family Practice
(Jan. 1994 - Jan. 1996)

Mercy Hospital & Medical Center (Consulting)
San Diego, California

Sharp Hospital (Consulting)
San Diego, California

Grossmont Hospital (Consulting)
La Mesa, California

Medical Conference Chairman:

Program Chairman, AOASM, Annual Sports Medicine Clinical Conference
San Diego, CA, (1990)

SPEAKING/LECTURES:

Speakers' Bureau for Syntex, Pfizer,
CIBA/Geigy, Searle, Smith Kline Beecham
On various topics in Sports Medicine, Musculoskeletal Medicine.

Moderator, Co-Chair, AOASM
Sports Medicine Clinical Conference
New Orleans, LA (1993)

Program Chair, AOASM Annual
Sports Medicine Conference (1997)

Moderator, AOASM 18th Annual Clinical Sports
Medicine Conference (2003)

SPEAKING/LECTURES FOR:

American Osteopathic Association, Sports Medicine
American Academy, Family Practice
Osteopathic Physicians, Southern California
San Diego Osteopathic Medical Association
College Osteopathic Medicine of Pacific
San Diego Academy Family Practice
American College of Sports Medicine
IDEA, International Association of Fitness Professionals

PUBLICATIONS:

Evaluating the impact of stress on systemic disease: The most protocol in primary care, JAOA May 2003

Genito Urinary Injuries, Comprehensive Sports Medicine
Blackwell Science, Inc., 1996

Cervical Spine Injuries, Sports Medicine Secrets
Hanley, Belfus & Mosby, 1994
Revised, 1997

The Winged Scapula, Physician & Sports Medicine
Sept. 1994, volume 22, #9

Health Screening, Personal Training Manual
American Council on Exercise, 1991, Updated 1997, 2002

PUBLICATIONS CONTINUED:

IDEA Today, Journal
Medical Emergencies, 1992
Physiological Stress, 1994
Educating the impact of stress on systemic disease; the most protocol in primary care.
JAOA, 3/00

Nicholas G., Robinson D., Douglas D., Anthony J.,
Retraining of a competitive master athlete following traumatic injury: A case study MSSE, Vol 32 No. 6
P.1037-1042, 2000

RESEARCH:

Sub-Investigator, "Lilly's Emotional and Physical Symptoms of Depression Study", Eli Lilly and Company, 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy to Glimepiride in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled Study Evaluating Acetaminophen Extended Release (3900 mg/day) in the Treatment of Osteoarthritis of the Hip or Knee", Chiltern International, Inc., 2004

Sub-Investigator, "A Randomized, Open-Label Study Comparing the Efficacy and Safety of Lidocaine 5% Patch with Celecoxib 200 mg in Patients with Chronic Axial Low Back Pain", Endo Pharmaceuticals, 2004

RESEARCH-CONTINUED:

Sub-Investigator, "To Compare the Effects of Continuous Low-Level Heat Wrap Therapy Alone and Combined with Active Exercise Versus Active Exercise Alone on the Functional Ability of Acute Low Back Pain Patients", Proctor & Gamble Company, U. S. Spine & Sport Foundation, 2004

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group, Active-Controlled, Placebo-Controlled, Multicenter Trial to Study the Efficacy and Safety of Cyclobenzaprine HCL Modified-Release (CMR) 15 mg and 30 mg in Subjects with Pain Due to Muscle Spasms of Local Origin", Omnicare Clinical Research, 2003

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study of the Efficacy and Safety of Dutasteride 0.5 Administered Once Daily for Four Years to Reduce the Risk of Biopsy-Detectable Prostate Cancer" GlaxoSmithKline, 2003

Sub-Investigator, "A Randomized, Double-Blind, Multicenter, Multifactorial, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Valsartan (160 and 320 mg)

and Hydrochlorothiazide (12.5 and 25 mg) Combined Alone in Hypertensive Patients", Novartis Pharmaceuticals, 2003
Sub-Investigator, "An Epidemiologic Program to Estimate the Population Prevalence of Hypogonadism in Men", Solvay Pharmaceuticals, 2003

Principal Investigator, "The Objective of Multicenter, Prospective, Open-Label, Crossover Study is to Document and Compare the Time for Migraine Patients to Become Headache free in Response to Treatment with Maxalt® (Rizatriptan Benzoate) Versus the Patient's Usual Oral Migraine Medication Over 2 Migraine Attacks", Access Medical Group, LTD, 2003

Sub-Investigator, "A Multinational Randomized, Double-Blind, Placebo-Controlled, Force-Titration, 2 x 2 Factorial Design Study of the Efficacy and Safety of Long Term Administration of Nateglinide and Valsartan in the Prevention of Diabetes and Cardiovascular Outcomes in Subjects with Impaired Glucose Tolerance", Novartis Pharmaceuticals, 2002

RESEARCH-CONTINUED:

Sub-Investigator, "A Double-Blind Randomized Trial of Intra-Articular Injection of Hyalgan® Into the Glenohumeral Articular Space for the Treatment of Chronic Painful Shoulder with Limitation of Motion Due to Glenohumeral Joint Osteoarthritis Rotator Cuff Tear (Partial or Complete) and/or Primary or Secondary Adhesive Capulitis – (Hyalgan Use in Painful Shoulder – HUPS)", Sanofi-Synthelabo, Inc., 2002

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group Study Comparing the Safety and Efficacy of Acetaminophen Extended Release (3900 mg/day) and Ibuprofen (1200 mg/day) in the Treatment of Ankle Sprains", McNeil Consumer & Specialty Pharmaceuticals, 2002

Sub-Investigator, "Clinical Protocol for a Double-Blind, Placebo-Controlled, Randomized Two Week Comparison Study of the Efficacy and Tolerability of Valdecoxib 10 mg QD and Rofecoxib

25 mg QD in Relieving the Signs and Symptoms of Osteoarthritis of the Knee", Pharmacia & Upjohn Company, 2002

Sub-Investigator, "Pioglitazone Versus Rosiglitazone in Subjects with Type 2 Diabetes Mellitus and Dyslipidemia", Eli Lilly and Company, 2002

CURRICULUM VITAE

Personal Data

Name: Lee P. Ralph, M.D.

Business: 6699 Alvarado Road, Suite 2100
San Diego, CA 92120
(619) 229-3909

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San Diego, CA 92121
(828) 793-7860

Date of Birth: September 28, 1961

Place of Birth: Akron, Ohio - USA

Education

University of California, San Diego - Medical Center
San Diego, CA
Fellowship- Primary Care Sports Medicine 1991-1992
Residency- Family Medicine 1989-1991
Internship- Family Medicine 1988-1989

University of Virginia - School of Medicine
Charlottesville, VA 1984-1988
M.D.

Amherst College
Amherst, MA 1979-1983
B.A.- Double Major: Economics and Biology

Employment

Physician and Partner, San Diego Sports Medicine and Family Health Center, San Diego, CA 92120
May 1997-present

Clinical Assistant Professor, Dept. of Family and Preventive Medicine, UCSD, La Jolla, CA
August 1993-1997, Non-salaried, 1997-Present

Clinical Assistant Professor of Family Medicine, Western University of Health Sciences/College of Osteopathic Medicine of the Pacific, Pomona, CA, Non-salaried, May 2014 - Present

Predoctoral Director of Undergraduate Medical Education, Dept. of Family and Preventive Medicine, UCSD, La Jolla, CA
June 1993-1998

Clinical Director, Primary Care Sports Medicine Fellowship Program, UCSD, La Jolla, CA, September 1992-1997

Employment

Clinical Instructor of Family Medicine, Dept. of Family and Preventive Medicine, UCSD, La Jolla, CA
1992-93

Honors

San Diego County Medical Society, Physicians of Excellence, "Top Doctor in Family Medicine", named 8 different years

Chief Resident, UCSD Department of Community and Family Medicine, 1990-1991

John Woodruff Simpson Fellowship for the Study of Medicine. Awarded by Amherst College, 1984-1987

Committees

California Academy of Family Physicians (CAFP)
- Committee on Continuing Professional Development 2009-Present
- Board of Directors, 2009-Present
- Secretary, Treasurer, 2012-2013
- Vice Speaker, 2013-2014
- -Speaker of House, 2014

San Diego Academy of Family Physicians (SDAFP)
- Board of Directors, 1999-Present
- Secretary/Treasurer, 2002
- President Elect, 2003
- President, 2004

Mid County Physicians Medical Group, IPA, Board of Directors and Quality Management Chairperson, 2003-Present

UCSD Faculty Council, Associate Faculty Representative, 2001-2002

Surgical Supervising Committee, Alvarado Hospital, 2000-2001

ISSE (Institutional Self-Study Evaluation) Committee Member, UCSD School of Medicine for LCME Accreditation 1995-1996

UCSD, SOM Faculty Retreat Planning Committee Member 9/95-1/96

UCSD, SOM Curriculum Reform Executive Committee Member 2/96-1997

Division of Family and Preventive Medicine Executive Committee Member 1996-1997

Committees

Primary Care Core Clerkship Committee, Co-Director UCSD School of Medicine, 1994-1997

Recruitment and Admissions Committee, UCSD School of Medicine, 1994-1995

Patient Care Review Committee UCSD Medical Center, 1990-1991, 1993-1994

Housestaff Association Executive Committee Member, UCSD Medical Center, 1989-1991

Quality Assurance Committee UCSD Dept. of Family Medicine, 1990-1991

Committee on Admissions University of Virginia, Student Member 1987-1988

Academic Positions

Clinical Assistant Professor, Dept. of Family and Preventive Medicine, UCSD, La Jolla, CA
August 1993-1997, Non-salaried, 1997-Present

Clinical Assistant Professor of Family Medicine, Western University of Health Sciences/College of Osteopathic Medicine of the Pacific, Pomona, CA, Non-salaried, May 2014 - Present

Memberships

American Academy of Family Physicians
California Academy of Family Physicians

Licensure

California Medical License #G 066851 Expiration 9/30/16 DEA #BR 2093172 Expiration 4/30/16 Board Certified, American Academy of Family Physicians 7/91, recertified 7/98,7/05, CAQ Sports Medicine- 9/93, 4/03, 7/13

Special Activities

Expert Medical Consultant Medical Board of California, Division of Medical Quality Assurance, 1994-present

Team Physician, The Bishop's School, 2003 - Present

Team Physician, San Diego State University, 1997-present

Team Physician, San Diego Stingrays Professional Basketball Team, 1999-2000

Team Physician, San Diego Flash Professional Soccer Team, 1998-2001

Special Activities

Team Physician, Grossmont College, 1998-2002

Team Physician, Kearny High School Football, 1991-2003

Team Physician, UCSD Soccer, Basketball, Rugby, 1991-1997

Volunteer Physician
San Diego Rock "N" Roll Marathon, 1998
California Police Olympics- Boxing, 1992
California Local Boxing Commission, 1992
Louis Vitton, America's Cup Challenge Series, 1992

Publications

Ralph, LP. The Cox-2 Specific Inhibitor Valdecoxib Versus Tramadol in Acute Ankle Sprain: A Multicenter, Randomized, Controlled Trial. American Journal of Sports Medicine. 2004

Ralph LP, Ekman E, Ruoff G, Kuehl K, Hormbrey P, Fiechtner JJ, Berger M. Effective Pain Relief with Valdecoxib Following Acute Ankle Sprain. EULAR

Ralph, L., Look M, Mayer JM, Erasala GN, Verna JL, Matheson LN, Mooney V. Treating acute low back pain with continuous low-level heat wrap therapy and/or exercise: a randomized controlled trial. The Spine Journal, March 2005

Ralph LP, Saglimbeni A. Book Review: Sports Medicine for the Primary Care Physician. American Family Physician, November 1995, p. 1936.

Ralph, LP. Chapter on "Exercise Induced Urticaria and Anaphylaxis", submitted for publication in Text of Sports Medicine, Blackwell Science, Inc. Cambridge, MA, October 1995.

Bracker M, Ralph LP. "The Numb Arm and Hand". American Family Physician, January 1995, p. 103-120.

Norcross WA, Ganiats TG, Ralph LP, Seidel RG, Ikeda TS. "Accidental Poisoning by Warfarin-Contaminated Herbal Tea". The Western Journal of Medicine, July 1993, 159:80-82.

Ganiats T, Bowersox M, Ralph LP. "Universal Neonatal Hepatitis B Immunization; Are We Jumping on the Bandwagon Too Early". The Journal of Family Practice, January 1993, p. 147-149.

Ralph LP. Chapter on "Renal Calculi", The 5-minute Clinical Consult, by H. Winter Griffith M.D., Mark R. Dumbro, 1993, p. 850-851.

Grants

Sub-Investigator, U.S. Dept. of Health & Human Resources, HHS Predoctoral Training Grant #1D15PE80103, $90,000-, 1997-1998, $81,000-, 1998-1999, $90,000-, 1999-2000

Research

Sub-Investigator: "A multi-center, randomized, double-blind, double-dummy, parallel-group dose finding study to evaluate the change in HbA1c after 12 weeks monotherapy with seven doses of LIK066 compared with placebo or sitagliptin in patients with type 2 diabetes", Novartis 2013

Sub-Investigator: "A multicenter, international, randomised, parallel group, double blind study to evaluate cardiovascular safety of linagliptin versus glimepiride in patients with type 2 diabetes mellitus at high cardiovascular risk. The Carolina Trial", Boehringer Ingelheim 2013

Sub-Investigator: "A phase III, randomised, double-blind, parallel group, 24 week study to evaluate efficacy and safety of once daily empagliflozin 10 mg and 25 mg compared to placebo, all administered as oral fixed dose combinations with linagliptin 5 mg, in patients with type 2 diabetes mellitus and insufficient glycaemic control after 16 weeks with linagliptin 5 mg once daily on metformin background therapy", Boehringer and Ingelheim 2013

Sub-Investigator: "A randomized, double-blind, placebo-controlled phase 2B study on safety and therapeutic efficacy of DAS181 in adult subjects with naturally acquired influenza", NexBio 2013

Sub-Investigator: "A randomized, double-blind, placebo-controlled, pivotal study to determine the safety and efficacy of SST-0225, a topical ibuprofen cream, in the treatment of pain caused by acute ankle sprains", Strategic Science & Technologies, Inc 2012

Sub-Investigator: "A randomized, double-blind, phase 3b protocol-of-concept study to evaluate the efficacy and safety of TAK-491 compared to placebo when used in combination with Metformin in subjects with hypertension and Type 2 diabetes", Takeda 2012

Sub-Investigator: "A randomized, double-blind, placebo-controlled, multiple-site, study comparing Oxiconazole Nitrate cream 1% (Taro Pharmexeuticals Inc) to Oxistat® (Oxiconazole Nitrate cream) cream 1% (Glaxosmithkline) in the treatment of Tinea Pedis", Novum Pharmaceutical Research Institute 2011

Sub-Investigator: "A multi-center, randomized comparative study of the Pharmacokinetics of Exonazole Nitrate 1% foam and the Econoazole Nitrate 1% cream in subjects with Interdigital Tinea Pedis aged 12 years to less than 18 years", Therapeutics, Inc 2011

Sub-Investigator: "A multi-center, randomized, double-blind, vehicle controlled, parallel group comparison study of the safety and efficacy of Econazole Nitrate foam 1% and foam vehicles in subjects with Intergidital Tinea Pedis", Therapeutics, Inc 2011

Research

Sub-Investigator: "A randomized, multi-center, double blind, factorial, comparator and placebo-controlled phase III trial to evaluate the efficacy, tolerability and safety of MRX-7EAT Ankle Sprains", IL Pharma 2010

Sub-Investigator: "A multicenter, randomized, active-control, phase 3B study to evaluate the cardiovascular safety of febuxostat and allopurinol in subjects with gout and cardiovascular comorbidities", Takeda Pharmaceuticals 2010

Sub-Investigator: "A multicenter, randomized, double-blind, phase 2 study to evaluate the effect of Febuxostat versus placebo in joint damage in Hyperuricemic in subjects with early gout", Takeda Pharmaceuticals 2010

Sub-Investigator: "A double-blind, randomized, controlled, multicenter, proof of efficacy study of oral BGS649 vs. placebo assessing pain response in patients with refractory endometriosis", Novartis Pharmaceuticals 2010

Sub-Investigator: "A randomized, open-label, parallel group, multicenter study to determine the efficacy and safety of Albigultide as compared with Liraglutide in subjects with Type 2 diabetes mellitus", GlaxoSmithKline LLC 2010

Sub-Investigator: "A randomized, placebo controlled clinical trial to evaluate cardiovascular outcomes after treatment with exenatide once weekly in patient with Type 2 Diabetes Mellitus", Duke Clinical Research Institute 2010

Sub-Investigator: "A randomized, multi-center double-blind, placebo-controlled phase III trial to evaluate the efficacy, tolerability, and safety of MRX-7EAT Etodolac-Lidocaine topical patch in the treatment of tendonitis and bursitis of the shoulder", IL Pharma 2010

Sub-Investigator: "A long-term, randomized, double-blind, parallel group study of Fluticasone Furoate/GW642444 inhalation powder once-daily and Fluticasone Furoate inhalation powder once-daily in subjects with asthma", GlaxoSmithKline 2010

Sub-Investigator: "A proof of principle study to explore the utility of Guaifensesin in upper back pain", GlaxoSmithKline 2009

Sub-Investigator: "A mluticenter, randomized, double-blind, placebo and allopurinol controlled phase 2 study to evaluate febuxostat in medical management of subjects with hyperuricosuria and calcium oaxate stones", Takeda Pharmaceuticals 2009

Research

Sub-Investigator: "A randomized, double-blind, placebo-controlled study evaluating the efficacy, safety, and tolerability of 2 doses of Aclidinium Bromide compared with placebo for 12 weeks in patients with moderate to severe, stable COPD followed by a 40-wk evaluation of the 2 Aclidinium Bromide doses", Forest Laboratories 2009

Sub-Investigator: "A randomized, double-blind, placebo-controlled study evaluating the efficacy, safety, and tolerability of 2 doses of Aclidinium Bromide compared with placebo for 12 weeks in patients with moderate to severe, stable COPD followed by a 40-wk evaluation of the 2 Aclidinium Bromide doses", Glaxo-Smith Kline 2009

Sub-Investigator: "A long term, randomized, double-blind, parallel group study of Fluticasone Furoate/GW642444 Inhalation Powder once-daily and Fluticasone Furoate Inhalation Powder once-daily in subjects with asthma", Glaxo-Smith Kline 2009

Sub-Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2009

Sub-Investigator: "A multi-center, randomized, double-blind study to evaluate the efficacy and long-term safety of vildagliptin modified release (MR) as add-on therapy to metformin in patients with type 2 diabetes", Novartis Pharmaceuticals 2009

Sub-Investigator: "A randomized, double-blind, placebo and active controlled, parallel group, multicenter study to determine the efficacy and safety of Albiglutide when used in combination with Metformin compared with Metformin plus Sitagliptin, Metformin plus Glimepiride, and Metformin plus placebo in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Sub-Investigator: "A randomized, open-label, parallel-group, multicenter study to determine the efficacy and long-term safety of Albiglutide compared with Insulin in Subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Sub-Investigator: "A randomized, double-blind, placebo-controlled, parallell-group, multicenter study to determine the efficacy and safety of two dose levels of Albiglutide compared with placebo in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Research

Sub-Investigator: "A randomized, open-label parallelgroup multi-center study to determine the efficacy and safety of Albiglutide (once weekly dose) compared with Liraglutide (once daily dose) in subjects with DMII", Glaxo-Smith Kline 2009

Sub-Investigator: "A randomized, double-blind, placebo-controlled study of the efficacy and safety of a Diclofenac sodium patch for the topical treatment of acute pain due to mild to moderate ankle sprain", Cermion Pharmaceuticals 2009

Sub-Investigator: "A randomized, double-blind, placebo-controlled study of the efficacy and safety of a Diclofenac sodium patch for the topical treatment of acute pain due to mild to moderate wrist sprain, strain or contusion", Cermion Pharmaceuticals 2009

Sub-Investigator: "A randomized, double-blind, placebo and active controlled, parallel-group, multicenter study to determine the efficacy and safety of Albiglutide administered in combination with Metformin plus Glimepiride and Pioglitazone in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Sub-Investigator: "A multi-center, randomized, double-blind study to evaluate the efficacy and long-term safety of vildagliptin modified release (MR) as monotherapy in patients with type 2 Diabetes", Novartis Pharmaceuticals 2008

Sub-Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2008

Sub-Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2008

Sub-Investigator: "A Long Term, Open-Label Extension Study to Investigate the Long-Term Safety of SYR110322 (SYR-322) in Subjects with Type 2 Diabetes", Novartis Pharmaceuticals 2007

Sub-Investigator: "An Open Label 52-Week Study To Evaluate The Safety and Efficacy of Tegaserod (6 mg. BID and 12 mg OD) Given Orally For The Treatment of Opioid-Induced Constipation (OIC) In Patients With Chronic Non-Cancer Pain", Novartis Pharmaceuticals 2007

Research

Sub-Investigator: "A Randomized, Double-Blind, Active-Controlled, Multicenter Study To Compare The Effect of 24 Weeks Treatment With A Fixed Combination Therapy of Vildagliptin and Metformin To The Individual Monotherapy Components In Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals 2007

Sub-Investigator: "A Phase 3, Randomized, Multicenter, Double-Blind, Allopurinol-Controlled Study Assessing The Efficacy and Safety of Oral Febuxostat In Subjects With Gout", TAP Pharmaceutical Products, Inc. 2007

Sub-Investigator: A randomized, multi-center double-blind, placebo-controlled phase III trial to evaluate the efficacy, tolerability and safety of MRX-7EAT Etodolac-Lidocaine topical patch in the treatment of Tendonitis and Bursitis of the shoulder. IL Pharmer 2006

Sub-Investigator: "An 8-Week, Multicenter, Randomized, Double-Blind, Parallel-Group Study To Evaluate The Efficacy and Safety of The Combination of Valsartan/HCTZ/Amlodipine Compared To Valsartan/HCTZ, Valsartan/Amlodipine, and HCTZ/Amlodipine In Patients With Moderate To Severe Hypertension", Novartis Pharmaceuticals 2006

Sub-Investigator: Randomized, Double-Blind Trial of The Combination of Carisprodol 250 mg. Tablets and Diclofenac 50 mg. Tablets Compared To Placebo and Either Product Alone In Patients With Acute, Painful Musculoskeletal Spasm of The Lower Back", MedPointe Pharmaceuticals 2006

Sub-Investigator: "A Randomized, Double-Blind, Multicenter Study Comparing The Effects of Carvedilol Modified Release Formulation (Coreg ™ MR) and Atenolol In Combination With and Compared To An Angiotensin Converting Enzyme Inhibitor (Lisinopril) On Left Ventricular Mass Regression In Hypertensive Patients With Left Ventricular Hypertrophy (LVH)", GlaxoSmithKline 2006

Principal Investigator: "A randomized, double-blind, placebo-controlled, parallel group phase III study of the efficacy, tolerability and safety of Ketoprofen topical patch, 20% (KTP) in the treatment of pain associated with tendonitis or bursitis of the shoulder, elbow, or knee", Endo Pharmaceuticals, Inc. 2006

Sub-Investigator: "An 8-Week Randomized, Double-Blind, Parallel Group, Multicenter, Placebo and Active Controlled Dose Escalation Study To Evaluate The Efficacy and Safety of Aliskiren (150 mg. and 300 mg.) Administered Alone and In Combination With Valsartan (160 mg. and 320 mg.) In Patients With Hypertension", Novartis Pharmaceuticals 2005

Research

Sub-Investigator: "A 6-week, Multicenter, Randomized, Double-Blind, Parallel-Group Study to Evaluate The Combination of Valsartan/HCTZ (160/12.5 mg. With Forced Titration To A Maximum Dose of 320/25 mg.) Compared To Valsartan Monotherapy (160 mg. With Forced Titration to 320 mg.) As Initial Therapy In Patients with Severe Hypertension," Novartis Pharmaceuticals 2005

Sub-Investigator: "A Multicenter, Randomized, Double-Blind Study To Compare The Effects of 24 Weeks Treatment With LAF237 (50 mg. QD, 50 mg. BID or 100 mg. OD) To Placebo in Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals 2005

Sub-Investigator: "A Randomized, Double Blind, Placebo-Controlled, Multicenter, Phase III Study of Rosuvastatin (Crestor ®) 20 mg. In The Primary Prevention of Cardiovascular Events Among Subjects With Low Levels of LDL-Cholesterol and Elevated Levels of C-Reactive Protein", Astra Zeneca 2005.

Sub-Investigator: "Randomized, double-blind trial of Carisoprodol 250 mg tablets compared to placebo in patients with acute, painful Muscusloskeletal spasm of the lower back", Endo Pharmaceuticals 2005

Sub-Investigator: "A double-blind, placebo-controlled evaluation of the safety and efficacy of three doses of topically applied Ketoprofen Transfersome ® Gel (KTG) in comparison to oral Naproxen for the treatment of the signs and symptoms of osteoarthritis of the knew", McNeil Consumer & Specialty Pharmaceuticals 2005

Sub-Investigator: "A Randomized, Double-Blind, Parallel-Group, Multicenter Study To Compare Clinical Health Outcomes of Telithromycin Versus Azithromycin In Out Patients With Community-Acquired Lower Respiratory Tract Infections", Aventis, Inc. 2004

Principal Investigator: "Pulmonary outcomes within a 2-year period in subjects with Diabetes Mellitus treated with Technosphere ®/Insulin or usual antidiabetic treatment and in subjects without abnormalities in glucose control", Mannkind Corporation 2005

Principal Investigator: "Lilly's Emotional and Physical Symptoms of Depression Study", Eli Lilly and Company, 2004

Principal Investigator: "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals 2004

Research

Principal Investigator: "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy to Glimepiride in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals 2004

Principal Investigator: "A Randomized, Double-Blind, Placebo-Controlled Study Evaluating Acetaminophen Extended Release (3900 mg/day) in the Treatment of Osteoarthritis of the Hip or Knee", Chiltern International, Inc. 2004

Principal Investigator: "A Randomized, Open-Label Study Comparing the Efficacy and Safety of Lidocaine 5% Patch with Celecoxib 200 mg in Patients with Chronic Axial Low Back Pain", Endo Pharmaceuticals 2004

Principal Investigator: "To Compare the Effects of Continuous Low-Level Heat Wrap Therapy Alone and Combined with Active Exercise Versus Active Exercise Alone on the Functional Ability of Acute Low Back Pain Patients", Proctor & Gamble Company, U. S. Spine & Sport Foundation 2004

Principal Investigator: "A Randomized, Double-Blind, Parallel-Group, Active-Controlled, Placebo-Controlled, Multicenter Trial to Study the Efficacy and Safety of Cyclobenzaprine HCL Modified-Release (CMR) 15 mg and 30 mg in Subjects with Pain Due to Muscle Spasms of Local Origin", Omnicare Clinical 2003

Principal Investigator: "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study of the Efficacy and Safety of Dutasteride 0.5 Administered Once Daily for Four Years to Reduce the Risk of Biopsy-Detectable Prostate Cancer" GlaxoSmithKline 2003

Principal Investigator: "A Randomized, Double-Blind, Multicenter, Multifactorial, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Valsartan (160 and 320 mg) and Hydrochlorothiazide (12.5 and 25 mg) Combined Alone in Hypertensive Patients", Novartis Pharmaceuticals, 2003

Principal Investigator: "An Epidemiologic Program to Estimate the Population Prevalence of Hypogonadism in Men", Solvay Pharmaceuticals 2003

Principal Investigator: "The Objective of Multicenter, Prospective, Open-Label, Crossover Study is to Document and Compare the Time for Migraine Patients to Become Headache free in Response to Treatment with Maxalt® (Rizatriptan Benzoate) Versus the Patient's Usual Oral Migraine Medication Over 2 Migraine Attacks", Access Medical Group, LTD 2003

Research

Principal Investigator: "A Multinational Randomized, Double-Blind, Placebo-Controlled, Force-Titration, 2 x 2 Factorial Design Study of the Efficacy and Safety of Long Term Administration of Nateglinide and Valsartan in the Prevention of Diabetes and Cardiovascular Outcomes in Subjects with Impaired Glucose Tolerance", Novartis Pharmaceuticals 2002

Principal Investigator: "A Double-Blind Randomized Trial of Intra-Articular Injection of Hyalgan® Into the Glenohumeral Articular Space for the Treatment of Chronic Painful Shoulder with Limitation of Motion Due to Glenohumeral Joint Osteoarthritis Rotator Cuff Tear (Partial or Complete) and/or Primary or Secondary Adhesive Capulitis – (Hyalgan Use in Painful Shoulder – HUPS)", Sanofi-Synthelabo, Inc. 2002

Principal Investigator: "A Randomized, Double-Blind, Parallel-Group Study Comparing the Safety and Efficacy of Acetaminophen Extended Release (3900 mg/day) and Ibuprofen (1200 mg/day) in the Treatment of Ankle Sprains", McNeil Consumer & Specialty Pharmaceuticals 2002

Principal Investigator: "Clinical Protocol for a Double-Blind, Placebo-Controlled, Randomized Two week Comparison Study of the Efficacy and Tolerability of Valdecoxib 10 mg QD and Rofecoxib 25 mg QD in Relieving the Signs and Symptoms of Osteoarthritis of the Knee", Pharmacia & Upjohn Company 2002

Principal Investigator: "Pioglitazone Versus Rosiglitazone in Subjects with Type 2 Diabetes Mellitus and Dyslipidemia", Eli Lilly and Company 2002

Presentations

CAFP Annual Scientific Assembly,, The Opiod Game", May 10, 2014

CAFP Annual Scientific Assembly,, "Tips for Traumatic Brain Injury Screening", May 4, 2013

CAFP Annual Scientific Assembly, "Head Trauma: From Concussions – to Traumatic Brain Injury." May 15, 2011

SDAFP 55th Annual Postgraduate Symposium, Family Medicine Update 2012: "Concussion Update 2012", June 23, 2012

SDAFP 51st Annual Postgraduate Symposium, Family Medicine Update: 2008, "Joint Injections, Evaluation and Examination of Painful Joints Workshop", June 28, 2008

Stanford Primary Cares Association Program Lecture, "Foot & Ankle Injuries", May 14, 2004

SDAFP/PACE CME Symposium "Get a Grip on Pain" AB487

Presentations Seminar on Low Back Pain, February 2003

SDAFP/PACE CME Symposium "Get a Grip on Pain" AB487 Seminar on Low Back Pain, January 2003

SDAFP/PACE CME Symposium "Get a Grip on Pain" AB487 Seminar on Low Back Pain, October 2002

SDAFP/UCSD Pace Program Workshop on :Low Back Pain and Spinal Pain" Fall Symposium "AB 487: Get a Grip on Pain", 2002

SDAFP 46th Annual Postgraduate Symposium Family Medicine Update 2002, "Workshop on Joint Examinations and Injection Techniques", 6/29/02

UCSD Pediatric & Adolescent Sports Medicine Conference, "The Team Physician: On Field Evaluation and Return To Play Criteria." February 18, 2000

UCSD Pediatric & Adolescent Sports Medicine Conference, "The Team Physician: On Field Evaluation and Return To Play Criteria." March 26, 1999

UCSD Dept. of Internal Medicine 23rd Annual Postgraduate Course in Internal Medicine. "Common Overuse Injuries of The Upper and Lower Extremity". Feb. 21, 1999

SDAFP 42nd Annual Postgraduate Symposium, Family Medicine Update: "Common Pediatric Sports Injuries", June 1998

UCSD Nurse Practitioner Program Grand Rounds: "Overuse Injuries of the Upper Extremity", October 30, 1996

SDAFP 40th Annual Postgraduate Symposium Family Medicine Update: 1996, "Foot and Ankle Injuries", June 29, 1996

UCSD Pediatric and Adolescent Sports Medicine Conference: "The Team Physician: On Field Evaluation-Return to Play Criterion", March 29, 1996.

UCSD, Department of Medicine 21st Annual Postgraduate Course in Internal Medicine. "Sports Medicine for the Internist: Common Injuries to the Upper and Lower Extremities", February 18, 1996.

CMEA Inc. San Diego State University, Sports and Occupational Medicine in Primary Care: "The State of the Art: Repetitive Stress Syndromes", August 23, 1995.

CMEA Inc. San Diego State University, Sports and Occupational Medicine in Primary Care: "Exercise Treadmill Testing", August 23, 1995.

Presentations UCSD Sports Medicine Conference. "How I manage Series -Hand Injuries", July 21, 1995.

SDAFP 39th Annual Postgraduate Symposium Family Medicine Update: 1995, "Foot and Ankle Injuries", July 8, 1995

UCSD Department of Family Medicine - Grand Rounds. Common Overuse Injuries of the Upper Extremity", April 19, 1995.

CME Associates Conference, San Diego, CA. "Exercise Treadmill Testing Workshop", March 18, 1995.

Mission Bay Hospital CME Program. "Carpal Tunnel Syndrome" presentation, November 1, 1994.

AAFP Annual Scientific Assembly, Boston, MA. "Common Nerve Entrapments of the Upper Extremity", September 1994.

UCSD Sports Medicine Conference. "How I Manage Series - Gamekeeper's Thumb, DeQuervain's Tenosynovitis, Carpal Tunnel Syndrome, and Mallet Finger", July 1994.

UCSD Department of Medicine - Noon Lecture Series. "Orthopedics for the Internist: Evaluation of the Ankle", May 1994.

UCSD Department of Medicine - Noon Lecture Series. "Orthopedics for the Internist: Evaluation of the Knee", March 1994.

AAFP Annual Scientific Assembly, Orlando, FL . "Common Nerve Entrapment Syndromes of the Upper Extremity", October 1993.

UCSD Sports Medicine Conference. "How I Manage Series - Stress Fractures, Compartment Syndrome, Plantar Fasciitis and Shin Splints", July 1993.

UC Irvine Family Practice Refresher Course. Workshop on Exercise Treadmill Testing, June 1993.

UCSD CME Conference. Family Practice Today and Tomorrow, Workshop on Exercise Treadmill Testing, April 1993.

UCSD Dept. of Family and Preventive Medicine. Nurse Practitioner Didactic, "Diagnosis and Management of Adolescent Back Pain", February 1993.

Presentations

UCSD Sports Medicine Conference. Workshop on "Exercise Treadmill Testing", July 1992 and 1993. AAFP Annual Scientific

Assembly, San Diego, CA. Workshops on "Acute and Chronic Low Back Pain", October 1992.

UCSD Primary Care Sports Medicine Didactic. "Head Injuries in Athletes", December 1992.

UCSD Dept. of Family and Preventive Medicine - Grand Rounds. "Pre-operative Evaluation of the Elderly Patient", January 1992.

Conferences

National Predoctoral Directors Meeting, Co-Director. Session on "Group Mentoring". Charleston, SC, January 1995.

UCSD Dept. of Family and Preventive Medicine Faculty Development Program, Assistant Coordinator. Borrego Springs, May 1994-1998.

National Predoctoral Directors Meeting, Coordinator of Roundtable Discussion on "Old and New Predoctoral Directors - Problem-Solving and Networking Session". Tucson, AZ, January 1994.

Curriculum Vitae

FREDERICK ALLEN RICHBURG II, M.D., M.S., F.A.A.F.P.

PERSONAL

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LICENSURE/ CERTIFICATION

California Medical License #A054679
DEA #BR4746092
Diplomate of the American Board of Family Practice, 1997-2004, Re-certified 2003-2013, 2013-Present
Certificate of Added Qualifications Sports Medicine, 1999-2009, 2009-2019
Fellow American Academy of Family Practice, 2005 to Present
Fellow, American Society for Laser Medicine and Surgery, Inc., 2005 to 2008
BLS Certified

EMPLOYMENT

Physician and Partner, San Diego Sports Medicine and Family Health Center
Full Time Family Practice, Sports Medicine, and Laser Medicine Practice
1999-Present

Richburg Valley Eye Institute Ambulatory Surgical Center, Quality Assurance Chairman and Vice President, 1/2003 to Present

Sharp Rees Stealy Urgent Care, 1998-1999

EDUCATION

1997 to 1998	Fellowship in Primary Care Sports Medicine. Stanford University accredited. San Diego Sports Medicine and Family Health Center.
1994 to 1997	Residency in Family Practice. Santa Monica/UCLA Medical Center Family Practice Residency Program, Santa Monica, CA.
1990 to 1994	M.D. degree. Loma Linda University School of Medicine, Loma Linda, CA.
1988 to 1990	M.S. degree in Anatomy. Loma Linda University Graduate School, Loma Linda, CA.
1983 to 1988	B.A. degree in Biology. California State University, Fresno.

HONORS/AWARDS

American Federation for Clinical Research Medical Student Award. 1990.
NCAA Scholar – Athlete Award. California State University, Fresno. 1984 to 1988.

TEACHING

U.C. San Diego School of Medicine Volunteer Assistant Clinical Professor, 2005-Present
Clinical Instructor, 1999-2005

San Diego State University Clinical Instructor, 2004 – Present

Attending for Family Practice clinic at the Sharp/Grossmont Family Practice Residency Program, 1997 to 2001.
Supervision of fellows, residents and medical students, 1995 to present.
Gross Anatomy Laboratory Assistant, Loma Linda University, Fall 1990.

PROFESSIONAL ORGANIZATIONS

American Medical Society for Sports Medicine, 1998 to present.
San Diego County Medical Society, 1998 to Present
American Academy of Family Physicians, Fellow, 1994 to present.
American Medical Association, 1994 to Present.
American Society for Laser Medicine and Surgery, 2003 to present.
American College of Sports Medicine, 1996 to 2000.
Loma Linda University Alumni Association, 1994 to present.
American Federation for Clinical Research, 1991 to 1995.

SPORTS COVERAGE

Medical Director, U. S. Olympic Training Center
Director of Athletic Medicine, San Diego State University
Team Physician Riptide Arena Football Team
Team Physician OMBAC Rugby Team
Team Physician Westview High School
Team Physician Canyon Crest High School
Physician San Diego Cycling Velodrome
Head Team Physician Grossmont College, 1997-2003
1998 to present Rock & Roll Marathon Staff Physician
Team Physician San Diego Stingrays and Wild Fire Professional Basketball Team
1998 & 1999 Hawaiian Ironman, 2000 California Ironman Triathlon Physician
American Council on Exercise Consulting Physician
E-Fit Consulting Physician

PUBLICATIONS

Photodermatitis, Allen Richburg. The 5-Minute Sports Medicine Consult. Bracker, Achar, Pana, Taylor. Lippincott Williams & Wilkins, 2011, pp464-465

Using an experimental bicycle seat to reduce perineal numbness. **Allen Richburg,** Mark Bracker**,** Dave Wallace. The Physician and Sports Medicine, May 2002, PP 27-32.

The 5-Minute Sports Medicine Consult., M. Bracker, Lippincott Williams & Wilkins. Section Editor and Contributing Author **F. Allen Richburg.** 2001

Clinical Trial: Determining the affects on genital numbness between a standard and experimental bicycle seat. Ken Taylor**, Allen Richburg,** Mark Bracker**,** Dave Wallace**,** American Medical Society for Sports Medicine, 1999.

Women's bicycle saddle study: **Allen Richburg**, Ken Taylor, J.C. Buller, AMSSM 2001

Reduction of Shoulder Dislocation, **A. Richburg** and Lee Ralph, Primary Care Procedures, Text Ed: Eugene Felmar, submitted 1999.

Volleyball, Chapter 51. L. Rice and **A. Richburg,** Principles and Practice of Primary Care Sports Medicine, ed. W.E. Garret Jr., 2001 Lippincott Williams & Wilkins, 591-601.

Superior patency of perforating antecubital vein in arteriovenous fistulae for hemodialysis. Steven A. Sparks, Appanager Gnanadev, James Smith, Lance Rossi, **F. Allen Richburg, II,** Paul S. Dagher. Annals of Vascular Surgery 1993.

N*eonatal organization of the deep and superficial terminations of the corticocollicular projection in the rat.* **A. Richburg.** National Student Research Forum. 1991.

Topographic development of the corticocollicular projection. **F.A. Richburg,** M.A. Kirby. Clinical Research 39 (1). 1991.

PUBLICATIONS

Topographic development of the corticocollicular projection. **F.A. Richburg,** (M.S. Thesis). Advisor: M. Kirby, Ph.D., Assistant Professor Anatomy and Pediatrics.

Development of the corticotectal projection in the neonatal rat. **F.A. Richburg,** M.A. Kirby. Society for Neuroscience Abstracts. 1989.

Amphetamine extraction by the pulmonary circulation. The specificity of the receptor system. D. Grubbs, J. Brunswick H. Kochounia, **A. Richburg,** J. Touya. Proceedings of the Central California Research Symposium. 1988.

PRESENTATIONS

Cosmetic Skin Procedures for Family Physicians. 49th Annual Postgraduate Symposium Family Medicine Update 2005, San Diego Academy of Family Physicians. June 2005.

Multiple lectures given to Fellows, Residents, Medical Students, Athletic Trainer Students and Physician Assistant Students, 1999-Present

Steroid and Drug Abuse. Lecture given to University of San Diego and Patrick Henry High School Football teams. 1997.

Substance abuse and the athlete. Talk given for a student/faculty drug awareness forum at the University of San Diego. 1997.

San Diego Sports Medicine and University California San Diego Sports Medicine Fellowship conference oral presentation topics: *Acromioclavicular injuries, Periscapular injuries, and Tennis Leg. Gastrointestinal Disorders in Sports Diabetes.* 1997-1999.

Dilated Cardiomyopathy in a College Basketball Player. Oral. American Medical Society for Sports Medicine meeting case presentation. 1998.

T-12 compression fracture in a university quarterback. Poster. American Medical Society for Sports Medicine meeting case presentation. 1998.

Development of the corticotectal projection in the neonatal rat. 19th Annual Society for Neuroscience Meeting. Phoenix, Arizona. Poster. 1989. Linda University Department of Anatomy open seminar. Oral. 1989. 58th Annual Postgraduate Convention, School of Medicine of Loma Linda University. Poster. 1990.

Neonatal organization of the deep and superficial termination of the corticocollicular projection in the rat. 32nd Annual National Student Research Forum. Galveston, Texas. Oral. 1991.

Santa Monica Family Practice Residency Noon Conference topics: Oral *Rehydration with Diarrhea, Sport Pre-Participation Physicals, Tuberculosis, Thrombocytopenia, Geriatrics, and Osteoporosis.* 1995 and 1996.

COMMUNITY SERVICE

Grossmont College Student Health Clinic, 1997 to present.
San Diego High School District sports physicals, 1997 to present.
Venice Family Clinic, 1994 to 1997.
Mount St. Mary's College Health Center, 1995 to 1997.
Pepperdine University Sports Physicals, 1994 to 1997.
Santa Monica College and Santa Monica High School Sports Physicals, 1994 to 1997.
Volunteer Assistant Wrestling Coach for Santa Monica High School, 1994 to 1997.
Big Brother Program, 1991 to Present.
S.A.C. Clinic (volunteer medical clinic), 1991 to 1992.
Las Palmas Masonic Lodge #366, 1986 to Present.

COMMUNITY SERVICE CONT'D

Tehran Shrine Temple, 1988 to Present.
Sigma Chi Fraternity Alumni, 1988 to Present.

HOBBIES

Bicycle racing: USCF Road Category 1, Track Category 2.
USCF Masters National Champion 2001
USCF National Championships 1990-1993, 1996, 1999-2003
U.S. Olympic Trails 1992.
International race experience in Belgium, Germany and Italy.

Wrestling: NCAA National Championships 1985, 1986, 1988.
PAC-10 Champion 1988.
Most wins in Fresno State University history 1988.
All-American All-Star Team 1984.
National Strength and Conditioning All-American 1984.

Water skiing, snow skiing, fishing, golf, fitness and watching all sports.

SPECIAL INTRESTS Sports Nutrition, Wellness Education, Skin Wellness and Laser Medicine

PRIVILEGES Alvarado Hospital, San Diego State University Medical Clinic, U.S. Olympic Training Center, Chula Vista, U.C. San Diego Medical Center

Curriculum Vitae

MICHELLE L. LOOK, M.D., F.A.A.F.P.

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Email: lookmi@yahoo.com
PLACE OF BIRTH: Honolulu, Hawaii
CITIZENSHIP: U.S.A.

EMPLOYMENT

San Diego Sports Medicine and Family Health Center
San Diego, California
Medical Director Clinical Research SDSM 2007-present
Primary Care Sports Medicine Fellowship Faculty 2001-present
Full time family practice-sports medicine private practice
Clinical Instructor Primary Care Sports Medicine fellowship
University of California, San Diego 1999-present
Scripps Clinic Medical Group, Rancho Bernardo, CA 1999-2001
Family Practice – Sports Medicine Physician

EDUCATION

San Diego Sports Medicine and Family Health, Primary Care Sports Medicine Fellowship
San Diego, California 1998-1999
Sharp Grossmont Family Medicine Residency
La Mesa, California 1995-1998
Jefferson Medical College, Thomas Jefferson University, Medical Doctor
Philadelphia, Pennsylvania 1991-1995
University of California - Los Angeles, Bachelor of Science-Kinesiology
Los Angeles, California 1986-1991
Henry J. Kaiser High School
Honolulu, Hawaii 1982- 1986

LICENSURE AND CERTIFICATION

Diplomate, American Board of Family Practice, 1998, 2005
Certificate of Added Qualification in Sports Medicine, American Board of Family Practice 1999,2009
Diplomate, American Board of Obesity Medicine, 2014
Fully licensed to practice medicine and surgery in State of California, l997
#A062798, DEA #BL5674646
Advanced Trauma Life Support Provider 1997-2001
Advanced Cardiac Life Support Provider 1997-1999
Neonatal Advanced Life Support Provider 1997-1999

PROFESSIONAL ORGANIZATIONS

American Academy of Family Physicians (AAFP) 1991-present

- Fellow of the American Academy of Family Physician Designee, 2004
- National Conference of Women, Minority and New Physicians-California Delegate 1999, 2001
- National Congress of Family Practice Residents, Delegate 1996-1997
- National Congress of Student Members, Delegate 1993-1995

San Diego Academy of Family Physicians Board of Directors 1999-2008
California Academy of Family Physicians (CAFP)
- CAFP Foundation
  - Board of Trustees 2001-2004
  - Board of Trustees –Resident Member 1998-1999
- Scientific Assembly Committee 2001-2008
- Resident Member of the Board of Directors 1997-1998
- Residents of the California Academy of Family Physicians (RCAFP), President, 1997-1998
- Residents CAFP, President elect, 1996-1997
- Residency Affairs Committee, Resident Representative, 1996-1998

Non-Salaried Clinical Instructor/Preceptor
- University of California San Diego Medical School 2000-2007
- Western University Osteopathic Medical School 2000-2005

The Obesity Society 2013-present
American Medical Society for Sports Medicine 1998-present
Academy of Pharmaceutical Physicians and Investigators 2006
Association of Clinical Research Professionals 2005-2012

HONORS

San Diego Magazine SDCMS "Top Doctor" Award -Family Practice 2008-2014
San Diego Magazine SDCMS " Top Doctor" Award-Sports Medicine 2006, 2009,2014
American Academy of Family Physicians(AAFP)
- Glaxo -Welcome Family Practice Resident Scholar, 1996
- Minority Health Affairs Scholarship Recipient, 1995

University of California, Los Angeles
- Chancellor's Marshall Award, Outstanding Service to the School, 1991

COMMUNITY SERVICE

US Olympic Team Medical Staff
- Olympic Training Center-Staff Team Physician, Chula Vista, CA 2004- present
- Winter 2010 Olympic Games US Team Physician, Vancouver 2010
- Summer 2008 Paralympic Games US Team Physician, Beijing, China 2008
- World University Games, US Team Physician 2007
- San Diego International Invitational, local medical consultant June 2005

American Heart Association /American Stroke Association Board of Director 2014-2016
Susan G. Komen Breast Cancer 3 Day Walk
- National Medical Director 2003-2012

The Salvation Army Ray and Joan Kroc Center San Diego
- Medical Director 2007-present

WUSA women's professional soccer team - San Diego Spirit 2001-2004
- Head Team Physician

WCHL Professional Ice Hockey-San Diego Gulls Assistant Team Physician 1998-2007
San Diego Senior Olympics Medical Director and BOD 1998-2004
California State Games Medical Director 1998-2004
OMBAC Rugby-club rugby Team Physician 1998-present
San Diego Rock and Roll Marathon Medical Team Captain 1998-2004

California Ironman Medical Tent Physician 1998-2000
Unlimited Hydroplane Boat Races Medical Director- San Diego 1998-2003
University of San Diego, Head Team Physician, Soccer 1999-2001
Rancho Bernardo High School, Team Physician 1999-2001
San Diego Sports Medicine and Family Health 1998-1999

- San Diego State University –Asst. Team Physician
- Grossmont College- Asst. Team Physician
- Patrick Henry High School- Team Physician
- San Diego Flash Soccer Team Assistant Team Physician
- Unlimited Hydroplanes Bay Fair Boat Racing, Medical Director

Girls Think Tank: Homeless Advocacy group and shelter assistance 2006- present
Sharp Grossmont Family Practice Residency 1995-1998

- Resident Faculty Curriculum Committee
- TAR WARSanti smoking education program, State Resident Coordinator
- High School Team Physician Program Coordinator
- Team Physician, El Capitan High School Varsity Football Team
- Grossmont-East County Healthy Neighborhoods Initiative Advisory Group

Jefferson Medical College 1991-1995

- Society of Teachers of Family Medicine (STFM), Host Committee Student Coordinator
- JMC Student Faculty Committee on Student Affairs, Four Year Appointed Representative
- JMC Student Council Executive Board, Treasurer
- JMC *Student Examiner,* Coeditor and Columnist

Solana Beach Free Clinic, Volunteer (1996-1998)
JEFF HOPE, Homeless Shelter Clinic, Volunteer (1992-1995)
Mercy Homeless Shelter for Women and Children, Volunteer (1993-1995)

PRESENTATIONS / PUBLICATIONS

Treatment of the Obese Patient in Primary Care: Targeting and Meeting Goals and Expectations. George Bray, MD, MACP, MACE[a]; **Michelle Look, MD**[b]; Donna Ryan, MD[a.] Postgraduate Medicine. 2013 Sep: Volume 125, Issue 5.

Two-year sustained weight loss and metabolic benefits with controlled-release phentermine/topiramate in obese and overweight adults (SEQUEL): a randomized, placebo-controlled, phase 3 extension study. Garvey WT, Ryan DH, **Look M** et al.,AJCN. First published ahead of print December 7, 2011 as doi: 10.3945/ajcn.111.024927

Double-Blind, Placebo-Controlled trial of Carisoprodol 250-mg tablets in the treatment of acute lower-back spasm, Lee Ralph, MD; **Michelle L. Look, MD**; William Wheeler, Harry Sacks.Curr med Res Opin. 2008 Feb: 24(2):551-8.

Treating acute low back pain with continuous low level heat wrap therapy and/or exercise: a randomized controlled trial John Mayer,PhD,Lee Ralph, MD, **Michelle Look,MD**, GeethaN Erasala, MScet. Al The Spine Journal5 (2005)395-403.

Early Deaths with Thrombolytic Therapy for Acute Myocardial Infarction in Patients with Rheumatoid Arthritis, Kotha, P.; McGreevy, J.; Kotha, A.; **Look. M;** Weisman, M., Clinical Cardiology, November, l998

Don't Miss Musculoskeletal Injuries
SDAFP Annual Scientific Assembly, 2008
CAFP Annual Scientific Assemble, 2007

HPV Screening and Vaccine
CAFP Annual Scientific Assembly, 2006
The Gravid Athlete
SDAFP Annual Scientific Assembly, 2006
Sports Medicine Seminar
CAFP Annual Scientific Assembly, 2005
Risk Factors for Breast Cancer
American Academy of Family Physicians Scientific Assenbly,2004
Osteoarthritis of the Knee
SDAFP Annual Scientific Assembly, 2004
The Female Athlete
American Academy of Family Physicians Scientific Assembly,
Program Chair Discussion Series , 2002, 2003
The Weekend Warrior
Pfizer Speakers Panel, 2002
Exercise Prescription for Older Athletes
Nevada Academy of Family Physicians Scientific Assembly, 2002
Athletic Amenorrhea
Texas Academy of Family Physicians, Scientific Assembly, 2002
Exercise in Older Athletes
CAFP Scientific Assembly, 2002
Athletic Head Injuries
CAFP Scientific Assembly, 2002
NSAIDS and Corticosteroids
AAFP Sports Medicine Board Review Course, 2002
Ergogenic Aids
AAFP Sports Medicine Board Review Course, 2002
Female Athlete Triad
AAFP Sports Medicine Board Review Course, 2002
The Gravid Athlete
AAFP Sports Medicine Board Review Course, 2002
Common Lower Extremity Injuries
Sharp Health Care Symposium, Laguna, California, 2001
Ergogenic Aids
Sharp Reese Steely Medical Group CME conference 2001
Common Upper Extremity Injuries
Stanford Physician Assistant Program
Sports Medicine for Primary Care Physicians-
California Academy of Family Physicians Annual Scientific Assembly, San Francisco, 2000
UV and You-
Senior Olympics Partners Seminar Series, 2000
Women Athletes-
Scripps Clinic Primary Care Update Conference, 2000
Sports Medicine in Adolescents –
AAFP Pediatrics and Adolescent Medicine conference, Palm Springs, 1999
"Jock Docs"-a Primary Care Approach to Sports Medicine
CAFP Annual Scientific Assembly, l999
The Knee Exam –
Univ. of California -San Diego Pediatric and Adolescent Sports Medicine Conference, 2000, 1999
Exercise Prescription-
Sharp Grossmont Hospital, Grand Rounds 1998
Athletics in Pregnancy-
San Diego State University Department of Public Health, Instructor

The Preparticipation Exam-
Western University School of Osteopathic Medicine, Instructor
Acromioclavicular Separations
Cardiac Arrhythmias in Sport
Medial and Lateral Epicondylitis
Female Athlete Triad
San Diego Sports Medicine and University of California, San Diego Sports Medicine Fellowship Seminar:

RESEARCH

Principal Investigator: "A multi-center, randomized, double-blind, double-dummy, parallel-group dose finding study to evaluate the change in HbA1c after 12 weeks monotherapy with seven doses of LIK066 compared with placebo or sitagliptin in patients with type 2 diabetes", Novartis 2013

Principal Investigator: "A multicenter, international, randomised, parallel group, double blind study to evaluate cardiovascular safety of linagliptin versus glimepiride in patients with type 2 diabetes mellitus at high cardiovascular risk. The Carolina Trial", Boehringer Ingelheim 2013

Principal Investigator: "A phase III, randomised, double-blind, parallel group, 24 week study to evaluate efficacy and safety of once daily empagliflozin 10 mg and 25 mg compared to placebo, all administered as oral fixed dose combinations with linagliptin 5 mg, in patients with type 2 diabetes mellitus and insufficient glycaemic control after 16 weeks with linagliptin 5 mg once daily on metformin background therapy", Boehringer and Ingelheim 2013

Principal Investigator: "A randomized, double-blind, placebo-controlled phase 2B study on safety and therapeutic efficacy of DAS181 in adult subjects with naturally acquired influenza", NexBio 2013

Principal Investigator: "A randomized, double-blind, placebo-controlled, pivotal study to determine the safety and efficacy of SST-0225, a topical ibuprofen cream, in the treatment of pain caused by acute ankle sprains", Strategic Science & Technologies, Inc 2012

Principal Investigator: "A randomized, double-blind, phase 3b protocol-of-concept study to evaluate the efficacy and safety of TAK-491 compared to placebo when used in combination with Metformin in subjects with hypertension and Type 2 diabetes", Takeda 2012

Principal Investigator: "A randomized, double-blind, placebo-controlled, multiple-site, study comparing Oxiconazole Nitrate cream 1% (Taro Pharmexeuticals Inc) to Oxistat® (Oxiconazole Nitrate cream) cream 1% (Glaxosmithkline) in the treatment of Tinea Pedis", Novum Pharmaceutical Research Institute 2011

Principal Investigator: "A multi-center, randomized comparative study of the Pharmacokinetics of Exonazole Nitrate 1% foam and the Econoazole Nitrate 1% cream in subjects with Interdigital Tinea Pedis aged 12 years to less than 18 years", Therapeutics, Inc 2011

Principal Investigator: "A multi-center, randomized, double-blind, vehicle controlled, parallel group comparison study of the safety and efficacy of Econazole Nitrate foam 1% and foam vehicles in subjects with Intergidital Tinea Pedis", Therapeutics, Inc 2011

Principal Investigator: "A randomized, multi-center, double blind, factorial, comparator and placebo-controlled phase III trial to evaluate the efficacy, tolerability and safety of MRX-7EAT Ankle Sprains", IL Pharma 2010

Principal Investigator: "A multicenter, randomized, active-control, phase 3B study to evaluate the cardiovascular safety of febuxostat and allopurinol in subjects with gout and cardiovascular comorbidities", Takeda Pharmaceuticals 2010

Principal Investigator: "A multicenter, randomized, double-blind, phase 2 study to evaluate the effect of Febuxostat versus placebo in joint damage in Hyperuricemic in subjects with early gout", Takeda Pharmaceuticals 2010

Principal Investigator: "A double-blind, randomized, controlled, multicenter, proof of efficacy study of oral BGS649 vs. placebo assessing pain response in patients with refractory endometriosis", Novartis Pharmaceuticals 2010

Principal Investigator: "A randomized, open-label, parallel group, multicenter study to determine the efficacy and safety of Albigultide as compared with Liraglutide in subjects with Type 2 diabetes mellitus", GlaxoSmithKline LLC 2010

Principal Investigator: "A randomized, placebo controlled clinical trial to evaluate cardiovascular outcomes after treatment with exenatide once weekly in patient with Type 2 Diabetes Mellitus", Duke Clinical Research Institute 2010

Principal Investigator: "A randomized, multi-center double-blind, placebo-controlled phase III trial to evaluate the efficacy, tolerability, and safety of MRX-7EAT Etodolac-Lidocaine topical patch in the treatment of tendonitis and bursitis of the shoulder", IL Pharma 2010

Principal Investigator: "A long-term, randomized, double-blind, parallel group study of Fluticasone Furoate/GW642444 inhalation powder once-daily and Fluticasone Furoate inhalation powder once-daily in subjects with asthma", GlaxoSmithKline 2010

Principal Investigator: "A proof of principle study to explore the utility of Guaifensesin in upper back pain", GlaxoSmithKline 2009

Principal Investigator: "A mluticenter, randomized, double-blind, placebo and allopurinol controlled phase 2 study to evaluate febuxostat in medical management of subjects with hyperuricosuria and calcium oaxate stones", Takeda Pharmaceuticals 2009

Principal Investigator: "A randomized, double-blind, placebo-controlled study evaluating the efficacy, safety, and tolerability of 2 doses of Aclidinium Bromide compared with placebo for 12 weeks in patients with moderate to severe, stable COPD followed by a 40-wk evaluation of the 2 Aclidinium Bromide doses", Forest Laboratories 2009

Principal Investigator: "A randomized, double-blind, placebo-controlled study evaluating the efficacy, safety, and tolerability of 2 doses of Aclidinium Bromide compared with placebo for 12 weeks in patients with moderate to severe, stable COPD followed by a 40-wk evaluation of the 2 Aclidinium Bromide doses", Glaxo-Smith Kline 2009

Principal Investigator: "A long term, randomized, double-blind, parallel group study of Fluticasone Furoate/GW642444 Inhalation Powder once-daily and Fluticasone Furoate Inhalation Powder once-daily in subjects with asthma", Glaxo-Smith Kline 2009

Principal Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2009

Principal Investigator: "A multi-center, randomized, double-blind study to evaluate the efficacy and long-term safety of vildagliptin modified release (MR) as add-on therapy to metformin in patients with type 2 diabetes", Novartis Pharmaceuticals 2009

Principal Investigator: "A randomized, double-blind, placebo and active controlled, parallel group, multicenter study to determine the efficacy and safety of Albiglutide when used in combination with Metformin compared with Metformin plus Sitagliptin, Metformin plus Glimepiride, and Metformin plus placebo in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Principal Investigator: "A randomized, open-label, parallel-group, multicenter study to determine the efficacy and long-term safety of Albiglutide compared with Insulin in Subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Principal Investigator: "A randomized, double-blind, placebo-controlled, parallel-group, multicenter study to determine the efficacy and safety of two dose levels of Albiglutide compared with placebo in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Principal Investigator: "A randomized, open-label parallel group multi-center study to determine the efficacy and safety of Albiglutide (once weekly dose) compared with Liraglutide (once daily dose) in subjects with DMII", Glaxo-Smith Kline 2009

Principal Investigator: "A randomized, double-blind, placebo-controlled study of the efficacy and safety of a Diclofenac sodium patch for the topical treatment of acute pain due to mild to moderate ankle sprain", Cermion Pharmaceuticals 2009

Principal Investigator: "A randomized, double-blind, placebo-controlled study of the efficacy and safety of a Diclofenac sodium patch for the topical treatment of acute pain due to mild to moderate wrist sprain, strain or contusion", Cermion Pharmaceuticals 2009

Principal Investigator: "A randomized, double-blind, placebo and active controlled, parallel-group, multicenter study to determine the efficacy and safety of Albiglutide administered in combination with Metformin plus Glimepiride and Pioglitazone in subjects with type 2 diabetes mellitus", Glaxo-Smith Kline 2009

Principal Investigator: "A multi-center, randomized, double-blind study to evaluate the efficacy and long-term safety of vildagliptin modified release (MR) as monotherapy in patients with type 2 Diabetes", Novartis Pharmaceuticals 2008

Principal Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2008

Principal Investigator: "A Phase III Randomized Double-Blind, Placebo Controlled Multicenter Study to Determine The Safety and Efficacy of VI-0521 In The Treatment of Obesity In Adults With Obesity-Related Co-Morbid Conditions", Vivus Pharmaceuticals 2008

Principal Investigator: "A Long Term, Open-Label Extension Study to Investigate the Long-Term Safety of SYR110322 (SYR-322) in Subjects with Type 2 Diabetes", Novartis Pharmaceuticals 2007

Principal Investigator: "An Open Label 52-Week Study To Evaluate The Safety and Efficacy of Tegaserod (6 mg. BID and 12 mg OD) Given Orally For The Treatment of Opioid-Induced Constipation (OIC) In Patients With Chronic Non-Cancer Pain", Novartis Pharmaceuticals 2007

Principal Investigator: "A Randomized, Double-Blind, Active-Controlled, Multicenter Study To Compare The Effect of 24 Weeks Treatment With A Fixed Combination Therapy of Vildagliptin and Metformin To The Individual Monotherapy Components In Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals 2007

Principal Investigator: "A Phase 3, Randomized, Multicenter, Double-Blind, Allopurinol-Controlled Study Assessing The Efficacy and Safety of Oral Febuxostat In Subjects With Gout", TAP Pharmaceutical Products, Inc. 2007

Principle Investigator: A randomized, multi-center double-blind, placebo-controlled phase III trial to evaluate the efficacy, tolerability and safety of MRX-7EAT Etodolac-Lidocaine topical patch in the treatment of Tendonitis and Bursitis of the shoulder. IL Pharmer 2006

Principal Investigator: "An 8-Week, Multicenter, Randomized, Double-Blind, Parallel-Group Study To Evaluate The Efficacy and Safety of The Combination of Valsartan/HCTZ/Amlodipine Compared To Valsartan/HCTZ, Valsartan/Amlodipine, and HCTZ/Amlodipine In Patients With Moderate To Severe Hypertension", Novartis Pharmaceuticals 2006

Principal Investigator: Randomized, Double-Blind Trial of The Combination of Carisprodol 250 mg. Tablets and Diclofenac 50 mg. Tablets Compared To Placebo and Either Product Alone In Patients With Acute, Painful Musculoskeletal Spasm of The Lower Back", MedPointe Pharmaceuticals 2006

Principal Investigator: "A Randomized, Double-Blind, Multicenter Study Comparing The Effects of Carvedilol Modified Release Formulation (Coreg ™ MR) and Atenolol In Combination With and Compared To An Angiotensin Converting Enzyme Inhibitor (Lisinopril) On Left Ventricular Mass Regression In Hypertensive Patients With Left Ventricular Hypertrophy (LVH)", GlaxoSmithKline 2006

Principal Investigator: "A randomized, double-blind, placebo-controlled, parallel group ohase III study of the efficacy, tolerability and safety of Ketoprofen topical patch, 20% (KTP) in the treatment of pain associated with tendonitis or bursitis of the shoulder, elbow, or knee", Endo Pharmaceuticals, Inc. 2006

Principal Investigator: "An 8-Week Randomized, Double-Blind, Parallel Group, Multicenter, Placebo and Active Controlled Dose Escalation Study To Evaluate The Efficacy and Safety of Aliskiren (150 mg. and 300 mg.) Administered Alone and In Combination With Valsartan (160 mg. and 320 mg.) In Patients With Hypertension", Novartis Pharmaceuticals 2005

Principal Investigator: "A 6-week, Multicenter, Randomized, Double-Blind, Parallel-Group Study to Evaluate The Combination of Valsartan/HCTZ (160/12.5 mg. With Forced Titration To A Maximum Dose of 320/25 mg.) Compared To Valsartan Monotherapy (160 mg. With Forced Titration to 320 mg.) As Initial Therapy In Patients with Severe Hypertension," Novartis Pharmaceuticals 2005

Principal Investigator: "A Multicenter, Randomized, Double-Blind Study To Compare The Effects of 24 Weeks Treatment With LAF237 (50 mg. QD, 50 mg. BID or 100 mg. OD) To Placebo in Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals 2005

Principal Investigator: "A Randomized, Double Blind, Placebo-Controlled, Multicenter, Phase III Study of Rosuvastatin (Crestor ®) 20 mg. In The Primary Prevention of Cardiovascular Events Among Subjects With Low Levels of LDL-Cholesterol and Elevated Levels of C-Reactive Protein", Astra Zeneca 2005.

Principal Investigator: "Randomized, double-blind trial of Carisoprodol 250 mg tablets compared to placebo in patients with acute, painful Muscusloskeletal spasm of the lower back", Endo Pharmaceuticals 2005

Principal Investigator: "A double-blind, placebo-controlled evaluation of the safety and efficacy of three doses of topically applied Ketoprofen Transfersome ® Gel (KTG) in comparison to oral Naproxen for the treatment of the signs and symptoms of osteoarthritis of the knee", McNeil Consumer & Specialty Pharmaceuticals 2005

Principal Investigator: "A Randomized, Double-Blind, Parallel-Group, Multicenter Study To Compare Clinical Health Outcomes of Telithromycin Versus Azithromycin In Out Patients With Community-Acquired Lower Respiratory Tract Infections", Aventis, Inc. 2004

Sub-Investigator: "Pulmonary outcomes within a 2-year period in subjects with Diabetes Mellitus treated with Technosphere ®/Insulin or usual antidiabetic treatment and in subjects without abnormalities in glucose control", Mannkind Corporation 2005

Sub-Investigator: "Lilly's Emotional and Physical Symptoms of Depression Study", Eli Lilly and Company, 2004

Sub-Investigator: "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals 2004

Sub-Investigator: "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy to Glimepiride in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals 2004

Sub-Investigator: "A Randomized, Double-Blind, Placebo-Controlled Study Evaluating Acetaminophen Extended Release (3900 mg/day) in the Treatment of Osteoarthritis of the Hip or Knee", Chiltern International, Inc. 2004

Sub-Investigator: "A Randomized, Open-Label Study Comparing the Efficacy and Safety of Lidocaine 5% Patch with Celecoxib 200 mg in Patients with Chronic Axial Low Back Pain", Endo Pharmaceuticals 2004

Sub-Investigator: "To Compare the Effects of Continuous Low-Level Heat Wrap Therapy Alone and Combined with Active Exercise Versus Active Exercise Alone on the Functional Ability of Acute Low Back Pain Patients", Proctor & Gamble Company, U. S. Spine & Sport Foundation 2004

Sub-Investigator: "A Randomized, Double-Blind, Parallel-Group, Active-Controlled, Placebo-Controlled, Multicenter Trial to Study the Efficacy and Safety of Cyclobenzaprine HCL Modified-Release (CMR) 15 mg and 30 mg in Subjects with Pain Due to Muscle Spasms of Local Origin", Omnicare Clinical 2003

Sub-Investigator: "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study of the Efficacy and Safety of Dutasteride 0.5 Administered Once Daily for Four Years to Reduce the Risk of Biopsy-Detectable Prostate Cancer" GlaxoSmithKline 2003

Sub-Investigator: "A Randomized, Double-Blind, Multicenter, Multifactorial, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Valsartan (160 and 320 mg) and Hydrochlorothiazide (12.5 and 25 mg) Combined Alone in Hypertensive Patients", Novartis Pharmaceuticals, 2003

Sub-Investigator: "An Epidemiologic Program to Estimate the Population Prevalence of Hypogonadism in Men", Solvay Pharmaceuticals 2003

Sub-Investigator: "The Objective of Multicenter, Prospective, Open-Label, Crossover Study is to Document and Compare the Time for Migraine Patients to Become Headache free in Response to Treatment with Maxalt® (Rizatriptan Benzoate) Versus the Patient's Usual Oral Migraine Medication Over 2 Migraine Attacks", Access Medical Group, LTD 2003

Sub-Investigator: "A Multinational Randomized, Double-Blind, Placebo-Controlled, Force-Titration, 2 x 2 Factorial Design Study of the Efficacy and Safety of Long Term Administration of Nateglinide and Valsartan in the Prevention of Diabetes and Cardiovascular Outcomes in Subjects with Impaired Glucose Tolerance", Novartis Pharmaceuticals 2002

Sub-Investigator: "A Double-Blind Randomized Trial of Intra-Articular Injection of Hyalgan® Into the Glenohumeral Articular Space for the Treatment of Chronic Painful Shoulder with Limitation of Motion Due to Glenohumeral Joint Osteoarthritis Rotator Cuff Tear (Partial or Complete) and/or Primary or Secondary Adhesive Capulitis – (Hyalgan Use in Painful Shoulder – HUPS)", Sanofi-Synthelabo, Inc. 2002

Sub-Investigator: "A Randomized, Double-Blind, Parallel-Group Study Comparing the Safety and Efficacy of Acetaminophen Extended Release (3900 mg/day) and Ibuprofen (1200 mg/day) in the Treatment of Ankle Sprains", McNeil Consumer & Specialty Pharmaceuticals 2002

Sub-Investigator: "Clinical Protocol for a Double-Blind, Placebo-Controlled, Randomized Two week Comparison Study of the Efficacy and Tolerability of Valdecoxib 10 mg QD and Rofecoxib 25 mg QD in Relieving the Signs and Symptoms of Osteoarthritis of the Knee", Pharmacia & Upjohn Company 2002

Sub-Investigator: "Pioglitazone Versus Rosiglitazone in Subjects with Type 2 Diabetes Mellitus and Dyslipidemia", Eli Lilly and Company 2002

LANGUAGES

Limited conversational Japanese and Chinese

SPECIAL INTERESTS

Sports Medicine, Wellness, Obesity

PERSONAL INTERESTS

Ocean Kayaking, Running, Hawaiian Music and Dance

Curriculum Vitae

Stephen J. Rohrer, D.O.

Board Certified Family Physician, ACOFP & ABFM
Certificate of Added Qualification in Sports Medicine
CA Medical License#: 20A10396
NPI #1821205873

San Diego Sports Medicine
and Family Health Center
6699 Alvarado Rd., Suite 2100
San Diego, CA 92120
619-229-3909 (work)
619-592-1679 (cell)
stephen.rohrer@gmail.com

Employment

- San Diego Sports Medicine and Family Health Center, San Diego, CA—Physician, *2009 – current*
  - -- Family and Sports Medicine
  - -- San Diego Regional Firefighter Wellness Program
  - -- Executive Wellness Program
- San Diego Sports Medicine and Family Health Center, San Diego, CA—Sports Medicine Fellow, *2008-09*
- The Reading Hospital and Medical Center, Reading, PA— Family Medicine Resident, *2005-08*
- Berkshire Family Medicine, P.C, Reading, PA— Moonlighting, *2006-08*
  - -- Moonlighting in family medicine and sports medicine
- The Reading Hospital Urgent Care Center, Reading, PA—Moonlighting, *2007-08*
  - -- Moonlighting in all aspects of acute care

Education

- San Diego Sports Medicine and Family Health Center, San Diego, CA—Sports Medicine Fellowship, *2008-09*
- The Reading Hospital and Medical Center, Reading, PA— Family Medicine Residency, *2005-08*
  - -- Family Medicine residency program with a Sports Medicine focus
  - -- Osteopathic internship completed, *2005-06*
- Midwestern University, Arizona College of Osteopathic Medicine, Glendale, AZ—Doctor of Osteopathic Medicine, *2000-05*
- Osteopathic Manipulative Medicine (OMM) Fellowship—AZCOM, *2002-05*
  - -- Involved with numerous aspects of teaching, research, and patient care
- Bob Jones University, Greenville, SC—Bachelor of Science in Accounting, *1992-96*

Faculty Appointments

- Touro University—Adjunct faculty preceptor, *2014-current*
- Stanford University—Adjunct faculty preceptor, *2014-current*
- UC San Diego—Adjunct clinical professor, *2008-current*
- San Diego State University—Adjunct clinical professor, *2008- current*

Professional Experience

- San Diego State University—Assistant Team Physician, *2008- current*
- USA Olympic training center, Chula Vista, CA— Assistant Team Physician, *2007-current*
- Los Angeles Dodgers—Consulting Team Physician, *April 2013-current*
- San Diego Christian College—Assistant Team Physician, *2008-current*
- Cuyamaca Community College—Assistant Team Physician, *2008-current*
- La Jolla Country Day High School, La Jolla, CA—Head team physician, *2008-current*
- Grossmont College, San Diego, CA—Pre-participation physical exams, *2008-current*
- Kuyper Christian Preparatory School, Spring Valley, CA—Head team physician, *2014-current*
- California Interscholastic Federation— Physician advisor, *2008*
- San Diego Senior Olympics, San Diego, CA—Medical director, *2008*
- San Diego Bayfair World Series of Powerboat Racing, San Diego, CA—Medical director, *2008*
- Torrey Pines High School Football, San Diego, CA—Assistant team physician, *2008*
- Susan G. Komen Breast Cancer 3-Day Walk, San Diego, CA—medical tent coverage, *2008*
- Rock and Roll Marathon, San Diego, CA—medical tent coverage, *2009*
- Ironman World Championship—Kona, HI, medical tent coverage, *2007*
- Keystone State Games, York, PA—Participated in general sports/ medical coverage, *2007*
- Comprehensive Athletic Treatment Center, Wyomissing, PA—Keynote speaker for continuing education seminar for physical therapists and certified athletic trainers on the topic of low back pain, *2007*
- San Diego Shockwave arena football team, San Diego, CA—Pre-participation physical exams, *2007*
- Tempe, AZ Ironman—medical tent coverage, *2007*
- Conrad Weiser High School, Robesonia, PA— assistant team physician, *2006-08*
- Across the Years Ultra Marathon, Phoenix, AZ—medical tent coverage, *2004*

Clubs and Organizations

- California Academy of Family Physicians, *2008-current*
- American Osteopathic Association, *2003-current*
- American Osteopathic Academy of Sports Medicine, *2008-current*
- American College of Osteopathic Family Physicians, *2000-current*
- American Medical Society for Sports Medicine, *2006-12*
- American Academy of Family Physicians, *2005-12*

- Pennsylvania Osteopathic Medical Association, *2005-07*
  --Resident representative, *2005-06*
- Arizona Osteopathic Medical Association, *2003-05*
- National Undergraduate (Osteopathic) Fellows Association, *2002-05*
- Undergraduate American Academy of Osteopathy, *2000-05*
- Christian Medical and Dental Society, *2000-05*
- Sports Medicine Club Vice President, AZCOM, *2001-02*

Professional Meetings

- AOASM Clinical Conference—Tampa, FL, *2014*
- CAFP Clinical Conference—San Diego, CA, *2013*
- AOASM Clinical Conference—Louisville, KY, *2012*
- AOASM Clinical Conference—Providence, RI, *2011*
- AOASM Clinical Conference—Anaheim, CA, *2010*
- AOASM Clinical Conference—Snowbird, UT, *2009*
- AOASM Clinical Conference—Kansas City, MO, *2008*
- Ironman Sports Medicine Conference—Kona, HI, *2007*
- AOASM Clinical Conference—St. Pete Beach, FL, *2007*
- AMSSM Advanced Team Physician course—Orlando, FL, *2006*
- Exercise Prescription—AZCOM, *2004*
- Strain/ Counterstrain course—Portland, OR, *2003*
- Strain/ Counterstrain course—Tucson, AZ, *2003 & 2004*

Awards and Honors

- St. Luke's Service League Scholarship, *2003-04, 2004-05*
- American Academy of Osteopathy Vicki Dyson Scholarship, *2004*
- Arizona Department of Public Safety Life Saving Award nominee, *2004*

Community Activities and Volunteer Experience

- Faith Community Bible Church member, El Cajon, CA, *1992-2006, 2008 – current*
  - -- Leader: Missions committee
  - -- Community outreach to homeless, Hispanic, youth, extended care facilities
  - -- Surgical missions trip to Mexico
- The Reading Hospital and Medical Center, Reading, PA—Skin cancer screening, *2006*
- Maranatha Baptist Church member, Sinking Spring, PA, *2006-08*
  - -- Leader: Young adult fellowship
  - -- Building committee member
- Phoenix Free Presbyterian Church, Glendale, AZ, *2004-05*
  - -- Building committee member

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San Diego, CA 92120
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(801) 918-7650 cell
srevans@sdsm.com

EMPLOYMENT

San Diego Sports Medicine and Family Medicine
Associate Physician
San Diego, CA
Aug 2008-present

MEDICAL

UCLA Sports Medicine Fellowship
Los Angeles, CA
July 2007- June 2008; CAQ eligible July 2008

- Team physician for UCLA football, men's soccer, men's volleyball, women's golf

University of Utah Family Medicine Residency
Salt Lake City, Utah
July 2004 – June 2007

EDUCATION

Doctor of Medicine, May 2004
George Washington University
Washington, DC

Bachelor of Science, Exercise Physiology, April 2000
Brigham Young University, Provo, Utah.
-*Magna Cum Laude*
-included one quarter of study abroad at BYU-Jerusalem Center

EXPERIENCE

- High School Preparticipation Physical Exams, Los Angeles Orthopedic Hospital, June 7, 2008, Los Angeles, CA
- Medical coverage, NCAA softball regionals, May 2008, Los Angeles, CA
- Event Medical Coverage, *Rafer Johnson/Jackie Joyner-Kersee Invitational Track Meet*, April 10-11, 2008, Los Angeles, CA
- Coverage of UCLA men's basketball vs. Oregon St., Feb 2008
- Medical tent coverage for LA Marathon, March 2008
- US Men's National Soccer Team Preparticipation Physical Exams, January 2008
- Coverage of UCLA men's basketball vs. Idaho St, December 2007
- Game coverage for UCLA men's soccer, Fall 2007
- Game coverage for UCLA men's volleyball, winter 2008
- Team physician, El Segundo High School, 2007-08
- Preparticipation Physical Exams, Pepperdine University, Sept 2007
- Preparticipation Physical Exams for many of the 650 UCLA student-athletes, 2007-08

- Assistant team physician, Skyline High School football, Salt Lake City, UT, fall 2006
- Acute ski injury clinic rotations:
  - Park City, Jan. 2008
  - Snowbird, Jan. 2007
  - Alta, Dec. 2005
- Preparticipation physical exams
  - Judge Memorial High School, 2005,2006
  - Westminster College soccer and volleyball 2005
  - National Youth Sports Programs, May 2005

OTHER

Fluent in Spanish language.

- *Volunteer Representative for the LDS Church.* Quito, Ecuador. June 1995-June 1997.
- Resident Continuity Clinic, Stephen D. Ratcliffe Community Health Center, Salt Lake City, Utah. *Underserved clinic serving mostly Hispanic population.* July 2004-June 2007.

CONFERENCES ATTENDED

American Medical Society for Sports Medicine, Albuquerque, New Mexico, April 2007
American Medical Society for Sports Medicine Rendezvous II, Las Vegas, NV, Mar 2008

RESEARCH

Scott Evans, MD, John DiFiori, MD, Becci Twombley, RD, CNSD, and Sameer Dixit, MD. "Elevated Blood Pressure in Collegiate Athletes: The Role of Body Mass Index and Body Composition," *Clin J Sport Med*, Vol 18 (2); Mar 2008:186-187 (abstract).
--Presented at AMSSM Rendezvous II, Mar 2008, Las Vegas, NV.
--Presented at UCLA Department of Family Medicine Multicampus Research Forum, Northridge, CA, May 6, 2008.
--Presented at UCLA Multidisciplinary Sports Medicine Conference, June 4, 2008, Los Angeles, CA

PRESENTATIONS

--"Evaluation of Acute Knee Injuries." UCLA Medical Student primary care lecture, June 6, 2008.
--"Sudden Cardiac Death in Athletes." LA Sports Medicine Symposium. May 7, 2008. Los Angeles, CA.
--"Elevated Blood Pressure in Collegiate Athletes: The Role of Body Mass Index and Body Composition." UCLA Department of Family Medicine Multicampus Research Forum, Northridge, CA, May 6, 2008.
--"Sports Injuries in Children and Adolescents." Beverly Hospital Multispecialty CME Conference, May 2008. Montebello, CA.
--"Sudden Cardiac Death in Athletes," Tarzana-Encino Community Hospital, CME Lecture. Encino, CA, April 8,2008.
--"Exertional Heat Illness and Fluid Management," UCLA Sports Medicine Conference, April 2, 2008.
--"Sudden Cardiac Death in Athletes." UCLA Athletic Training Staff Monthly Sports Medicine Conference, April 1, 2008.

--"Elevated Blood Pressure in Collegiate Athletes: The Role of Body Mass Index and Body Composition." AMSSM Rendezvous II Research Podium Presentation. Las Vegas, NV, March 27, 2008
--"Sudden Cardiac Death in Athletes," UCLA Sports Medicine Conference, January 16, 2008.
--AC Joint Injuries and Stinger Injuries in Athletics, Case Conference, UCLA Department of Family Medicine Grand Rounds, Jan 9, 2008.
--"Examination of the Shoulder," Musculoskeletal workshop for UCLA Family Medicine Residents, January 9, 2008.
--"Current Concepts in Concussion Management," UCLA Sports Medicine Conference, October 2007.
--"Closed Head Injuries," Univ. of Utah Family Medicine Residency Presentation, Aug 2006.
--"Shoulder Examination," Univ. of Utah Family Medicine Residency Presentation, Mar 2006.
--"Preparticipation Physical Examination," Univ. of Utah Family Medicine Residency Presentation, Aug 2005.

AWARDS

Research Award, UCLA Department of Family Medicine Multicampus Research Forum Podium Presentation
Valedictorian, Brigham Young University College of Health and Human Performance, April 2000
Edwin S. Hinckley academic scholarship from Brigham Young University, 1998-99
Karl G. Maeser Scholarship from Brigham Young University, 1999-2000
Brigham Young University Trustees Scholarship recipient, full tuition academic scholarship, 1994-95, 1997-98
Eagle Scout

LICENSES and CERTIFICATION

Board Certified Family Physician, Sept 2007
Physicians License, State of California, May 2007
Advanced Cardiac Life Support
Neonatal Advanced Life Support
Advanced Life Support in Obstetrics

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

American Medical Society for Sports Medicine
American College of Sports Medicine
American Medical Association
Utah Medical Association
California Medical Association
American Association of Family Physicians

HOBBIES/INTERESTS

basketball, football, tennis, racquetball, hiking, travel

REFERENCES

Available upon request.

Rebeccah Rhenae Rodriguez

4010 Sorrento Valley Blvd, #300
San Diego, CA 92121
Phone: (602) 421-4204
rrodriguez@sdsm.com

EDUCATION

Sports Medicine Fellowship	San Diego Sports Medicine and Family Health Center, CA 7-14-09→8-10-2010
AOA Residency Training	Family Medicine, John C. Lincoln Hospital, Phoenix, AZ, 6-19-06→6-28-09
Doctor of Osteopathic Medicine	Kirksville College of Osteopathic Medicine (KCOM), Kirksville, MO, 63501, June 2006
BA Biochemistry	Grand Canyon University, Phoenix, Arizona 85061, *Magnum Cum Laude*, 1997-2001
Minor	Spanish, Grand Canyon University, Phoenix, Arizona 85061, 1997-2001

CERTIFICATION

AOBFP Boards	Board Certified Family Medicine 3/09-present
AOASM Boards	Board Certified Sports Medicine 4/11-present
CPR-BLS	American Heart Association, 1995-Present

LANGUAGES

Bilingual	English and Spanish

LEADERSHIP POSITIONS

Women's Athletic Health Director SDSU	San Diego State University, 2012-present
AOASM Board of Directors	American Osteopathic Academy of Sports Medicine, 2013-present
ACOFP Board Task Force Improving Residency Programs and Procedure Committee	ACOFP, 2011-Present
ACOFP CA Academic Committee Member	ACOFP State Society of CA, 2013-present
LatinaStrong Foundation CEO, Co-Founder	Hispanic Health Initiative for education on healthy diet and exercise to Latinas. Phoenix, AZ, 2014
Contact Arts Secretary	Non-profit organization to support the performing arts in San Diego, CA. 2013-present

TEACHING EXPERIENCE

Adjunct Professor ATSU, AZCOM, COMP	Clinical Professor to 3rd and 4th year medical students for Family Med sports med, 2012-present
Adjunct Professor OMT	A.T. Still University, School of Osteopathic Medicine Mesa, AZ. 1-08 thru 6-09.
Adjunct Faculty SDSU	Lecture on hypohydration and female athlete health given to athletic Trainers at San Diego State University, 2011-present
Adjunct Faculty UCSD	Teaching 3rd- 4th medical students, FP residents, and fellows sports Medicine physical exam skills at UCSD School of Medicine. 2009-2014.

CLINICAL EXPERIENCE

Lady Gaga Tour "Rock Doc"	Physician coverage for Lady Gaga Art Pop Tour, San Diego, CA 2014
Nike Women's Marathon	Team In Training Team Physician, San Francisco, CA, 2013.
BMX National Championships	Chula Vista Olympic Training Center, Team USA, 2011-present
Medical Director Susan Komen 3 day Breast Cancer Walk	San Diego, CA, 2010, 2014.
Medical Director Thunder-Boat Bay Fair Races	San Diego, CA. Completed physicals on drivers. 9-09.
MMA Ringside Physician	Xplode Fight Series, San Diego, CA 2011-2013.
Olympic Training Center Physician	Team Physician at Olympic Training Center, Chula Vista, CA. Treating athletes in family medicine, sports medicine, drug testing Athletes. 2009-present.
Assistant Medical Director Breast Cancer 3 day Walk	San Diego, CA. 11-09.
Company Physician	San Diego Ballet, California Ballet, Academy of Performing Arts San Diego. 2009-present.
LA X-Games Physician	Event Physician for Los Angeles X-Games, CA 2010-2012.
BMX World Cup Event Physician	Event Physician at US Olympic Training Center Chula Vista, CA 2010-12
Team Physician San Diego Chargers Cheerleaders	San Diego Chargers Cheerleaders, 2009-present.
Medical Team Captain	Rock and Roll Marathon San Diego, CA. 6-6-2010-present.

Event Physician	Footlocker National High School Cross Country Meet. 12-12-09 and Carlsbad 5000, Carlsbad, CA. 4-2010.
Event Physician	Amateur Boxers For Christ National Championships. 12-2010.
PGA Tour Physician	PGA Tour Torrey Pines-Farmers Insurance Invitational. 2-29-2010.
Academy Physician SDFD Recruits	San Diego Fire Department for 2009 Academy recruits. 2009.
Team Physician	San Diego OMBAC Rugby Team. 2010-present.
AOA Mentor	Attending physician providing shadowing experience to pre-medical students and residents. 2009-present
Team Physician AVP	AVP Pro Beach Volleyball Best of the Beach Tournament, Glendale, AZ 9-08.
High School Team Physician	Torrey Pines High School Football, San Diego, CA. 2009-present
Senior Olympic Team Physician	San Diego, CA. Individually covered this event and reported to San Diego Sports Medicine Fellowship program for injuries. Sports Included Men's softball, Men's Basketball, women's basketball, women's Volleyball. 2007-2009.
ACOFP National Committees	American College of Osteopathic Family Physicians. Participated on numerous national committees including Task Force on Maintaining Osteopathic Residency Positions, Task Force on Women's Initiative, Resident's Committee, Marketing/Public Relations, Convention/Site Program Committee, Osteopathic Principles and Practice. 2005-present.

LEADERSHIP AND CO-CURRICULAR INVOLVEMENT

John C. Lincoln Family Medicine Residency Program, Phoenix, AZ

ACOFP Resident Member Board of Governors	American College of Osteopathic Family Medicine, 2007-2008
ACOFP Resident Recruiter	American College of Osteopathic Family Medicine, 2006-2009
ALMA Young Physician Chair	Arizona Latin American Association, 2006-2009

Kirksville College of Osteopathic Medicine, Kirksville, MO

National SAACOFP President	National Student Association American College of Osteopathic Family Physicians President, 2004-2005.

Chapter President ACOFP	American College of Osteopathic Family Physicians (ACOFP) Gamma Chapter at KCOM, 2002-2003

Professional Membership

Member	American Osteopathic Academy of Sports Medicine (AOASM),2006-present
Member	American College of Osteopathic Family Physicians, 2001-present.
Member	American College of Osteopathic Family Physicians, CA, 2012-present
Member	American Osteopathic Association, 2001-present
Member	IADMS, 2010-2012

HONORS AND AWARDS

San Diego Top Doctors 2014	San Diego Magazine, Oct 2014
San Diego Patient Choice Award	San Diego, 2012-2013
Grobe Award Recipient	AZ Family Medicine Resident of the year, AAFP,2009
Arizona Osteopathic Medical Association Student Distinguished Service Award	AOMA, 2006

PUBLICATIONS

San Diego Magazine Oct 2014	San Diego Top Doctors Family Medicine, 2014
U.S. News and World Report	Ballet For Adults: Getting Fit at the Barre, 7-17-14
Kirksville College of Osteopathic Medicine 2004-2006 Student Cover Girl	Selected to have picture represent KCOM on website, convention posters, brochures, small billboards.
The Journal-Minority Medical Magazine	Keepsake 2004 Vol 12 #1 pg. 47. A guide for minority science students, Jan. 2004.
The Journal-Minority Medical Magazine	Campus Rep Spotlight, pg. 16, Spring 2003 issue
Still News Newsletter	"ACOFP serves KCOM and community", Feb. 2003
InterCom Newsletter	"Rodriguez receive ACOFP Scholarship", Dec. 2002
Kirksville Magazine for KCOM Alumni And Friends (02 Vol. 31 #3 pg 13)	KCOM Founder's Day Highlights for ACOFP, 2002

Douglas D. Dengerink, D.O.

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La Mesa, CA 91941
ddengerink@yahoo.com
(H) 619.334.6433 (C) 619.977.5322

A compassionate, personable board certified family physician; a team player with leadership experience; efficient and punctual; able to put patients at ease and defuse conflict-oriented situations; Special interests include: Urgent Care, Sports Medicine, laceration repair, and procedures

Specific strengths:

- Outstanding bedside manner and relationship-building skills
- Clinically sound training and standard of care practices
- Strong work ethic
- Collegial, working well with physician extenders and ancillary staff
- Versed in a wide array of procedures, injections, and musculoskeletal diagnoses

Education / Training

Western University of Health Sciences: College of Osteopathic Medicine
Doctor of Osteopathic Medicine, Conferred upon: June 2002
- Residency: Mayo Clinic, Family Medicine
- Board Certified: 2005

San Diego Sports Medicine and Family Health Center, Sports Medicine Fellowship,
- July 2011 – July 2012

Azusa Pacific University
Bachelor of Arts Degree in Biology; Minor in Philosophy, Conferred upon: June 1996

Leadership Experience

Mayo Clinic Scottsdale Family Medicine Residency, Chief Resident Elect	2004- 2005
Mayo Clinic Scottsdale Family Medicine Residency, Recruitment Coordinator	2003- 2004
Arizona Academy of Family Physicians, Residency Representative	2003- 2004
Faith Community Church Medical Outreach Mission, Medical Provider	2000- 2002
Western University of Health Sciences, Montclaire Clinic Coordinator	1999- 2000
Western University of Health Sciences, Christian Medical Society, President	1999- 2000
Western University of Health Sciences, Christian Medical Society, Treasurer	1998- 1999

Medical / Professional Experience

San Diego Sports Medicine and Family Health Center	08/2012 - Present
Associate Physician	
Sharp Rees-Stealy Medical Group, Urgent Care	
Staff Physician	09/2007- 08/2011
Cypress Medical Group, Doctors on Duty Urgent Care	
Staff Physician	07/2005- 10/2007
Mayo Clinic	
Family Medicine Resident	07/2002- 06/2005
John C. Lincoln Hospital, Deer Valley Clinic	
After-Hours Physician	10/2004- 2005
John C. Lincoln Hospital, Saguaro Clinic	
After-Hours Physician	10/2004- 2005
Drive Against Prostate Cancer	
Prostate Examiner	2003
Whittier Christian High School	
Teacher, Biology/Anatomy	1996- 1998

Douglas D. Dengerink, D.O.

Presentations/Publications

Splinting and Bracing Workshop ACOFP 50th Annual Convention & Scientific Seminars, March 21-24, 2013

Common Conditions in the Overhead Athlete. Douglas D. Dengerink, Eric W. Edmonds, AM Fam Physician 2014 Apr 1;89 (7):537-541

Memberships

America Osteopathic Association
American Osteopathic Academy of Sports Medicine

Licensure and Certifications

California Board of Osteopathic Examiners In Medicine and Surgery Licensure
American Board of Family Medicine, Board Certified
BLS and ACLS certified

Skills

Proficient in Multiple Electronic Medical Record Formats
Proficient with dictation

Activities

Spending time with my family, home improvement projects, church activities and mountain biking

References and supporting documentation furnished upon request.

Alexandra Reed Myers
1054 Law St Apt A
San Diego, CA 92109
(760) 887-3243
alexandramyers10@gmail.com

Work Experience

San Diego Sports Medicine and Family Health Center
Associate Physician
July 2014 - present

San Diego Sports Medicine and Family Health Center
Primary Care Sports Medicine Fellowship
July 2013 – July 2014

Downey Regional Medical Center, Downey, CA
Family Medicine Residency
Graduation date – June 2013

US Healthworks
Per Diem Physician
September 2011 – present

Pioneer Medical Group
Per Diem Physician
October 2012 – June 2013

Formal Educational Background

Western University of Health Sciences, College of Osteopathic Medicine of the Pacific
Pomona, CA
Doctor of Osteopathy
Masters of Science in Health Sciences, Health Professions Education
Graduation date – May 2010

Cornell College, Mt. Vernon, Iowa
Bachelor of Arts in Biology and Spanish
Graduation date – May 2005

Event Coverage

November 2013 Medical Director "The Susan G. Komen 3-Day"

In this position I oversaw the medical evaluation and care of all of the participants and volunteers during a three day event. The participants walked approximately 20 miles a day and there were medical services offered at 4 different locations each day.

Teaching Experience

May 2008 – present Teaching Assistant to Dr. Lorane Dick, Assistant Professor, Department of Osteopathic Manipulative Medicine, Western University of Health Sciences, College of Osteopathic Medicine of the Pacific, Pomona, CA

As a teaching assistant I helped to instruct students in courses on Osteopathic Manipulative Medicine. The courses were held in France and Spain and I assisted in 4 separate weeklong courses.

January 2008 – May 2010 Pre-Doctoral Teaching Fellow, Department of Osteopathic Manipulative Medicine, Western University of Health Sciences, College of Osteopathic Medicine of the Pacific, Pomona CA

As a pre-doctoral teaching fellow, my responsibilities included lecturing, facilitating problem-based learning sessions, and table-training for 1st and 2nd year D.O. students. Within the Department of Osteopathic Manipulative Medicine I worked closely with other fellows and faculty on projects such as curriculum development and online resources for students. I was also responsible for handling a group of over twenty students during lecture and PBL sessions, and for testing the students on written and practical examination.

December 2000 – present Ski Instructor, Mt. High Winter Sports School Wrightwood, CA

Certified by the Professional Ski Instructors of America as an Alpine Level I instructor, I teach groups of up to twenty children and adults how to ski. As a part of a team of over 100 instructors I am responsible for helping to train newly hired instructors and for advising others on new techniques.

March 2004 – May 2005 Spanish Tutor, Department of Classical and Modern Languages, Cornell College, Mt. Vernon, IA

As a tutor I taught students in the beginning levels of Spanish on the basics of grammar. The emphasis was on improving their reading, writing, and conversational skills.

Leadership Experience

October 2013 – Present Physician member Council of New Physicians In Practice, American Osteopathic Association. In this position I serve as a liaison between the council and the Council of Interns and Residents.

February 2013 – Present Membership Committee Chair, Osteopathic Physicians and Surgeons of California. I work with the committee members and the board to increase membership and improve retention of current members.

October 2012 – September 2013 Resident member Bureau on International Osteopathic Medical Education and Affairs. In this position I helped to develop the strategic plan for the next three years for the bureau. I also serve on the planning committee for the annual international seminar hosted at OMED.

February 2011 – February 2013 Resident Board Member, Osteopathic Physicians and Surgeons of California, chair of Student and Young Physicians Committee. In this position I have acted as a liaison between residents and the board, and have edited the publication of a New Physician Guide to practicing medicine in California.

October 2010 – Present Ambassador to the Council of Interns and Residents, American Osteopathic Association.

During my studies at Western University of Health Sciences, College of Osteopathic Medicine of the Pacific, I held the following positions.

March 2006 – March 2007 Spain Exchange Program Coordinator, International Medicine Club. In this position I coordinated the exchange between five students from COMP and five students from Universidad de Cantabria, Spain. Students had clinical rotations of their choosing at each site, and all housing and transportation services were planned out prior to their arrival.

January 2006 – May 2007 Curriculum Committee Representative, Student Government Association. In this position I acted as a liaison between the students of the D.O. class of 2009 and the curriculum committee at the College of Osteopathic Medicine of the Pacific. I was asked to contribute student opinion to the committee as we made decisions on how to revise the curriculum.

March 2006 – March 2007 Public Relations Co-Chair, Pomona Community Health Action Team. In this position I conducted the public relations work for a volunteer organization that held free community health clinics throughout Pomona, CA.

During my undergraduate years at Cornell College, Mt. Vernon, Iowa, I held the following positions.

April 2004 – April 2005 President, Mortar Board National College Senior Honor Society. I served as the president of the Cornell chapter of Mortar Board. The duties for this position included planning meetings, coordinating service events, and attending a national conference to represent the school.

April 2004 – April 2005 President, Beta Beta Beta Biology Honors Society. As president I organized informational workshops, lectures, blood drives, and fundraisers that served to increase interest in the biological sciences.

December 2003 – December 2004 Captain, Women's Soccer Team. As a captain I served as a leader on the women's team and was responsible for planning team events and representing our team to the administration.

Conferences Attended

Osteopathic Physicians and Surgeons of California
- September 2013, Monterey, California
- February 2013, San Diego, California
- September 2012, Monterey, California
- February 2012, San Diego, California
- September 2011, Monterey, California
- February 2011, San Diego, California

American Academy of Osteopathy
- March 2010, Colorado Springs, Colorado
- March 2009, Little Rock, Arkansas
- March 2008, Dallas, Texas
- April 2007, Colorado Springs, Colorado

American Osteopathic Association
- July 2013, Chicago, Illinois *House of Delegates, California Delegate*
- October 2012, San Diego, California
- July 2012, Chicago, Illinois *House of Delegates, California Delegate*
- July 2011, Chicago, Illinois *House of Delegates, California Delegate*
- October 2010, San Francisco, California
- October 2008, Las Vegas, Nevada
- October 2006, Las Vegas, Nevada

Committee of Osteopathic Student Government Presidents
- October 2006, Las Vegas, Nevada
- January 2007, Sarasota, Florida

References

Dr. Stephen Rohrer
San Diego Sports Medicine and Family Health Center
6699 Alvarado Rd, Suite 2100, San Diego, CA 92120, (619)229-3909

Dr. Michael Seffinger
Department of Osteopathic Manipulative Medicine
Western University of Health Sciences, College of Osteopathic Medicine of the Pacific
302 E. Second St., Pomona, CA 91766, (909) 469-5282

Dr. Carol-Lacy Salazar
Spanish Professor, Department of Classical and Modern Languages
Cornell College
810 Commons Circle, Mt. Vernon, IA 52314, (319) 895-4000

SHANNON KAREEN CHEFFET, D.O.

PERSONAL INFORMATION

DATE OF BIRTH: December 18, 1975
PLACE OF BIRTH: San Diego, California
HOME ADDRESS: 6095 Cowles Mountain Boulevard
La Mesa, CA 91942
619.490.6066
shannoncheffet@yahoo.com

PRESENT POSITION

SAN DIEGO SPORTS MEDICINE & FAMILY HEALTH CENTER

Physician, Internal Medicine & Pediatrics, June 2013 – present

Provide quality patient care in the outpatient setting.

EDUCATION

UNDERGRADUATE: University of California, Davis – B.S. in Microbiology, June 1997
GRADUATE: Western University of Health Sciences – Doctor of Osteopathic Medicine (D.O.), May 2002
POSTGRADUATE: Loma Linda University Medical Center – Combined Internal Medicine/Pediatrics, Aug 2006
SPECIAL TRAININGS: Harvard School of Public Health – Management of Ambulatory Health Centers, June 2009

PROFESSIONAL CERTIFICATIONS

Board Certified, American Board of Internal Medicine – August 21, 2006 – present
Board Certified, American Board of Pediatrics – October 2006 – present
California Osteopathic Medical license
Drug Enforcement Agency
Basic Life support 2001 – present
Advance Cardiac Life Support, 2002 – 2007, 2012 – present
Pediatric Advance Life Support, 2002 – 2007
Neonatal Advanced Life Support, 2002 – 2007

PROFESSIONAL EXPERIENCE

FAMILY HEALTH CENTERS OF SAN DIEGO

Physician, Internal Medicine & Pediatrics, August 2011 – May 31, 2013

Provide quality patient care in outpatient community health setting. Perform outpatient procedures including, but not limited to, sutures, incision & drainage, EKG interpretation. Community outreach.

SAN DIEGO INTERNAL MEDICINE ASSOCIATES

Physician, Internal Medicine & Pediatrics, November 2009 – July 2011

Provide quality patient care in outpatient and inpatient setting. Clinical rounds/consultations at Sharp Mary Birch Hospital for Women & Children, Sharp Memorial Hospital, Sharp Mesa Visa Hospital. Perform various outpatient procedures including, but not limited to, sutures, incision & drainage, circumcision, frenotomy, toe nail removal, EKG interpretation.

MOUNTAIN HEALTH & COMMUNITY SERVICES, INC.

Chief Medical Officer & Physician, Internal Medicine & Pediatrics, March 2007 – November 2009

Supervise 11-13 medical providers and nursing staff for 5 Federally Qualified Health Centers and one School-based clinic. Developed and implemented a quality assurance program and triage protocols. Developed and implemented disease-specific progress notes. Led the team charged with investigating and selecting an electronic health record. Coordinated pandemic influenze response amoungst all 5 clinics. Regularly attended Physician's Council meetings with medical directors of other FQHCs. Collaborated with Director of Behavioral Health to support the ideology of integrative health care.

MOUNTAIN HEALTH & COMMUNITY SERVICES, INC.

Chief Medical Officer & Physician, Internal Medicine & Pediatrics, August 2006 – March 2007

Provide quality patient care in outpatient community health setting. Perform various outpatient procedures including, but not limited to, sutures, incision & drainage, EKG interpretation. Participate in local community outreach.

UNIVERSITY OF CALIFORNIA, DAVIS MEDICAL CENTER
Laboratory Assistant II, Dept of Microbiology, Molecular Biology & Cytogenetics, September 1997 – June 1998
ZENECA AGRICULTURAL PRODUCTS, RICHMOND, CALFORNIA
Microbiologist, July 1997 – September 1997

HONORS AND AWARDS

Sharp Healthcare Guardian Angel (twice) – 2010
Internal Medicine-Pediatrics Resident of the Year, 2006
Pediatric Resident Teacher of the Year, 2003
Neonatal Intensive Care Unit, Intern of the year 2003
Rotary Club Community Service Award , 20000
Excellence in Research Award, 28th Annual Student Medical Research Forum, 2000
National Health Service Corps Scholarship, 1999, 2000, 2001
Summer Anatomy Prep Program Teaching Assistant Award, 2000
Grossmont Hospital Auxiliary Scholarship, 1993, 1998, 1999, 2000

COMMITTEE MEMBERSHIPS

Physican Council, Council of Community Clinics, March 2006 – November 2009

PRESENTATIONS

"Day at the Capital," appointed spokesperson and physician representative for the Council of Community Clinics, spoke with senators regarding budget cuts and long term effects on health care for the underserved. 2008, 2009
Fox News interview, Council of Community Clinics spokesperson, budget cut effects on mental/medical health care
"Pandemic Flu: The Virus that Could Change the World, " Fred Friendly Seminars, Panel Speaker - June 2007

COMMUNITY SERVICE

Volunteered to perform sports physicals for various high schools in the area, 2013-present
Ready, Set, Grow Kids Health Fair, March 2008, May 2009, Committee Chair/Founder
Kids Care Fest – Sharp Grossmont Hospital, September 2007, September 2011
Facilitator - training Loma Linda University medical students on Medical Response to Terrorism, July 2006
Medical Staff – Camp Chinnock, Camp for Children with Diabetes, July 2005
Volunteer at emergency Medical Clinic for victims of San Bernardino Fires, October 2003
Pomona Community Health Action Team Committee Member, 1999-2000

PROFESSIONAL MEMBERSHIPS

Osteopathic Physicians and Surgeons 2006 – present
American Academy of Pediatrics, 2002-2007 and 2012 - present
American College of Physicans, 2002-2007
American Osteopathic Association, 1998 – 2002
Sigma Sigma Phi, National Osteopathic Honor Society 1999-2002, 2007-2008

RESEARCH INTERESTS

2006 – Case report on iatrogenic hyperglycemia and intracranial hemorrhage in neonates
2000 – Abstract presentation, *Restenosis of Coronary Arteries: Relationship to Chlamydia pneumonia antibody titer*

HOBBIES

Hiking, reading, music, running, yoga, wood refinishing, soccer (playing and coaching children), scrapbooking, paddle-boarding, kayaking, travel, camping, SCUBA-certified.

CURRICULUM VITAE

Personal Data

Name: Kathleen Dorothy Rusk, P.A.-C, M.A.

Address:
Home: 11961 Miro Circle
San Diego, CA 92131
(858) 566-1244

Business: San Diego Sports Medicine & Family Health Center
6699 Alvarado Road, Suite 2100
San Diego, CA 92120
(619) 229-3909

Date of Birth: 5/13/55
Place of Birth: Milwaukee, WI
Citizenship: U.S.A.
Social Security #: 387-62-7214

Licensure/ Certification

California Physician Assistant – CA 13657, Exp. 5/31/13
NCCPA-Physicians Assistant with special recognition in Primary Care
American College of Sports Medicine-Exercise Specialist, CPR – 09/13.

Employment

Physician Assistant

San Diego Sports Medicine and Family Health Center-Full Time
6699 Alvarado Road, Suite 2100, San Diego, CA 92120
July 1998 - Present

Stanford Primary Care Program - Clinical Instructor-Part Time
1215 Welch Road, Modular G., Palo Alto, CA 94305
July 1997- Present

Sharp Grossmont Family Practice-Full Time
5525 Grossmont Center Dr., #200, La Mesa, CA 91942
July 1996-July 1998

Clinical Exercise Physiologist/Director of Health Enhancement

San Diego Sports Medicine and Family Health Center
1981-1995

Executive Health Program-Scripps Clinic and Research Foundation
1980-1981

Cardiac Rehabilitation Program-Alvarado Hospital Medical Center
1978-1981

Cardiopulmonary Technician

Rancho San Diego Medical Group
1978-1980

Education

Stanford University Primary Care Associate Program, January 1996
Received accreditation for Physician Assistant

San Diego State University, December 1981
M.S. Degree, Exercise Physiology

University of Wisconsin, June 1978
B.S. Degree, Nutritional Science

Honors

Captain – University of Wisconsin Women's Cross Country and Track Teams
University of Wisconsin –Lettered 4 years in Cross Country and Track

Teaching Experience

Stanford Primary Care Program Clinical Instructor
Conduct site visits for students in San Diego area; assist with practicum exams, inpatient coordinator for students for hospital rotations, lectures and evaluate placements/students with prospective preceptors.
July 1997-Present

UCSD Extension Fitness Instructor Course

Western University of Health Sciences College of Osteopathic Medicine of the Pacific, Guest Lecturer

Nike Symposium, Prevention of Injuries for High School Athletes, Guest Lecturer

Research

Sub-Investigator, "An Open Label 52-Week Study To Evaluate The Safety and Efficacy of Tegaserod (6 mg. BID and 12 mg OD) Given Orally For The Treatment of Opioid-Induced Constipation (OIC) In Patients With Chronic Non-Cancer Pain", Novartis Pharmaceuticals, 2007

Sub-Investigator, "A Randomized, Double-Blind, Active-Controlled, Multicenter Study To Compare The Effect of 24 Weeks Treatment With A Fixed Combination Therapy of Vildagliptin and Metformin To The Individual Monotherapy Components In Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals, 2007

Research Cont'd

Sub-Investigator, "A Phase 3, Randomized, Multicenter, Double-Blind, Allopurinol-Controlled Study Assessing The Efficacy and Safety of Oral Febuxostat In Subjects With Gout", TAP Pharmaceutical Products, Inc., 2007

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Phase III Study of The Efficacy, Tolerability and Safety of Ketoprofen Topical Patch, 20% (KTP) In The Treatment of Pain Associated With Tendonitis or Bursitis of The Shoulder, Elbow, or Knee", Endo Pharmaceuticals, Inc., 2006

Sub-Investigator, "An 8-Week, Multicenter, Randomized, Double-Blind, Parallel-Group Study To Evaluate The Efficacy and Safety of The Combination of Valsartan/HCTZ/Amlodipine Compared To Valsartan/HCTZ, Valsartan/Amlodipine, and HCTZ/Amlodipine In Patients With Moderate To Severe Hypretension", Novartis Pharmaceuticals, 2006

Sub-Investigator, Randomized, Double-Blind Trial of The Combination of Carisprodol 250 mg. Tablets and Diclofenac 50 mg. Tablets Compared To Placebo and Either Product Alone In Patients With Acute, Painful Musculoskeletal Spasm of The Lower Back", MedPointe Pharmaceuticals, 2006

Sub-Investigator, "A Randomized, Double-Blind, Multicenter Study Comparing The Effects of Carvedilol Modified Release Formulation (Coreg ™ MR) and Atenolol In Combination With and Compared To An Angiotensin Converting Enzyme Inhibitor (Lisinopril) On Left Ventricular Mass Regression In Hypertensive Patients With Left Ventricular Hypertrophy (LVH)", GlaxoSmithKline, 2006

Sub-Investigator, "Randomized, Double-Blind Trial of Carisoprodol 250 mg. Tablets Compared To Placebo In Patients With Acute, Painful Muscusloskeletal Spasm of The Lower Back", Endo Pharmaceuticals, 2005

Sub-Investigator, "A Double-Blind, Placebo-Controlled Evaluation of The Safety and Efficacy of Three Doses of Topically Applied Ketoprofen Transfersome ® Gel (KTG) In Comparison To Oral Naproxen For The Treatment of The Signs and Symptoms of Osteoarthritis of The Knee", McNeil Consumer & Specialty Pharmaceuticals, 2005

Research Cont'd

Sub-Investigator, "Pulmonary Outcomes Within A 2-Year Period In Subjects With Diabetes Mellitus Treated With Technosphere ®/Insulin or Usual Antidiabetic Treatment and In Subjects Without Abnormalities In Glucose Control", Mannkind Corporation, 2005

Sub-Investigator, "An 8-Week Randomized, Double-Blind, Parallel Group, Multicenter, Placebo and Active Controlled Dose Escalation Study To Evaluate The Efficacy and Safety of Aliskiren (150 mg. and 300 mg.) Administered Alone and In Combination With Valsartan (160 mg. and 320 mg.) In Patients With Hypertension", Novartis Pharmaceuticals, 2005

Sub-Investigator, "A 6-week, Multicenter, Randomized, Double-Blind, Parallel-Group Study to Evaluate The Combination of Valsartan/HCTZ (160/12.5 mg. With Forced Titration To A Maximum Dose of 320/25 mg.) Compared To Valsartan Monotherapy (160 mg. With Forced Titration to 320 mg.) As Initial Therapy In Patients with Severe Hypertension," Novartis Pharmaceuticals, 2005

Sub-Investigator, "A Multicenter, Randomized, Double-Blind Study To Compare The Effects of 24 Weeks Treatment With LAF237 (50 mg. QD, 50 mg. BID or 100 mg. OD) To Placebo in Drug Naïve Patients With Type 2 Diabetes", Novartis Pharmaceuticals, 2005

Sub-Investigator, "A Randomized, Double Blind, Placebo-Controlled, Multicenter, Phase III Study of Rosuvastatin (Crestor ®) 20 mg. In The Primary Prevention of Cardiovascular Events Among Subjects With Low Levels of LDL-Cholesterol and Elevated Levels of C-Reactive Protein", Astra Zeneca, 2005.

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group, Multicenter Study To Compare Clinical Health Outcomes of Telithromycin Versus Azithromycin In Out Patients With Community-Acquired Lower Respiratory Tract Infections", Aventis, Inc., 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Sub-Investigator, "A Multicenter, Double-Blind, Randomized, Parallel-Group Study to Compare the Effect of 24 Weeks Treatment with LAF237 (50 mg qd or bid) to Placebo as Add-On Therapy to Glimepiride in Patients with Type 2 Diabetes Inadequately Controlled with Metformin Monotherapy", Novartis Pharmaceuticals, 2004

Research Cont'd

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled Study Evaluating Acetaminophen Extended Release (3900 mg/day) in the Treatment of Osteoarthritis of the Hip or Knee", Chiltern International, Inc., 2004

Sub-Investigator, "A Randomized, Open-Label Study Comparing the Efficacy and Safety of Lidocaine 5% Patch with Celecoxib 200 mg in Patients with Chronic Axial Low Back Pain", Endo Pharmaceuticals, 2004

Sub-Investigator, "To Compare the Effects of Continuous Low-Level Heat Wrap Therapy Alone and Combined with Active Exercise Versus Active Exercise Alone on the Functional Ability of Acute Low Back Pain Patients", Proctor & Gamble Company, U. S. Spine & Sport Foundation, 2004

Sub-Investigator, "A Randomized, Double-Blind, Parallel-Group, Active-Controlled, Placebo-Controlled, Multicenter Trial to Study the Efficacy and Safety of Cyclobenzaprine HCL Modified-Release (CMR) 15 mg and 30 mg in Subjects with Pain Due to Muscle Spasms of Local Origin", Omnicare Clinical Research, 2003

Sub-Investigator, "A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study of the Efficacy and Safety of Dutasteride 0.5 Administered Once Daily for Four Years to Reduce the Risk of Biopsy-Detectable Prostate Cancer" GlaxoSmithKline, 2003

Sub-Investigator, "A Randomized, Double-Blind, Multicenter, Multifactorial, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Valsartan (160 and 320 mg) and Hydrochlorothiazide (12.5 and 25 mg) Combined Alone in Hypertensive Patients", Novartis Pharmaceuticals, 2003

Sub-Investigator, "An Epidemiologic Program to Estimate the Population Prevalence of Hypogonadism in Men", Solvay Pharmaceuticals, 2003

Sub-Investigator, "The Objective of Multicenter, Prospective, Open-Label, Crossover Study is to Document and Compare the Time for Migraine Patients to Become Headache free in Response to Treatment with Maxalt® (Rizatriptan Benzoate) Versus the Patient's Usual Oral Migraine Medication Over 2 Migraine Attacks", Access Medical Group, LTD, 2003

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m.downs37@gmail.com

Matthew Alan Downs

Objective

To obtain a position that will challenge me, allow me to grow and fully utilize the skills I have attained thus far.

Experience

March 2011-Present

San Diego Sports Medicine

Exercise Physiologist

San Diego, CA

Perform Exercise stress tests, blood value consultation and functional fitness testing on Firefighters, as well as provide continuing education and individual programming. Perform VO_2 max tests and Resting Metabolic Rates for athletes and the general population as part of the SDSM Peak Performance program.

March 2010 – Present

YMCA

Floor Staff/Personal Trainer

La Mesa, CA

Train clients, orient members to the gym, and ensure safety of the members while exercising.

January 2010 – May 2011

San Diego State University

Graduate Teaching Assistant

San Diego, CA

Instructed an Exercise, Fitness and Health class. Educate students on exercise programming and prescription. Lectured, administered practical exams and assigned final grades.

September 2006- October 2009

Education

August 2009 – May 2011 **San Diego State University** **San Diego, CA**

- Master's in Exercise Physiology
- 3.75 GPA

August 2006- May 2009 **San Diego State University** **San Diego, CA**

Major: Kinesiology: Fitness, Nutrition, and Health

- Received B.S. in May 2009
- 3.95 GPA
- Golden Key Honor Society
- Phi Kappa Phi Honor Society
- Graduated Summa Cum Laude

2004 – July 2006 **College of the Sequoias** **Visalia, CA**

Major: Kinesiology; Athletic Training

- 4.0 GPA

2000-2004 **Exeter Union High School** **Exeter ,CA**

Hobbies/Interests

Weight Training, Golfing, Soccer, Tennis, Coffee Roasting, Video Games and all things technology based.

Other Qualifications

Registered EMT-B in San Diego.

Writing weekly exercises for publication in the San Diego Union Tribune.

CSCS- NSCA.

FMS Certified.

CPR and First Aid Certified.

3825 First Avenue #221
San Diego, CA 92103
(717)-343-6110
bjmcclin@gmail.com

Rebecca J. McClintock

Objective

To obtain a position in the health & wellness field that utilizes the skills developed through work and school experience.

Experience

August 2011-present San Diego Sports Medicine, San Diego, CA

Clinical Coordinator, Exercise Physiologist

- Oversee a team of 5 exercise physiologists during daily testing of Southern California Firefighters during their annual Wellness visits
- Conduct exercise stress tests on the treadmill or bicycle
- Test & analyze functional strength and flexibility of firefighters and recommend/teach programs based on individual strengths/weaknesses
- Measure body composition using skin calipers, test pulmonary function, and screen vision & hearing
- Nutrition consulting based on cholesterol and glucose laboratory values

February 2011-May 2011 University City Physical Therapy San Diego, CA

Metabolic Testing (Intern)

- Performed VO_2 max tests for endurance athletes
- Measured lactate threshold and explained results using data and graphs
- Determined body composition using skin calipers

August 2006-July 2010 University City Physical Therapy San Diego, CA
Drayer Physical Therapy Hershey, PA

Physical Therapy Aide

- Set-up patients on heat, ice, electrical stimulation, performed ultrasounds, etc.
- Instructed/assisted patients with exercise programs & supervised them as they used different machines in the clinic.
- Cleaned, repaired, and maintained facility equipment.
- Assisted PTs and PTAs in various ways as needed.

July 2005-June 2006 Logos International School Phnom Penh, Cambodia

Health & Physical Education Teacher

- Designed & implemented the first physical education (PE) for Logos and taught PE classes to students in grades K-10
- Developed and taught health curriculum for grades 8-10.
- Initiated and co-directed 1st annual Track & Field Day for elementary students in association with three other international schools in Cambodia.

Education

2010-2011 San Diego State University San Diego, CA

- M.S. Exercise Physiology

1998-2002 Messiah College Grantham, PA

- B.S. Nutrition & Dietetics; minor in Sport & Exercise Science

Certifications

- *Clinical Exercise Specialist*, American College Of Sports Medicine
- *Certified Strength and Conditioning Specialist*, National Strength and Conditioning Association

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San Diego, CA 92123
(714) 401-1226
kayligibbs02@yahoo.com

Kayli Gibbs, MS, CSCS

Experience

May 2013-Present San Diego Sports Medicine San Diego, CA

Exercise Physiologist and Nutritionist

- Promote a lifestyle of healthy eating and physical activity to 1,200+ firefighters throughout San Diego County
- Develop education materials regarding nutrition, physical activity, stress management, sleep patterns, and injury prevention for firefighters
- Administer exercise stress tests, strength and flexibility assessments, nutrition risk screen, and audio, visual, and pulmonary function tests for firefighters
- Instruct boot camps and yoga classes for firefighters and administrative staff

March 2013-June 2013 LifeWellness Institute San Diego, CA

Exercise Physiologist and Nutritionist

- Administered and interpreted exercise stress tests
- Provided recommendations and goal-setting for physical activity and nutrition
- Administered resting metabolic rate, audio & visual, and pulmonary functions tests

May 2008-May 2013 Aztec Recreation Center San Diego, CA

Membership Services Lead Supervisor

- Hired, trained, and scheduled 20-25 student membership staff
- Provided front-line customer service and sales to 16,000+ members
- Accurately entered data for all members and reconciled daily inventory count
- Instructed annual safety meeting, CPR/AED, First Aid & biohazard training

Jan. 2011-May 2013 San Diego State University San Diego, CA

Teacher's Assistant – Exercise Physiology Laboratory

- Taught fundamentals of exercise physiology and research design
- Aided in the management of the Kasch laboratory

Aug. 2011-May 2013 San Diego State University San Diego, CA

Teacher's Assistant – Exercise, Fitness & Health Laboratory

- Developed and presented lectures utilizing the American College of Sports Medicine Guideline's to Exercise Prescription and Programming
- Provided information on the values of physical activity as it relates to health
- Demonstrated the proper techniques for various body composition,

cardiorespiratory, and musculoskeletal fitness assessments
- Administered and evaluated practical examinations

Education

May 2013 San Diego State University San Diego, CA
- Dual Master's degree in Exercise Physiology & Nutritional Sciences

May 2010 San Diego State University San Diego, CA
- Bachelor of Science in Kinesiology, *Emphasis Fitness, Health, & Nutrition*

Certifications

- *Strength and Conditioning Specialist*, National Strength and Conditioning Association
- *Health Fitness Specialist*, American College of Sports Medicine
- *CPR, AED and First Aide,* American Heart Association

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(858) 610 5317
miasgreen@gmail.com

Mia Green

Experience

January 2011-present Sharp Cardiac Rehabilitation Center, San Diego, CA

Exercise Specialist

- Monitoring of outpatient exercise sessions and development of safe and effective exercise prescriptions in accordance with established guidelines
- Educate patients on home exercise guidelines, secondary risk factor reduction including heart-healthy nutrition
- Communicate patient progress/adverse events within multidisciplinary team
- Cardiac inpatient (phase I) visits

June 2011-Present San Diego Sports Medicine San Diego, CA

Exercise Physiologist

- Conduct maximal/sub-maximal treadmill and bike exercise stress tests for firefighters and family practice patients
- Create individualized exercise programs based on ACSM guidelines
- Conduct basic nutritional evaluations (blood work review) and give basic nutritional advice on heart healthy diet
- Create handouts and presentations to educate individuals on all aspects of exercise and diet. Presentations are presented at fire stations in San Diego City and county.

August 2007-Jan 2011 Wesley Palms Retirement Community San Diego, CA

Personal Trainer and Group Fitness Instructor

- Conduct various exercise classes (balance & mobility, aqua exercises, and chair exercises)
- Evaluate residents' fitness level & design individual exercise plans accordingly
- Work in close conjunction with physical therapists and continue with post-surgery rehabilitation (e.g. hip replacements, knee replacements)

Education

December 2010 San Diego State University San Diego, CA

- Dual Master of Science, Exercise Physiology and Nutritional Sciences

July 2006 University of Stuttgart Stuttgart, Germany

- Bachelor of Science, Physical Education

July 2006 University of Hohenheim Hohenheim, Germany

- Bachelor of Science, Biology

January – December 2003 San Diego State University San Diego, CA

- Study abroad: Kinesiology

Certifications

Certified Clinical Exercise Specialist, American College of Sports Medicine

Certified Personal Trainer, American College of Sports Medicine

Basic Life Support for Healthcare Providers (CPR and AED), American Heart Association

Certified Vinyasa Yoga Teacher (200 hours) – Yoga Alliance

Other

Permanent resident

1586 Everview Road
San Diego, CA 92110
(619) 559-0488
kate.s machado@gmail.com

Kate Schluter Machado, MS, RD, CSSD

Experience

April 2014-present UCSD Eating Disorder Treatment Center, San Diego, CA

Eating Disorder Dietitian

- Perform comprehensive nutrition assessments for adults and adolescents in inpatient and outpatient settings with weekly follow-ups
- Consult with patients and families concerning nutritional needs/goals
- Develop meal plans for patients based on individual energy needs to support weight gain, weight loss, or weight maintenance
- Plan and execute nutrition groups and educational programs for patients, families, and staff

June 2013-Present San Diego Sports Medicine San Diego, CA

Sports Dietitian

- Perform comprehensive nutrition assessments for firefighters & athletes
- Counsel/recommend nutrition action plans for improved performance/health
- Deliver nutrition presentations on varied topics at fire stations in San Diego

October 2014-Present University of San Diego San Diego, CA

Sports Dietitian

- Perform comprehensive nutrition assessments for collegiate athletes
- Counsel/recommend nutrition action plans for improved performance/health
- Deliver nutrition presentation on varied sports nutrition topics
- Develop training table menus for home and away competitions

January 2013-Sept 2013 US Olympic Training Center Chula Vista, CA

Sports Dietitian

- Counseled athletes living at the training center and those who came in for camps regarding optimal diets for training needs
- Created weekly recipes and logs for website
- Supervised menus in the training kitchen

Education

Fall 2012-Present University of California, San Diego San Diego, CA

- Doctorate of Public Health, Health Behavior (in progress)

2009 California State University, Long Beach Long Beach, CA

- M.S. Exercise Physiology and Nutrition

2006 University of California, Berkeley Berkeley, CA

- B.S. Nutritional Sciences

Certifications

- *Registered Dietitian*, American Dietetic Association
- *Certified Specialist in Sports Dietetics*, American Dietetic Association
- *Intuitive Eating Certified Counselor*
- *Certificate of Childhood and Adolescent Weight Management*, American Dietetic Association

(619) 727-8334
Brittany Davis4069@gmail com

Brittany Ann Davis

Experience

March 2009-present United States Air Force Reserves, USA

Aeromedical Evacuation Flight Medic

- Prepares patients and equipment for flight
- Assists flight nurse with in-flight patient care and documentation
- Monitors safety and security of patients, crew, and aircraft during in-flight or ground operations
- Operates specialized aircraft life support equipment, medical devices and aircraft systems related to patient care

June 2014-Present San Diego Sports Medicine San Diego, CA

Medical Assistant

- Prepares patients for examination by performing preliminary physical tests, taking blood pressure, height, weight and recording patients' health history
- Administers and records all patient vaccinations, collects and analyzes patient specimens and performs ancillary tests including audiology, spirometry and visual accuracy exams
- Assists with administrative duties, inventories, and requisition supplies

Education

May 2012 San Diego Mesa Community College San Diego, CA

- A.A. Pre-Nursing
- A.A. Psychology

Certifications

- *CPR/BLS*, American Dietetic Association
- *EMT*
- *Military combat and water survival training*

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davoropeza@gmail.com

Davina Oropeza

Experience

November 2007-Present San Diego Sports Medicine, San Diego, CA

Administrative Assistant

- Prepare charts and information for firefighters when they are scheduled for their wellness exam
- Check multiple phone lines, messages, and emails
- Prepare and track the DMV, DL51 forms
- Update patients' information into data base
- Check patients in and out
- Track and update the list of the HAZMAT and USAR teams
- Contact firefighters to make sure follow-ups are completed
- Schedule and confirm appointments
- Fill out x-ray cards for each patient
- Write out billing slips for each patient
- Work with the billing department to make sure everything is billed correctly

Medical Records

- Pull and file charts
- Box, label and track retired patients' carts
- File patient forms in the correct order into their chart
- Organize filing closet
- Make new charts for each patient

August 2005-2007 Horizon Christian Pre-School, San Diego, CA

Teacher Aide

- Assisted the teacher with taking care of the children
- Constructed learning and art projects
- Playground supervisor
- Supervisor of closing where I verified each parent that was picking up their child and making sure the building was locked up for the night

Education

2004 Lighthouse Christian Academy, San Diego , CA

- High school graduate

Present Mesa College, San Diego ,CA

- Some college

Dr. Steven Birch
steven@birch.org
858 353 8808

Multi-Disciplinary full stack Solutions Provider
Web enabled database and geo-spatio-temporal applications

OBJECTIVES:
Passionate about the way people interact with information, I develop information systems, including visualizations, to facilitate timely decision making process, from the physician's desk through to global disaster response and humanitarian assistance. My eclectic knowledge and interest base, as well as skill set, allows for agile development and emergent requirements as clients discover new needs through research and development feedback loops.

EDUCATION:

B.Sc.	Biochemistry & Zoology	[1990]
B.Sc. Honors	Biochemistry	[1992]
Ph.D.	Electrical & Computer Systems Engineering (Biomedical Engineering) (Monash University, Australia)	[1999]

EMPLOYMENT:
1993 - 1999 : Lecturer, Electrical & Computer Systems Engineering, Monash University, Australia
1999 - 2001 : Webmaster/Webdesigner/Systems Engineer/Systems Administrator. Neuroflex Fremont,CA
2005 - 2012 : Adjunct Faculty - Homeland Security Masters Degree Program, SDSU, San Diego, CA
2010 – 2012 : Technology Consultant, Knowledge Bridge International, Herndon, VA

2002 - Now : Senior Scientist, SDSU Visualization Center, San Diego, CA (subject to grant availability)

2005 - Now : Medical Data Architect, San Diego Regional Firefighters Wellness Program
2008 – Now : CAITO, Welltivia Healthcare, San Diego, CA
2008 – Now : Multi-disciplinary Solutions Architect / Integrator, EW Wells Group LLC, Dallas, TX

REPRESENTATIVE PROJECTS:

Executive Office of the President - Office of National Drug Control Policy: Drug Target Mapping System Visualization procedures and product [2008-9]

CaliBaja Binational MegaRegion: (San Diego Co, Imperial Co, Baja California) – Asset map database and web interface system, cited as pioneer in binational cooperation in Whitehouse press release [2011-12]

Global Humanitarian Assistance / Disaster Response (HADR) : DOD USN

Counter-Narcotic/Counter-Insurgency/Human Trafficking Data Visualization : EOP ONDCP, DIA

Operational Field deployments, Communications and Sensor networks : SDPD, SDSD, LASD, DARPA, DOD

Unmanned Aerial Vehicle Data fusion / Search and Recovery Missions : in house UAS platform

Near real-time data fusion and visualization : on call

Specialty Education of Homeland Security Masters Students and others : incl. SDPD officers, local & international state and federal attorneys office, 911 operators

Database and complex interface design and use : Firefighter Wellness Programs, African Medical Missions, Executive Wellness, Psych Assessment Systems, Other

-National Geospatial Intelligence Agency []

-U.S. Department of Defense, US Navy, Navy Non Class enclave and HA/DR GIS and emergency product [2008 - 2011]

-San Diego Police Department - Support to Critical Incident Management Unit, Public Safety Surveillance and Ongoing Technology Evaluations [2005 - 2010]

-San Diego State University Police Department, Rapid field deployment of surveillance systems [2007 - 2011]

-San Diego Firefighters Regional Wellness Medicine, Firefighter's wellness research database and firefighter instrumentation and communication [2006-present]

-U.S. Department of Defense, Bagram Airforce Base, Afghanistan: Installation of MedWeb telemedicine system in base hospital [2007]

-San Diego Police Department, Mission Beach Community, Camera design, placement, and effectiveness for public-safety applications [2006]

-Office of Secretary of Defense: Operation Strong Angel II and III [2004], [2006]

-Office of Secretary of Defense, Ariz. State Univ. Culinary Intelligence [2006] associated with Ariz. State Univ. Decision Theatre

-Office of Secretary of Defense research at Burning Man (Satcom / Crowd Surveillance / Vehicle/Aircraft tracking) [2002,2003, 2004, 2005, 2007]

-San Diego Sheriff's Department, Imperial Beach and El Cajon, surveillance [2003][2004]

-Los Angeles Sheriff's Department, Emergency Operations Bureau Support detail: Rose parade video surveillance [2007] [2008]

-SRA Los Angeles Terrorism Early Warning Exercises, Domestic Emergency Response Information System [2003], Gameroom [2003], Operation Talavera [2004], Operation Chimera [2005]

-US Navy Humanitarian Reachback & GIS Support: Banda Aceh earthquake, Indonesia [2005], Merapi Volcano, Indonesia [2006], Iraq [2006] Hurricanes Rita, Katrina [2005], Afghanistan [2006], Yogyakarta, Indonesia [2006]

-DARPA Grand Challenge Autonomous Vehicle Tracking [2004]

-SANDIA National Labs: Mentor-Pal system [2003]

-Iraq conflict: medical reachback support for humanitarian assistance [2003]

-VOC (Virtual Operations Center) [2003]

-National Reconnaissance Office Knowledge Fountain [2002]

-DARPA HumanID Biometrics [2002]

OTHER EXPERIENCE and PROFESSIONAL MEMBERSHIPS
2006 - Present: UCLA HIPAA Certification

AWARDS
02/2003 Certificate of Appreciation - Superbowl XXXVII Public safety - San Diego Police Department
07/2003 Meritorious Achievement - MENTOR/Pal Team - Sandia National Laboratories
05/2004 Grand Challenge Certificate - Defense Advanced Research Projects Agency
08/2005 Letter of Appreciation - Fourth of July Public safety support - San Diego Police Department
03/2006 Certificate of Completion - UCLA - HIPAA Privacy Rule Research Education Course
Certificate of Completion - UCLA - Protecting Human Research Subjects in Social and Behavioral Research
Certificate of Completion - UCLA - Protecting Human Research Subjects in Biomedical & Genetics Research

MILITARY SERVICE
1987 - 1990 Australian Defense Forces Army Reserve
Infantry / Signals / Transport Driver / Recruit Counsellor

University of California San Diego
Curriculum Vitae

Date Prepared: March 2015

Name: Atul Malhotra

Office Address: UCSD Pulmonary and Critical Care Medicine
9300 Campus Point Drive, MC 7381, La Jolla, CA 92037

Home Address:

Work Phone: 858-657-6159

Work Email: amalhotra@ucsd.edu

Work FAX: 858-657-7107

Place of Birth: Edmonton, Alberta, Canada (Visa Status: Green Card)

Education

6/1988	B.S.	Major: Chemistry	University of Alberta, Edmonton, Alberta, Canada
6/1992	M.D.	Medicine	University of Alberta

Postdoctoral Training

7/1992-6/1993	Intern	Transitional	St. Thomas Medical Center, Akron, OH
7/1993-6/1996	Resident	Internal Medicine	Mayo Clinic, Rochester, MN
7/1996-6/2000	Clinical and Research Fellow	Pulmonary/Critical Care Medicine	Harvard Medical School (HMS) Combined Program: Massachusetts General Hospital (MGH), Brigham and Women's Hospital (BWH), Beth Israel Deaconess Medical Center , BIDMC), and West Roxbury VA Medical Center, Boston, MA
5/1998-6/2000	Research Fellow	Medicine PI: David P. White	Harvard Medical School

Faculty Academic Appointments

2000-03	Instructor	Medicine	Harvard Medical School,
2003-2008	Assistant Professor	Medicine	Harvard Medical School
2008-2013	Associate Professor	Medicine	Harvard Medical School
2013-	Professor	Medicine	UC San Diego School of Medicine

Appointments at Hospitals/Affiliated Institutions

6/1999-6/2013	Staff Physician	Sleep	Sleep Health Centers, Boston, MA
7/2000-6/2013	Assistant in Medicine	Medical ICU	Massachusetts General Hospital
7/2000-6/2013	Associate Physician	Medicine (Sleep Medicine, Pulmonary & Critical Care Medicine	Brigham and Women's Hospital
7/2003-6/2013	Staff Physician	Pulmonary/Critical Care	Beth Israel Deaconess Medical Center
2/2012-	Attending Physician	Intensive Care Unit	King Faisal Hospital, Kigali, Rwanda
7/2013-	Attending Physician	Pulmonary & Critical Care Medicine	UC San Diego Health System
6/2014-	Attending Physician and ICU co-director	Pulmonary & Critical Care Medicine	Temecula Valley Hospital

Major Administrative Leadership Positions

Local

2/2000-	Co-Director, Health Science and Technology Respiratory Physiology and Pathophysiology (HST 100)	Massachusetts Institute of Technology and Harvard Medical School, Boston, MA
7/2000-	Co-Founder and Co-Organizer of weekly teaching session for Pulmonary and Critical Care and Anesthesia fellows	MGH, BWH, BIDMC
4/2006-2012	Medical Director	Sleep Disorders Research Program Brigham and Women's Hospital
4/2006-2012	Clinical Chief	Division of Sleep Medicine, Brigham and Women's Hospital
4/2008-	Co-Director	American Academy of Sleep Medicine (AASM) Comprehensive Academic Sleep Program of Distinction for Brigham and Women's Hospital
2/2011-	Director of Clinical Training for HMS Sleep Division T32 Training Grant	Sleep Medicine Division, Harvard Medical School

National

2005-2008	Director and Organizer, National Sleep Medicine Course	American Academy of Sleep Medicine (AASM), held in Chicago, Il or Denver, CO
2010	Chairman and Organizer	National Heart Lung and Blood Institute (NHLBI) workshop on Molecular Mechanisms Underlying Sleep Apnea, Bethesda, MD
2010-2011	Co-Founder and Co-Organizer/Director	Sleep State of the Art Course for the American Thoracic Society (ATS), held in Miami, FL or San Diego, CA

Committee Service

Local

2006-	Accreditation Council for Graduate Medical Education (ACGME) Fellowship Selection Committee	Member, Brigham and Women's Hospital
2006-2012	Clinical Directors of Department of Medicine	Member, Brigham and Women's Hospital
2007-	Editorial Board, Sleep and Health Education	Member, Harvard Medical School
2007-	Training Grant Writing Committee	Member, Brigham and Women's Hospital and Harvard Medical School, Co-Chairman since 2011- (received priority score of 15, funded)
2007-	Tracking and Evaluation Sub-Committee	Member, Harvard Medical School Sleep Medicine Division
2007-	Trainee Selection Committee	Member, Brigham and Women's Hospital

2009-	Faculty Review Committee	Member, Harvard Medical School Sleep Medicine Division
2013-	Jacobs Planning and Transition Committee	Member, UCSD
2013-	Department of Medicine Executive Committee	Member, UCSD
2013-	Medicine Council	Member, UCSD
2013-	Cardiovascular Council, Sulpizio	Member, UCSD
2013-	Search Committee for Associate Director of CTRI	Member, UCSD
2014-	International Core of the UCSD Center for AIDS Research	Member, Advisory Board
2014-	Institute of Engineering in Medicine (IEM), UCSD	Member, review panel Galvanizing Engineering and Medicine phase I
2014-	Critical Care Executive Committee/Council	Chair, UCSD
2014-	Professional Standards Committee	Member UCSD

National

2005-	Abstract Reviewer	Association of Professional Sleep Societies Member
2008-2009	Program Committee	International Sleep and Breathing Meeting, Pittsburgh, PA Member
2008-2009	Advisory Committee	International Dyspnea Symposium Member
2009-	End Point Adjudication Committee	Pfizer, New York
2010	Data Safety Monitoring Board (DSMB)	University of Pennsylvania, Cardiovascular Effects of Obstructive Sleep Apnea (COSA) study Member
2011	Future Research Needs in the Diagnosis of Obstructive Sleep Apnea	Agency for Healthcare Research and Quality (AHRQ) Expert Member

2011	DSMB	University of Pennsylvania Program Project Grant, Philadelphia, PA Member
2011	Advisory Committee	Comparative Outcomes Management with Electronic Data Technology (COMET) Study, Stanford University, Palo Alto, California Expert Member
2011	DSMB	American Lung Association study Member
2012-	Abstract Review	American Society of Clinical Investigation (ASCI) and American Association of Physicians (AAP) Reviewer for annual meeting
2012-	Sleep and Circadian Rhythm External Advisory Group	Canadian Institute of Health Research (CIHR) Member
2012-	Founding Member	Society of Anesthesia and Sleep Medicine
2013-	Nominating Committee	Society of Anesthesia and Sleep Medicine
2014-	Endpoints Committee in Congestive Heart Failure	American Heart Association writing committee
International		
2006	PhD Thesis Review Committee	University of Melbourne, Victoria, Australia Member
2006	Program Committee	International Sleep and Breathing Meeting, Queensland, Australia Member
2010-	Expert Advisory Panel - Respiratory	Treatment Strategies - The Cambridge Research Centre (Cambridge, UK) Member
2011	Expert Review Panel	Biomedical Research Council: Agency for Science, Technology and Research, Singapore Member

2011	PhD Thesis Review Committee	All India Institute of Medical Sciences, New Delhi, India Member
2012	PhD Thesis Review Committee	University of Manitoba, Canada Member
2012	PhD Thesis Review Committee	University College Dublin, Ireland
2014	PhD Thesis Review Committee	Imperial College London, UK
2014-	Deputy Editor	Sleep

Professional Societies

Society of Critical Care Medicine	1994-	Member
	2006-2009	Adult Multidisciplinary Critical Care Knowledge Assessment Program Member
	2010-2013	Research Committee Member
American College of Chest Physicians	1996-	Member
Royal College of Physicians and Surgeons of Canada	1997-	Fellow
American Academy of Sleep Medicine	1998-	Member
	2004-2007	National Sleep Medicine Course Director
	2005	Nominating Committee of Sleep Disorders Breathing Section Chairman
	2007-	Academic Affairs Committee Member
	2010-	Academic Affairs Committee Vice Chairman
	2010-2011	AASM Future of Sleep Medicine Task Force Invited Member
	2011-	Fellow
Sleep Research Society (SRS)	2005-2008	Member
American Thoracic Society	1996-	Member

(ATS)

2001-2008	Program Committee for Respiratory Neurobiology and Sleep Member (2003-2005)
2003-2005	Program Committee for Respiratory Neurobiology and Sleep Chairman
2004-	Respiratory Neurobiology of Sleep Executive Committee Member
2005-2008	Training Committee Member
2005-2008	Review of Educationally Focused Proposals, Education Committee Chair
2006-2009	Leadership Group of American Thoracic Society and European Respiratory Society Member
2006-2009	International Conference Advisory Group Member
2006-2009	Education Committee Chairman
2006-2009	Documents Committee Member
2006-2009	Clinician's Advisor Committee Member
2006-2008	Website Editorial Board Member
2007-2008	Nominating Committee for Respiratory Neurobiology of Sleep Assembly Elected Member
2008-2011	Sleep and Respiratory Neurobiology Assembly Elected Chairman
2009-2011	Board of Directors Elected Member
2010-2011	Documents Review Board of Directors Chairman
2011-2012	Comparative Effectiveness Research Group Member
2012-	Membership Committee Member
2012-2017	Member, Executive Committee
2012	Elected Secretary Treasurer
2013	Vice-President Member, Finance Committee
2014	President-Elect Chairman, Finance Committee

	2015 2016	**President** Past-President
Society of Anesthesia and Sleep Medicine (SASM)	2011	Founding Member
	2012-	Continuing Education Committee Member
	2012-	Research and Clinical Committee Member
American Society of Clinical Investigation and American Association of Physicians	2012-	Abstract reviewer for annual meeting
Critical Care Society Collaborative (CCSC)	2012-	Executive Committee Member
Association of Pulmonary and Critical Care medicine Program Directors/ ACCP/ATS Education Research Award (AERA) Review Committee	2012-	Member, representative from ATS Executive Committee

Grant Review Activities

2003	Grant & Thesis Reviewer	Health Research Board, Dublin, Ireland
2005	Grant Reviewer (ad hoc), Study Section	National Institute of Diabetes and Digestive and Kidney Disease (NIDDK), National Institutes of Health (NIH), Bethesda, MD
2005	Grant Reviewer	University of Western Australia, Perth, Australia
2006-	Grant Reviewer, Study Section Standing Member (2006-2009) Ad hoc reviewer 2011-	American Heart Association (AHA), Dallas, TX
2006-2009	Grant Reviewer, Beeson Grant Study Section Standing Member	National Institute of Aging (NIA), National Institutes of Health, Bethesda, MD
2008	Grant Reviewer, Program Project	National Heart Lung and Blood Institute (NHLBI)
2008-	Grant Reviewer, Loan Repayment (annually) Standing Member	National Institute of Aging, Bethesda, MD

2009-2011	K23 Study Section Standing Member	National Institutes of Health
2009-	Respiratory Integrative Biology and Translational Research (RIBT) Study Section Ad Hoc Reviewer Standing Member 2011	National Heart Lung and Blood Institute, NIH
2009-	Grant Reviewer	National Institute of Aging (NIA)
2010	Ad Hoc Reviewer	NIDDK
2011-	Ad Hoc Reviewer	NHLBI R13 applications
2011-	Review Committee Member, Vision Grants	Society of Critical Care Medicine
2011	Grant Reviewer	National Medical Research Council Singapore
2012-	Sleep and Circadian Rhythm External Advisory Group (grant review)	Canadian Institute of Health Research (CIHR)
2013-	GEM projects Galvanizing Engineering in Medicine	UCSD School of Engineering and Medical School

Editorial Activities

2009-	Associate Editor	Sleep
2013-	Deputy Editor	Sleep

Ad Hoc Reviewer
Mayo Clinic Proceedings
Sleep
European Respiratory Journal
New England Journal of Medicine
Journal of Applies Physiology
Journal of Clinical Endocrinology and Metabolism
Archives of Internal Medicine
Sleep Medicine Reviews
Circulation
American Journal of Epidemiology
Anesthesiology
Respiratory Research
Critical Care
Journal of the American College of Cardiology
American Journal of Physiology
Journal of the American Medical Association (JAMA)
Annals of Medicine
Medical Hypotheses

Other Editorial Roles

2005-	Member, Editorial Board	Chest
2005-	Member, Editorial Board	American Journal of Respiratory and Critical Care Medicine
2008-	Member, Editorial Board	Sleep
2009	Guest Editor	Progress in Cardiovascular Diseases, issues 51(4) and 51(5)

Honors and Prizes

1984-88	Province of Alberta Scholarship	Alberta Government	First Class Standing and named to Dean's Honor Roll in undergraduate sciences
1992	Rajcoomarie Singh Memorial Achievement Award	Rajcoomarie Singh Memorial	Outstanding achievement in medical school
1992	Ciba book prize for academic achievement	Ciba Pharmaceuticals	Outstanding achievement in medical school

1992	First Class Standing	University of Alberta Medical School	
1992-93	Intern of the Year	St. Thomas Medical Center	
1996	Gold Medal	Mayo Clinic	Outstanding Achievement Award in Residency
2000	Trainee Research Merit Award	Associated Professional Sleep Societies, Las Vegas, NV	Outstanding Research
2001	Teacher of the Year	Massachusetts General Hospital	Internal Medicine Residents Visiting Teaching Award
2001	Teacher of the Year	Harvard Combined Fellowship (BWH, MGH, BIDMC)	Pulmonary and Critical Care fellowship award
2003-	International Health Professional of the Year	International Biographic Centre, Cambridge, UK	
2005	Young Investigator Award, Respiratory Neurobiology and Sleep	American Thoracic Society International Conference, San Diego, CA	Outstanding research potential
2006	Certificate of Appreciation	American Thoracic Society	Outstanding contribution
2008	Presidential Citation	Society of Critical Care Medicine	Outstanding contribution
2008	The Harvard Pulmonary and Critical Care Senior Fellows' Teaching Appreciation Award	Harvard Medical School	Award for outstanding teaching and dedication to teaching
2009	Certificate of Appreciation	American Thoracic Society	Session on "How to pick a mentor"
2009	Certificate of Appreciation	National Heart Lung and Blood Institute	E-mentoring initiative
2010	Certificate of Appreciation	American Thoracic Society	Center for Fellows and Junior Professionals

2010	Top Reviewer Award	Chest	Top 5% of journal reviewers
2010	Best Doctors in America	Best Doctors	Selected by peers
2011	Fellow	American Academy of Sleep Medicine	FAASM (Fellow of the American Academy of Sleep Medicine)
2011	Outstanding Contribution	American Thoracic Society	ATS Board of Directors
2011	Member	American Society for Clinical Investigation (ASCI)	Council member for honorific society (convocation 4/11)
2012	Member	Leading Health Professionals of the World	Selected by International Biographical Centre (IBC) Cambridge, England
2013	Member	Galvanizing Engineering in Medicine	Selection Committee, UCSD
2013	Member	Engineering School Liaison	UCSD
2013	Chairman	Critical Care Council	UCSD
2014	Member	Center for Circadian Biology	UCSD
2014	Member	Who's Who in Medicine Higher Education	Selected
2014	Member	**San Diego's Physicians of Exceptional Excellence**	Selected
2014	Member	**Top Doc's Award San Diego Magazine**	Selected

Report of Funded and Unfunded Projects

Funding Information

Past

1998-2008 Harvard Center on Sleep Neurobiology and Sleep Apnea
NIH/NHLBI P50 HL060292 (SCOR – Specialized Center of Research)
Co-Investigator (1998-2006), Total Direct Costs $1.3M
Major Goal: To study the basic and physiological mechanisms underlying sleep and sleep apnea.

2000-2002 The Influences of Aging, Gender and Obesity on Upper Airway Structure, Function and Ventilatory Stability
American Heart Association Beginner's Grant in Aid
Principal Investigator, Total Direct Costs $100K
Major Goal: To define the mechanisms underlying epidemiological risk factors for sleep apnea.

2000-2003 The Influences of Aging, Gender and of Obesity on Upper Airway Structure, Function and Ventilatory Stability
Medical Research Council Canada, Clinician Scientist Award
Principal Investigator, Total Direct Costs $135,327
Major Goal: To define the mechanisms underlying epidemiological risk factors for sleep apnea.

2001-2005 The Influences of Aging, Gender and Obesity on Upper Airway Structure, Function and Ventilatory Stability
American Heart Association Scientific Development Grant
Principal Investigator, Total Direct Costs $304, 912
Major Goal: To define the mechanisms underlying epidemiological risk factors for sleep apnea.

2003-2010 Sleep Apnea and Obesity: Cardiovascular Risk Assessment
R01 HL73146
Principal Investigator, Total Direct Costs $1,086,487
Major Goal: To understand the independent roles of sleep apnea and obesity on cardiovascular biomarkers.

2004-2008 The Mechanisms Underlying the Aging Predisposition to Obstructive Sleep Apnea
National Institutes of Aging, Paul B. Beeson Award AG024837
Principal Investigator, Total Direct Costs $697,727
Major Goal: To understand why people develop sleep apnea with aging.

2006-2008 Sleep and the Control of the Pharyngeal Musculature
P50 HL060292-09
Principal Investigator, Total Direct Costs $ 477,335 (for 2 years)
Major Goal: To understand the interactions between pharyngeal anatomy, upper airway muscle control and ventilatory instability in the pathogenesis of sleep apnea.

2008-2009 Sepracor: Use of Eszopiclone to Alter Upper Airway mechanics
Principal Investigator, Total Direct Costs $261K to SHC
Major Goal: To assess the role of eszopiclone on upper airway mechanics in rodents and in humans

2007-2008 Philips Respironics: Positive Airway Pressure for the Treatment of Asthma
Principal Investigator, Total Direct Costs $200K to SHC
Major Goal: To perform pilot studies using Bi-Flex with Auto to determine whether lung stretch can affect bronchomotor tone during sleep

2007-2008 Philips Respironics: Use of Bi-Flex with Auto to Rescue Patients with a poor initial experience with CPAP
Principal Investigator, Total Direct Costs $89K
Major Goal: To test the hypothesis that newer technology is better than standard of care CPAP to treat patients with a poor initial experience with CPAP

2011-2012 Sleep Group Solutions: Using of acoustic pharyngometry to assess patients at risk of sleep apnea and adherence to CPAP therapy
Principal Investigator, Total Direct Costs $51K
Major Goal: To assess rhinometry and pharyngometry in patients undergoing a protocol for occupational sleep medicine assessment with a view towards defining objective indices to predict OSA (without the need for subjective report) and possibly to predict adherence with CPAP therapy.

2008-2012 Targeted Sleep Apnea Therapy by Identifying Underlying Mechanisms
0840159N
American Heart Association (AHA) Established Investigator Award
Principal Investigator, Total Direct Costs $454, 545
Major Goal: To identify potential therapeutic targets for sleep apnea by defining underlying mechanisms

2012-2013 Apnex Medical, Hypoglossal Nerve Stimulator Study (HGNS)
Overall PIs: Malhotra, Kezirian; Direct Costs: depend on patient enrollment
Major Goal: To perform a multinational randomized trial to study HGNS for treatment of obstructive sleep apnea

Current

2008-2013 Single Motor Unit Genioglossus Recordings to Understand Sleep Apnea Pathogenesis
R01 HL085188-01A2
Principal Investigator, Total Direct Costs $1,022,456
Major Goal: To perform newer electrophysiological techniques on the upper airway muscles with a view towards defining new therapeutic targets for sleep apnea.

2009-2014 Mechanisms Underlying the Aging Predisposition to Obstructive Sleep Apnea
R01 HL090897-01A2
Principal Investigator, Total Direct Costs $1M
Major Goal: To characterize thoroughly the various mechanisms underlying sleep apnea with a view towards defining why older people are susceptible to sleep apnea

2009-2015 Assessment of Upper Airway Mechanics Using Newer Electromyographic Techniques
K24 HL 093218 – 01 A1
Principal Investigator, Total Direct Costs $803K
Major Goal: A mentoring award to protect the PI's research time for development of young trainees

2009-2014 Program Project Grant
1 P01 HL 095491 - 01 A1
Mechanisms of State Switching in Sleep and Sleep Apnea
Overall PI: Saper, PI of Project 2: Malhotra; Total Direct Costs $1.25M for Brigham Site
Major Goal: To identify the neural circuitry involved in arousal from sleep and to assess the possible role of arousal in the pathogenesis of sleep apnea.

2010-2015 The Modifying the Impact of ICU-Associated Neurological Dysfunction (MIND-USA) Multicenter Clinical Trial
R01- AG035117-01
Overall PI: Ely, Brigham PI: Malhotra; Total Costs: $1.5M/year
Major Goal: To test the hypothesis that anti-psychotic therapy leads to improvement in outcomes among critically ill patients with delirium.

2011-2016 Obstructive Sleep Apnea Increases Cardiovascular Risk in Type 2 Diabetes
1R01HL110350-01A1
MPIs: Malhotra and Veves; Total Costs: $871K/year
Major Goal: To assess the impact of sleep apnea on cardiovascular outcomes in patients with diabetes.

2012-2016 Esophageal Pressure to Guide Mechanical Ventilation in acute respiratory distress syndrome (ARDS)
UM1HL108724
PIs: Talmor and Loring; Brigham PI: Malhotra; Total Costs: $1.5M
Major Goal: To test the role of esophageal manometry in setting mechanical ventilator in ICU patients with acute respiratory distress syndrome.

2014-2016 Resmed Foundation
Sleep Disordered Breathing in Mozambique
Overall PI: Malhotra

Report of Local Teaching and Training

Teaching of Students in Courses

1997-	Patient-Doctor II – Respiratory System Medical School Students	Harvard Medical School 5 hours preparation time per session, 5-10 sessions per year
1998-	Health Science and Technology – Respiratory Physiology and Pathophysiology for MD and PhD students	Massachusetts Institute of Technology and Harvard Medical School 20 hours preparation time per lecture, 3 lectures per year 15 hours preparation time per session, 6 sessions per year

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

2000-	Weekly lecture to Pulmonary & Critical Care and Anesthesiology fellows regarding current clinical and research topics in current basic and clinical literature	MGH, BWH, BIDMC (in addition to duties as co-director and organizer), 10 hours of preparation per week
2000-	Regular lectures to house officers at all of the major teaching hospitals including BWH, MGH and BIDMC, roughly 1-2 per month (Pulmonary, Critical Care, Sleep Medicine)	BWH, MGH and BIDMC

Clinical Supervisory and Training Responsibilities

1999-2000	Attending Physician, Intensive Care Unit, Medical and Surgical	West Roxbury VA Medical Center	One month per year
2000-2002	Attending Physician, Surgical Intensive Care Unit	Brigham and Women's Hospital	6-8 weeks per year
2000-2004	Attending Physician Medical Intensive Care Unit	Massachusetts General Hospital	8 weeks per year
2005-2008	Attending Physician Medical Intensive Care Unit	Beth Israel Deaconess Medical Center	8 weeks per year
2006-	Preceptor	Brigham and Women's	1-2 half days per week

	Sleep Medicine fellows	Hospital	
2006-	Polysomnography Interpretations, supervision of fellows	Brigham and Women's Hospital	1 half day per week
2013-	Chief of Pulmonary and Critical Care	University of California San Diego	10 hours per week
2013-	Director of Sleep Medicine	University of California San Diego	5 hours per week
2014-	Co-director ICU	Temecula Valley Hospital	5 hrs per week

Laboratory and Other Research Supervisory and Training Responsibilities

2000- Mentor/advisor to trainees/junior faculty from all major Boston teaching hospitals **3-4 hours per week**

Based on the breadth of my research and my substantial contacts within my field, I frequently serve as a mentor/advisor to trainees at all of the major teaching hospitals in Boston. I have provided advice to many trainees about manuscript preparation, data synthesis/interpretation, mentor/mentee conflicts, granting mechanisms, response to reviewers and faculty position negotiations. Based on the success of my trainees, I am frequently called upon to serve in this role from individuals from diverse backgrounds/experience. In total I spend roughly 3-4 hours per week in this role and have an open door policy for these types of interactions. These interactions began in 2000 and became more frequent in 2006-present when I achieved the position of Medical Director of the Sleep Disorders Research Program.

Formally Supervised Trainees

1999 Stephanie Crowley (summer student)
Current position: Assistant Professor, Rush University, Chicago, Il

2001 Stan Lazic (summer student)
Current position: Research scientist, Hoffman La-Roche Laboratories, Lausanne, Switzerland

2001- Andrew Wellman, MD (post-doctoral fellow)
Received RO1 funding from NHLBI
Current position: Instructor in Medicine, Harvard Medical School (promotion pending)

2002-04 Michael Stanchina, MD (post-doctoral fellow)
Current position: Assistant Professor, Brown University, Providence, Rhode Island

2003-05 Amy Jordan, PhD (post-doctoral fellow and Instructor in Medicine), Harvard Medical School
Received **AHA** Scientific Development Grant funding (co-mentor: Malhotra)
Amy has 58 publications to date, including 39 with Malhotra as co-author
Current position: Roper Fellow at University of Melbourne, Melbourne, Australia

2005-06 Kate Steiner, MD (post-doctoral fellow)
Current position: Attending Physician, UMass Medical Center, Worcester, MA

2005-06 Andrew Nguyen, MD (post-doctoral fellow)
Current position: Attending Physician, McGill University, Montreal, Quebec, Canada

2005-06 Ednan Bajwa, MD (resident and fellow)
K23 funded from NHLBI (co-mentor: Malhotra).
RO1 funded from NHLBI currently
Current position: Director, Massachusetts General Hospital, Medical Intensive Care Unit

2005-07 Matthias Eikermann, MD (post-doctoral fellow)
Has 73 publications to date, with the majority as first or last author.
Current position: Assistant Professor of Anesthesiology, Massachusetts General Hospital

2005-08 Susie Yim Yeh, MD (post-doctoral fellow)
Won the **Pickwick Fellowship** from the National Sleep Foundation and **Young Investigator Award** from International Sleep & Breathing (Primary Mentor: Malhotra)
Current position: Attending Physician, Kaiser Permanente, Anaheim, CA

2006-07 Yulun Lo, MD (post-doctoral fellow)
Current position: Assistant Professor, University of Taiwan, Taipei, Taiwan

2006-08 Shilpa Rahangdale, MD (post-doctoral fellow)
Awarded a research grant from the **American Sleep Medicine Foundation** (Primary Mentor: Malhotra).
Current position: Attending Physician, North Shore University Health System, Chicago, IL

2006-08 Suzanne Bertisch, MD, MPH (post-doctoral fellow)
Received her **K23** award in July 2009 (co-mentor: Malhotra).
Current position: Instructor in Medicine, Harvard Medical School

2006-2009 Danny Eckert, PhD (post-doctoral fellow)
Won the **Allen & Hanbury** and **CJ Martin Awards** (Australia)
and was funded with an **AHA** Scientific Development Grant (primary mentor: Malhotra).
Current position: University of Sydney junior faculty, Sydney, Australia with 3 awards from NHMRC

2007-2012 Lisa Campana, BS, PhD
PhD completed, Boston University, Boston, MA (primary mentor: Malhotra)
Current position: engineer working at start-up Respiratory Motion

2007- Julian Saboisky, PhD, post-doctoral fellow
Awarded **AHA funding** and SRS travel award for his research (Primary mentor: Malhotra).
Current position: Research Fellow, University of Sydney, Australia

2008- Robert Owens, MD
Pulmonary and Critical Care Fellow, Brigham and Women's Hospital
Received a **National Research Service Award** in July 2009 and received his **K23 from NHLBI in September 2011** (primary mentor: Malhotra).
Awarded James Skatrud Outstanding Young Investigator Award, American Thoracic Society
Current position: Assistant Professor in Medicine, Harvard Medical School

2008- Lichuan Ye, RN, PhD
Awarded a grant from **Sigma Theta Tau Honor Society of Nursing** and **received a fundable score on an NIH R15 grant.**
Current position: Assistant Professor, Boston College, Chestnut Hill, MA

2008- Shamim Nemati, BEng
Current position: Graduate Student, Massachusetts Institute of Technology, Cambridge, MA, defended PhD at MIT December 2012 (co-mentor Malhotra)
Awarded a James S. McDonnell Foundation Postdoctoral Fellowship Program

2008- Ina Djonlagic, MD
Research fellow and junior faculty
Awarded two grants from the American Sleep Medicine Foundation and recently a **K23 from NHLBI** (primary mentor: Malhotra)
Current position: Instructor in Medicine, HMS; Division of Sleep Medicine, BWH

2009-2010 Jay Balachandran, MD
Pulmonary and Critical Care Fellow, Brigham and Women's Hospital
Current position: Assistant Professor, University of Chicago, Chicago, IL

2009- Bradley Edwards PhD, Melbourne, Australia (post-doctoral fellow)
Won the **Allan & Hanbury** and **CJ Martin, ATS travel** award, ATS unrestricted research grant and Anne Surratt Young Investigator Award for his research proposal (primary mentor: Malhotra).
Current position: Instructor in Medicine, Sleep Disorders Program, BWH/HMS

2010- David McSharry, MBBS
Received **AHA post-doctoral fellowship and ATS travel award** (primary mentor: Malhotra)
Current position: Consultancy in Letterkenney, Ireland

2010- Jessie Bakker, PhD
Received **AHA scientific development grant, American thoracic Society grant**
Current position: Instructor in medicine Harvard Medical School

2010- Mary Rice, MD
Received NRSA from NIH
Comentor: Malhotra
Current position: post-doctoral fellow Harvard medical school

2010- Scott Sands, PhD student, Monash University, Melbourne, Australia
Received **AHA** post-doctoral fellowship award (co-mentor: Malhotra)
Received **CJ Martin research award and ATS travel award**
Current position: research post-doctoral fellow, BWH/HMS

2010- Jessica Noggle, PhD, Boston, NIH **F32 award** (co-mentor: Malhotra)
Current position: post-doctoral fellow, BWH/HMS

2010- Eric Kezirian, MD, MPH
Received K12 award (remote mentor: Malhotra)
Current position: Assistant Professor of Otolaryngology, UCSF, San Francisco, CA

2011- Pedro Genta, MD
Received Sao Paulo Research Foundation (FAPESP) grant (primary mentor: Malhotra) and **American Heart Association** post-doctoral fellowship.
Current position: post-doctoral fellow, Malhotra laboratory

2011- Mihaela Teodorescu
Received: **Merit Award from the Department of Veteran Affairs (VA)** (remote mentor: Malhotra).
Current position: Associate Professor with tenure, University of Wisconsin (Madison), Madison, WI

2011- Karim Awad, MD
Received: **AHA Fellow to Faculty Award** (Primary Mentor: Malhotra, award relinquished by choice).
Current position: Attending Physician, Harvard Medical School

2012-	Natalie Shaw, MD Received **K23 award from NIH** (co-mentor: Malhotra), Current position: Instructor in Medicine, Harvard Medical School
2012-	Puja Kohli, MD Received NRSA from NIH Current position: fellow Harvard Medical School
2013-	Kathleen Corey, MD Received **K23 award from NIH** (co-mentor Malhotra) Current position: Instructor in Medicine, Harvard Medical School
2013-	Jeremy Orr, MD Awarded CESAMH fellowship VA health system Current position: UCSD pulmonary and critical care fellow
2013-	Katie Sarmiento, MD, MPH Awarded American Sleep Medicine Foundation grant Current position: Assistant Professor of Medicine UCSD
2014-	Rachel Jen, MD Received UBC Clinician Investigator Program award (mentor: Malhotra) Current position: incoming post-doctoral fellow UCSD
2014-	Naomi Deacon, PhD student Current position: PhD student in Adelaide Australia

Formal Teaching of Peers (e.g., CME and other continuing education courses)

No presentations below were sponsored by outside entities.

2000-2003	Harvard Advances in Sleep Medicine CME Course Meet the Professors Session topic: sleep apnea	One lecture per course Boston, MA
2001-2004	Massachusetts General Hospital Pulmonary and Critical Care Unit CME Course Topic: Sleep apnea and meet the professors	One lecture per course Boston, MA
2008	Harvard Obesity Surgery Symposium topic: sleep apnea	Invited talk Boston, MA
2009	Harvard Trauma ICU CME Course Topic: mechanical ventilation in acute respiratory distress syndrome (ARDS)	Lecture Boston, MA

2009-2011	Harvard CME Course on Obesity topic: sleep apnea	One lecture per course Boston, MA
2011	Brigham and Women's Pulmonary and Critical Care video CME Course topic: sleep apnea	Lecture Boston, MA

Local Invited Presentations

No presentations below were sponsored by outside entities.

1996-2004	Medical House Staff Lectures/ Resident Report/ "Firm Chief" Rounds, Massachusetts General Hospital various topics in pulmonary, critical care, sleep medicine, ~ 5 per year
1996-98	Pulmonary Grand Rounds, ~ 5 per year Massachusetts General Hospital clinical topics in pulmonary and critical care medicine
1997-2000	Harvard Combined Pulmonary and Critical Care Fellowship Lectures, ~ 3 per year
2000-2004	Medical Intensive Care Unit Teaching Lectures, roughly 1 per month Massachusetts General Hospital topics include acid/base, hemodynamics, ARDS, sepsis
2000	Rheumatology Case Conference Brigham and Women's Hospital
2000	Anesthesiology Grand Rounds Brigham and Women's Hospital topic: mechanical ventilation
2001	Trauma Grand Rounds Brigham and Women's Hospital topic: ARDS
2001	Surgical Grand Rounds, Mortality and Morbidity Conference Brigham and Women's Hospital topic: ARDS
2001	Sleep Grand Rounds Sleep Medicine Division, Brigham and Women's Hospital topic: upper airway physiology

2001	Neurogroup Meeting Harvard School of Public Health
2001	Pulmonary and Critical Care Grand Rounds Massachusetts General Hospital Topic: upper airway physiology
2001-2005	Surgical ICU Course: Current State of Critical Care Medicine Brigham and Women's Hospital various topics in critical care medicine
2002	Medical Grand Rounds Massachusetts General Hospital topic: sleep disordered breathing in congestive heart failure
2002	Neurology Critical Care Conference Massachusetts General Hospital topic: acid/base
2002	Anesthesiology Teaching Conference Massachusetts General Hospital topic: heart/lung interactions
2004	Anesthesiology Grand Rounds Beth Israel Deaconess Medical Center, Boston, MA topic: heart/lung interactions
2005-2007	Partners Healthcare Physicians' Day lecture/discussion and small group sessions Boston, MA
2006	Pulmonary Grand Rounds Longwood Medical Area Boston, MA topic: clinical update on sleep disorders
2006	Anesthesiology Grand Rounds Brigham and Women's Hospital topic: controversies in critical care
2006	Cardiology Grand Rounds West Roxbury VA Medical Center, West Roxbury, MA topic: sleep in the cardiac patient
2007	Allergy/Immunology Grand Rounds Massachusetts General Hospital topic: sleep apnea

2007 Anesthesiology Grand Rounds
Beth Israel Deaconess Medical Center
topic: mechanical ventilation

2007 Diabetes Research Meeting
Massachusetts General Hospital
topic: sleep apnea

2008 Obesity Grand Rounds
Massachusetts General Hospital
topic: sleep apnea

2008 Pediatric Sleep Conference
Massachusetts General Hospital
topic: upper airway

2009 Pulmonary and Critical Care Grand Rounds
Brigham and Women's Hospital
topic: future of sleep apnea therapy

2009 Anesthesiology Grand Rounds
Massachusetts General Hospital
topic: mechanisms underlying sleep apnea

2009 Pulmonary and Critical Care Grand Rounds
Massachusetts General Hospital
topic: sleep apnea pathogenesis

2010 Pulmonary Grand Rounds
Brigham and Women's Hospital
topic: Controversies in critical care

2010 Endocrinology Grand Rounds
Massachusetts General Hospital
topic: endocrine aspects of pulmonary/critical care and sleep medicine

2010 Fish Center for Women, invited lecture
Brigham and Women's Hospital, Boston, MA
topic: interactive discussion about sleep disorders

2010 Medical Grand Rounds
Faulkner Hospital, Boston, MA
topic: sleep apnea

2010- Primary Care Outpatient lectures (~ quarterly)
Brigham and Women's Hospital
various topics in pulmonary/critical care and sleep medicine

2011 Anesthesiology Grand Rounds
Brigham and Women's Hospital
topic: future of sleep apnea therapy

2011 Center for Functional Pulmonary Imaging, invited lecture
Brigham and Women's Hospital
topic: novel therapeutic targets in the upper airway

2011 Endocrinology Grand Rounds
Brigham and Women's Hospital
topic: endocrine aspects of pulmonary/critical care and sleep medicine

2012 Oral and Maxillofacial Surgery Grand Rounds
Massachusetts General Hospital
topic: sleep apnea therapeutic targets

2012 Pulmonary and Critical Care Grand Rounds
Massachusetts General Hospital
topic: controversies in critical care

2012 Sleep and Shift Work: Optimizing Productivity and Health Management in the 24/7 Global Economy conference, invited lecture and panel discussion
Harvard School of Public Health

2012 Anesthesiology Grand Rounds
Massachusetts General Hospital
Topic: sleep deprivation and fatigue

2013 Anesthesia, Critical Care and Pain Medicine Grand Rounds
Beth Israel Deaconess Medical Center
Topic: perioperative risk of sleep apnea

2013 Anesthesiology Critical Care Grand Rounds
New England Medical Center
Tufts University, Boston, MA
Topic: high frequency oscillatory ventilation

2013 Pulmonary Grand Rounds
University of California, San Diego, La Jolla, CA
Topic: ARDS

2013 Cardiovascular Center Grand Rounds
UCSD Sulpizio Center
Topic: Sleep disorders

2013 UCSD internal medicine residency
La Jolla, CA
Topic: acid base

2014- UCSD Internal medicine residency
La Jolla, CA
Morning report, regular contributor

Report of National and International Invited Teaching and Presentations

No presentations below were sponsored by outside entities.

Invited Presentations and Courses

Regional:

2001-2003 Cardiopulmonary pathophysiology (undergraduate course, one lecture annually)
Boston University, Boston, MA
topic: upper airway physiology

2002 Pulmonary Grand Rounds
St. Elizabeth's Hospital, Boston, MA
topic: 10 things to think about in sepsis

2002 Pulmonary Grand Rounds
St. Anne's Hospital, Fall River, MA
topic: sleep apnea

2002 Medical Grand Rounds
Southern New Hampshire Medical Center, Nashua, NH
topic: idiopathic pulmonary fibrosis

2004 Cardiology Grand Rounds
Boston University, Boston, MA
topic: cardiovascular complications of sleep apnea

2004 Medical Grand Rounds
Shattuck Hospital (Tufts University), Jamaica Plain, MA
topic: chronic obstructive pulmonary disease

2004- General Systems Physiology Lecture
Massachusetts Institute of Technology, Cambridge, MA
topic: control of breathing

2004 Pulmonary Research Conference
Brown University, Providence, RI
topic: sleep apnea pathogenesis

2005 North East Sleep Society, invited lecturer
Stamford, CT
topic: upper airway physiology

2009 Pulmonary Journal Club
Boston University, Boston, MA
topic: mechanical ventilation

2010 Future of Clinical Sleep Medicine meeting, invited discussant
Sleep HealthCenter, Dedham, MA
topic: panel discussion

2010 Cardiometabolic Health Congress (CMHC), invited speaker
Boston, MA
topic: sleep apnea

2011 Institute of Electrical and Electronics Engineers (IEEE) Engineering in Medicine and Biology Society 33rd annual meeting, invited lecture
Boston, MA
topic: control of breathing

2011 Future of Clinical Sleep Medicine meeting, invited lecturer
Sleep HealthCenter, Dedham, MA
topic: sleep apnea therapy

2012 Critical Care Grand Rounds
Tufts Medical Center, Boston, MA
Topic: critical care controversies

2012 American Association of Sleep Technologists meeting
Boston, MA
topic: central sleep apnea

2013 Experimental Biology (FASEB)
Boston, MA
Topic: sleep apnea biomarkers

2013 Program Project Grant (PI: Haddad)
invited laboratory meeting presentation UCSD
Topic: sleep apnea

2014- UCSD Heart Failure Symposium
Invited lecture and panel discussion, annually
Topic: sleep apnea

2014 UCSD Pulmonary CME
Invited lecture and panel discussion chair
Topic: sleep apnea

2014- San Diego Heart Failure Symposium
Advanced in the Recognition and Treatment of Heart Failure
Invited lecture: Sleep Apnea

2014 2014 Critical Care Summer Session, San Diego, CA
Topic: ARDS
Keynote speaker

2014 Pulmonary and Critical Care Grand Rounds
University of Southern California
Topic: sleep apnea

2015 Annual Course: Continuous Renal Replacement Therapy and Acute Kidney Injury
Topic: abdominal compartment syndrome
Invited lecture

2015 Biomarkers in Cardiovascular Disease
Topic: sleep apnea in congestive heart failure
Invited speaker

2015 6th Annual Center for Circadian Biology Symposium
Topic: future of sleep apnea
Invited speaker, Sanford Consortium

2015 Medical Grand Rounds
Sharpe Memorial Hospital
Topic: sleep apnea

National

2002	Meet the Professors Session American Thoracic Society, Atlanta, Georgia topic: central sleep apnea
2002	Pulmonary and Critical Care Medicine Grand Rounds New York University, New York, NY topic: sleep apnea pathogenesis
2003	Laboratory for Biomedical Science North Shore Long Island Jewish Hospital, New York topic: autonomic physiology in sleep apnea
2004	American College of Cardiology annual meeting, New Orleans, LA topic: sleep apnea and hypertension and sleep apnea in congestive heart failure
2004	Mayo Clinic, Rochester, MN, invited speaker topic: sleep apnea pathogenesis
2004	Pulmonary Grand Rounds University of California, San Francisco, CA topic: sleep apnea pathogenesis
2004	Surgery, Sleep, and Breathing Meeting, invited speaker Milwaukee, WI topic: cardiovascular complications of apnea
2004	National Sleep Medicine Course: Central Sleep Apnea American Association of Sleep Medicine, Chicago, IL
2005	University of Michigan, Ann Arbor, MI, invited speaker topic: sleep apnea pathogenesis
2005	Advanced Sleep Medicine Course American Association of Sleep Medicine, Miami, FL topic: central sleep apnea and stump the expert
2005	National Sleep Medicine Course Chicago, IL topic: respiratory physiology and central sleep apnea
2005	Review Course, Sleep 2005, invited lecturer and Meet the Professors Session Phoenix, Arizona topic: sleep apnea pathogenesis/sleep apnea treatment

2005 Carolina Sleep Society, **Keynote Speaker**
Myrtle Beach, SC
topic: cardiovascular complications of sleep apnea

2005 Vascular Biology Conference, Visiting Professor and invited lecturer
University of Alabama, Birmingham, Alabama
topic: cardiovascular complications of sleep apnea

2005 Pulmonary Grand Rounds
Mt. Sinai Hospital, New York, NY
topic: sleep apnea pathogenesis

2006 Society of Critical Care Medicine, invited lecturer
San Francisco, CA
topic: post-extubation failure

2006 Surgery Sleep and Breathing Meeting, invited lecturer
Chicago, IL
topic: upper airway mechanics and the evidence for CPAP

2006 Sleep 2006, invited lecturer
Salt Lake City, UT
topic: year in review

2006- National Sleep Medicine Course, invited lecturer (2 lectures)
Chicago, IL
topic: sleep apnea

2006- Annual Sleep Board Review, invited lecturer
(speaker ranked highest for content and presentation several times)
American College of Chest Physicians
Orlando, FLA or Phoenix, AZ
topics: obstructive and central sleep apnea

2006 92nd American College of Surgeons meeting, invited lecturer
Chicago, IL
topic: intensive insulin therapy

2007 Society of Critical Care Medicine, invited lecture (3 lectures) and co-chair for 2 sessions
Orlando, FL
various critical care topics

2007 Scripps Clinic, Visiting Professor and invited lecturer
San Diego, CA
topic: sleep apnea pathogenesis

2007 National Sleep Medicine Course, Meeting Chairman/Organizer and invited lecturer (2 lectures)
Denver, CO
topic: sleep apnea

2007 American College of Chest Physicians (ACCP) Sleep Board Review, invited lecturer (2 lectures)
Phoenix, AZ
topics: sleep apnea epidemiology and sleep apnea treatment

2007 Medical Grand Rounds
St. Luke's Hospital, NY, NY
topic: future of sleep apnea treatment and cardiovascular complications of sleep apnea

2007 Sleep Apnea Board Review, ACCP Meeting, invited lecturer
Chicago, IL
topic: sleep apnea, obstructive and central, and board review

2007 Visiting Professor
Mayo Clinic, Rochester, MN
topic: controversies in critical care

2008 Medical Grand Rounds
Pennsylvania State University, Hershey, PA
topic: cardiovascular complications of sleep apnea

2008 Pulmonary Grand Rounds
Columbia University, NY, NY
topic: cardiovascular complications of sleep apnea

2008 Ohio Siesta meeting (ranked best speaker)
Kent State University, OH
topics: complex apnea and cardiovascular complications of apnea

2008 Medical Grand Rounds
Stamford Hospital, Stamford, CT
topic: cardiovascular complications of apnea

2008 American College of Chest Physicians Board Review, invited lecturer (2 lectures)
Orlando, FL
topic: sleep apnea

2008 American Academy of Dental Sleep Medicine, invited lecturer (2 lectures)
Baltimore, MD
topic: sleep apnea

2009 American College of Chest Physicians Board Review, invited lecturer (2 lectures)
Phoenix, AZ
topic: sleep apnea

2009 Sleep Medicine Grand Rounds and Fellows' Lecture
Stanford University, Stanford, CA
topics: sleep apnea pathogenesis and cardiovascular complications of sleep apnea

2009 New Jersey Sleep Society Annual Education Symposium, invited lecturer
New Brunswick, NJ
topic: complex sleep apnea

2009 Sleep Grand Rounds
University of Pittsburgh Medical Center, Pittsburgh, PA
topic: future of sleep apnea therapy

2009 Pulmonary Grand Rounds
Ohio State University, Columbus, OH
topic: controversies in critical care

2009 American Association of Respiratory Care meeting
San Antonio, TX
topic: central sleep apnea

2010 American Academy of Dental Sleep Medicine, Webinar leader
topic: sleep apnea

2010 Pulmonary Grand Rounds
University of Miami, Miami, FL
topic: future of sleep apnea therapy

2010 Case Western Reserve University, invited lecturer (2 lectures)
Cleveland, OH
topics: sleep and critical care sleep apnea and ARDS

2010 Wayne State University, Visiting Professor and invited lecturer (2 lectures)
Detroit, MI
various pulmonary/critical care and sleep topics

2010 Tennessee Sleep Society meeting, **Keynote Speaker**
Nashville, TN
topic: sleep apnea

2010 American College of Chest Physicians Board Review, invited lecturer (2 lectures)
Orlando, FL
topic: sleep apnea

2010 — 8th Annual Northern New England Critical Care Conference, **Keynote Speaker**
Burlington, VT
topic: controversies in critical care

2010 — National Heart Lung and Blood Institute workshop: Molecular Mechanisms Underlying Sleep Apnea, invited lecturer (3 lectures)
Bethesda, MD
topic: sleep apnea mechanisms

2010-11 — Sleep State of the Art Course, American Thoracic Society, invited lecturer
(~3-4 lectures per annual course)
Miami, FL, or San Diego, CA
various topics in sleep apnea

2011 — American Academy of Facial Pain meeting, **Featured Speaker**
New Orleans, LA
topic: sleep apnea

2011 — Pulmonary Grand Rounds, University of California at San Diego, San Diego, CA
topic: future of sleep apnea therapy

2011 — New York State Thoracic Society meeting, invited speaker
NY, NY
topic: sleep apnea

2011 — Pulmonary & Critical Care Grand Rounds, Univ. of Wisconsin, Visiting Professor
Madison, WI
topic: sleep apnea and mechanical ventilation

2011 — University of Wisconsin Veterinary School, Visiting Professor and invited Neuroscience lecturer
Madison, WI
topics: sleep apnea and mechanical ventilation

2011 — Associated Professional Sleep Societies meeting, invited lecturer and session co-chair
Minneapolis, MN
topic: sleep apnea

2011 — Stanford University, invited lecturer and Visiting Professor
Palo Alto, CA
topic: sleep apnea mechanisms

2011 — American College of Chest Physicians Board Review, invited lecturer (2 lectures)
San Antonio, TX
topic: sleep apnea

2011 American Association of Oral and Maxillofacial Surgeons, invited lecturer
Chicago, IL
topic: sleep apnea biomarkers

2011 Society of Anesthesia and Sleep Medicine (SASM) inaugural meeting, **Keynote Speaker**
Chicago, IL
topic: future research priorities for anesthesia and sleep medicine

2011 Pulmonary and Critical Care Grand Rounds
Stanford University, Palo Alto, CA
topic: controversies in critical care

2011 Sleep Summit, invited lecturer
Las Vegas, NV
topic: sleep apnea therapy

2011 Pulmonary Grand Rounds
Dartmouth-Hitchcock Medical Center, Hanover, NH
topic: future of sleep apnea therapy

2011 Critical Care Grand Rounds
Dartmouth-Hitchcock Medical Center, Hanover, NH
topic: controversies in critical care

2012 Seattle Sleep Medicine and Technology Program, invited lecturer
Seattle, WA
topic: sleep apnea therapy

2012 Pulmonary Fellows' Teaching Conference, invited lecturer
University of Washington, Seattle, WA
topic: sleep apnea

2012 Carolinas 2nd Annual Sleep Symposium
Charlotte, NC
topic: sleep apnea therapy

2012 18th annual Advances in Diagnosis and Treatment of Sleep Apnea and Snoring meeting, invited lecturer (3 lectures)
University of California at San Francisco, San Francisco, CA
topic: sleep apnea

2012 University of California, San Diego, CA
Invited lecture for special seminar
topic: sleep apnea

2012 Case Western Reserve University, Cleveland, Ohio
Invited lecture Pulmonary and Critical Care Grand Rounds
topic: sleep apnea

2012 American Academy of Otolaryngology, invited lecturer
Washington, DC
topic: sleep apnea mechanisms

2012 University of California, San Diego, CA
Pulmonary and Critical Care Grand Rounds
Topic: critical care controversies

2012 University of Pennsylvania, Philadelphia, PA
Invited lecture
Topic: sleep apnea

2012 Sleep Disorders: Diagnosis and Management, St. Luke's and Roosevelt, NYC
Invited lecture
Topic: cardiovascular complications of sleep disorders

2012 Society of Anesthesia and Sleep Medicine, invited lecturer and session chair
Washington, DC
topic: peri-operative complications of sleep apnea

2013 University of Chicago, invited lecture
Pulmonary and Critical Care Grand Rounds
Topic: sleep apnea

2013 Tiger 21, invited lecture and panel discussion
Group of high net worth investors meeting to discuss investments and personal health
Palm Beach, Florida
topic: sleep deprivation and human performance

2013- University of Pennsylvania and UCSF
Annual Advances in Diagnosis and Treatment of Sleep Apnea and Snoring
4 invited lectures and panel discussion, annually
Topic: Sleep apnea

2013 Mayo Clinic, Rochester, MN
Invited lecture, David Dines Annual Lecture
Pulmonary and Critical Care Grand Rounds
Topic: career as clinician scientist

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Nichols, Jeanne F	Professor Emeritus; Chief Exercise Physiologist
eRA COMMONS USER NAME JNICHOLS	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Northeastern University	B.A.	1969	Kinesiology
University of New Hampshire	M.S.	1981	Exercise Physiology
University of Michigan	Ph.D.	1985	Exercise Physiology

A. Personal Statement

I am Professor Emeritus (as of 08/31/11) in the School of Exercise & Nutritional Sciences at San Diego State University, and currently a Research Associate and Chief Exercise Physiologist in the Exercise & Physical Activity Resource Center (EPARC) within the Department of Family and Preventive Medicine at the University of California, San Diego. I have 29 years of teaching and research experience with a broad interest in exercise and musculoskeletal health across the lifespan, with emphasis on prevention/reduction of sarcopenia and osteopenia in older adults, and prevention of low bone mass in adolescent girls at risk for low energy status. I have extensive experience in developing, implementing, and evaluating exercise interventions focused on improving strength, balance and mobility to reduce fall risk among community-residing older adults. I have worked with the San Diego County Aging and Independence Services to develop an instructor training curriculum for a County-wide physical activity program for older adults, and continue as a volunteer conducting quarterly booster training sessions for approximately 25 County instructors. I have been a Co-Investigator on several NIH and CDC funded trials to increase physical activity and improve bone health in children and adults. reduce/prevent obesity and related co-morbidities, and prevent recurrence of breast cancer.

B. Positions and Honors

Positions and Employment

1985-2011	*Assistant to Full Professor*, Department of Exercise & Nutritional Sciences, San Diego State University, San Diego, CA.
1986-2000	*Associate Director to Director*, Adult Fitness Program, San Diego State University, San Diego, CA
2001-2003	Director, Project Independence: A falls-prevention program targeting underserved seniors; conducted through a partnership with San Diego County Health and Human Services Agency, Aging & Independence Services
2003-2006	*Co-Director*, Center for Optimal Health & Performance, San Diego State University
2007-2010	*Director*, Center for Optimal Health & Performance, San Diego State University
2009-present	Adjunct Professor, Graduate School of Public Health, San Diego State University
2011-present	Senior Research Associate, Exercise & Physical Activity Resource Center, Dept of Preventive Medicine, University of California, San Diego; Professor Emeritus, San Diego State University, San Diego, CA.

Other Experience

1991-*present*	*SDSU IRB member and Chair* (since 2001). Oversee committee of 13 members; annually review approximately 480 proposals involving human subjects (exempt/expedited/full committee).

Honors and Offices Held

June 2004	Awarded *Fellow* status in the American College of Sports Medicine (ACSM)
June 2009	SDSU College of Professional Studies & Fine Arts, *Distinguished Faculty Award*
Sept 2010	*Excellence in Research Award,* Sports Physical Therapy Section of the American Physical Therapy Association.
May 2012- present	Elected *President,* Female Athlete Triad Coalition, An international consortium of physicians and researchers whose mission is to prevent the Female Athlete Triad syndrome through advocacy, education, international leadership, public policy, and research.

C. Selected Peer-Reviewed Publications

Most relevant to the current application (in chronological order)

1. **Nichols, JF.,** D.K. Omizo, K.K. Peterson and K.P. Nelson. Efficacy of heavy-resistance training for active women over sixty: muscular strength, body composition, and program adherence. *J Am Geriatr Soc* 41(3):205-210, 1993.
2. **Nichols, JF.**, K.M Nelson, K.K Peterson. Bone mineral density responses to high intensity strength training in active older women. *J Aging Phys Act* 3(1):26-38, 1995.
3. **Nichols, JF.**, L.M. Hitzelberger, J.G. Sherman and P. Patterson. The effects of resistance training on muscular strength and functional abilities of older adults. *J Aging Phys Act* 3(3):238-250, 1995.
4. Verfaillie, D., **JF. Nichols**, E. Terkel and M. Hovell. Effects of resistance, balance and gait training on muscular strength and balance of seniors. *J Aging Phys Act* 5(3):213-228, 1997.
5. Calfas, K.J., J.F. Sallis, **JF. Nichols,** J.A. Sarkin, M.F. Johnson, S. Caparosa, S. Thompson and J. Alcarez. Project GRAD: Two year outcomes of a randomized controlled physical activity intervention among young adults. *Am J Prev Med* 18(1):28-37, 2000.
6. **Nichols, JF**, D. Medina and E. Dean. The effects of functional resistance training on measures of functional fitness in older adults. *Am J Med & Sports* 3(5):279-285, 2001.
7. **Nichols, JF,** JE Palmer, and SS Levy. Low bone mineral density in highly trained male master cyclists. *Osteoporos Int* 14:644-49, 2003.
8. Rose, DJ, GD Abernethy, SC Castle, **JF Nichols,** L Vasquez, L Missaelides. The California infrastructure and best practice models for fall prevention. In: Preventing falls in older Californians: State of the art. A white paper prepared for: *A California Blueprint for Fall Prevention Conference.* Sacramento, CA, Feb, 2003.
9. **Nichols, JF**, MJ Rauh, MT Barrack, HS Barkai. Bone mineral density in female high school athletes: Interactions of menstrual function and type of mechanical loading. *Bone* 41:371-377, 2007.
10. Hovell MF, **Nichols JF**, Irvin VL, Schmitz KE, Rock CL, Hofstetter CR, Keating K, Stark L. Parent/child training to increase preteens' calcium, physical activity and bone density: A controlled trial. *Am J Health Promotion.* 24(2): 118-128, 2009.
11. **Nichols, JF** and Rauh, MJ. Longitudinal changes in bone mineral density in male master cyclists and non-athletes. *J Strength & Cond Res.* 25(3):727-734, 2011.
12. Ayala, G, J Elder, E Arredondo, M Ji, S Marshall, T McKenzie, **J Nichols,** J Sallis and G Talavera. San Diego Prevention Research Center. Effects of a promotora-based intervention to promote physical activity: Familias Sanas y Activas. *Am J Pub Health* 101(12):2261-2268, 2011.

13. Levy, SS, CA Macera, J Hootman, K Coleman, R Lopez, **J Nichols,** S Marshall, B Ainsworth, M Ji. Evaluation of a Multi-component Group Exercise Program for Adults with Arthritis: Fitness and Exercise for People with Arthritis (FEPA). *Disability and Health Journal* 5(4):305-311, 2012.
14. Medina, E, E Mejia, M Duesterhaus, S Gonzales, **J Nichols,** T Galati and S Marshall. Development and evaluation of a culturally-responsive fitness instructor training program for underserved Latinos. **Med Sci Sports Exerc** 44:5 Supplement, 2012.
15. Irvin VL, **Nichols JF**, Hofstetter CR, Kang S, Song YJ, Ojeda V, Hovell MF. Osteoporosis and calcium intake among Korean women in California: Relationship with acculturation to U.S. lifestyle. *J Immigrant Minority Health* (in press).

D. Research Support

On-going Research Support

1R01CA138192 (Hovell) **03/01/09-01/31/15** **0.10 FTE Yr 1 and 5;**
NIH/NCI **0.05 FTE Yr 2-4**

Clinician Promotion of Healthy Diet and Activity to Reduce Obesity among Adolescents

This study tests a multi-component intervention designed to increase physical activity, reduce sedentary practices, and promote healthy diets among preteens who obtain orthodontia care.

Role: Co-Investigator. Oversee development of physical activity materials; oversee measures of fitness and body composition by DXA in subsample of patients; participate in data interpretation and manuscript writing.

08-85465 A03 (Hovell) **10/01/10 – 09/30/12** **0.0 CY**
California Dept of Public Health

Women, Infants, and Children Program (WIC)

WIC is a special nutrition program funded by the US Department of Agriculture through the State of Department of Health Services. WIC services low income women, infants and children at their most vulnerable life stages: pregnancy, lactation, infancy and early childhood by providing nutrition and consumer education in addition to food vouchers which are redeemed at local good stores. WIC is intended to improve the health of its participants during critical times of growth and development thus preventing health problems. WIC is dedicated to helping participants improve their health status by providing supplemental foods, nutrition education, breastfeeding education and support, and referral to health care and other social services for women and children who receive WIC services.

Role: Co-PI. Assist in oversight of program implementation. Oversee graduate student interns working in the program.

#G00008309 (Elder) **9/30/09 – 9/29/14** **0.02 FTE**
CDC Prevention Research Center

Obesity Prevention and Control in the Latino Community

The San Diego Prevention Research Center (SDPRC) was first funded in 2004 to work with our community partner to identify best practices for promoting healthy lifestyles & environments in the Latino community. Like other disadvantaged ethnic minorities, Latinos exhibit worse health behaviors compared with non-Latino whites that, in turn, contribute to increased morbidity & mortality from chronic diseases. The SDPRC conducts

research, translates these results into practice, and promotes healthy lifestyles & environments in order to improve the health of Latino populations.

Role: Co-Investigator; Contribute in developing fitness measures for the research core. Assist in quality control procedures for fitness measures. Provide incidental consultation for training community fitness instructors.

IMOHP25102 Hill (PI) **10/01/12 – 9/30/14** **0.05 FTE**
HRSA

Training Program for Preventive Medicine Residents on Integrative Medicine

HRSA funding provides support to expand training for physicians enrolled in the UCSD-SDSU Preventive Medicine Residency (PMR) Program, which trains physicians for clinical practice and research in preventive medicine and public health.

Role: Co-Investigator; Teach a didactic and laboratory course in physical activity and exercise-related measures used to screen, diagnose, and manage patients with chronic diseases associated with inactivity.

1R21MH100968-01A1 **(B. Henry)** **9/26/13 – 7/31/15** **0.03 FTE**
NIH/NCI

Text Message Physical Activity Intervention to Treat Cognitive Deficits in HIV

The objective of this study is to examine the efficacy of a personalized and interactive mobile phone text message intervention to increase physical activity and improve neurocognitive function in HIV+ individuals with HIV-associated neurocognitive disorders (HAND)

Role: Co-Investigator. Oversee measures of physical activity; provide input on text message content for intervention; participate in data interpretation and manuscript writing.

Pending

1 R34 HL121751-01 (Allison, M) **06/01/2014 – 05/31/2016** **0.10 FTE**

Muscle-Specific Metabolic Effects of Resistance VS Aerobic Training in Middle-aged Men and Women

This study will test the hypothesis that resistance exercise training will increase muscle mass and improve muscle metabolic function more than aerobic training. The proposed pilot study is a randomized trial of resistance training (RT) vs. aerobic training (AT) in middle age adults.

Role: Co-Investigator. Design the AT and RT exercise interventions; hire exercise trainers; participate in data interpretation and manuscript writing.

Cancer Center Diet and Physical Activity Based Research Center

NIH funding provides support to include and expand nutrition/diet and physical activity based interventions to illuminate pathways for cancer prevention, treatment and to improve patient's quality of life following successful cancer treatment.
Role: Laboratory Manager; Assist in research design(s) that include physical activity. Act as measurement lead for studies in which objective measurements of physical activity, body composition, or functional capability are gathered. Develop and teach didactic and laboratory course(s) regarding the potential role(s) of physical activity and exercise-related measures in screening, and managing current cancer patients and cancer survivors.

CFM 19933A Kado (PI) 07/14-06/15
Internal UCSD Family and Preventive Medicine Departmental Grant

Kyphosis, Balance and Incident Falls in Older Persons

UCSD internal funding provides support to gather pilot data regarding age-related spinal postural differences and their effect on balance and fall risk. This is a prospective study examining multiple physiological data points in order to determine if fall risk can be better predicted.
Role: Measurement Coordinator; Lead measurement team in gathering objective data regarding health history, balance (using Computerized Dynamic Posturography), bone density, and body composition. Aggregate data and provide preliminary statistical analysis.

CITD 157 Hill (PI) 08/14-07/15
Internal UCSD Center for Strategic Resource Opportunity Grant

An Interdisciplinary Study of the Mechanism(s) of the Health Benefits of Yoga Compared with Aerobic Exercise

UCSD internal funding (will) provide support to gather pilot data comparing differences in parasympathetic nervous system tone, cellular markers of neuro-inflammation, and epigenetic markers of homeostasis between yoga and aerobic exercisers.

Role: Study Coordinator; Responsible for coordinating recruitment, informed consent, and data collection for all participants (n=40). Will aggregate and conduct preliminary statistical analysis of collected data.

Completed Projects

IMOHP25102 Hill (PI) 10/12-12/14
HRSA

Training Program for Preventive Medicine Residents on Integrative Medicine

HRSA funding provides support to expand training for physicians enrolled in the UCSD-SDSU Preventive Medicine Residency (PMR) Program, which trains physicians for clinical practice and research in preventive medicine and public health.
Role: Laboratory Manager; Assist in teaching a didactic and laboratory course in physical activity and exercise-related measures used to screen, diagnose, and manage patients with chronic diseases associated with inactivity.

2/28/11: Edgemoor Hospital
3/17/11: Eisenhower Hospital, Rancho Mirage
3/21/11: Loma Linda
3/21/11: Family Practice Medical Group of San Bernardino
4/20/11: Hillcrest Medical Center
5/3/11: Kaiser Fontana
7/6/11: Neighborhood Health Center
12/611: Scripps Mercy San Diego
1/4/12: UCSD Family medicine
2/1/12: UCSD Geriatrics
2/2/12: UCLA Geriatric Fellows
3/1/12: Long Beach Memorial Hospital
3/12/12: Tarzana Memorial Hospital
'3/24/12: CANP Conference
7/24/12: Anaheim Medical Center
2/7/2013: UCLA Geriatrics Fellowship
3/7/2013: Grossmont Sharp Hospital
3.29/13: Sharp Chula Vista Hospital.
4/8/2013: Residents UCSD
4/9/2013: VA Medical Center
9/10/2013 Linda Vista
9/20/2013: Navy/Balboa
2/3/2014: Navy/Balboa
3/14 and 4/14: UCSD Residency at VA Medical Center
3/28/14: Primed Conference at Anaheim Convention Center
6/12/14: Dominican Hospital, Santa Cruz
10/15/14: Primed Conference, Chicago, Illinois
11/8/2015 Memorial Care Medical Foundation, Tustin, CA

Presentations to the Public on Driving Safety:
10/9/10: Rotary Club San Diego
4/2/11: AAA Los Angeles Older Driver forum
1/11/12: Poway Unified School District bus drivers
5/11/12: Caregiver Conference, First United Methodist Church, San Diego
10/3/12: La Mesa Older Adult Forum
11/3/12: Bus Driver Training, San Diego
11/14/12: Stein Aging Seminar Series for the public
6/6/2013: Osher Institute of Lifelong learning, UCSD
6/28/2013: Coronado Roundtable

51) UCSD News Center. UC San Diego's TREDS program promotes safety. January 3, 2013. http://ucsdnews.ucsd.edu/pressreleases/uc_san_diegos_treds_program_promotes_safety
52) KUSI http://www.kusi.com/video?clipId=8128686&autostart=true
53) 10News. San Diego Program Looks to Promote Safe Driving for Seniors. January 1, 2013 http://www.10news.com/news/san-diego-program-looks-to-promote-safe-driving-for-seniors01032013
54) KPBS. San Diego researchers promote safe driving for seniors. January 4, 2013.
55) UCSanDiego Newsroom. UC San Diego's Training, Research, and Education for Driving Safety (TREDS) Program Promotes Safety for Senior Drivers. January 3, 2013.
56) News Medical. UCSD's TREDS program to promote driving safety in older adults. January 4, 2013
57) Scoop San Diego. UC San Diego's UC San Diego's Training, Research, and Education for Driving Safety (TREDS) Program Promotes Safety for Senior Drivers. January 3, 2013
58) UCSD Health Sciences News. Survey results reveal distracted driving habits of San Diegans. April 2013
59) UC San Diego Newsroom. Survey results reveal distracted driving habits of San Diegans. April 10, 2013.
60) I4U News. University of California, San Diego. Tips for senior drivers and their families. 2013
61) UCSD TV: Aging and driving: A complex combination – Research on aging. January 10, 2013
62) UC TV: Aging and driving: A complex combination – Research on aging. January 3, 2013.
63) Facebook, Stein Institute. UC San Diego Helps Older Drivers Stay Safe. January 3, 2013.
64) CBS10. Cell phone use leading cause of distracted driving. April 10, 2013.
65) 10News. Distracted driving study released by UC San Diego researchers. March 11, 2013.
66) Science Daily. Distracted driving: Habits of San Diego drivers revealed. April 10, 2013.
67) KPBS. San Diegans and distracted driving. April 10, 2013.
68) Phys.org. Survey results reveal distracted driving habits. April 13 2013.
69)UCSD News Center. Survey results reveal distracted driving habits of San Diegans. April 10, 2013.
70) UPI. Cellphone use while driving the main cause of crashes. April 11, 2013.
71) UTSan Diego. Gadgets blamed for distracted driving. June 12, 2013
72) KOGO live radio September 26, 2013 on distracted driving and texting
73) NBC December 4, 2013 on distracted driving
74) Dec, 2013: http://www.utsandiego.com/news/2013/dec/04/uc-san-diego-treds-distracted-driving-texting/
75) http://lajolla.patch.com/groups/schools/p/83-of-adult-still-texting-talking-while-driving-ucsd-to-educate-san-diego-businesses
76) http://www.newswise.com/articles/new-program-helps-curb-phone-use-while-driving
http://www.kpbs.org/news/2013/dec/04/san-diego-researchers-train-drivers-stop-texting/

http://health.ucsd.edu/news/releases/Pages/2013-12-04-TREDS-just-drive-program.aspx
77) NBC news dec 4, 2013
78) http://www.news-medical.net/news/20131205/New-San-Diego-distracted-driving-education-project-to-help-curb-phone-while-driving.aspx
79) http://www.kpbs.org/news/2013/dec/05/san-diegans-take-part-campaign-end-distracted-driv/
Sept 2014
80) http://www.reuters.com/article/2014/09/19/us-health-driving-texting-idUSKBN0HE28I20140919
October:
81) NBC San Diego: Elderly driving. October 2014
82) KPBS http://www.kpbs.org/news/2014/oct/10/smartphones-wheels-safer-alternative-texting-while/
83) NPR http://www.marketplace.org/topics/tech/car-companies-catch-connected-world
84) http://health.ucsd.edu/news/releases/Pages/2014-11-03-TREDS-elderly-drivers.aspx.aspx
85) http://www.news-medical.net/news/20141106/New-educational-program-aims-to-reduce-fatalities-involving-older-drivers.aspx
86) http://www.consumeraffairs.com/news/doctors-worry-about-growing-number-of-older-drivers-110714.html
87) http://medicalxpress.com/news/2014-11-elderly-drivers-doctors-law.html
88) http://www.insurancejournal.com/news/west/2014/11/10/346380.htm
89) http://www.lajollalight.com/news/2014/nov/14/senior-drivers-in-la-jolla/?#article-copy
90) http://ewallstreeter.com/university-of-california-helps-businesses-implement-cellphone-bans-6360/
91) http://www.insurancejournal.com/news/west/2014/11/10/346380.htm
92) http://ucsdguardian.org/2014/11/19/medical-school-launches-new-program-curb-distracted-driving/
93) http://www.ocregister.com/articles/-301021-ocprint--.html
94) https://health.ucsd.edu/news/releases/Pages/2015-02-09-longroad-grant.aspx
95) http://www.nbcsandiego.com/video/#!/news/local/New-Study-to-Track-Elderly-SD-Drivers/291607941
96)http://ucsdnews.ucsd.edu/pressrelease/national_grant_funds_project_to_address_safety_and_wellbeing_of_older_drive
97) http://fox5sandiego.com/2015/02/24/uc-san-diego-study-will-track-elderly-drivers/
http://www.utsandiego.com/news/2015/feb/24/UCSD-olderdrivers-AAA/
98) http://www.utsandiego.com/news/2015/mar/01/tp-ucsd-joining-study-on-older-drivers-cognition/

Presentations to Law Enforcement Agencies: *(in-person presentations, does not include video/team presentations) (on medical conditions and driving, especially in older drivers)*
4/5/11: CHP San Diego Office

4/14/11: CHP San Diego Office
4/20/11: CHP El Cajon Office
5/5/11: CHP San Diego Office
5/10/11: Police Escondido Office
5/17/11: Border Division Headquarters
5/25/11: CHP San Diego Office
5/31/11: CHP Border Division Office
6/8/11: CHP San Onofre
6/14/11: CHP Border Division Headquarters
6/22/11: CHP San Onofre
6/28/11: North County LE
6/29/11: CHP San Diego Office
9/22/11: CHP Capistrano Office
3/29/12: SDPD
5/30/12: Chula Vista PD
8/29/13 CHP Border Headquarters

Presentations physicians: *via grand rounds and seminars (partial list) addressing driving safety, with an emphasis on older drivers:*
1/13/10: Scripps Mercy San Diego
2/24/10: Kaiser Permanente San Diego
3/18/10: Sharp Chula Vista
4/09/10: UCSD PMR
4/14/10: Naval Medical Center
4/21/10: UCSD Geriatric Fellows
5/20/10: Palomar Health
6/03/10: Scripps Encinitas
6/17/10: Palomar Hospital
6/24/10: Arch Health Partners
6/1/10: Scripps Coastal
7/19/10: Scripps Coastal Encinitas
8/5/10: Tri City
8/18/10: San Diego Scripps Mercy
8/19/10: Scripps Mercy San Diego
8/31/10: UCSD Division of Trauma
9/21/10: Scripps Coastal Oceanside
9/28/10: Scripps Coastal Carlsbad
10/3/10: Sharp Indian Wells
10/14/10: Sharp Memorial
10/28/10: North County Health Network

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EDUCATION

1986	University of California at San Diego	Residency Preventive Medicine
1986	San Diego State University (USA)	Masters Public Health
1979	McGill University (Canada)	Transitional Internship
1978	University of Ottawa (Canada)	Medical Doctorate (M.D.)
1974	University of Ottawa (Canada)	Undergraduate Biology

PROFESSIONAL APPOINTMENTS

Current Positions

1981-present Professor
Department of Family and Preventive Medicine
University of California, San Diego
La Jolla, California

1980-present Staff Physician and Consultant (Medical Director 1980-2001)
Linda Vista Health Care Center/ San Diego Family Care
6973 Linda Vista Rd.
San Diego, California

1989-present Director/Faculty (on sabbatical 2001-2002)
UCSD/SDSU Preventive Medicine Residency
San Diego, California

2009-present Director
TREDS (Training, Research and Education for Driving Safety)
UCSD School of Medicine
San Diego, California

2007-present Co-Director
IEPRC (Injury Epidemiology Prevention Research Center)
UCSD (Division of Trauma/Division of Preventive Medicine)
San Diego, CA

2010- Present Medical Director
EPARC- Exercise and Physical Activity Research Center
CALIT2, UCSD
San Diego, California

2008-present	Medical Director Refugee Health Assessment Program UCSD/County of San Diego
1988-present	Adjunct Professor Graduate School of Public Health San Diego State University, San Diego, California

Past Positions

2002-2010	Associate Director, Center for Behavioral Epidemiology & Community Health San Diego State University 9245 Sky Park Ct. San Diego, California
2002-2005	Consultant, Behavioral Epidemiology San Diego, California London, UK
2001-2003	Public Health Consultant, Director CV Health Promotion Tower Hamlets Primary Care Trust London, UK
1995-2001	Medical Director Mid City Community Clinic San Diego, California
1991-1994	Evaluation Coordinator Project VIP SDSU/SD Dept. Health Services/CDC Cooperative Research Project San Diego, California
1990-1994	Managed Care Consultant Medicus Systems Corporation, San Diego, California

LICENSES & MEMBERSHIPS

1996-2001	American College of Preventive Medicine Regent	Nationally Elected
1989	American Board of Preventive Medicine Fellow	#50455
1980	State of California Licensee	#G41532
1979	Medical Council of Canada (LMCC) Registrate	#48497
1979	National Board of Medical Examiners Diplomat	#225546
Member	American Medical Association	
Member	San Diego Medical Association	
Member	Road Traffic Injuries Research Network	
Member	Gerontology Society of America	

RESEARCH AND HEALTH PROMOTION INTERESTS

Refugee and immigration health
Systems engineering
Immunization delivery
Cardiovascular risk reduction: Exercise and Nutrition
Improving prevention in primary care settings
Cancer prevention and screening
Women's health care: access, prevention, community health promotion
Trauma prevention
Driving safety

GRANTS AND RESEARCH FUNDING

Current Funding

7/14-6/15:	An interdisciplinary study fo the health benefits of yoga; pilot grant from Qualcomm institute. $49690. Role: Principal Investigator.
10/2013-9/2014 renewed 9/15, yearly	California Office of Traffic and Safety OP1409 $339,997.00 Training Professionals in Driving Safety Role: Principal Investigator Goal: To improve health and law enforcement professionals' ability to promote driving safety on older adults
10/2013-9/2014 renewed 9/15, yearly	California Office of Traffic and Safety DD 1405 $144,937 Distracted Driving Prevention Role: Principal Investigator Goal: To reduce distracted driving by employees
10/2012-9/2015 no cost extension	HRSA IMOHP25102 Training Program for Preventive Medicine Residents on Integrative Medicine $150,000/3 years Role: Principal Investigator
1/2013-12/2017 (extended)	American Cancer Society Training Fellowship for Preventive Medicine Residents $400,000/5 years Role: Principal Investigator

Completed

1/2010-12/2014	American Cancer Society PTAPM-97-181-12 Training Fellowship for Preventive Medicine Residents $300,000/4 years

	Role: Principal Investigator
10/2012-9/2013	California Office of Traffic and Safety OP1310 Training Professionals in Driving Safety $339,720/year Role: Principal Investigator
7/2010-6/2013	HRSA D33 HP 01035 Training Program for Preventive Medicine Residents $844,040/3 years Role: Principal Investigator
4/1/08-3/31/13	Planned Care for Obesity and Risk Reduction NIH/NHLBI 1 R01 HL089444-01 A-1 $500,000/5 years Role: Co-Investigator Principle Investigator: Kevin Patrick
10/1/11 – 9/30/12	20522 Training and Education to Promote Older Driver Safety $317,347 Role: Principal Investigator
10/1/10 – 9/30/11	OP1008 Law Enforcement Training for Age-Related Driving Disorders $207,843 Role: Principal Investigator
10/1/10 – 9/30/11	OP1110 Training Health Professionals on Age-Related Driving Disorders $217,876 Role: Principal Investigator
10/2009-9/2010	OP1009 California Office of Traffic and Safety Training Law Enforcement to identify Older Adults with Age Related Driving Disorders $196,594 Role: Principal Investigator
10/ 2010 – 09/2011	HRSA D76HP20895 Equipment to Enhance Training for Health Professionals $300,000 Role: Principal Investigator
2/2008-5/2010	Robert Wood Johnson 55246B

	Shared decision-making when an interpreter is needed: A case study with Latino men at risk for prostate cancer. This intervention addresses the provider and interpreter actions needed to improve patient participation in shared decision when an interpreter is needed. Role: Co-Investigator Principal Investigator: Roussos	
7/2003-6/2009	NIH R01 HL608595 Project Fiesta Role: Investigator Principal Investigator: Hovell	
1994-June 2009	American Cancer Society Training Fellowship for Preventive Medicine Residents Training physicians in preventive medicine with an emphasis on cancer control and prevention. Role: Principal Investigator	
10/2009-9/2010	California Office of Traffic and Safety PS0803 Screening for Age Related Driving Disorders in the Hospital Setting $346,119 IRB Approval date: not applicable (service grant) Role: Principal Investigator	
7/2007-6/2010	HRSA D33 HP 01035 Training Program for Preventive Medicine Residents Role: Principal Investigator	
10/2007-9/2009	California Office of Traffic and Safety PS0803 Screening for Age Related Driving Disorders in the Hospital Setting $304,467/2 years IRB Approval date: not applicable (service grant) Role: Principal Investigator	1.8 calendar
6/2007-11/2007	Pfizer 20073763 Model Development and Validation of Provider Participation in Care Management Programs: A Partnership Between Pfizer Health Solutions Inc. (PHS) and UCSD Center for Management Science in Health (CMASH) $17,000/5 months IRB Approval date: 6/21/07-6/19/08 Role: Principal Investigator	0.96 calendar
10/01/04-8/31/09	San Diego Prevention Research Center PA 04003 CDC - subcontract from SDSU to UCSD $385,899/year	0.48 calendar

	IRB Approval Date: 10/15/06-10/04/07 Role: Investigator Principal Investigator: Elder	
9/01/06-3/31/08	CDC IP000094-02 AnCIP: Analysis of Childhood Immunization Practices $318,321/2 years IRB Approval Date: 9/28/06-9/28/07 Role: Investigator Principal Investigator: Fontanesi	1.2 calendar
7/2006- 5/2007	Santa Barbara County Systems Engineering Resign Goal: To improve prevention outcomes with system engineering IRB Approval Date: 5/30/07-5/30/08 Role: Principal Investigator	
4/2005-9/2006	California Office of Traffic and Safety 53786B P1356 7802 213 Developing training modules for physicians on senior drivers Role: Principal Investigator	
7/1995-6/2007	HRSA D33 HP 01035 Training Program for Preventive Medicine Residents Role: Principal Investigator	
2003-2005	CDC MM0632 PRICE II Assessing the costs of implementation of immunization standards in community settings Role: Investigator	
2004-2006	CDC CEPIS: Assessing the costs and efficacy of three interventions to improve immunization coverage Role: Investigator	
9/01/05-8/31/07	CDC 1 U01 IP000033-01 PRICE III: Diffusion of Innovation in the adoption of Clinical Practice Guidelines $225,000 Role: Investigator, 10% effort Principal Investigator: Fontanesi	
2004-2006	State of California VFC QI project Role: Co-Principal Investigator	
2004-2007	Office of Population Affairs HIV Counseling Screening and Referral Role: Consultant	
2005-2006	Susan G. Komen Foundation	

	Breast Cancer Screening in the Community Role: Consultant
2002-2004	CDC The assessment of adoption of immunization standards for high risk young adults Role: Consultant
2003-2004	NIH Improving ETS counseling for parents of tobacco exposed children Role: Consultant
2002-2004	New Opportunities Funds, London, UK Core Prevention Training Grant Role: Consultant
1995-2004	HRSA Training Program for Preventive Medicine Residents Role: Principal Investigator/Co-Director
1991-1994	CDC Project V.I.P (Vaccinations are Important for Preschoolers) Role: Evaluation Coordinator

REGIONAL, STATE & NATIONAL ACTIVITIES

Present:

2012- Present	Member, Elected, Health Sciences Faculty Committee, School of Medicine, UCSD
2010-present	Chair, Graduate Medical Education Committee American College of Preventive Medicine
2013-present	Member, Policy Committee American College of Preventive Medicine
2010-2014	Member, Licensing Task Force American College of Preventive Medicine
2012-2014	Member, Match Task Force American College of Preventive Medicine
2010-present	Planning Committee American College of Preventive Medicine Residency Director Meeting
2004-present	Advisory Committee County Physician Immunization Advisory Council,

Past:

2011 to 2013	Member, Milestones Task Force Accreditation Council for Graduate Medical Education
2007-2008	Advisory Committee

	Burn Institute Scientific Advisory Board
2003-2006	Member, Board of Directors (nationally elected)
	Association of Teachers of Preventive Medicine
2000-2001	President Elect
	Physician Council, Council of Community Clinics
1999-2001	Chair, Planning Committee
	Annual Graduate Preventive Medicine Residency Directors Meeting
1999-2001	Advisory Committee
	Partners in Prevention
1988-1989	Advisory Committee
	American Liver Foundation
1997-2001	Development Committee
	American College of Preventive Medicine
1997-1998	Policy Committee (Policy Statement Subcommittee Chair)
	American College of Preventive Medicine, March
1996-2001	Steering Committee
	Partners in Prevention
1995-2001	West Regent, Board of Directors (regionally & nationally elected)
	American College of Preventive Medicine
1995-2001	Practice Guidelines Committee
	American College of Preventive Medicine
1995-1998	Consultant
	Picture of Health Mammography Project, San Diego, CA
1994-2001	Chair, Graduate Medical Education Committee
	American College of Preventive Medicine
1994-1997	Physician Advisory and Steering Committees
	All Kids Count Immunization Project, San Diego, CA
1994-1997	Primary Care Committee
	California Academy of Preventive Medicine
1993-1999	Residency Advisory Committee
	California State Preventive Medicine Program
Reviewer	
2010-present	American Journal of Public Health
2007-present	Academic Medicine
2007-present	Public Health Nursing
1997-2002	Western Journal of Medicine
1995-present	American Journal of Preventive Medicine
Editorial Board	Injury Epidemiology Journal (2014-present)

AWARDS

2014 Individual Award Recipient of the 2014 *Live Well San Diego* Public Health Champion Award
2013 US News and World Report 'Top Doctor'
2013 Distinguished Service Award, American College of Preventive Medicine
2012 Outstanding Physician Award, San Diego County Medical Society
2011 American Cancer Society Recognition for Training in PM
2008 Alpha Omega Alpha Alumnae Award
2001 Community "Heroes" Award (Council of Community Clinics)
2001 Service Award (American College Preventive Medicine)
1997 Community Service Award, Linda Vista Bayside Center
1997 Physician Recognition Award, AMA
1987 Alpha Omega Alpha Invitee for Academic Excellence (declined)

PUBLICATIONS

Selected Peer-Reviewed Publications (in chronological order)

1) Bates S, Hill L, Barrett-Connor E. Cardiovascular Risk in an Indo-Chinese Population. AJPM 5:15-20, 1989.
2) Hill L, Hovell M, Benenson A. Prevention of Hepatitis B in Indo-Chinese Refugees with Active and Passive Immunization. AJPM 7:29-32, 1991.
3) Hill L, Faine N. Health Risk Appraisal in the Clinical Setting. WJM May, 1992.
Physicians' Advisory Board Recommendations of the Physicians' Advisory Board on Hepatitis B in Asians, American Liver Foundation Newsletter. Vol. 12, 1988.
4) Robyn R, Waterman S, Hill L, et al. Predictors of age appropriate vaccination rates of preschool children in two San Diego communities. Proceedings of the 28th Annual Immunization Conference. May 1994.
5) Hill L. Specialty care needs of a medically indigent population. WJM 1994; 163(3): 280.
6) Hill L, Ferrini R, Mannino E, Randsell E. The efficacy of mammography and screening for breast cancer. JAMA 1995; 274(5): 381-3.
7) Hill L, Waterman S, Robyn B. Evaluation of a model immunization program: San Diego. Proceedings of the 29th Annual Immunization Conference, June 1995.
8) Ferrini R, Mannino E, Ramsdell E, Hill L. Screening mammography in asymptomatic women. Screening mammography for breast cancer: American College of Preventive Medicine practice policy statement. AJPM 1996; 12(5):340-1.
9) Hill L, Patrick K, Avila P. Training physicians to care for the underserved: Preventive medicine residency-community health center linkages. AJPM 1996; 12(3): 156-160.
10) Waterman S, Hill L, Robyn R, Yeager K, Maes EF, Stevenson JM, Anderson KN. A model immunization demonstration for preschoolers in an inner city barrio, San Diego, CA 1992-1994. AJPM 1996; Suppl 12(4): 8-13.
11) Mannino E, Hill L. DOT for tuberculosis. WJM 1996; 165(4): 224-25.

12) Robyn B, Bilinski R, Fontanesi J, Hill L. How immunization registries develop core data elements in their databases: A discussion paper. AJPM 1997; 13(2) Suppl: 46-50.
13) Robyn B, Tuzin B, Schneider E, Hill L. The process of developing an immunization information system - Lessons from San Diego All Kids Count. AJPM 1997; (13:2: Suppl): 17-22.
14) Ferrini R, Perlman M, Hill L. Screening for skin cancer. AJPM 1998; 14(1): 80-82.
15) Ferrini R, Perlman M, Hill L. Skin protection from ultraviolet light exposure. AJPM 1998; 14(1): 83-86.
16) Hill L. Lessons from the practice: An unlikely role model. WJM 1998; 169(3): 184-5.
17) Bentley J, Ferrini R, Hill L. Folic acid fortification of grain products in the U.S. to prevent neural tube defects. AJPM 1999; 16(3): 264-7.
18) Hill L, Ferrini R. Skin cancer prevention and screening. CA-A Cancer Journal for Clinicians 1998; 48(4): 232-235.
19) Lorentz J, Hill L, Samimi B. Occupational needle stick injuries in a metropolitan police force. AJPM 2000; 18(2), 146-150.
20) Palinkas L, Pickwell S, Brandstein K, Clark T, Hill L, Moser R, Osum A. The journey to wellness: stages of refugee health promotion and disease prevention. J of Immigrant Health 2003, Vol 5, Issue 1:19-28.
21) Hovell M, Roussos S, Hill L, Johnson NW, Squier C, Gyenes M. Engineering clinician leadership and success in tobacco control: Recommendations for policy and practice in Hungary and Central Europe, Eur J of Dent Ed 2004. 8(s4): 51-60.
22) Fontanesi J, Goldsman D, C Alexopoulos, Kopald D, Holcomb K, Hill L. The (MIS) application of management science in medicine: a flawed concept. J of Practice Mgmt 2004. Vol 20(2) 111-3.
23) Hill L, Henry B, Schweiker S. Screening for hepatitis C. AJPM 2005.28(3):327-30.
24) Hill L. Missed Opportunities: The UK's national health system. BMJ 2005. 330 (7490) 530-533.
25) Hill L, Hofstetter CR, Hovell M, et al. Risk factors for cardiovascular disease among Koreans residing in California and Seoul. J Immigr Refug Stud. 2006; 4(4):37-54.
26) Jones, KL, Chambers C, Hill L et al. Alcohol use in pregnancy: inadequate recommendations for an increasing problem. BJOG. 2006; 113(8):967-968
27) Hill L, Hofstetter R, Hovell M, Lee J, Irvin V, Zakarian J. Koreans' use of medical services in Seoul, Korea and California. J Immigr Minor Health. 2006; 8(3):273-280
28) Fontanesi, J, Hill L, Olson, R, Bennett, N. Kopald, D. A comparative analysis of mass vaccination clinics and routine appointments in vaccinating adults. Journal of Practice Management, March, 2006.
29) Hill L. Family history: adopted. Kaiser Permanente Journal. 2007 Winter; 11 (1).
30) Mueller M.R., Hill L, Fontanesi J, Kopald D. Disagreement on immunization recommendations: An analysis of lay-clinician interaction. Journal of Applied Social Science. 2007 Fall; 1(2): 69-76.

31) Fontanesi J, Messonier M, Hill L, Shefer A. A new model of adoption of clinical practice guidelines. Journal of Public Health Management & Practice. 2007. 13(6): 605-11.
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84) http://health.ucsd.edu/news/releases/Pages/2014-11-03-TREDS-elderly-drivers.aspx.aspx
85) http://www.news-medical.net/news/20141106/New-educational-program-aims-to-reduce-fatalities-involving-older-drivers.aspx
86) http://www.consumeraffairs.com/news/doctors-worry-about-growing-number-of-older-drivers-110714.html
87) http://medicalxpress.com/news/2014-11-elderly-drivers-doctors-law.html
88) http://www.insurancejournal.com/news/west/2014/11/10/346380.htm
89) http://www.lajollalight.com/news/2014/nov/14/senior-drivers-in-la-jolla/?#article-copy
90) http://ewallstreeter.com/university-of-california-helps-businesses-implement-cellphone-bans-6360/
91) http://www.insurancejournal.com/news/west/2014/11/10/346380.htm
92) http://ucsdguardian.org/2014/11/19/medical-school-launches-new-program-curb-distracted-driving/
93) http://www.ocregister.com/articles/-301021-ocprint--.html
94) https://health.ucsd.edu/news/releases/Pages/2015-02-09-longroad-grant.aspx
95) http://www.nbcsandiego.com/video/#!/news/local/New-Study-to-Track-Elderly-SD-Drivers/291607941
96)http://ucsdnews.ucsd.edu/pressrelease/national_grant_funds_project_to_address_safety_and_wellbeing_of_older_drive
97) http://fox5sandiego.com/2015/02/24/uc-san-diego-study-will-track-elderly-drivers/
http://www.utsandiego.com/news/2015/feb/24/UCSD-olderdrivers-AAA/
98) http://www.utsandiego.com/news/2015/mar/01/tp-ucsd-joining-study-on-older-drivers-cognition/

Presentations to Law Enforcement Agencies: *(in-person presentations, does not include video/team presentations) (on medical conditions and driving, especially in older drivers)*
4/5/11: CHP San Diego Office

4/14/11: CHP San Diego Office
4/20/11: CHP El Cajon Office
5/5/11: CHP San Diego Office
5/10/11: Police Escondido Office
5/17/11: Border Division Headquarters
5/25/11: CHP San Diego Office
5/31/11: CHP Border Division Office
6/8/11: CHP San Onofre
6/14/11: CHP Border Division Headquarters
6/22/11: CHP San Onofre
6/28/11: North County LE
6/29/11: CHP San Diego Office
9/22/11: CHP Capistrano Office
3/29/12: SDPD
5/30/12: Chula Vista PD
8/29/13 CHP Border Headquarters

Presentations physicians: *via grand rounds and seminars (partial list) addressing driving safety, with an emphasis on older drivers:*
1/13/10: Scripps Mercy San Diego
2/24/10: Kaiser Permanente San Diego
3/18/10: Sharp Chula Vista
4/09/10: UCSD PMR
4/14/10: Naval Medical Center
4/21/10: UCSD Geriatric Fellows
5/20/10: Palomar Health
6/03/10: Scripps Encinitas
6/17/10: Palomar Hospital
6/24/10: Arch Health Partners
6/1/10: Scripps Coastal
7/19/10: Scripps Coastal Encinitas
8/5/10: Tri City
8/18/10: San Diego Scripps Mercy
8/19/10: Scripps Mercy San Diego
8/31/10: UCSD Division of Trauma
9/21/10: Scripps Coastal Oceanside
9/28/10: Scripps Coastal Carlsbad
10/3/10: Sharp Indian Wells
10/14/10: Sharp Memorial
10/28/10: North County Health Network

2/28/11: Edgemoor Hospital
3/17/11: Eisenhower Hospital, Rancho Mirage
3/21/11: Loma Linda
3/21/11: Family Practice Medical Group of San Bernardino
4/20/11: Hillcrest Medical Center
5/3/11: Kaiser Fontana
7/6/11: Neighborhood Health Center
12/611: Scripps Mercy San Diego
1/4/12: UCSD Family medicine
2/1/12: UCSD Geriatrics
2/2/12: UCLA Geriatric Fellows
3/1/12: Long Beach Memorial Hospital
3/12/12: Tarzana Memorial Hospital
'3/24/12: CANP Conference
7/24/12: Anaheim Medical Center
2/7/2013: UCLA Geriatrics Fellowship
3/7/2013: Grossmont Sharp Hospital
3.29/13: Sharp Chula Vista Hospital.
4/8/2013: Residents UCSD
4/9/2013: VA Medical Center
9/10/2013 Linda Vista
9/20/2013: Navy/Balboa
2/3/2014: Navy/Balboa
3/14 and 4/14: UCSD Residency at VA Medical Center
3/28/14: Primed Conference at Anaheim Convention Center
6/12/14: Dominican Hospital, Santa Cruz
10/15/14: Primed Conference, Chicago, Illinois
11/8/2015 Memorial Care Medical Foundation, Tustin, CA

Presentations to the Public on Driving Safety:
10/9/10: Rotary Club San Diego
4/2/11: AAA Los Angeles Older Driver forum
1/11/12: Poway Unified School District bus drivers
5/11/12: Caregiver Conference, First United Methodist Church, San Diego
10/3/12: La Mesa Older Adult Forum
11/3/12: Bus Driver Training, San Diego
11/14/12: Stein Aging Seminar Series for the public
6/6/2013: Osher Institute of Lifelong learning, UCSD
6/28/2013: Coronado Roundtable

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Wing, David R	Clinical Specialist (Exercise Physiologist) and Laboratory Manager
eRA COMMONS USER NAME DWing	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Northern Arizona University	B.S.	1997	Political Science (Honors)
San Diego City College	A.A.	2009	Sports Nutrition
San Diego State University	M.S.	2012	Exercise Physiology

A. Personal Statement

I am the laboratory manager for UCSD's Exercise and Physical Activity Resource Center (EPARC), a state-of-the science laboratory focusing on the objective assessment of physical activity, bone health, body composition, cardiorespiratory fitness, and balance. I hold a master's degree in Exercise Physiology from San Diego State University and am a registered X-Ray Technician (Dual Energy X-Ray Absorptiometry) and Certified Phlebotomy Technician (CPT-I) in the State of California. I also hold additional certifications in Cardiopulmonary Resuscitation and Automated External Defibrillation, and am certified as a personal trainer with the American Council on Exercise. I have extensive experience in maximal and submaximal exercise stress testing, metabolic assessment via indirect calorimetry, body composition analysis, functional movement screening, and Computerized Dynamic Posturography (balance assessments) in healthy and diseased populations. I also have hundreds of hours of direct exercise training with individuals from diseased populations including those suffering from cystic fibrosis, type II diabetics, and the obese. I also coordinate the accelerometer loan and data analysis program(s) operated by EPARC. My professional research interests include sweat-rate kinetics during heat acclimatization, the development of functional exercise tests for individuals with neurological disease, and the links between executive function and balance in both healthy and diseased populations.

B. Positions and Honors

and Employment

2007-2011 *Managing Personal Trainer and Marketing Director* for Taking Wing Training Services.

2010- 2012 *Teaching Assistant and Laboratory Manager* San Diego State University

2011-present *Clinical Specialist (Exercise Physiology) and Laboratory Manager* University of California San Diego

levant Experience

·earch Director for IRB approved study at San Diego State University under Dr. Michael Buono.

Assistant to Dr. Linda Hill (MS/MPH) in providing instruction in "Exercise is Medicine" course taught to UCSD's Preventive Medicine Residency Program.

2011-2014 Assistant to Dr. Jeanne Nichols in providing instruction in "Exercise is Medicine" course taught to UCSD/SDSU Joint Doctoral Students in Public Health.

2013-2014 Research Director for IRB approved study at University of California San Diego under Dr. Deborah Kado

Honors and Offices Held

1996 Awarded "Outstanding Student in the School of Behavioral Science" at Northern Arizona University

1997 Awarded "Outstanding Senior in the School of Behavioral Science" at Northern Arizona University

C. Peer-Reviewed Publications and Presentations (in reverse chronological order)

1. Truc T., **D. Wing**, J. Bergstrom, A. Davis, J. Nichols, and D. Kado. Kyphosis, balance and risk for falls: a cross-sectional analysis. MSTREAM student presentation, UCSD, August 2014.
2. Justin Yamamoto, **D. Wing**, A. Davis, J. Bergstrom, J. Nichols, and D. Kado. Association of body composition and hyperkyphosis in community-dwelling older men and women. MSTAR student presentation, August 2014.
3. Ellis, K. J. Kerr, S. Godbole, G. Lanckriet, **D. Wing**, and S. Marshall. A comparison of wrist and hip accelerometers for the prediction of energy expenditure and type of physical activity. *Physiological Measuremnt.* 35(11): 2191, 2014.
4. **Wing, D,** S. Godbole, L. Wang, E. Johnson, and J Kerr. Demonstrating the utility of a person worn camera to assess multiple behaviors in different populations: beyond accelerometers and food recalls. Abstract presented at the ISBNPA conference May 2014. http://isbnpa2014.org/scientificProgram.aspx
5. Godbole, S, L. Wang, G. Merchant, **D. Wing,** S. Marshall, L. Natarajan and J. Kerr. Predicting Energy Expenditure from a Wrist-worn Actigraph GT3X+ accelerometer. Abstract presented at the ISBNPA conference May 2014. http://isbnpa2014.org/scientificProgram.aspx
6. **Wing, D,** M. Prausnitz, and MJ Buono. Skin pretreatment with microneedles prior to pilocarpine iontophoresis increases sweat production. *Clin Physiol Funct Imaging.* 33(6):436-440, Nov 2013.
7. Marshall, S, J. Kerr, S. Godbole, J. Chen, K. Ellis, and **D. Wing.** Contemporaneous assessment of physical activity, sedentary behavior and sleep using an ActiGraph GT3X+ accelerometer. Abstract presented at ICAMPAM conference June 2013. http://www.umass.edu/sphhs/icampam2013.html
8. **Wing, D,** R. McClintock, D. Plumlee, M. Rathke, T. Burnett, B. Lyons, and MJ Buono. Does anticipatory sweating occur prior to fluid consumption? *Int J Physiol Pathophysiol Pharmacol.*4(1): 45-50, 2012.

D. Research Support

On-going Research Support

R01AG049369-01 (Lenze PI) 2014/2019
NIMH
Remediating age-related cognitive decline: Mindfulness-Based Stress Reduction and Exercise

This clinical trial examines the benefits of exercise, MBSR, and their combination for the improvement of cognitive functioning in older adults. The study also examines the mechanism of these cognitive benefits, and predictors of change, using structural and functional neuroimaging and other biomarkers.

P30CA023100 Rock (PI) 07/14-06/18
NIH/NCI

Cancer Center Diet and Physical Activity Based Research Center

NIH funding provides support to include and expand nutrition/diet and physical activity based interventions to illuminate pathways for cancer prevention, treatment and to improve patient's quality of life following successful cancer treatment.
Role: Laboratory Manager; Assist in research design(s) that include physical activity. Act as measurement lead for studies in which objective measurements of physical activity, body composition, or functional capability are gathered. Develop and teach didactic and laboratory course(s) regarding the potential role(s) of physical activity and exercise-related measures in screening, and managing current cancer patients and cancer survivors.

CFM 19933A Kado (PI) 07/14-06/15
Internal UCSD Family and Preventive Medicine Departmental Grant

Kyphosis, Balance and Incident Falls in Older Persons

UCSD internal funding provides support to gather pilot data regarding age-related spinal postural differences and their effect on balance and fall risk. This is a prospective study examining multiple physiological data points in order to determine if fall risk can be better predicted.
Role: Measurement Coordinator; Lead measurement team in gathering objective data regarding health history, balance (using Computerized Dynamic Posturography), bone density, and body composition. Aggregate data and provide preliminary statistical analysis.

CITD 157 Hill (PI) 08/14-07/15
Internal UCSD Center for Strategic Resource Opportunity Grant

An Interdisciplinary Study of the Mechanism(s) of the Health Benefits of Yoga Compared with Aerobic Exercise

UCSD internal funding (will) provide support to gather pilot data comparing differences in parasympathetic nervous system tone, cellular markers of neuro-inflammation, and epigenetic markers of homeostasis between yoga and aerobic exercisers.

Role: Study Coordinator; Responsible for coordinating recruitment, informed consent, and data collection for all participants (n=40). Will aggregate and conduct preliminary statistical analysis of collected data.

Completed Projects

IMOHP25102 Hill (PI) 10/12-12/14
HRSA

Training Program for Preventive Medicine Residents on Integrative Medicine

HRSA funding provides support to expand training for physicians enrolled in the UCSD-SDSU Preventive Medicine Residency (PMR) Program, which trains physicians for clinical practice and research in preventive medicine and public health.
Role: Laboratory Manager; Assist in teaching a didactic and laboratory course in physical activity and exercise-related measures used to screen, diagnose, and manage patients with chronic diseases associated with inactivity.

DUPLICATE

FIRST AMENDMENT TO AGREEMENT WITH SAN DIEGO SPORTS MEDICINE AND FAMILY HEALTH CENTER

This First Amendment to the Agreement with San Diego Sports Medicine and Family Health Center (First Amendment) is made and entered into by and between the City of San Diego (City) and San Diego Sports Medicine and Family Health Center (Contractor), also referred to individually as "Party" and collectively as the "Parties."

RECITALS

1. City issued San Diego Firefighter's Wellness Program, 10056900-15-V and accepted Contractor's proposal, resulting in a contract between the City and Contractor (Contract). The Contract is comprised of the RFP and Cover Sheet; Pricing Schedule, the successful bid or proposal; the Notice of Intent to Award; the City's written acceptance of exceptions or clarifications to the ITB or RFP, if any; the previous amendments to the Contract, if any; and the City's General Contract Terms and Provisions.

2. The Contract may be amended by written agreement executed by duly authorized representatives of both Parties.

3. The Parties wish to amend the Contract to replace the current Pricing Schedule with a new Pricing Schedule ("Attachment A" to this Amendment).

TERMS

1. The Pricing Schedule attached to this Amendment as "Attachment A" will replace the Agreement's original Pricing Schedule starting on the effective date of this Amendment until the Agreement is terminated.

2. This First Amendment will be effective when signed by both parties and approved by the City Attorney in accordance with Charter section 40.

3. All provisions of the Agreement not addressed in this First Amendment remain in full force and effect.

R-311483

IN WITNESS WHEREOF, this First Amendment is executed by City and Contractor acting by and through their authorized officers.

Contractor

By: San Diego Sports Medicine and Family Health Center

Name: Richard A. Parker, D.O.

Title: President

Date: November 22, 2017

City of San Diego

By: _____

Name: Kristina Peralta
Director
Purchasing & Contracting

Title: _____

Date: 2/21/2018

Approved as to form this 22 day of Feb, 2018

MARA W. ELLIOTT, City Attorney

By: _____
Deputy City Attorney

NOAH J. BRAZIER
Print Name

R. 311483

III. PRICE SCHEDULE

A. Pricing.

1. City's Estimated Need. NOTE: Estimated Quantities Are Provided To Calculate Estimated Contract Value Only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

a. Services Included in PARTICIPANT FEE for all Wellness Program Participants (all inclusive of requirements specified in Section II)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	~~SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS~~	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per Participant)
1075	EA	MEDICAL AND FITNESS EVALUATIONS (ONE EACH PER YEAR PER PARTICIPANT)	$ 1,191.75	$ 1,281,131.25
			TOTAL SECTION 1a:	$ 1,281,131.25

b. Services Available to Wellness Program Non-Participants (all inclusive of requirements specified in Section II)

EST. ANNUAL QTY.	U/M	~~SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS~~ (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost)
30	EA	Respiratory Fit Exam	$ 157.50	$ 4,725.00
20	EA	DMV Exam	$ 131.25	$ 2,625.00
4	EA	CEDMAT Exam	$ 577.50	$ 2,310.00
180	EA	Academy Preemployment Physicals	$ 575.00	$ 103,500.00
			TOTAL SECTION 1b:	$ 113,160.00

c. Additional Costs for Services Provided Above Those Required and Covered Under Wellness Participant Fee.

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
24	HR	Additional Services provided by Exercise Physiologist/ Athletic Trainer/Strength Conditioning Trainer/C SCS (provided weekly)	$ 63 / Per Hour	$ 1,512.00
16	HR	Additional Education Program Services (provided weekly)	$ 63 / Per Hour	$ 1008.00
			TOTAL SECTION 1c:	$ 2,520.00
			TOTAL YEARLY	$131,040.00

d. Additional Services Available to Wellness Program Participants and Non-Participants.

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
600	EA	Influenza Vaccinations - Quadrivalent	$ 23.80	$14,280.00
600	EA	TB/PPD testing	$ 26.25	$15,750.00
-0-	EA	Hepatitis A Vaccination - Special P.O.	$ -0-	-0-
20	EA	Hepatitis B Vaccination	$ 264.60 / Per Series	$ 5,292.00
435	EA	Prostate-Specific Antigen Test (PSA)	$ 47.25	$20,553.75
10	EA	MMR	$ 119.70	$ 1, 197.00
-0-	EA	Polio	$ -0-	-0-
-0-	EA	HPV	$ -0-	-0-
-0-	EA	Diptheria	$ -0-	-0-
10	EA	Varicella	$ 157.50	$ 1575.00
130	EA	Hemocult	$ 25.20	$ 3,276.00
10	EA	Pap Smear with HPV Testing	$ 183.75	$ 1,837.50

d. Additional Services Available to Wellness Program Participants and Non-Participants (continued)

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
4	EA	Mammogram	$ 210.00	$ 840.00
30	EA	Adacel (Tetanus)	$ 78.75	$ 2,362.50
90	EA	Chest x-ray	$ 68.25	$ 6,142.50
77	EA	Cholinesterase	$ 73.50	$ 5,659.50
-0-	EA	Resting EKG	$ -0-	$ -0-
-0-	EA	Audiometry	$ -0-	$ -0-
-0-	EA	Treadmill	$ -0-	$ -0-
20	EA	Heavy Metals Testing	$ 225.75	$ 4,515.00
50	EA	General Labs for various blood work	$ 50.40	$ 2,520.00
			TOTAL SECTION 1d:	$ 85,800.75

e. Data Collection and Associated Reporting.

EST. ANNUAL QTY.	U/M	DESCRIPTION	COST PER MONTH	ANNUAL COST (Est. Annual Qty. x Cost Per Month)
12	MONTH	Data Collection Services (as specified in Section II of this RFP)	$ 2100.00	$ 25,200.00
			TOTAL SECTION 1e:	$ 25,200.00

f. Administrative Duties/Services.

EST. ANNUAL QTY.	U/M	DESCRIPTION	COST PER MONTH	ANNUAL COST (Est. Annual Qty. x Cost Per Month)
12	MONTH	Administrative Duties/Services (as specified in Section II of this RFP)	$ 3,785.59	$ 45,427.08
			TOTAL SECTION 1f:	$ 45,427.08

g. Desirables

EST. WEEKLY QTY.	U/M	DESCRIPTION	COST PER HOUR	WEEKLY COST (Est. Weekly Qty. x Cost Per Hour)
-0-	HOUR	Physical Therapy Services (weekly)	$ / Per Hour	$ -0-
-0-	HOUR	Safety/Prevention Services (weekly)	$ / Per Hour	$ -0-
			TOTAL SECTION 1g:	$ -0-

Attachment A
Fiscal Year 2017-2018

COST SUMMARY FOR DESIRABLES AND INNOVATIVE IDEAS

g. (continued)

Item	Service	Service Description	Units	Unit Cost	Monthly Cost	Annual Cost
D.1.	**Physical Therapy Services**	Physical Therapy as authorized by Wellness Officer (1 hour)	4 individuals per month	$75.00 per hour	$300.00	$3,600.00
D.2.a.	**Safety/Prevention Services**					
D.2.a.i.a.	Hydration Education Program	2 hour educational sessions to stations	48 hours per year/ 2 sessions per month			Included in Educational Services
D.2.a.i.b.	Hydration Assessment	Hydration status of firefighters through urine and saliva testing	6 assessments per year	$2,000.00 initial set up cost $150.00 per individual	n/a	$2,900.00
D.2.a.ii.	Back Injury Prevention	Academy Low Back Workshop	2 per year	$3,000.00 per workshop	n/a	$6,000.00
D.2.a.ii.	Back Injury Prevention Education	Back Injury Education				Included in Educational Services
D.2.a.iii.	Weight Loss					Included in Educational Services
D.3.a.	**Depression and Post Traumatic Stress Disorder Assessment**	Questionnaire	750 per year			Included in Medical Fitness Evaluation
D.3.b.	**Monitoring High Risk Individuals**					
D.3.b.i.	Monitoring Movement		5 individuals per month		$200.00	$2,400.00
D.3.b.ii.	Blood Pressure Monitoring		5 individuals per month		$140.00	$1,680.00
D.3.b.iii.	Glucose Monitoring		5 individuals per month		$140.00	$1,680.00
D.3.c.	**Cardiovascular and Other Additional Screening**					
D.3.c.i.	Carotid Ultrasound		Every three years			Included in Medical Fitness Evaluation
D.3.c.ii.	Abdominal Aorta Ultrasound		Every three years			Included in Medical Fitness Evaluation

COST SUMMARY FOR DESIRABLES AND INNOVATIVE IDEAS

g. (continued)

Item	Service	Service Description	Units	Unit Cost	Monthly Cost	Annual Cost
D.3.c.iii.	Thyroid Ultrasound		Every three years			Included in Medical Fitness Evaluation
D.3.c.iv.	Peripheral Vascular Screening		Every three years			Included in Medical Fitness Evaluation
D.3.d.	**Fire Academy Athletic Injury Clinic**		2 hours per visit/8 visits per Academy	$200.00 per visit/ 8 visits per Academy/ 2 Academies per year		$3,200.00
D.3.e.	**Web-based Learning Module**					Included in Educational Services
D.3.f.	**Pulmonary Disease and Sleep Disorder Screening**					Apply for grant with UCSD
D.3.g.	**CT Cardiac Calcium Score**	16 Slice EBCT	24 screenings per year	$300.00 per screening		$7,200.00
D.3.h.	**Breast Cancer Screening**					Included in Medical Fitness Evaluation
D.3.i.	**Bladder Cancer Screening**					Included in Medical Fitness Evaluation
D.3.j.	**Sleep Study**					Apply for grant with UCSD
D.3.k.	**Functional Movement Screening**					Included in Medical Fitness Evaluation

City of San Diego

CONTRACTOR STANDARDS

Pledge of Compliance

The City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). The City of San Diego uses the criteria set forth in the CSO to determine whether a bidder or proposer has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds. This completed Pledge of Compliance signed under penalty of perjury must be submitted with each bid and proposal. If an informal solicitation process is used, the bidder must submit this completed Pledge of Compliance to the City prior to execution of the contract. All responses must be typewritten or printed in ink. If an explanation is requested or additional space is required, Respondents must provide responses on Attachment A to the Pledge of Compliance and sign each page. Failure to submit a signed and completed Pledge of Compliance may render the bid or proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted. A submitted Pledge of Compliance is a public record and information contained within will be available for public review except to the extent that such information is exempt from disclosure pursuant to applicable law.

A. BID/PROPOSAL/SOLICITATION TITLE:

San Diego Firefighter's Wellness Program

Bid Number RFP-10056900-15V

B. BIDDER/PROPOSER INFORMATION:

San Diego Sports Medicine and Family Health Center			
Legal Name		DBA	
6699 Alvarado Road, Suite 2100	San Diego	CA	92120
Street Address	City	State	Zip
Richard A. Parker, D.O., President	(619) 229-3922	(619) 229-3902	
Contact Person, Title	Phone	Fax	

C. OWNERSHIP AND NAME CHANGES:

1. In the past five (5) years, has your firm changed its name?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to list all prior legal and DBA names, addresses, and dates each firm name was used. Explain the specific reasons for each name change.

2. In the past five (5) years, has a firm owner, partner, or officer operated a similar business?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to list names and addresses of all businesses and the person who operated the business. Include information about a similar business only if an owner, partner, or officer of your firm holds or has held a similar position in another firm.

D. BUSINESS ORGANIZATION/STRUCTURE:

Indicate the organizational structure of your firm. Fill in only one section on this page. Use Attachment "A" if more space is required.

Corporation Date incorporated: 05 / 31 / 1995 State of incorporation: California

List corporation's current officers:
President: Richard A. Parker, D.O.
Vice Pres: Jeffrey P. Anthony, D.O.
Secretary: Frederick A. Richburg, M.D.
Treasurer: Lee P. Ralph, M.D.

Is your firm a publicly traded corporation? Yes ✓No

If **Yes**, name those who own ten percent (10 %) or more of the corporation's stocks:

N/A

Limited Liability Company Date formed: ___/___/____ State of formation: _____

List names of members who own ten percent (10%) or more of the company:

N/A

Partnership Date formed: ___/___/____ State of formation: _____

List names of all firm partners:

N/A

Sole Proprietorship Date started: ___/___/____

List all firms you have been an owner, partner or officer with during the past five (5) years. Do not include ownership of stock in a publicly traded company:

N/A

Joint Venture Date formed: ___/___/____

List each firm in the joint venture and its percentage of ownership:

N/A

Note: To be responsive, each member of a Joint Venture must complete a separate *Pledge of Compliance*.

E. FINANCIAL RESOURCES AND RESPONSIBILITY:

1. Is your firm preparing to be sold, in the process of being sold, or in negotiations to be sold?
   ☐ **Yes** ☑ No

   If **Yes**, use Attachment "A" to explain the circumstances, including the buyer's name and principal contact information.

2. In the past five (5) years, has your firm been denied bonding?
   ☐ **Yes** ☑ **No**

If **Yes**, use Attachment "A" to explain specific circumstances; include bonding company name.

3. In the past five (5) years, has a bonding company made any payments to satisfy claims made against a bond issued on your firm's behalf or a firm where you were the principal?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain specific circumstances.

4. In the past five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain specific circumstances.

5. Within the last five years, has your firm filed a voluntary petition in bankruptcy, been adjudicated bankrupt, or made a general assignment for the benefit of creditors? ☐ **Yes** ☑ **No**

6. Please provide the name of your principal financial institution for financial reference. By submitting a response to this Solicitation Contractor authorizes a release of credit information for verification of financial responsibility.

   Name of Bank: Wells Fargo

   Point of Contact: Jonathan Selga

   Address: 4690 63rd Street, San Diego, CA 92115

   Phone Number: (619) 583-8357

7. By submitting a response to a City solicitation, Contractor certifies that he or she has sufficient operating capital and/or financial reserves to properly fund the requirements identified in the solicitation. At City's request, Contractor will promptly provide to City a copy of Contractor's most recent balance sheet and/or other necessary financial statements to substantiate financial ability to perform.

F. PERFORMANCE HISTORY:

1. In the past five (5) years, has your firm been found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for defaulting or breaching a contract with a government agency?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain specific circumstances.

2. In the past five (5) years, has a public entity terminated your firm's contract for cause prior to contract completion?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain specific circumstances and provide principal contact information.

3. In the past five (5) years, has your firm entered into any settlement agreement for any lawsuit that alleged contract default, breach of contract, or fraud with or against a public entity?
   ☐ **Yes** ☑ **No**

   If **Yes**, use Attachment "A" to explain specific circumstances.

4. Is your firm currently involved in any lawsuit with a government agency in which it is alleged that your firm has defaulted on a contract, breached a contract, or committed fraud?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to explain specific circumstances.

5. In the past five (5) years, has your firm, or any firm with which any of your firm's owners, partners, or officers is or was associated, been debarred, disqualified, removed, or otherwise prevented from bidding on or completing any government or public agency contract for any reason?

☐ Yes ☑ No

If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances.

6. In the past five (5) years, has your firm received a notice to cure or a notice of default on a contract with any public agency?

☐ Yes ☑ No

If **Yes**, use Attachment "A" to explain specific circumstances and how the matter resolved.

7. Performance References:

Please provide a minimum of three (3) references familiar with work performed by your firm which was of a similar size and nature to the subject solicitation within the last five (5) years.

Company Name: San Diego Fire-Rescue Department

Contact Name and Phone Number: Fire Chief Brian Fennessy, (619) 533-4311

Contact Email: BFennessy@sandiego.gov

Address: 1010 Second Avenue, Suite 400, MS 604, San Diego, CA 92101-4409

Contract Date: 01/01/2014

Contract Amount: $1,710,419.00

Requirements of Contract: San Diego Firefighter's Regional Wellness Program

Company Name: National City Fire Department

Contact Name and Phone Number: Frank Parra, Emergency Services Director, (619) 336-4241

Contact Email: FParra@nationalcityca.gov

Address: City Hall, 1243 National City Blvd., National City, CA 91950

Contract Date: 01/01/2007

Contract Amount: $44,000.00 Annual

Requirements of Contract: Firefighter Wellness Program Services

Company Name: Imperial Beach Fire Department

Contact Name and Phone Number: Fire Chief John French, (619) 423-8223

Contact Email: JFrench@imperialbeachca.gov

Address: 865 Imperial Beach Blvd., Imperial Beach, CA 91932

Contract Date: 01/01/2011

Contract Amount: $20,000.00 Annual

Requirements of Contract: Firefighter Wellness Program Services

G. COMPLIANCE:

1. In the past five (5) years, has your firm or any firm owner, partner, officer, executive, or manager been criminally penalized or found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for violating any federal, state, or local law in performance of a contract, including but not limited to, laws regarding health and safety, labor and employment, permitting, and licensing laws?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances surrounding each instance. Include the name of the entity involved, the specific infraction(s) or violation(s), dates of instances, and outcome with current status.

2. In the past five (5) years, has your firm been determined to be non-responsible by a public entity?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances of each instance. Include the name of the entity involved, the specific infraction, dates, and outcome.

H. BUSINESS INTEGRITY:

1. In the past five (5) years, has your firm been convicted of or found liable in a civil suit for making a false claim or material misrepresentation to a private or public entity?

   ☐ Yes ☑ No

   If **Yes**, use Attachment "A" to explain specific circumstances of each instance. Include the entity involved, specific violation(s), dates, outcome and current status.

2. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract?

   ☐ Yes ☑ No

   If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

3. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a federal, state, or local crime of fraud, theft, or any other act of dishonesty?

   ☐ Yes ☑ No

   If **Yes**, use *Pledge of Compliance Attachment "A"* to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

I. **WAGE COMPLIANCE:**

In the past five (5) years, has your firm been required to pay back wages or penalties for failure to comply with the federal, state or local prevailing, minimum, or living wage laws? Yes ☐ No ☑ If **Yes**, use Attachment "A" to explain the specific circumstances of each instance. Include the entity involved, the specific infraction(s), dates, outcome, and current status.

J. **STATEMENT OF SUBCONTRACTORS:**

Please provide the names and information for all subcontractors used in the performance of the proposed contract, and what portion of work will be assigned to each subcontractor. Subcontractors may not be substituted without the written consent of the City. Use Attachment "A" if additional pages are necessary. If no subcontractors will be used, please write "Not Applicable."

Company Name: Quest Diagnostics

Contact Name and Phone Number: Stephanie Peterson, (619) 219-9404

Contact Email: Stephanie.D.Peterson@questdiagnostics.com

Address: 9245 Activity Rd, Suite 109, San Diego CA 92126

Contract Date 01/01/2005

Sub-Contract Dollar Amount: Cost of services provided

Requirements of Contract: Processing laboratory specimens

What portion of work will be assigned to this subcontractor: Laboratory - general labs

Is the Subcontractor a certified SLBE, ELBE, MBE, DBE, DVBE, or OBE? (Circle One) YES ☐ NO ☑

If YES, Contractor must provide valid proof of certification with the response to the bid or proposal.

Company Name: Scantibodies Laboratories, Inc.

Contact Name and Phone Number: David Cantor, (619) 258-9300

Contact Email: david.cantor@scantibodies.com

Address: 9336 Abraham Way, Santee, CA 92071

Contract Date 01/01/2014

Sub-Contract Dollar Amount: Cost of services provided

Requirements of Contract: Processing laboratory specimens

What portion of work will be assigned to this subcontractor: Laboratory-Quantiferon testing

Is the Subcontractor a certified SLBE, ELBE, MBE, DBE, DVBE, or OBE? (Circle One) YES ☐ NO ☑

If YES, Contractor must provide valid proof of certification with the response to the bid or proposal.

K. STATEMENT OF AVAILABLE EQUIPMENT:

List all necessary equipment to complete the work specificied. Use *Pledge of Compliance Attachment "A"* if additional pages are necessary. In instances where the required equipment is not owned by the Contractor, Contractor shall explain how the equipment will be made available before the commencement of work. The City of San Diego reserves the right to reject any response when, in its opinion, the Contractor has not demonstrated he or she will be properly equipped to perform the work in an efficient, effective manner for the duration of the contract period.

If no equipment is necessary to complete the work specified, please write "Not Applicable."

Equipment Description: See Attachment "A" for list of all medical and office equipment

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

Equipment Description: _____

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

Equipment Description: _____

Owned □ Rented □ Other □ (explain below)

If Owned, Quantity Available: _____

Year, Make & Model: _____

Explanation: _____

L. TYPE OF SUBMISSION: This document is submitted as:

Initial submission of *Contractor Standards Pledge of Compliance.*

✓ Update of prior *Contractor Standards Pledge of Compliance* dated 03/27/15.

Complete all questions and sign below.

Under penalty of perjury under the laws of the State of California, I certify that I have read and understand the questions contained in this Pledge of Compliance, that I am responsible for completeness and accuracy of the responses contained herein, and that all information provided is true to the best of my knowledge and belief. I agree to provide written notice to the Purchasing Agent within five (5) business days if, at any time, I learn that any portion of this Pledge of Compliance is inaccurate. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

I, on behalf of the firm, further certify that I and my firm will comply with the following provisions of SDMC section 22.3004:

(a) I and my firm will comply with all applicable local, State and Federal laws, including health and safety, labor and employment, and licensing laws that affect the employees, worksite or performance of the contract.

(b) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of receiving notice that a government agency has begun an investigation of me or my firm that may result in a finding that I or my firm is or was not in compliance with laws stated in paragraph (a).

(c) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of a finding by a government agency or court of competent jurisdiction of a violation by the Contractor of laws stated in paragraph (a).

(d) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of becoming aware of an investigation or finding by a government agency or court of competent jurisdiction of a violation by a subcontractor of laws stated in paragraph (a).

(e) I and my firm will cooperate fully with the City during any investigation and to respond to a request for information within ten (10) working days.

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed *Pledge of Compliance* is submitted.

Richard A. Parker, D.O., President		11/22/2017
Name and Title	Signature	Date

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed. Print in ink or type responses and indicate question being answered.

Equipment owned by SDSM needed to provide necessary services for contract:

- EKG machine
- Treadmill
- Bicycle ergometer
- AED
- Emergency equipment, oxygen tank, masks, ambubag, tubing
- Otoscope and Opthalmoscope
- Audiometer
- Sound proof booth
- Spirometers (2)
- Arm and leg dynamometer
- Grip Dynamometer
- Skinfold calipers (Lange)
- Sit reach box/Acuflex
- Vertical jump – Probotics "Just Jump" Mat
- Roman chair
- Stopwatch
- Metronome
- Mat
- Polar TriFit 700 Fitness Evaluation and Health Risk Appraisal and Polar Body Age System
- Blood pressure cuffs (7)
- Digital thermometers (3)
- Scales, upright (2)
- Eye chart
- Examination tables (2)
- Pillows (3)
- Desk, chair, and computer (7)
- Printers (3)

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Richard A. Parker, D.O., President		11/22/2017
Print Name, Title	Signature	Date

City of San Diego
EQUAL OPPORTUNITY CONTRACTING (EOC)
1200 Third Avenue • Suite 200 • San Diego, CA 92101
Phone: (619) 236-6000 • Fax: (619) 236-5904

WORK FORCE REPORT

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR).*

NO OTHER FORMS WILL BE ACCEPTED
CONTRACTOR IDENTIFICATION

Type of Contractor: ☐ Construction ☐ Consultant ☒ Vendor/Supplier ☐ Grant Recipient ☐ Financial Institution ☐ Insurance Company ☐ Lessee/Lessor ☐ Other

Name of Company: San Diego Sports Medicine and Family Health Center

ADA/DBA: _____

Address (Corporate Headquarters, where applicable): 6699 Alvarado Road, Suite 2100

City: San Diego County: San Diego State: CA Zip: 92120

Telephone Number: ( ) (619) 229-3922 Fax Number: ( ) (619) 229-3902

Name of Company CEO: Richard A. Parker, D.O., President

Address(es), phone and fax number(s) of company facilities located in San Diego County **(if different from above):**

Address: See Contractor Standards Pledge of Compliance "A" for list of all facility locations

City: _____ County: _____ State: _____ Zip: _____

Telephone Number: ( ) _____ Fax Number: ( ) _____ Email: _____

Type of Business: Physicians/Healthcare Type of License: Offices of Physicians

The Company has appointed: Jo Baxter

As its Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 6699 Alvarado Road, Suite 2100, San Diego, CA 92120

Telephone Number: ( ) (619) 229-3920 ext. 160 Fax Number: ( ) (619) 229-3902 Email: jobaxter@sdsm.com

☒ One San Diego County (or Most Local County) Work Force - Mandatory
☐ Branch Work Force *
☐ Managing Office Work Force

Check the box above that applies to this WFR.
**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

I, the undersigned representative of San Diego Sports Medicine and Family Health Center
(Firm Name)
San Diego, California hereby certify that information provided
(County) *(State)*
herein is true and correct. This document was executed on this 20th day of November, 20 17

J Baxter
(Authorized Signature)

J BAXTER
(Print Authorized Signature Name)

WORK FORCE REPORT – Page 2

NAME OF FIRM: San Diego Sports Medicine and Family Health Center DATE: 11/20/2017

OFFICE(S) or BRANCH(ES): One San Diego County Workforce COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

(1) Black, African-American
(2) Hispanic, Latino, Mexican-American, Puerto Rican
(3) Asian
(4) American Indian, Eskimo
(5) Filipino, Asian Pacific Islander
(6) White, Caucasian
(7) Other ethnicity; not falling into other groups

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian		(5) Asian Pacific Islander		(6) Caucasian		(7) Other Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Professional	0	0	0	2	0	1	0	0	0	0	12	13	0	0
A&E, Science, Computer	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Technical	0	1	1	3	1	1	0	0	0	0	1	5	0	0
Sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Administrative Support	0	0	0	4	0	1	0	0	0	0	1	15	0	0
Services	0	3	3	24	3	5	0	0	0	1	10	30	0	4
Crafts	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operative Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laborers*	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Construction laborers and other field employees are not to be included on this page

Totals Each Column	0	4	4	33	4	8	0	0	0	1	25	65	0	4

Grand Total All Employees	148

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

WORK FORCE REPORT – Page 3

NAME OF FIRM: San Diego Sports Medicine and Family Health Center DATE: 11/20/2017

OFFICE(S) or BRANCH(ES): One San Diego County Workforce COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

(1) Black, African-American
(2) Hispanic, Latino, Mexican-American, Puerto Rican
(3) Asian
(4) American Indian, Eskimo
(5) Filipino, Asian Pacific Islander
(6) White, Caucasian
(7) Other ethnicity; not falling into other groups

TRADE OCCUPATIONAL CATEGORY	(1) African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian		(5) Asian Pacific Islander		(6) Caucasian		(7) Other Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carpet, Floor & Tile Installers Finishers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cement Masons, Concrete Finishers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction Laborers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drywall Installers, Ceiling Tile Inst	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electricians	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elevator Installers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
First-Line Supervisors/Managers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glaziers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Helpers; Construction Trade	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Millwrights	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Const. Equipment Operators	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painters, Const. & Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipelayers, Plumbers, Pipe & Steam Fitters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plasterers & Stucco Masons	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roofers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Security Guards & Surveillance Officers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Metal Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Structural Metal Fabricators & Fitters	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Welding, Soldering & Brazing Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Workers, Extractive Crafts, Miners	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals Each Column	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Grand Total All Employees: 148

Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CITY OF SAN DIEGO WORK FORCE REPORT

HISTORY

The Work Force Report (WFR) is the document that allows the City of San Diego to analyze the work forces of all firms wishing to do business with the City. We are able to compare the firm's work force data to County Labor Force Availability (CLFA) data derived from the United States Census. CLFA data is a compilation of lists of occupations and includes the percentage of each ethnicity we track (African-American, Hispanic or Latino, Asian, American Indian, Asian Pacific Islander, Caucasian, and Other Ethnicities) for each occupation. Currently, our CLFA data is taken from the 2010 Census. In order to compare one firm to another, it is important that the data we receive from the consultant firm is accurate and organized in the manner that allows for this fair comparison.

WORK FORCE & BRANCH WORK FORCE REPORTS

When submitting a WFR, especially if the WFR is for a specific project or activity, we would like to have information about the firm's work force that is actually participating in the project or activity. That is, if the project is in San Diego and the work force is from San Diego, we want a San Diego County Work Force Report.[1] By the same token, if the project is in San Diego, but the work force is from another county, such as Orange or Riverside County, we want a Work Force Report from that county.[2] If participation in a San Diego project is by work forces from San Diego County and, for example, from Los Angeles County and from Sacramento County, we ask for separate Work Force Reports representing your firm from each of the three counties.

MANAGING OFFICE WORK FORCE

Equal Opportunity Contracting may occasionally ask for a Managing Office Work Force (MOWF) Report. This may occur in an instance where the firm involved is a large national or international firm but the San Diego or other local work force is very small. In this case, we may ask for both a local and a MOWF Report.[1,3] In another case, when work is done only by the Managing Office, only the MOWF Report may be necessary.[3]

TYPES OF WORK FORCE REPORTS:

Please note, throughout the preceding text of this page, the superscript numbers one [1], two [2] & three [3]. These numbers coincide with the types of work force report required in the example. See below:

[1] One San Diego County (or Most Local County) Work Force – Mandatory in most cases

[2] Branch Work Force *

[3] Managing Office Work Force

**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

Exhibit A: Work Force Report Job categories-Administration

Refer to this table when completing your firm's Work Force Report form(s).

Management & Financial

Advertising, Marketing, Promotions, Public Relations, and Sales Managers
Business Operations Specialists
Financial Specialists
Operations Specialties Managers
Other Management Occupations
Top Executives

Professional

Art and Design Workers
Counselors, Social Workers, and Other Community and Social Service Specialists
Entertainers and Performers, Sports and Related Workers
Health Diagnosing and Treating Practitioners
Lawyers, Judges, and Related Workers
Librarians, Curators, and Archivists
Life Scientists
Media and Communication Workers
Other Teachers and Instructors
Postsecondary Teachers
Primary, Secondary, and Special Education School Teachers

Religious Workers
Social Scientists and Related Workers

Architecture & Engineering, Science, Computer

Architects, Surveyors, and Cartographers
Computer Specialists
Engineers
Mathematical Science Occupations
Physical Scientists

Technical

Drafters, Engineering, and Mapping Technicians
Health Technologists and Technicians
Life, Physical, and Social Science Technicians
Media and Communication Equipment Workers

Sales

Other Sales and Related Workers
Retail Sales Workers
Sales Representatives, Services
Sales Representatives, Wholesale and Manufacturing
Supervisors, Sales Workers

Administrative Support

Financial Clerks
Information and Record Clerks
Legal Support Workers
Material Recording, Scheduling, Dispatching, and Distributing Workers
Other Education, Training, and Library Occupations
Other Office and Administrative Support Workers
Secretaries and Administrative Assistants
Supervisors, Office and Administrative Support Workers

Services

Building Cleaning and Pest Control Workers
Cooks and Food Preparation Workers
Entertainment Attendants and Related Workers
Fire Fighting and Prevention Workers
First-Line Supervisors/Managers, Protective Service Workers
Food and Beverage Serving Workers
Funeral Service Workers
Law Enforcement Workers
Nursing, Psychiatric, and Home Health Aides
Occupational and Physical Therapist Assistants and Aides
Other Food Preparation and Serving Related Workers
Other Healthcare Support Occupations
Other Personal Care and Service Workers
Other Protective Service Workers
Personal Appearance Workers
Supervisors, Food Preparation and Serving Workers
Supervisors, Personal Care and Service Workers
Transportation, Tourism, and Lodging Attendants

Crafts

Construction Trades Workers
Electrical and Electronic Equipment Mechanics, Installers, and Repairers
Extraction Workers
Material Moving Workers
Other Construction and Related Workers
Other Installation, Maintenance, and Repair Occupations
Plant and System Operators
Supervisors of Installation, Maintenance, and Repair Workers
Supervisors, Construction and Extraction Workers
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
Woodworkers

Operative Workers

Assemblers and Fabricators
Communications Equipment Operators
Food Processing Workers
Metal Workers and Plastic Workers
Motor Vehicle Operators
Other Production Occupations
Printing Workers
Supervisors, Production Workers
Textile, Apparel, and Furnishings Workers

Transportation

Air Transportation Workers
Other Transportation Workers
Rail Transportation Workers
Supervisors, Transportation and Material Moving Workers
Water Transportation Workers

Laborers

Agricultural Workers
Animal Care and Service Workers
Fishing and Hunting Workers
Forest, Conservation, and Logging Workers
Grounds Maintenance Workers
Helpers, Construction Trades
Supervisors, Building and Grounds Cleaning and Maintenance Workers
Supervisors, Farming, Fishing, and Forestry Workers

Exhibit B: Work Force Report Job categories-Trade

Brick, Block or Stone Masons

Brickmasons and Blockmasons
Stonemasons

Carpenters

Carpet, floor and Tile Installers and Finishers

Carpet Installers
Floor Layers, except Carpet, Wood and Hard Tiles
Floor Sanders and Finishers
Tile and Marble Setters

Cement Masons, Concrete Finishers

Cement Masons and Concrete Finishers
Terrazzo Workers and Finishers

Construction Laborers

Drywall Installers, Ceiling Tile Inst

Drywall and Ceiling Tile Installers
Tapers

Electricians

Elevator Installers and Repairers

First-Line Supervisors/Managers

First-line Supervisors/Managers of Construction Trades and Extraction Workers

Glaziers

Helpers, Construction Trade

Brickmasons, Blockmasons, and Tile and Marble Setters
Carpenters
Electricians
Painters, Paperhangers, Plasterers and Stucco
Pipelayers, Plumbers, Pipefitters and Steamfitters
Roofers
All other Construction Trades

Millwrights

Heating, Air Conditioning and Refrigeration Mechanics and Installers
Mechanical Door Repairers
Control and Valve Installers and Repairers
Other Installation, Maintenance and Repair Occupations

Misc. Const. Equipment Operators

Paving, Surfacing and Tamping Equipment Operators
Pile-Driver Operators
Operating Engineers and Other Construction Equipment Operators

Painters, Const. Maintenance

Painters, Construction and Maintenance
Paperhangers

Pipelayers and Plumbers

Pipelayers
Plumbers, Pipefitters and Steamfitters

Plasterers and Stucco Masons

Roofers

Security Guards & Surveillance Officers

Sheet Metal Workers

Structural Iron and Steel Workers

Welding, Soldering and Brazing Workers

Welders, Cutter, Solderers and Brazers
Welding, Soldering and Brazing Machine Setter, Operators and Tenders

Workers, Extractive Crafts, Miners

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed. Print in ink or type responses and indicate question being answered.

List of all facility locations in San Diego County:

San Diego Sports Medicine and Family Health Center – Alvarado Office
6699 Alvarado Road, Suites 2100 & 2101
San Diego, CA 92120
Telephone (619) 229-3922
Fax (619) 229-3902

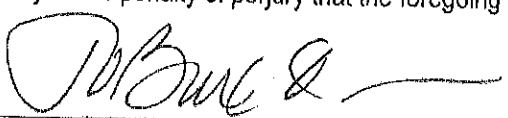
San Diego Sports Medicine and Family Health Center – Sorrento Valley Office
4010 Sorrento Valley Boulevard, Suite 300
San Diego, CA 92121
Telephone (858) 793-7860
Fax (858) 436-1289

San Diego Sports Medicine and Family Health Center – Grossmont Office
8860 Center Drive, Suite 350A
La Mesa, CA 91942
Telephone (619) 229-3922 (all correspondence directed to Alvarado office)
Fax (619) 229-3902

San Diego Sports Medicine and Family Health Center – Pacific Beach office
1945 Garnet Avenue
San Diego, CA 92109
Telephone (858) 224-7977
Fax (858) 224-7978

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Jo Baxter, EEOO — Print Name, Title

 — Signature

11/20/2017 — Date

Item 100
1-9-2018
(R-2018-251)

RESOLUTION NUMBER R- 311483

DATE OF FINAL PASSAGE JAN 18 2018

A RESOLUTION OF THE COUNCIL OF THE CITY OF SAN DIEGO AMENDING AND AUTHORIZING A COST INCREASE OF $574,537 FOR FY 2018 TO THE SAN DIEGO SPORTS MEDICINE AND FAMILY HEALTH CENTER CONTRACT TO PROVIDE HEALTH AND WELLNESS SERVICES.

WHEREAS, in 2015 the City awarded San Diego Sports Medicine and Family Health Center (SDSMFHC) the contract for health and wellness services; and

WHEREAS, the contract with SDSMFHC gives the City to option to extend the term of the contract through one year extensions up until June 30, 2020; and

WHEREAS, the Fire-Rescue Department desires to increase amount payable to SDSMFHC to reflect the higher than expected number of Fire-Rescue Department employees in the Wellness Program, reflect an increase in health and wellness services' costs, and to include pre-employment fitness exams within this contract; and

WHEREAS, this amendment would increase the total contract by an additional $574,537 in FY 2018 for a total FY 2018 contract amount of $1,710,419; and

WHEREAS, these additional costs, including any future increases allowed under the Wellness Program contract, will be absorbed by the Fire-Rescue Department's annual operating budget; NOW, THEREFORE,

BE IT RESOLVED, by the City Council of the City of San Diego, that the Mayor, or his designee, is authorized to amend the existing contract between the City and San Diego Sports Medicine and Family Health Center to provide health and wellness services and to increasing the contract's FY 2018 costs by an additional $574,537 for a total FY 2018 cost of $1,710,419.

BE IT FURTHER RESOLVED, that any future extensions of the term of the contract between the City and San Diego Sports Medicine and Family Health Center may be subject to a 5% cost increase of the previous fiscal year's costs, as stated that contract.

BE IT FURTHER RESOLVED, that the Chief Financial Officer is authorized to expend additional funds in an amount not to exceed $574,537 in FY 2018 for a total FY 2018 contract amount of $1,710,419 contingent upon the Chief Financial Officer furnishing a certificate certifying that the funds necessary for expenditure are, or will be, on deposit with the City Treasurer.

BE IT FURTHER RESOLVED, that the Chief Financial Officer is authorized to expend additional funds required by the contract between the City and San Diego Sports Medicine and Family Health Center in any subsequent fiscal year into which the term of the contract is extended contingent upon the adoption of the annual appropriations ordinance for the applicable fiscal year and contingent upon the Chief Financial Officer furnishing a certificate certifying that the funds necessary for expenditure are, or will be, on deposit with the City Treasurer.

APPROVED: MARA W. ELLIOTT, City Attorney

By _____
Noah J. Brazier
Deputy City Attorney

NJB:hm
December 18, 2017
Or.Dept:PSE
Doc. No.: 1644925

I certify that the foregoing Resolution was passed by the Council of the City of San Diego, at this meeting of JAN 09 2018.

ELIZABETH S. MALAND
City Clerk

By _____
Deputy City Clerk

Approved: 1/18/18
(date)

_____
KEVIN L. FAULCONER, Mayor

Vetoed: _____
(date)

_____
KEVIN L. FAULCONER, Mayor

Passed by the Council of The City of San Diego on JAN 09 2018, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Barbara Bry	☒	☐	☐	☐
Lorie Zapf	☒	☐	☐	☐
Chris Ward	☒	☐	☐	☐
Myrtle Cole	☒	☐	☐	☐
Mark Kersey	☒	☐	☐	☐
Chris Cate	☒	☐	☐	☐
Scott Sherman	☒	☐	☐	☐
David Alvarez	☒	☐	☐	☐
Georgette Gomez	☒	☐	☐	☐

Date of final passage JAN 18 2018.

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

KEVIN L. FAULCONER
Mayor of The City of San Diego, California.

(Seal)

ELIZABETH S. MALAND
City Clerk of The City of San Diego, California.

By _____, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R- 311483

Passed by the Council of The City of San Diego January 9, 2018, by the following vote:

YEAS:	**BRY, ZAPF, WARD, COLE, KERSEY, CATE, SHERMAN, ALVAREZ, GÓMEZ.**
NAYS:	**NONE.**
NOT PRESENT:	**NONE.**
RECUSED:	**NONE.**

AUTHENTICATED BY:

KEVIN L. FAULCONER

Mayor of The City of San Diego, California

ELIZABETH S. MALAND

City Clerk of The City of San Diego, California

(Seal)

By: **Matthew R. Hilario**, Deputy

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of RESOLUTION NO. **R-311483**, approved on **January 9, 2018**. The date of final passage is **January 18, 2018.**

ELIZABETH S. MALAND

City Clerk of the City of San Diego, California

(Seal)

By: _____, Deputy

CITY OF SAN DIEGO

PURCHASING & CONTRACTING DEPARTMENT
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195
Fax: (619)236-5904

ADDENDUM B

RFP No. 10089601-20-K

RFP Closing Date: January 31, 2020 @2:00p.m.

Bid for furnishing the City of San Diego with **a Wellness Program for San Diego Fire-Rescue and Police Departments.**

The following changes to the specifications are hereby made effective as though they were originally shown and/or written:

1. *Delete* the original Request for Proposal Cover Page and *replace* with the attached Addendum B Request for Proposal Cover Page. (**NOTE:** RFP Closing Date has been extended)

2. *Delete* the Addendum A Request for Proposal signature page 3 and *replace* with the attached Addendum B Request for Proposal signature page 3.

3. *Add* one (1) page "Questions and Answers". (**NOTE:** Question No. 1 is a clarification to Addendum A, question no. 7. The questions and answers are being provided for informational purposes only, and are not part of any resulting contract from this RFP.)

CITY OF SAN DIEGO PURCHASING & CONTRACTING DEPARTMENT

Brent Krohn
Program Coordinator
(619)236-6044

January 21, 2020

The City of SAN DIEGO

Request for Proposal (RFP) for
Wellness Program for San Diego Fire-Rescue and Police Departments

ADDENDUM B

Solicitation Number:	10089601-20-K
Solicitation Issue Date:	December 16, 2019
Recommended Pre-proposal Conference:	9:00 a.m., January 3, 2020 at the following location: San Diego Police Plaza 4020 Murphy Canyon Rd San Diego, CA 92123
Questions and Comments Due:	12:00 p.m., January 9, 2020
Proposal Due Date and Time (Closing Date):	**2:00 p.m., January 31, 2020**
Contract Terms:	For a period of three (3) years beginning on the Effective Date with two (2) additional one (1) year options to renew, as defined in Article I, Section 1.2 of the City's General Contract Terms and Conditions.
City Contact:	Brent Krohn, Program Coordinator, 1200 Third Avenue, Suite 200, San Diego, CA 92101 BKrohn@sandiego.gov, (619) 236-6044
Submissions:	Respondent is required to provide four (4) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein. Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued. **Note: Emailed submissions will not be accepted.**

acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

_____
Proposer

_____
Street Address

_____
City

_____
Telephone No.

_____
E-Mail

BY:

_____
Signature of
Proposer's Authorized
Representative

_____
Print Name

_____
Title

_____
Date

CITY OF SAN DIEGO
A Municipal Corporation

BY:

_____

Print Name:

_____
Director, Purchasing & Contracting Department

_____
Date Signed

Approved as to form this _____ day of

_____, 20_____.
MARA W. ELLIOTT, City Attorney

BY:_____
Deputy City Attorney

RFP No. 10089601-20-K

QUESTIONS AND ANSWERS

Question 1: Clarification and intent to Section B.1.b.iii regrading our answer to the prior Addendum A, Question 7 below:

> *Question 7: What services can be contracted out from the facility of the Medical Fitness Evaluation?*
>
> ***Response:***
> ***Laboratory Analyses and mammograms (RFP, Section B.1.a.ii)***
> ***The intent of the RFP is to have all services for the evaluation provided at the wellness center. If a service needs to be contracted out it will need to be identified in writing and agreed to by the Wellness Officers.***

Response: **Regarding – "Provided on the site of the medical evaluation"**
It is the City's intent to not inconvenience the employee by requiring them to travel to multiple sites to complete a single exam.

Per section B.1.a.ii.2 - Since the laboratory facilities for the blood draws will be spread throughout the City, it shall be acceptable for other specialty diagnostics (i.e. X-ray, Ultrasounds, Mammogram etc…) to be performed at those same facilities.

Regarding – "Rotating biennial tests"

The rotating biennial tests shall be on the following fiscal yearly schedule.

- **FY 1 – Rotating Ultrasound Order**
- **FY 2 – Chest X-Ray**
- **FY 3 – Rotating Ultrasound Order**
- **FY 4 – Chest X-Ray**
- **FY 5 – Rotating Ultrasound Order**

Question 2: What costs will the proposer be responsible for at the City owned facility?

Response: **All City owned facility costs shall be paid by the City including utilities, fixed building repairs, restrooms, housekeeping, toiletries, etc…**

Proposer will be responsible for all other medical related waste and supplies associated with performance of the exam and any items specifically mentioned within the RFP.

EXHIBIT B
SCOPE OF WORK

A. OVERVIEW

San Diego Sports Medicine and Family Health Center (SDSM) acknowledges the overview and the Scope of Work specified in RFP-10089601-20-K to provide medical, wellness and rehabilitation services to all classifications of San Diego Firefighters, Lifeguards and Police Officers.

B. REQUIREMENTS AND TASKS

San Diego Sports Medicine and Family Health Center (SDSM) will provide the following services as outlined in the RFP. All services provided will be in accordance with the most current and established industry standards throughout the duration of this Agreement.

SDSM will provide the following on an annual basis:

1. COMPLETE PHYSICAL WELLNESS MEDICAL EVALUATION (CPWME)

    a. Provision of Required Paperwork and Services Prior to Physical Wellness Medical Evaluation.

        i. To encourage participation and understanding of the program for all participants, the following forms, reports, and documentation will be provided to all participants prior to the Medical Fitness Exam:

            1. Introductory letter describing the Wellness Initiative to new participants. (See example in Tab 1)

            2. Health history/lifestyle questionnaire for new participants will be provided. A summary sheet will be provided to past participants that reviews previous data including medications, allergies, past medical history, surgical history, family history, habits, and immunizations from the previous year. All participants will review and edit information as needed, as well as sign the summary sheet to update information within their medical record. (See example in Tab 2)

            3. Exercise risk assessment will be addressed through a cardiovascular risk questionnaire and through questions on the database with respect to the frequency of flexibility, cardiovascular training and strength training. Injury assessment is determined through a health questionnaire and health history. (See example in Tab 3)

4. Participation information form will be given at time of blood draw or initial visit to include demographic and contact information as well as the participant's election of exams. (See example in Tab 4)

5. HIPAA information and acknowledgement form educates the participants as to their privacy rights and HIPAA laws with a signed acknowledgment. (See example in Tab 5)

6. Nutrition risk assessment developed by the SDSM registered dietitian includes a questionnaire designed to elicit dietary habits of individual participants incorporated with health-related risk factors and/or diseases to determine nutrition risk. (See example in Tab 6)

7. The arbitration agreement is a signed document between the participant and the medical provider used to address dispute resolution. SDSM no longer uses an arbitration agreement under direction from SDSM's medical malpractice carrier. Participants have the right to pursue claims of medical malpractice through any legal means available. (See Tab 7 for the arbitration agreement previously used by SDSM)

8. Explanation of testing procedures provides a complete description of the purpose of the tests and evaluations that will be performed during the exam. (See example in Tab 8)

9. Instructions for participants on exam date includes information on eating, drinking, dress, exercise precautions and medications, etc. (See example in Tab 9)

10. Respiratory fit clearance form and OSHA questionnaire in compliance with City of San Diego requirements will be provided. (See example in Tab 10)

11. Request for immunization records will be provided to determine participant immunization status. (See example in Tab 11)

12. Directions to facilities. (See directions in Tab 12)

13. Electronic participation survey. (See example in Tab 13)

ii. Laboratory Analyses (participants will have labs drawn at least one week prior to the evaluation but no more than 120 days).

1. SDSM will coordinate with the Wellness Officer(s) or designee (Fire-Rescue &

Police Department employee provided to oversee and coordinate the contract).

2. SDSM will provide access to laboratory facilities spread throughout the City that can be utilized by fire & police personnel on an individual basis while on duty.

   Participants can go to any Quest Laboratory draw station for a blood draw. Quest draw stations are located throughout San Diego County. SDSM will provide standing orders for all participants 120 days in advance of their scheduled Wellness exam. In addition, participants may go to the SDFRWP Wellness Center for a blood draw from 8:00 a.m. to 10:00 a.m. Monday through Friday, excluding federal holidays. (See Quest locations in Tab 14)

   a. SDSM shall make contact with individuals that have not completed their blood draw at least two (2) weeks prior to the participant's Physical Wellness Medical Evaluation.

3. The costs incurred by SDSM for these services shall be included as part of the Complete Physical Wellness Medical Evaluations except as noted on pricing schedule attached.

4. The blood analysis will include the following tests in accordance with required components referenced in the WFI, 4th Edition, blood analysis section:

   a. Chemistry Panel (SMAC 20)

   b. Prostate Specific Antigen (PSA) for men over age 40

   c. CBC with differential

      i. HbA1C performed for all blood glucose levels above 120 mg/dl

   d. Thyroid Stimulating Hormone test

   e. Any future test that becomes part of either a WFI revision or for standard medical care and requested by City will incur an additional charge.

5. SDSM will utilize Quest Diagnostic laboratories. Quest Diagnostics is certified to perform medical analysis of blood and related tests by the State of California.

b. Physical Wellness Medical Evaluation

SDSM will provide the following evaluations in accordance with the RFP:

i. Vital signs to include height, weight, blood pressure, pulse, temperature and

respirations.

ii. A complete hands-on physical examination by qualified SDSM physicians, who are board certified in family medicine and sports medicine. SDSM physicians have extensive knowledge and expertise in firefighter health and safety. SDSM has provided wellness services for over 30 years to multiple departments in San Diego County and elsewhere. SDSM physicians have extensive experience as doctors of record for hundreds of police and fire personnel for over 30 years (see Qualifications).

The periodic physical examination will be conducted every 12 months on each participant. The exam performed by SDSM physicians is designed to gather valuable data on the status of uniformed personnel in the Fire-Rescue and Police Departments as they progress through their careers. The exam will include a thorough evaluation of the following systems of the body in accordance with guidelines of the WFI, 4th Edition:

1. Head, eyes, ears, nose, throat
2. Neck, to include:
    a. Endocrine (thyroid gland)
3. Cardiovascular
4. Pulmonary
5. Gastrointestinal
6. Genitourinary
7. Rectal (for males over age 40 and females over age 50)
8. Lymph nodes
9. Neurological
10. Musculoskeletal
11. Skin
12. DMV exam, if applicable. SDSM physicians performing these exams are certified by the National Registry of Certified Medical Examiners to provide

DMV exams.

13. FBI, Scuba, HAZMAT, Bomb Squad Technician and US&R physical exams and reports will be provided as needed.

14. Follow-up consultation with SDSM physicians will be conducted at the time of the initial appointment. The follow-up consultation will consist of the following:

    a. SDSM physicians will follow-up on any findings from any prior annual examinations and review them with participant at the time of the evaluation.

    b. SDSM will review any abnormal findings on the annual physical, will address any issue directly with the participant, and provide specific recommendations to control or remedy the abnormality, and give specific recommendations for follow-up or referral.

    c. SDSM physicians will make appropriate referral for non-service connected issues using the participant's primary care physician.

iii. The following tests will be performed on participants as outlined below. These tests will be performed coincident with and at the same location as the medical evaluations. The SDSM facility is located at 6699 Alvarado Road, Suite 2101.

1. A two-view chest X-ray (CXR) will be performed utilizing digital imaging technology at SDSM facilities as follows:

    a. New Wellness participants will receive a CXR at the initial visit.

    b. CXR's will be done on all participants over the age of 40 in the second year of the contract.

    c. If a member has a past positive PPD test, CXR will be performed annually (at an additional cost).

    d. On any participant with symptoms that are suggestive of a respiratory or cardiovascular issue for which CXR would be useful for further diagnostic accuracy. This will be at the discretion of the physician (at additional cost).

2. Ultrasound will be performed using a Sonosite M Turbo ultrasound or equivalent machine. The following ultrasound examinations will be performed during the third year of the contract on all participants over the age of 40.

    a. Carotid Arteries: There are two common carotid arteries, one on each side

of the neck, that supply blood to the head and neck. Ultrasound of the carotid arteries is a useful tool for assessing carotid artery disease. The amount of disease is determined by the amount of plaque that is built up in these two vessels. Plaque is made up of fat, cholesterol, calcium and other substances found in the blood. Plaque can slow down or block the flow of blood through the artery allowing a blood clot to form. A piece of the blood clot can break off and block the artery thereby slowing or stopping blood flow to the brain, resulting in a stroke. Ultrasound of the carotid arteries will measure the intimae–media thickness (IMT) of the arterial wall. Increases in the IMT of the arteries have been associated with increased risk of myocardial infarction and stroke. Ultrasound of the carotid arteries will also assess arterial stenosis and plaque formation.

b. Thyroid: A screening thyroid ultrasound allows the physician to visualize the thyroid, a gland in the neck that regulates metabolism and other functions, as well as visualize any physical abnormalities of the thyroid gland.

iv. Respiratory Fitness Exam

1. Pulmonary evaluation test will be performed by qualified personnel and include the following:

a. Spirometry on each individual will be conducted using a calibrated spirometer that will measure the following variable: FVC - forced vital capacity, FEV1 - forced expiratory volume in one second, FEV1/FVC ratio, and Peak Expiratory flow rate. Data will be graphed from year to year to see individual trends and will be retained in the participant's medical record.

b. Other tests will be recommended as appropriate in accordance with the WFI, 4th Edition, if abnormalities are found upon pulmonary evaluation. Individuals will be referred to their primary care physician and/or qualified pulmonologist as needed.

c. SDSM will incorporate any future tests that become part of a WFI revision or become standard medical care and requested by City will incur an additional charge.

v. Urinalysis

1. Urinalysis tests will include dipstick and/or laboratory microscopic evaluation as appropriate in accordance with the WFI, 4th Edition. The urine dipstick will

include tests for pH, glucose, ketones, protein, blood, and bilirubin. Microscopic evaluation will include white blood cells (WBC), red blood cells (RBC), WBC casts, RBC casts, and crystals. The microscopic urinalysis will be performed if the urine dipstick results are abnormal.

2. SDSM will provide any future tests that become part of either a WFI revision or become standard medical care and requested by the City at an additional cost.

vi. SCBA, N100 and other face piece fit testing will be provided by SDSM. Staff are well trained in providing and coordinating this service with the San Diego Fire-Rescue Department.

vii. Vision and Audiometric Examinations

1. SDSM will provide vision and audiometric evaluations.

   a. Vision will be assessed by evaluation of near, distance, peripheral, and color vision as indicated by the referenced guidelines published by the California Department of Motor Vehicles (DMV).

   b. Audiometric evaluation will be conducted using an ANSI-approved soundproof booth located onsite. The following frequencies will be tested: 500 HZ, 1000 HZ, 2000 HZ, 3000 HZ, 4000 HZ, 6000 HZ, and 8000 HZ. This evaluation is in accordance with the reference guidelines of the DMV and the WFI, 4th Edition.

viii Resting 12-lead EKG will be performed annually

ix. Sub-maximal exercise test monitored with a 12-lead EKG will be performed by SDSM staff trained at a Master's level in exercise physiology. This exercise test is used to determine cardiovascular fitness, heart rate, and blood pressure response to exercise as well as evaluation of any arrhythmias, heart blocks or evidence of ischemia (lack of oxygen of heart) during exercise. An SDSM physician will be onsite for supervision of the test and interpretation of EKG.

1. The primary mode of testing will be on a treadmill (Mortar's Welch Allen TM 65). A bicycle ergometer (Schiller 910S) will be used as the alternative method of exercise testing as specified in the WFI, 4th Edition.

x. Department of Transportation (DOT)/DMV physical (required every two [2] years) will be performed on those individuals who require DMV physicals. Any necessary forms and documentation will be completed by SDSM staff and physicians for the participant’s Medical Examiner’s card. These exams will be

performed annually for all participants as needed.

1. All qualified SDSM physicians that will be performing DMV exams are currently registered Medical Examiners on the Federal Motor Carrier Safety Administrations' National Registry of Certified Medical Examiners. All SDSM qualified physicians completed the training and testing concerning the federal physical qualifications and standards for truck and bus drivers and possess the necessary knowledge and professional credentials to perform physical qualification examinations for commercial motor vehicle drivers in accordance with the Federal Motor Carrier Safety Regulations (49CFR 391.41). SDSM will continue to be certified by the National Registry of Certified Medical Examiners throughout the term of this contract.

2. SDSM physicians and staff will follow all current DMV guidelines.

3. SDSM physicians and staff will follow HIPAA privacy regulations while conducting DMV exams.

4. SDSM physicians and staff will complete any necessary documentation/forms for the participant's Medical Examiner's Certificate as part of the DOT/DMV physical form.

5. SDSM will coordinate efforts as needed with the staff of the City of San Diego in relation to the DOT/DMV physical.

6. SDSM will complete the DMV form for the City of San Diego on each participant receiving a DOT/DMV physical. (See example in Tab 15)

xi. Behavior Wellness Evaluation

1. SDSM physicians will review the behavioral health questionnaire with each participant and have clinical discussion with each participant regarding their behavioral health. (See example in Tab 16)

2. Referrals will be made to the City's specific resources as needed for behavioral concerns. SDSM will provide information on City of San Diego resources for behavioral health in their personal profile for future reference for each individual.

xii. Cancer Detection

1. SDSM proposes the following cancer detecting program to identify all

occupational cancers. The program will be a combination of blood work, innovative ideas and evaluations. SDSM will add new evaluations if new technologies and/or medical discoveries become available to this program. SDSM will perform the following cancer detection tests based on current recommendations:

a. Skin cancer screening, with particular attention to sun-exposed areas, will be performed during the physical exam by the physician. Any individuals with suspicious lesions will be referred to their private physician or dermatology for further assessment and/or treatment.

b. Breast cancer is the most common type of cancer in women and the second leading cause of death in women after lung cancer. An annual clinical breast examination will be given to each female participant. Breast self-examination (BSE) will be taught and each individual will be encouraged to perform the BSE monthly. Educational material will be made available to interested participants. SDSM will use the Breast Cancer Risk Assessment Tool designed by scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP). This tool is used to estimate a woman's risk of developing invasive breast cancer. (See example tool in Tab 17.) Annual mammogram screening shall be performed on all female participants beginning at age 40 at the SDSM-contracted facility utilizing digital technology (Imaging Healthcare Specialists). Participants with a family history of breast cancer or other significant risks shall be provided with appropriate individualized recommendations for breast cancer screening.

c. Cervical cancer screening utilizing pap smear will be provided for female participants over age 21. Cervical cancer screening will be performed annually until three normal results have been obtained. Cervical cancer screening will then be provided every three to five years thereafter based on risk. Risk will be determined annually by the physician. In high risk individuals, screening will be performed more frequently.

    i. HPV testing will be performed as indicated by the American College of Gynecology (ACOG).

d. Lung cancer screening will be performed using the performed for qualified participants utilizing chest x-rays with the frequency listed below:

    i. New Wellness participants will receive a CXR at the initial visit.

ii. CXR's will be done on all participants over the age of 40 in the second year of the contract.

iii. If a member has a past positive PPD test, the CXR will be performed annually (at additional cost).

iv. On any participant with symptoms that are suggestive of a respiratory or cardiovascular issue for which CXR would be useful for further diagnostic accuracy. This will be at the discretion of the physician (at additional cost).

v. All CXRs are reviewed by a Radiologist from Imaging Healthcare Specialists. If any pulmonary nodule or other suspicious finding is observed on X-ray, the participant will be referred to their primary care physician for further evaluation.

vi. Other diagnostics strategies will be used depending on the participant's health risks, such as a Lung CT or referral to pulmonologist.

e. Prostate cancer is the second most common type of cancer in men, after skin cancer. Prostate cancer screening will be conducted annually for all participants utilizing digital rectal exam and Prostate Specific Antigen (PSA) testing for males age 40 and above.

f. Colon cancer screening will be conducted on all individuals beginning at age 45 using OC-Light FIT fecal occult blood testing. The presence of fecal occult blood in the stool is associated with gastrointestinal disorders such as diverticulitis, polyps and Crohn's disease, which may lead to colorectal cancer if not treated. Early diagnosis and treatment have been shown to significantly reduce mortality from colorectal cancer. OC-Light is an immunological-based test that is specifically designed to test for the presence of human hemoglobin in feces. There is no need for patients to adhere to any dietary restrictions with this test. The sampling procedure is user friendly, requiring virtually no fecal handling and only one sample. Participants with abnormal results will be referred to their primary care physician for further testing. Participants will be encouraged to obtain a colonoscopy through their primary care physician starting at age 50, or sooner depending on risk factors.

g. Testicular cancer represents one percent of all cancers in men. It remains the most common cancer in Caucasian men age 20–34. Early detection and treatment generally result in an excellent prognosis. Testicular examination

will be performed on all male participants annually, and self- examination will be taught and encouraged. Educational materials on testicular cancer will be made available to all interested participants.

h. Bladder cancer screening will be performed onsite at the time of the physical examination through urinalysis to determine microscopic count of red blood cells (RBCs). Other tests at the discretion of the Wellness Officer can be performed on high-risk individuals. Appropriate referrals will be made to a Urologist through the participant's primary care physician if the participant is found to be at increased risk for bladder cancer.

i. Oral cancer screening will be performed by visual examination of the participant's mouth. If any suspicious lesions are found, recommendations will be made to have a biopsy performed through the participant's dentist, primary care physician, or other appropriate specialist.

xiii Fitness Evaluation and Staff (Exercise Physiology, Strength and Conditioning and Certified Athletic Training)

1. SDSM will employ fitness staff to conduct fitness evaluations and perform other activities relative to the WFI, including fitness education. SDSM fitness staff is presently comprised of personnel with Master's degrees or higher in the disciplines of exercise physiology and nutrition. This level of education among the fitness staff will be maintained throughout the contract. SDSM fitness staff are certified in strength and conditioning through either the American College of Sports Medicine (ACMS) or the National Strength and Conditioning Association (NSCA). SDSM's fitness staff includes certified athletic trainers, exercise physiologists and registered dietitians.

2. SDSM fitness staff will be available to participants to directly perform fitness evaluations and the following services:

   a. Evaluate participant's level of fitness

   b. Evaluate participant's level of improvement since past assessments, if applicable

   c. Provide realistic job-specific assessment tools for injury prevention

   d. Review participant's current exercise program and suggest modifications as appropriate

   e. Provide comprehensive wellness/fitness program recommendations

f. Perform the wellness age assessment, calculated from the health and fitness assessments

g. Provide orthopedic/musculoskeletal rehabilitation if prescribed by a physician

h. Perform fitness evaluations to include the following assessments:

   i. Body composition can be measured in several different methods including circumferential measurements, hydrostatic weighing, BodPod, bioelectrical impedance analysis (BIA), skinfold measurements, body mass index (BMI), and dual energy X-ray absorptiometry (DEXA). The accuracy, reliability, practicality and associated cost of these methods vary. The WFI, 4th Edition, recommends waist and hip circumference be used to assess body composition. SDSM will continue to measure waist hip circumference on each participant to not only determine body composition but to help determine health risk associated with increased waist to hip ratio. The WFI, 4th Edition, also specifies other optional methods to measure firefighter fitness including skinfolds for body composition. They have recommended that departments that have been currently using this assessment and have the resources continue to do so. SDSM has 15 years of data on skin fold measurements of the firefighters and therefore will continue to assess body composition using this method. Skinfold measurement will be taken at seven different sites. The Jackson and Pollock regression equation will be used to determine body fat. From the estimated body fat, lean body mass will be determined along with an ideal body weight for each individual. Skin fold measurements will be made with the Lange caliper.

   ii. Abdominal crunch test will be conducted for a two-minute duration by the Wellness staff. The purpose of this test is to evaluate muscular endurance of the core stabilization and abdominal muscles of the body. (See example in Tab 18)

   iii. Push-up evaluation, or alternative grip push-up, will be used to evaluate upper body strength and endurance. The alternate grip push- up will be used for those individuals with a history of hand, wrist or shoulder injuries. (See example in Tab 19)

   iv. Functional movement screen is now employed as part of the current wellness program for the SDFRD personnel. This test is used to help

evaluate core strength, flexibility and balance. (See example in Tab 20)

The seven components of the functional movement screen are as follows:

1. Deep squat: assess mobility and strength of hips, knees, ankles and shoulders.
2. In-line lunge: assess stability of hip, ankle and knee.
3. Hurdle step: assess bilateral mobility, stability and balance of lower extremity as well as hip extension strength.
4. Shoulder mobility: assess bilateral shoulder range of motion.
5. Active straight leg raise: assess active hamstring and gastrocnemius/soleus flexibility while maintaining a stable pelvis.
6. Trunk stability push-up: assess trunk stability and symmetry of movement in the sagittal plane.
7. Rotational stability: assess multi-planar stability while combined upper and lower extremity motion is performed.

v. Strength testing: Lower body power and strength is required for many essential tasks including lifting and carrying equipment, forcing entry, climbing stairs, pulling and operating hose lines, and lifting patients. Lower body power and strength will be assessed by the vertical jump using the Vertec system. The fitness staff will follow protocol of the WFI, 4th Edition. (See example in Tab 21)

vi. Flexibility evaluation will be performed using the Novel Acuflex 1 or equivalent equipment to perform a sit-reach test. This flexibility test evaluates trunk flexibility, specifically the flexibility of the joints of the lower back and hamstrings. (See example in Tab 22)

vii. Assessment of low back muscular endurance will be performed using the static plank and side plank test outlined in the WFI, 4th Edition. (See example of side plank in Tab 23)

viii Alternative assessments of core strength and flexibility: The WFI, 4th Edition, recommends the horizontal pull-up test as an additional exercise to assess strength. SDSM fitness staff presently perform this test on injury-free participants. This test assesses the pulling strength/endurance of the upper body and control of lower back and shoulders for extended periods of time. (See example in Tab 24)

i. SDSM fitness staff will provide individual recommendations for overall

conditioning programs for participants in the wellness program based on their findings. (See example in Tab 27, pages 5 and 40 - 47)

j. SDSM fitness staff will provide fitness consultations for individuals, the departments in their entireties, and the Academies as required by the Wellness Officer(s) as part of educational hours.

k. SDSM will develop personalized strength and flexibility programs for individuals as required as part of educational hours.

l. Nutrition Station

    i. SDSM staff including the registered dietitians and the exercise physiology staff with Master's degree training in nutrition will conduct the nutritional assessment and provide nutritional consultation. The staff will use a nutrition assessment tool in conjunction with overall health risk to consult with individuals on improving dietary intake, exercise habits, weight control, nutrient intake, hydration, energy balance, and specific nutrient requirements for their job. Personalized nutrition education material will be given to individuals in their Personal Profile, including the most up to date information on lowering health risks. The consultation will be conducted on the day of the physical exam and is scheduled for approximately 20 to 30 minutes. Other educational and consultation formats will be used in conjunction with the assessment, such as the Nutritional Quiz, to keep participants current on the latest nutritional recommendations and findings and to employ new tools in the education of the participants. High risk individuals will have the opportunity to meet one on one with the registered dietitian or other wellness staff as part of educational services. (See example in Tab 25)

m. SDSM fitness staff will provide preventive measures or techniques to mitigate developing injuries and provide rehabilitation of past injuries not covered under worker's compensation under the direction of the Physician and Athletic trainer.

n. SDSM fitness staff will develop and provide educational materials and instructions that address specific needs of individual participants, such as core stabilization exercises, treatment of plantar fasciitis, rotator cuff injuries, and shoulder stabilization exercises, to be included as part of educational hours.

o. SDSM fitness staff will enter data into the database for the tracking of

individual strength, flexibility and body composition measurements and assessments at each annual visit as part of the fitness assessment. SDSM fitness staff will provide educational workshops that will be conducted during individual station visits and provide individual counseling to those participants at high risk as part of the ongoing educational program. See Section 3a on pages 23 – 26 of this Scope of Work for a description of the educational program proposed by SDSM.

xiv Personalized Written Health and Wellness Report

1. SDSM physicians and wellness staff will provide each wellness participant with a written or electronic Personal Profile at the discretion of the provider at the immediate conclusion of the Complete Physical Wellness Medical Evaluation (CPWME).

    a. SDSM's written or report will include the medical exam consisting of recent and all retrospective data from when the participant began to attend the San Diego Firefighter's Regional Wellness Program (SDFRWP) and/or San Diego Fire-Rescue and Police Wellness Program (SDFRPWP) to demonstrate individual medical and fitness trends for review with the physician. The SDSM physician will review all parameters of the evaluation with the participant and provide a report detailing the findings of the medical and fitness evaluation. (See example in Tab 27)

2. SDSM's report will include:

    a. Recommendations for each participant to improve and maintain fitness as well as recommended treatment or follow-up for any medical conditions. The format will include the following: (See example in Tab 27 Personal Profile, pages 4 – 5 and education throughout the personal profile)

        i. Fitness profile with comparison information to other uniformed firefighters, lifeguards and police officers based on local and national data.

        ii. Evaluation of risk status (e.g. cardiovascular, cancer) and plans for mitigating individual risk. (See example data in Tab 27, pages 15 – 18)

        iii. Individualized educational materials to improve overall fitness and well-being. (See example data in Tab 27, pages 25 – 34)

    b. SDSM physicians will incorporate into the medical examination any and all

pertinent findings based on the report. This information will be reviewed with the participant and will incorporate any participant strategies and education to improve the participant's health and fitness. (See example data in Tab 27, pages 1 – 4)

xv. Follow-up

1. SDSM will provide any and all pertinent data to participant in order to expedite any referral deemed prudent either within the workers' compensation system established by the City of through the participant's private health care system.

xvi Hazardous Materials Technician/CEDMAT Fire Inspectors Physical (Fire-Rescue Only)

1. SDSM will provide wellness participants designated as Hazardous Materials Technician/CEDMAT Fire Inspectors with a complete physical exam. The physical exam will include the following additional specific requirements:

    a. Heavy metals (arsenic, mercury, and lead) testing and archiving of results upon acceptance and when exiting the HAZMAT team.
    b. Cholinesterase testing annually
    c. Any additional blood testing for specific or known exposure
    d. Hepatitis A series for new members
    e. Fecal occult blood testing at age 45 and over
    f. SDSM physicians and staff will complete and sign the HazMat report (See example in Tab 28)

xvii Bomb Squad Technician Physical (Fire-Rescue Only)

1. SDSM will provide participants designated as Bomb Squad Technicians with a complete physical to include the following specific requirements:

    a. Heavy metals (arsenic, mercury and lead) testing and archiving of results upon acceptance and leaving the team.
    b. Cholinesterase testing annually
    c. Any additional blood testing for specific or known exposure
    d. Hepatitis A series for new members
    e. Fecal occult blood testing at age 45 and over
    f. SDSM physicians and staff will complete and sign the physical report form (See example in Tab 29)

xviii Urban Search and Rescue (US&R) Physical (Fire-Rescue Only)

1. SDSM will provide US&R physicals to San Diego Fire-Rescue personnel and approved civilian US&R personnel as reflected in the Pricing Schedule. The exam will include the following additional requirements for US&R as follows:

    a. Heavy metal testing (arsenic, mercury and lead) and RBC cholinesterase performed at initial evaluation, when medically indicated, and when exiting the US&R team.
    b. Any additional blood testing required for specific or known exposure.
    c. Hepatitis A vaccination for all new US&R personnel.
    d. Update vaccinations as needed.
    e. SDSM physicians and staff will complete and sign the physical report form (See example in Tab 30)

xix SCUBA Physical

1. SDSM will perform SCUBA physicals as required with the following additional requirements:

    a. Additional services as required
    b. SDSM physicians and staff will complete the SCUBA Physical Report form (See example in Tab 31)

Operational flow of the Physicals: Over the last 15 years, SDSM has fine-tuned the delivery of the CPWME so it is efficient and cost effective for the SDFRD. This efficiency and cost effectiveness is predicated on our medical and fitness staff seeing four participants per half day. During the exam, the participant flows through five stations as listed below.

Station 1: Medical Assistant
    a. Vitals
    b. Urinalysis
    c. Hearing evaluation
    d. Pulmonary function evaluation
    e. Establishing and reviewing personal medical history, family history, social history
    f. N-100 mask fitting
Station 2: Nutrition assessment and body composition measurements
Station 3: Exercise stress test and EKG
Station 4: Strength, flexibility and FMS evaluation
Station 5: Physical exam and review of results by physician

Our proposal and pricing is based on this operational model and a guaranteed minimum

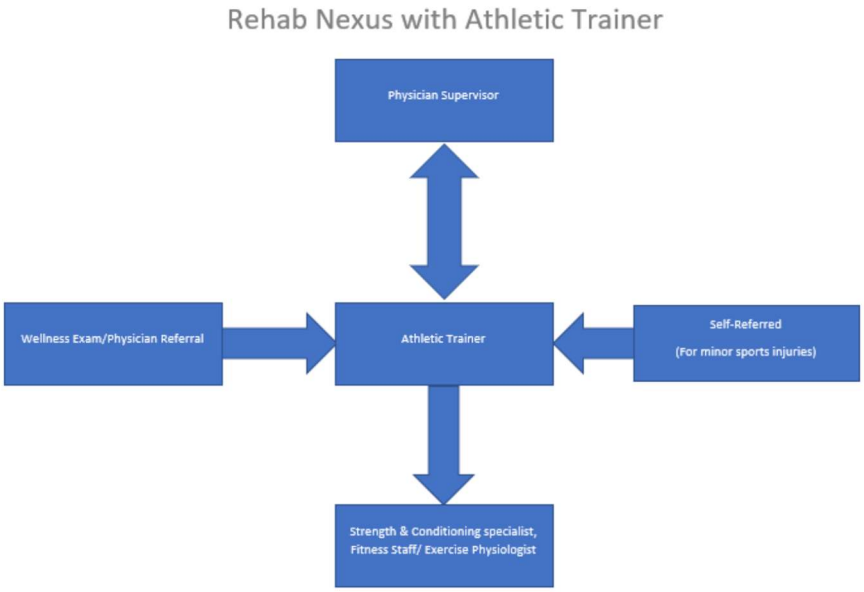
of 800 CPWME's per year. The City has agreed to discussion of changes to either pricing or scheduling if the department exceeds 50 vacancies in a year. SDSM must rely on some degree of efficiency to keep costs reasonable.

c. Athletic Trainer

Physicians at SDSM have served as team physicians for multiple NCAA, Olympic, and professional athletic teams. Each of these organizations have certified athletic trainers on staff and operate athletic training rooms providing care for injured athletes. Certified athletic trainers employed by each of these teams work hand in hand with team administration, coaches and strength and conditioning personnel to ensure each athlete and enjoys the best possible physical preparedness to carry out the physical demands of their sport. For the past 35 years our physicians have been involved in the organization, administration and leadership of each of these teams' training rooms. SDSM physicians serve as medical directors and team physicians, heavily involved in the education and training of certified athletic trainers at the Chula Vista Elite Athlete Training Center, San Diego State University, Point Loma Nazarene University, and Grossmont College. Given this experience, we have long been strong proponents of an athletic training room experience for SDFRWP participants. We have trialed a program like this on a very limited basis in the past with good results. With the addition of a certified athletic trainer to the SDFRWP, under the direction of our physician staff, participants could access evaluation and treatment with the certified athletic trainer for minor injuries and other musculoskeletal problems that have not reached the level of a workers' compensation claim. This could include injuries sustained on the job and filed as "minor injury". Certainly, the goal of early evaluation and management of these minor injuries could reduce the number of workers' compensation claims, saving the City significant expense.

It is important to point out that certified athletic trainers in the state of California are not licensed. In fact, there is no licensing board in the state of California for certified athletic trainers. Unlike physical therapists who are licensed and can practice physical therapy independently, certified athletic trainers must work under the supervision of a licensed physician in the state of California. Given these facts, SDSM proposes to create a training room experience much like an NCAA or professional athletic training room. The full-time certified athletic trainer would be available for appointments for participants with minor injuries or musculoskeletal pain. The participants could self-refer or be referred following their annual CPWME. SDSM proposes a weekly, four-hour athletic training room clinic be held for the purposes of minor injury evaluation jointly staffed by one of our board certified sports medicine physicians in conjunction with the certified athletic trainer. Collaboration regarding diagnosis and treatment plan between the physician and certified athletic trainer is considered best practice for required physician oversight of the certified athletic trainer. The absence of this level

of oversight would create untenable liability risk for both SDSM and the City. Injury evaluation and management protocols would be created and published allowing the certified athletic trainer to work in the training room even without the presence of a physician on site. See the algorithm below for clarification of the training room experience proposed by SDSM. The cost for these services including physician oversight can be found in the pricing for the certified athletic trainer.



i. The athletic trainer will provide overall clinical support towards evaluating both participating SDFRD and SDPD members, developing individualized and group treatment and corrective exercise plans, restoring function and strength in firefighter, lifeguard and police related biomechanical movements and injuries.

ii. SDSM will provide the necessary number of athletic training staff members to accommodate appointments.

    1. All athletic training sessions shall be conducted onsite at the facility identified by the City.

    2. When athletic training is requested, the initial appointment will be scheduled to take place within five (5) business days.

    3. With approval of the respective Wellness Officer(s), the athletic trainer can assist with academy recruit injury prevention.

iii. The athletic trainer shall meet all following qualifications:

    1. Education

a. The athletic trainer will have a minimum of a Bachelor's degree (Master's degree preferred) in athletic training.

2. Licensure

   a. The athletic trainer will have National Athletic Trainer Association (NATA) Board of Certification credentials for Certified ATCs.

   b. The athletic trainer will have training in National Strength and Conditioning Association Tactical Strength and Conditioning Facilitator (NSCA TSAC-F).

3. The athletic trainer will be knowledgeable in Tactical Athletic Rehabilitation and Injury Prevention.

4. The athletic trainer will have minimum five years' experience as a certified ATC (Certified Athletic Trainer).

5. We will seek an athletic trainer with experience working with Tactical Athletes and/or in a First Responder environment. SDSM has worked with Brent Alvar, Ph.D., professor of kinesiology at Point Loma Nazarene University, who is also a certified strength and conditioning specialist with distinction and recognized as a Fellow of the American College of Sports Medicine and the National Strength and Conditioning Association. Dr. Alvar will be a valuable resource to help educate SDSM's athletic training, physical therapy, and fitness staff in areas of tactical rehabilitation and injury prevention as needed. (See Vol. 2, Tab 32 for Dr. Alvar's curriculum vitae.)

   a. We will seek an athletic trainer with experience working with Division I college athletes or professional athletes.

6. The athletic trainer will be experienced in Functional Movement Screen (FMS) with Level 1 and 2 certifications or equivalent.

7. We will seek an athletic trainer with experience working with organizations similar in size and function to the Fire-Rescue and Police departments with knowledge on how to organize and schedule for high usage rates.

8. The athletic trainer will have knowledge and use of pre-OSHA recordable treatments such as: heat, ice, mechanical stimulation and reconditioning and functional exercises.

9. The athletic trainer will have knowledge and experience in creating and managing individualized assessment and treatment programs.

10. The athletic trainer will have basic understanding of injury prevention as it relates to the workers' compensation nexus.

d. SDSM will provide a clerical staff member dedicated to working with the respective Wellness Officer (s) or designee on scheduling, coordination of functions, and other work identified as needed.

2. MEDICAL EVALUATIONS AVAILABLE TO NON-PARTICIPANTS SPECIFIC TO THEIR JOB DUTIES

a. Respiratory Fit Exam

i. SDSM will provide Respiratory Fit Examinations to wellness program non-participants as referenced by guidelines published by Cal-OSHA and the WFI (4th Edition) and will include spirometry (FVC, FEV1, FEV1/FVC ratio, Peak Expiratory flow rate).

ii. The physical examination by the SDSM physician will include review of systems and a hands-on physical examination of head, ears, eyes, nose, throat, heart and lungs. Past medical history and family history will be taken and reviewed by the SDSM physician.

iii. SDSM will perform SCBA and N100 facepiece fit testing as part of the Respiratory Fit exam.

b. DMV Physicals

i. SDSM will provide DMV physicals for wellness program non-participants and be responsible for the following:

1. SDSM will follow current DMV guidelines.

2. SDSM will follow HIPAA regulations

3. SDSM will provide the Department of Transportation (DOT)/Department of Motor Vehicles (DMV) physical form as required every two (2) years or sooner as regulated by the DMV, to include any necessary documentation or forms to complete a Medical Examiner's Card for Class A, Class B for all wellness program non-participants as needed.

4. SDSM will coordinate all efforts as necessary with the staff of the City of San Diego

5. SDSM physicians performing the exams will be certified by the National Registry of Certified Medical Examiners to provide DMV exams.

6. SDSM physicians and staff will complete the Fire-Rescue DMV Form provided by the City.

3. SDSM WILL PROVIDE THE BELOW ADDITIONAL SERVICES UNDER THIS CONTRACT THAT ARE NOT INCLUDED IN THE WELLNESS PARTICIPANT FEE

   a. Education Program

      i. SDSM will propose an education program, coordinated with and approved by the respective Wellness Officer(s). These education hours may fluctuate but will not exceed 1,040 hours annually or an estimated 20 hours per department per week. All education will be coordinated through the respective department's Wellness Officer(s).

      ii. SDSM will propose a program that is multifaceted in its delivery and demonstrate intent to address those areas of interest and concern for the health and fitness of the San Diego first responders. Based on our experience with firefighters we have found that a multifaceted approach is needed. Individuals, departments and crews respond differently to the delivery of educational material. We will continue to develop ongoing education that is pertinent to the health and fitness needs of the SDFRD and SDPD.

      iii. SDSM's education program will include the elements listed below. Forty (40) hours per week are allotted for these services as per the RFP. If additional education is requested beyond the services and time allotted, the additional cost of educational services will be reviewed with the Wellness Officer(s) for approval.

         1. Station visits which will include but not be limited to educational sessions on exercise, fitness, nutrition and health related topics. Station visits have been one of the most popular forms of education for the firefighters in SDSM's 15 years of experience. The wellness staff and physicians will be keenly aware of any specific crew needs or educational desires. Aggregate data from the database as well as data from San Diego City's human resource department on injuries has driven the development of our educational programs to the stations and to the group. The following is a list of some of the educational presentations that we have developed to meet the ongoing health and fitness needs of the firefighters:

            a. Shoulders of steel (See example in Tab 32)
            b. LINK program (See example in Tab 32)
            c. Spine TLC (See example in Tab 32)
            d. Nutrition and cooking for probationary firefighters

e. Phytochemicals
f. Hypertension quiz
g. Understanding weight control
h. Omega 3 fatty acids
i. Immune boosting diet
j. Anti-inflammatory diet
k. Foam rolling
l. Nutrition Tidbits for Prevention of Cancer

SDSM has the capacity and resources among our staff and in our medical community to deliver education on a wide variety of topics. We will continue to work with the Wellness Officer(s), the uniformed personnel and management to offer new and exciting ideas for education for the stations. Our latest education tools are Spine TLC and Nutrition Tidbits for Prevention of Cancer, an interactive Jeopardy game emphasizing the important of nutrition in cancer prevention.

2. Individual counseling for high risk participants and those with specific nutritional needs. As participants complete their wellness exam, certain health risks may be identified which place that individual at high risk for negative health outcomes. Recommendations are made at the time of exam to mitigate these risks along with referrals as appropriate. One of the many strategies that has been successful over the years is to identify high risk individuals and offer them individual counseling. One-on-one counseling has proven to be particularly useful for those with high nutrition risk, low exercise capacity and those with specific strength and flexibility issues. We continue to offer individual appointments with the wellness staff as part of the overall educational component of this program.

3. SDSM will coordinate with the Cancer and Health Coordinator to aid in the prevention of occupational cancer through educational materials, station visits and by any other means as appropriate. Most recently our registered dietician has developed an interactive educational session on Nutrition Tidbits for Prevention of Cancer. (See example in Tab 33)

4. Group Education Projects: SDSM physicians and staff have gained tremendous experience working with firefighters over the past 15 years. Our staff have been truly innovative and creative in developing fresh and effective educational tools. Our database is key to identifying group educational needs. Aggregate data and information gathered during the wellness exam has driven the development of our educational program to the Fire Department. Examples of our response to new data and literature include the Cholesterol Challenge quiz based on 2014

Wellness data. Data from the American Heart Association suggests that cardiovascular risk reduction relies not only with dedicated exercise but even more importantly relies on active lifestyle. In 2015 we rolled out an education program to address the concept for Physical Activity vs. Active Lifestyle. In 2017 the wellness staff rolled out the AXE challenge to help firefighters incorporate healthy nutrients into their firehouse meals. Similar programs have been developed in the past to address issues that the staff deems appropriate: The Fiber Challenge, Biggest Burn, Holiday Challenge, 12 MET challenge, and the Move More Challenge. (See examples in Tab 34)

5. SDSM will provide resources and consultation on health and fitness related issues identified in the medical exam not related to work-related injury or illness, such as breast cancer risk information for the Wellness Officer(s) and Fire and Police Chiefs, videos for stretching and warm-up for the Academy, and high intensity workouts for individuals.

6. Registered Dietitian: SDSM currently has two registered dietitians on our wellness staff: Nick Shields, MS, RD and Linda Illingworth, RD, CSSD. (See their bios on pages 51 and 52 of this Scope of Work)

    a. Nick Shields received his dual Master's degree in exercise physiology and nutrition at San Diego State University and is licensed as a registered dietitian. Linda Illingworth is a registered dietitian and is certified as a specialist in sports dietetics.

7. Certified Athletic Trainer and Registered Physical Therapist: SDSM has a full-service physical therapy department at three locations in San Diego. SDSM employs 12 physical therapists and two athletic trainers. Our qualified staff will be utilized to help those individuals with specific injury-related problems identified by a physician.

8. Webpage: SDSM will continue to provide resource material and manage content placed in a City-maintained webpage.

    a. SDSM currently delivers the fire wellness newsletter monthly via email to interested participants. SDSM's medical and fitness staff will continue to develop and deliver our wellness newsletter to interested participants and place it on our website for the entirety of the contract. (See example newsletter in Tab 35)

    b. SDSM will continue to send out communications on upcoming challenges and results of past efforts.

c. SDSM will continue to provide access to health and fitness materials in electronic format on our website (www.sdsm.com/services/fire-wellness) and our wellness YouTube channel https://www.youtube.com/channel/UCo8wCTT2c0jyizC7zT27zCA).

d. SDSM will continue to provide online tutorials and programs for stretching, yoga, and injury prevention. Please refer to our fire wellness website, wellness YouTube channel, and City website.

e. SDSM will provide other content identified by the respective Wellness Officer(s) as requested.

b. Job-Wide Tuberculosis/PPD

i. SDSM will provide infectious disease screening on a mobile basis for Tuberculosis (TB).

ii. SDSM will provide participants on-duty PPD/TB testing at strategic locations throughout the city, mutually agreed upon with the respective Wellness Officer(s) or designee and will be charged according to the pricing schedule.

iii. SDSM will provide all forms for consent and education and will perform any required reporting to the respective agencies, such as the Public Health Department.

iv. SDSM will provide appropriate licensed staff to perform immunization and screening services.

v. SDSM licensed staff will read the PPD test within 48 to 72 hours of any tests administered.

1. SDSM will perform CXRs on those individuals with a positive PPD to determine if the individual has active TB and will be charged according to the pricing schedule.

vi. SDSM will offer the option to perform a QuantiFERON TB Gold blood test to any individuals determined by the City to have had a significant exposure or to be at high risk.

vii. Scheduling will be determined by the City via the respective Wellness Officer(s) or designee. SDSM will coordinate with the Wellness Officer(s) to carry out the delivery of these services according to the schedule.

c. Immunizations/Vaccinations/Screening

i. SDSM will make available to participants the vaccinations listed below. The participant will provide documentation of immunization records and may receive additional vaccinations at the recommendation of the physician and approval of the respective Wellness Officer(s) or designee.

   1. Hepatitis A vaccine (if on US&R, TRT, or Swift Water Rescue)

   2. Hepatitis B vaccination series will be given until a follow-up confirmation of antibody production demonstrates conversion.

   3. Tetanus/Diphtheria vaccine

   4. Pertussis vaccine

   5. Influenza vaccine

   6. MMR vaccine

   7. Polio vaccine

   8. HPV vaccine will be provided to all female participants up to 26 years of age, if previous vaccination is not documented. Consideration may be made to incorporate the new guidelines from the CDC's Advisory Committee on Immunization Practices changing the recommendations for HPV vaccination to be based on shared clinical decision-making to include both males and females age 27 to 45 who have not been adequately vaccinated.

   9. Varicella vaccine

   10. Pneumovax vaccine for individuals with appropriate risk factors

ii. SDSM will provide annual recommended Influenza (flu) vaccinations on a mobile basis. All immunizations records and history shall be maintained in participant's medical record and reviewed at the time of the CPWME or Respiratory Fit Exam.

iii. SDSM will provide any other necessary immunizations at the time of the CPWME or Respiratory Fit Exam and will be charged according to the pricing schedule.

iv. Any/all additional immunizations will be approved and scheduled via the respective Wellness Officer(s) or designee.

v. SDSM will provide Hepatitis B vaccinations to all personnel on a schedule determined by the City through the respective Wellness Officer(s) or designee.

vi. SDSM will provide the Hepatitis B vaccination series until a follow-up

confirmation of antibody production demonstrates conversion. Individuals who do not convert beyond the medically accepted series may be considered as non-converters.

vii. All immunizations/vaccinations will be authorized in writing by the respective Wellness Officer(s) or designee in advance of performing such service.

4. PROGRAM FACILITY AND EQUIPMENT REQUIREMENTS

a. Facility

The City-owned facility on Murphy Canyon Road opens up several exciting possibilities and very interesting opportunities to expand services for the wellness program. With improvements to the former Charger's training room it appears the facility could adequately host physical wellness exams as well as services performed by the certified athletic trainer. The open gym area used by the Chargers as a weight room appears to measure approximately 5,000 square feet. During the site visit, Chief Picone mentioned this gym would potentially be used as a self-directed fitness facility for police and firefighter wellness participants. SDSM believes this is a terrific idea. SDSM proposes this gym be staffed by a full-time strength and conditioning coach with experience in guiding elite and/or tactical athletes towards peak physical conditioning. The strength and conditioning coach could work collaboratively with the SDSM medical, fitness/exercise physiology, certified athletic trainer and physical therapy staff in a continuum of physical health and well-being that begins with the medical fitness evaluation. Adam Hall, Assistant Athletic Director of Strength and Conditioning at SDSU, has agreed to collaborate with SDSM to develop the new strength and conditioning facility and guide SDSM in the selection of a qualified full- time strength and conditioning coach. (See Vol. 2, Tab 33 for Adam Hall's résumé.)

Participants graduating from formal treatment provided by the certified athletic trainer or physical therapist could seamlessly continue their physical fitness program in the gym with guidance as necessary from the strength and conditioning coach. This would require neither direct physician supervision nor a prescription from outside physicians. Participation in the gym could be self-directed but with coordinated guidance from each of our highly trained staff members in each of the disciplines mentioned above. The likely cost of providing a qualified strength and conditioning coach with at least five years of experience working with elite athletes and/or tactical athletes would range from $90,000 to $100,000 annually if employed and supervised by SDSM.

If the City moves forward with a City-owned facility on Murphy Canyon Road, SDSM is willing to negotiate funding for strength and conditioning equipment to be located in the gym area for the use of all police and fire-rescue wellness participants. Additionally,

this equipment could be used by participants receiving care from the certified athletic trainer and physical therapy staff. Classes could be held in the gym as part of the educational services described elsewhere in this RFP response.

Please note pricing for the City-owned facility is predicated on the City providing high speed Internet (50/50 Mbps) and phone lines for each wellness staff member including telephone hardware. SDSM plans to provide computers necessary to support Welltivia, SDSM's HIPAA compliant electronic health record system.

i. SDSM will provide pricing for both the City-owned facility and SDSM's Wellness facility.

    1. SDSM acknowledges the City will decide the location of the Wellness exams once all bids are received.

    2. SDSM acknowledges the City reserves the right to change the location within a 120-day notice.

    3. SDSM is willing to operate the Wellness Program at SDSM's present Wellness facility on Alvarado Road if needed until the San Diego Police Plaza is fully equipped and ready for operations.

ii. City-Owned Facility

    1. SDSM acknowledges the joint use facility known as San Diego Police Plaza shall be utilized by SDSM if the City selects this location as the Wellness Center.

        a. SDSM acknowledges the San Diego Police Plaza is located at 4020 Murphy Canyon, Rd., San Diego CA 92123

    2. SDSM acknowledges the desire of the City to conduct all components of the CPWME at the San Diego Police Plaza. SDSM also acknowledges that since the laboratory facilities for the blood draws will be spread throughout the City, it shall be acceptable for other specialty diagnostics to be performed at those same facilities.

        SDSM proposes that CXRs, ultrasounds, and blood draws be performed at one or more of SDSM's facilities.

    3. SDSM is solely bidding on the staffing, medical/clerical personnel, and equipment essential to fulfill the requirements set forth in the RFP.

    4. SDSM will provide an offsite safe storage area for the participants' medical

records. Presently all fire wellness records are kept in a secured room at our Alvarado office located at 6699 Alvarado Road, Suite 2101, San Diego, CA 92120.

a. SDSM will develop a policy describing the personnel with access to medical records and describing how confidentiality will be maintained.

b. SDSM will adhere to the industry standards and HIPAA requirements for security of medical data.

iii. SDSM's Wellness Facility: SDSM's primary Wellness facility is centrally located near San Diego State University at 6699 Alvarado Rd, Suites 2100, 2101 & 2102, San Diego, CA 92120. This facility consists of 22,000 square feet with 32 examination rooms, onsite X-ray, laboratory services, two exercise stress testing rooms, three minor surgical procedure rooms, Physical Therapy, a fitness center, a 25-yard four lane lap pool, the Executive Wellness Center, and includes the facilities for the current SDFRWP. Our administrative offices are also located onsite.

Our Sorrento Valley office is convenient to the northern coastal area of San Diego located at 4010 Sorrento Valley Blvd., San Diego, CA 92121. This facility offers 12,000 square feet with 14 examination rooms, onsite X-ray, laboratory services, and full-service physical therapy, fitness and wellness facilities.

Our Pacific Beach office is convenient for the southern coastal area of San Diego located at 1945 Garnet Avenue, San Diego, CA 92109. This facility offers 4,500 square feet with 10 examination rooms, onsite X-ray, and laboratory services. Our Pacific Beach Physical Therapy center is located nearby at 2204 Garnet Avenue, San Diego, CA 92109 consisting of 1,850 square feet providing full service Physical Therapy services.

SDSM has recently acquired a new facility located at 2448 Historic Decatur Road, Suite 130, San Diego, CA 92106 at Liberty Station. This facility consists of 5,000 square feet with six examination rooms, onsite X-ray, onsite DXA scanning, and laboratory services.

a. SDSM is the current provider for the San Diego Firefighters' Regional Wellness Program (SDFRWP). We currently serve and fulfill the requirements of the WFI initiative for the San Diego Fire-Rescue Department, Viejas Fire Department, San Miguel Fire Department, Alpine Fire Department, Heartland Fire Department, Rancho Santa Fe Fire Department, and National City Fire Department. We also service Bonita Fire Department, Coronado Fire Department and Imperial Beach Fire Department. In the event the City chooses

to house the wellness program at SDSM, we will continue to utilize the SDFRWP facility at 6699 Alvarado Road, Suite 2101, San Diego, CA 92120. This facility offers five exam rooms, a nutrition consultation room, and is adjacent to the physical therapy facility. This accessibility to physical therapy offers the ability of our Exercise Physiologists to demonstrate strength and conditioning exercises to the participants in real time. There are locker and shower facilities within this suite. Chest X-rays will be performed in the family medicine office located next door to the SDFRWP facility.

b. All of the components required in the CPWME can be conducted within the SDSM wellness facility, with the exception of the CXR which will be performed next door at SDSM's family medicine office.

c. SDSM will continue to provide a dedicated, private office for the Wellness Officer co-located in the SDSM administration suite at 6699 Alvarado Road. The office will include office furniture, internet access, and telephone lines.

d. SDSM has secure storage onsite at this facility for participants' medical records.

i. SDSM has a policy in place describing the personnel with access to medical records and how confidentiality is adhered and maintained.

ii. SDSM will adhere to the industry standards and HIPAA requirements for security of medical records.

iv. SDSM acknowledges the following components of the contract are to take place in locations identified by the respective Wellness Officer(s).

1. Blood draws
2. Immunizations/PPD
3. Education

b. Equipment

i. SDSM will provide all necessary equipment to fulfill this contract.

ii. SDSM will be responsible for the provision of any and all equipment required to perform services under this contract, including maintenance, repair and replacement as needed.

1. SDSM is the current provider for the SDFRWP. In the process of developing this program over the last 15 years we have procured, maintained and replaced equipment according to manufacturer's guidelines necessary to carry out the

services outlined in the WFI. Below is a list of the requirements and recommendation of the Fire Service Joint Labor Management Wellness- Fitness Initiative for equipment. All of the equipment listed below is currently available at SDSM's wellness facility.

Medical Examination Room

- Otoscope and ophthalmoscope
- Examination table
- Eye chart
- Audiometer
- Soundproof booth
- Spirometer (2)
- Pillows
- Blood pressure cuffs (5)
- Digital thermometers
- Scale, upright (2)
- Desks, chairs and computers

Treadmill Room

- EKG machine
- Treadmill
- Bicycle ergometer
- Examination table
- AED
- Blood pressure cuffs, handheld (3)
- Emergency equipment, oxygen tank, masks, Ambu bag, tubing
- Desks, chairs, and computers

Fitness Testing Equipment

- Arm and leg dynamometer
- Skinfold calipers (Lange)
- Sit Reach box (Acuflex)
- Grip dynamometer
- Vertical jump mat (Probotics "Just Jump" mat)
- Roman chair
- Desk, chair, computer
- Stopwatch
- Metronome

- Mat
- FMS equipment

iii. SDSM will provide any needed office furniture and file cabinets necessary for the exam rooms, physician and respective Wellness Officers' offices.

5. STAFFING REQUIREMENTS

The San Diego Firefighter's Regional Wellness Program (SDFRWP) under the leadership of SDSM has become one of the leading WFI programs in the nation. Our team of physicians, exercise physiologists, athletic trainers, physical therapists, medical assistants and administrative staff have a passion for wellness. We work diligently and efficiently to serve the uniformed personnel of the San Diego Fire-Rescue Department and look forward to extending that service to the San Diego Police Department personnel. Our physicians lead our team with their knowledge and expertise of working with first responders. The combined experience of SDSM's physicians exceeds 200 years in the fields of family medicine, internal medicine, sports medicine, occupational medicine, wellness and preventive medicine. Our physicians have been selected to serve on several advisory committees establishing the recommendations for fire wellness programs throughout the country.

SDSM physicians are nationally known experts in sports medicine, having served as team physicians for the San Diego Chargers, USA Men's and Women's Volleyball Teams, San Diego Spirit, San Diego Sockers, San Diego Gulls, San Diego Flash, America's Cup Yacht Racing, US Olympic Training Center, San Diego State University, Point Loma Nazarene University, Grossmont College, San Diego Christian College and multiple area high schools over the last 40 years. We have provided medical coverage for numerous events around the county and world including Senior Olympics, Fire and Police Games, Junior Olympics, Hawaii's Ironman Triathlon, Breast Cancer Foundation 3-Day Walk in San Diego, Boston, New York and other cities, and America's Cup Sailing in San Diego and Auckland, New Zealand. Our doctors have served as USA Team Physicians in eight Olympic games. Our doctors have served in leadership positions for medical associations, San Diego County health services, hospital boards, California state organizations and national boards including presidency of the two main sports medicine organizations in the US. The sports medicine aspect of our practice focuses on the prevention and treatment of medical and musculoskeletal injuries, complete team care and sporting event coverage. SDSM hosts the longest running sports medicine fellowship training program in the nation in cooperation with UCSD for the purpose of training young physicians to become board certified sports medicine specialists.

Our physicians have served as Qualified Medical Examiners for the State of California and have extensive experience in the treatment of occupational injuries. This experience has sharply developed our ability to understand the roles of labor and management relating to

occupational medicine, health and safety. We have worked with employers, managers and workers' compensation carriers and have an excellent working knowledge of local, state and federal laws.

As the exclusive medical providers of the SDFRWP for the past fifteen years, SDSM has been involved in the health care of thousands of firefighters across San Diego County including the San Diego Fire-Rescue Department, City of Coronado Fire Department, City of Bonita Fire Department, City of Imperial Beach Fire Department, City of La Mesa Fire Department, Pala Fire Department, Sycuan Fire Department, Viejas Fire Department, Alpine Fire Department, Chula Vista Fire Department, Rancho Santa Fe Fire Department, San Miguel Fire Department, Heartland Fire & Rescue, City of Santee Fire Department, National City Fire Department, Lemon Grove Fire Department, El Cajon Fire Department, and the City of Corona Fire Department.

SDSM has provided service to fire agencies and their uniformed personnel for over 40 years. Our services have included personal health care, pre-employment physicals, fitness evaluations, respiratory fitness examinations, DMV examinations, US&R examinations, HAZMAT examinations, DOD examinations, wellness and behavioral education, back injury prevention, workers' compensation injury rehabilitation, immunizations, treatment and prevention of occupational exposures. This experience has given us expertise with job-related activities, physical demands of the occupation and stresses associated with firefighting.

We have provided comprehensive wellness programs that have included extensive medical evaluations, fitness evaluations, nutritional analysis, behavioral and lifestyle evaluations, ongoing disease management, wellness and educational seminars to multiple companies and organizations. Our clients have included Mammoth Mountain Ski Area, Cox Communications, the Young Presidents Organization, City of La Mesa, City of Coronado, The Executive Committee (TEC) and the San Diego Chargers, among others.

In the fall of 2004, SDSM was awarded the contract as medical provider for a FEMA grant awarded to the SDFRD to start a wellness program based on the IAFF Wellness Fitness Initiative. It has been our pleasure over the last 15 years to work in partnership with the SDFRD to develop, implement and expand this exceptional program. Our goal at the initiation of this contract was to create a permanent, comprehensive and fiscally responsible health and wellness program that would provide ongoing services to qualified public safety personnel. We have worked diligently in collaboration with the SDFRD to promote the physical and emotional well-being of the participants in a positive, respectful environment. Our professional team of physicians, exercise physiologists, nutritionists, athletic trainers, medical assistants and clerical staff has gained the trust and confidence of the firefighters over the years. Evidence of this trust rests in the 96% participation rate for this program, one of the best participation rates in the U.S. for a program of this nature. We feel strongly that SDSM in conjunction with the SDFRD have created a wellness program that has met

and exceeded our initial expectations and goals.

The wellness program has grown and developed over these past 15 years and has proven to be successful in meeting the goals of early detection of disease, reducing health risk factors and injury rates and increasing the health and fitness of the firefighters. Our data and statistics indicate that we have significantly reduced risk factors for heart disease, the number one cause of death among firefighters.

There have been numerous accounts of early detection of disease including prostate cancer, testicular cancer, melanoma, leukemia, myocardial bridging, diabetes, and metabolic syndrome. SDSM has provided creative educational information and programs to assist the firefighters in reaching their goals. We are committed to building on existing programs and developing new innovative resources to help the firefighters and police officers of San Diego remain fit, healthy and injury-free throughout their careers.

SDSM with its experience, background, medical and fitness professionals is uniquely qualified to carry out this contract to its fullest extent. Our record of delivering an efficient, effective and creative wellness program serves as tangible evidence that SDSM is the best organization in San Diego prepared to provide ongoing wellness services to the SDFRD and SDPD.

SDSM will continue to provide qualified staff dedicated to the wellness program. Résumés of personnel that will be providing services for the wellness program are located in Volume 2 of the response to the RFP and include the following personnel:

Physicians:

Richard A. Parker, D.O., F.A.O.A.S.M. (See Vol. 2, Tab 1 for curriculum vitae)

Dr. Parker is the President of SDSM and Medical Director of the SDFRWP for the last 15 years. He completed his sports medicine fellowship training in 1987 at SDSM. He graduated from the Kirksville College of Osteopathic Medicine and is board certified in family medicine and sports medicine. Dr. Parker is a clinical professor of sports medicine in the Department of Family and Preventive Medicine at UCSD and a clinical professor at Western University of Health Sciences. Dr. Parker is the Director of the Sports Medicine Fellowship Program at San Diego Sports Medicine and is Past President of the American Osteopathic Academy of Sports Medicine. He served for six years as Chairman of the American Osteopathic Association Conjoint Sports Medicine Examination Committee, responsible for the examination leading to board certification in sports medicine. He has served as Co-Chairman of the UCSD Health Physicians Network Advisory Board since 2013 and serves on the finance committee of the UCSD Health Accountable Care Organization as well as the participation committee of the UCSD Health Clinically Integrated Network. Dr. Parker was recently appointed to serve on the Health Services Advisory Board of the San Diego County Board of Supervisors. Dr. Parker has been team

physician for many teams including the San Diego Chargers, SDSU Aztec Athletics, Oracle/BMW Racing America's Cup Challenge, One Australia America's Cup Challenge, USA Volleyball Men's and Women's teams as well as serving as a venue physician for the Salt Lake City Olympic Downhill skiing venue in 2002. As an athlete he received All-American Honors in Swimming at Springfield College.

Wellness program responsibilities:

- Medical Director
- Perform physical exams
- Medical and program consultation

Jeffrey P. Anthony, DO, F.A.A.F.P., F.A.O.A.S.M. (See Vol. 2, Tab 2 for curriculum vitae)

Dr. Anthony joined SDSM in 1987. Dr. Anthony earned his doctor of osteopathy from the University of Osteopathic Medicine and Health Sciences in Des Moines, Iowa. He completed his residency and served as chief resident at Phoenix General Hospital and completed a fellowship at SDSM. He is board certified in family medicine with a subspecialty in sports medicine.

Dr. Anthony was one of the first physicians to work with the firefighter wellness program in the late 1980's and continues to do so. He is dedicated to treating workers compensation patients, including firefighters and police officers.

Dr. Anthony is a team physician for the U.S. Olympic Training Center in Chula Vista, San Diego State University Athletics, San Diego Christian College, Cuyamaca College, Santa Fe Christian High School and the Challenged Athletes Foundation Annual Million Dollar Challenge, a role he has held since 2007.

He is an assistant clinical professor at UC San Diego School of Medicine and an adjunct professor at San Diego State University. He has served on many boards, including the Governor's Board for Alvarado Hospital Medical Center and currently serves as President of the San Diego Academy of Family Practice.

Dr. Anthony was voted among America's Best Family Medicine Doctors by the Consumers' Research Council of America and as has repeatedly been honored as a top doctor in San Diego Magazine's Physicians of Exceptional Excellence annual survey performed in collaboration with the San Diego County Medical Society.

Wellness program responsibilities:

- Consultation to the program and participants
- Performing physical exams

Lee P. Ralph, M.D. (See Vol. 2, Tab 3 for curriculum vitae)

Dr. Ralph earned his medical degree from the University of Virginia School of Medicine. He completed his residency and fellowship training at University of California San Diego Medical Center and is board certified in family medicine with a subspecialty in sports medicine. Dr. Ralph joined SDSM in 1997 after previously serving as a family medicine physician at UC San Diego Health for many years. Dr. Ralph is an assistant clinical professor at UC San Diego School of Medicine. Dr. Ralph serves as a team physician for San Diego State University Athletics.

Dr. Ralph is the past president of the San Diego Academy of Family Physicians and is on the board for the California Academy of Family Physicians. Dr. Ralph was inducted as the President of the California Academy of Family Physicians, a coveted and honorable position for family practitioners in the state of California. In 2019, Dr. Ralph was named as the Family Physician of the Year by the California Academy of Family Physicians. He has repeatedly been honored as a top doctor in San Diego Magazine's Physicians of Exceptional Excellence annual survey performed in collaboration with the San Diego County Medical Society.

Wellness program responsibilities:

- Advisory and consulting services
- Performing physical exams

Frederick Allen Richburg, M.D., M.S., F.A.A.F.P. (See Vol. 2, Tab 4 for curriculum vitae)

Dr. Richburg earned his medical degree from Loma Linda University School of Medicine and completed his residency at University of California Los Angeles Medical Center. Dr. Richburg completed his fellowship training at SDSM in 1998. He is board certified in family medicine with a subspecialty in sports medicine and is a Fellow of the American Academy of Family Physicians.

Dr. Richburg is the medical director and head team physician at the U.S. Olympic Training Center in Chula Vista and at the San Diego Cycling Velodrome, where he works closely with some of the most elite athletes in the world. He is the Director of Athletic Medicine for San Diego State University. Dr. Richburg is the clinical director for the Peak Performance program and for the Skin Wellness department for SDSM.

Dr. Richburg has repeatedly been honored as a top doctor in San Diego Magazine's Physicians of Exceptional Excellence annual survey performed in collaboration with the San Diego County Medical Society.

Wellness program responsibilities:

- Advisory and consulting services

Stephen J. Rohrer, D.O., F.A.O.A.S.M. (See Vol. 2, Tab 5 for curriculum vitae)

Dr. Rohrer completed SDSM's sports medicine fellowship program in July 2009 and is now a general partner of SDSM. He is board certified in family medicine, Osteopathic Manipulative Medicine, and Sports Medicine. He is currently a team physician for San Diego State University, Cuyamaca College, Grossmont College, San Diego Christian College, and Kuyper Christian Preparatory School. He is an Assistant Clinical Professor at the UCSD School of Medicine and an adjunct professor at San Diego State University. Dr. Rohrer has provided medical coverage at the NCAA Division I basketball and baseball tournaments, Ironman World Championship, Rock and Roll Marathon, Keystone State games, the USA Olympic Training Center, and the Thunderbolt Regatta in Mission Bay. He was recognized by San Diego Magazine as one of San Diego's "Top Doctors" in 2016, 2017, and 2019. He provides comprehensive family medicine and sports medicine care through workers' compensation. Dr. Rohrer has worked closely with the SDFRWP for over a decade providing physical examinations to lifeguards and firefighters. He is currently the Assistant Medical Director of the SDFRWP. In addition to performing the medical exams he oversees the carotid ultrasound screening for early detection of heart disease. He has a passion for early cancer detection and prevention. As a sports medicine specialist he is involved in the detection and coordination of care for musculoskeletal diseases.

Wellness program responsibilities:

- Assistant Medical Director
- Performing physical exams
- Overseeing carotid, abdominal and thyroid ultrasound screening program
- Consultation to the program and participants

Scott R. Evans, M.D. (See Vol. 2, Tab 6 for curriculum vitae)

Dr. Evans joined our practice in 2008 after he finished his primary care sports medicine fellowship at UCLA, where he served as a team physician for UCLA athletics. He graduated from George Washington University Medical School. He earned his BS from Brigham Young University in exercise physiology, where he graduated magna cum laude. He is currently a team physician for San Diego State University and Francis Parker High School. He is board certified in family medicine and sports medicine. Dr. Evans is an Assistant Clinical Professor at the UCSD School of Medicine, as well as adjunct professor at SDSU. He is a member of the American Medical Society for Sports Medicine as well as the American Academy of Family Physicians. He currently serves as one of the medical directors for the Mid County Physicians Medical Group IPA. Dr Evans has been

recognized multiple times by San Diego Magazine and the San Diego County Medical Society as one of San Diego's "Top Doctors" in Family Medicine.

Wellness program responsibilities:

- Consultant to the program
- Performing physical exams

Michelle L. Look, M.D., F.A.A.F.P. (See Vol. 2, Tab 7 for curriculum vitae)

Dr. Look joined SDSM in 2001 after completing our primary care sports medicine fellowship program and a family practice residency at Sharp Healthcare in San Diego. She graduated from Jefferson Medical College in Philadelphia. She is board certified in family medicine, sports medicine and obesity medicine. During her family medicine and sports medicine career she has served as the team physician across a wide spectrum of events including local high school football, X-Games, and women's professional soccer. In 2008 and 2010, Dr. Look dedicated her time and talent as the team physician for Team USA at the Summer Olympics in Beijing and Winter Olympics in Vancouver, Canada.
Dr. Look has been heavily involved in USA and World rugby starting with local OMBAC rugby, to serving as a team physician for the USA National Men's and Women's rugby teams, and currently serves on the medical board of directors for USA Rugby. Her service to the community includes ten years as the National Medical Director for the Susan G. Komen 3-Day Walk to cure breast cancer and as a board member of the American Heart Association's San Diego chapter. Dr. Look acquired board certification in obesity medicine and has a thriving weight loss practice at SDSM. She has authored several published articles on the treatment of obesity in primary care.

Wellness program responsibilities:

- Consultant to the program
- Consultant on women's health
- Consultant on weight loss

Douglas Dengerink, D.O. (See Vol. 2, Tab 8 for curriculum vitae)

Dr. Dengerink earned his medical degree at Western University of Health Sciences, College of Osteopathic Medicine of the Pacific. He completed his residency at the Mayo Clinic and completed his fellowship training at SDSM. Dr. Dengerink is board certified in family medicine with a certificate of added qualification in sports medicine.

Dr. Dengerink is an adjunct clinical professor at San Diego State University where he lectures in the Doctor of Physical Therapy School. He is a team physician for San Diego State University Athletics, San Diego Christian College, Cuyamaca Community College,

Granite Hills High School, Grossmont High School and the U.S. Olympic Training Center in Chula Vista. Dr. Dengerink provided medical cover for the San Diego Fleet professional American football franchise. He also holds a CrossFit level 1 mobility certificate.

Wellness program responsibilities:

- Consultation to the program and participants
- Performing physical exams

Alexandra Myers, D.O., M.S.H.S. (See Vol. 2, Tab 9 for curriculum vitae)

Dr. Myers earned her medical degree and Master of Science in Health Professions from Western University of Health Sciences, College of Osteopathic Medicine of the Pacific. She completed her residency at Downey Regional Medical Center and completed her fellowship training at SDSM. Dr. Myers is board certified in family medicine and osteopathic manipulative treatment, with a certificate of added qualification in sports medicine.

Dr. Myers is the Director of Women's Athletic Medicine at San Diego State University where she oversees the care for the Women's Basketball, Women's Water Polo and Women's Crew teams. She is a team physician for USA Men's and Women's Rugby Sevens and head physician for Santa Fe Christian High School, San Diego Christian College, Cuyamaca College and San Diego City College. Dr. Meyers is the co-medical director for the Susan G. Komen 3 Day Breast Cancer Walk, the medical director for the Adrenalina Skateboard Marathon and had provided medical coverage for the San Diego Half Marathon.

Dr. Myers is Vice President of the San Diego Osteopathic Medical Association and serves on the board of the Osteopathic Physicians and Surgeons of California. She volunteers on medical missions with Liga International and Global Health Teams.

Wellness program responsibilities:

- Consultation to the program and participants
- Performing physical exams

Elizabeth Williams, D.O. (See Vol. 2, Tab 10 for curriculum vitae)

Dr. Williams completed her sports medicine fellowship at the University of Washington, Seattle in July 2018 and joined SDSM in August 2018. She earned her Doctor of Osteopathy degree from Philadelphia College of Osteopathic Medicine and completed her internal medicine residency from Lankenau Medical Center in Philadelphia. Dr. Williams is board certified in internal medicine with a Certificate of Added Qualification in

Sports Medicine. She is a team physician at San Diego State University, Point Loma Nazarene University, and La Jolla Country Day School. She works closely with the University of San Diego athletic program. Dr. Williams enjoys covering other high-level sports teams in the area including Legion, a professional rugby team. She provides medical coverage for the Surfers premier league rugby team and the Old Aztecs rugby football team. Dr. Williams has enjoyed working with public service officers including firefighters, FBI personnel, Border Patrol and Police regarding a variety of health concerns ranging from preventive medicine, acute medical needs, and assessing musculoskeletal injuries. Dr. Williams holds particular interest in sports cardiology, musculoskeletal ultrasound, and regenerative medicine including platelet rich plasma (PRP) treatment.

Wellness program responsibilities:

- Consultation to the program and participants
- Performing physical exams

E. Lee Rice, D.O., F.A.A.F.P., F.A.C.S.M., F.A.O.A.S.M. (See Vol. 2, Tab 11 for curriculum vitae)

Dr. Rice is an internationally known authority in sports medicine, wellness and preventive medicine. In 1980, he founded the SDSM, the first privately owned comprehensive sports medicine center in the country and began one of the first fellowship training programs in primary care sports medicine. In 2002, Dr. Rice founded the Lifewellness Institute, an innovative medical clinic specializing in health risk evaluation, wellness and health promotion. For this, Dr. Rice has received numerous awards.

Dr. Rice graduated from the University of California Santa Barbara and earned his medical degree from Kirksville College of Osteopathic Medicine (now A.T. Still University), after which he completed his internship and family medicine residency in the U.S. Navy. Dr. Rice is a board certified physician in family practice with a certificate of added qualification in sports medicine and integrative and holistic medicine. He is currently a voluntary clinical instructor with the University of California San Diego Department of Family Medicine and Public Health, as well as a clinical professor in family and sports medicine at Western University of Health Sciences. He has authored numerous texts and medical journal articles in the areas of wellness and sports medicine and lectures on these topics regularly to medical schools, medical conventions and the business community in the United States and abroad. He was named Top Wellness Doctor in San Diego and was recognized by the International Association of Healthcare Professionals as a 2018 Leading Physician of the World.

Dr. Rice is a co-founder, past president and Fellow of the first organization of primary care sports medicine specialists in the United States, the American Medical Society for Sports Medicine. Dr. Rice is also a founder, past president and Fellow of the American

Osteopathic Academy of Sports Medicine, a Fellow of the American Academy of Family Physicians, and Fellow of the American College of Sports Medicine. In 1993, he was appointed by Governor Pete Wilson as Chairman of the Medical Advisory Committee to the California Governor's Council on Physical Fitness and Sports, chaired by Arnold Schwarzenegger. He has served on the sports medicine committees of both the National Federation of High Schools and the California Interscholastic Federation (CIF).

Dr. Rice has been team physician for many professional, Olympic and University teams including the San Diego Chargers (NFL), San Diego Clippers (NBA), San Diego Gulls (ECHL), San Diego Sockers (MISL), San Diego Spirit (WUSA) and San Diego State University. He was a volunteer venue physician for the Summer Olympic Games in 1984 in Los Angeles and served for 20 years as head team physician for the Men's and Women's USA National and Olympic Volleyball Teams, involving five Olympiads. He has been medical director and team physician for four America's Cup sailing regattas, most recently for Oracle BMW Racing during the campaign in Auckland, New Zealand. Dr. Rice's community activities include serving as Chairman for the San Diego Chapter of the American Heart Association as well as serving on the board for the San Diego Epilepsy Foundation. In the past, he has served as Chairman for the San Diego Senior Olympics, medical director of the San Diego Rock and Roll Marathon.

Wellness program responsibilities:

- Advisory and consulting physician

Physician Assistant:

Kathleen D. Rusk, P.A.-C., M.S. (See Vol. 2, Tab 12 for curriculum vitae)

Katie joined SDSM in 1982 after receiving her Master's degree in exercise physiology from San Diego State University and Bachelor of Science degree in Nutrition from the University of Wisconsin. She graduated from Stanford University's Primary Care Program in 1996 as a Physician Assistant. She served for 14 years as the co-director and clinical instructor of the Stanford University Primary Care satellite program in San Diego. She now serves on the board of directors for the Point Loma National University Physician Assistant program. Katie has served as the director for the San Diego Firefighter's Regional Wellness Program for the last 15 years. Katie has been instrumental in the development of the SDFRWP since its inception. Her responsibilities include management, hiring and training of staff, overseeing education, development, maintenance, development and utilization of the database, instituting new tests, evaluations and protocols, interfacing with the Wellness Officer and coordinating efforts for firefighter research with local and national academic agencies. She has represented the SDFRWP by presenting at the Redmond Health and Safety Conference and Firehouse World. Katie has been involved in national efforts and research projects for firefighters as it relates to prevention and merging health issues. She

has most recently served as a stakeholder funded by the Department of Homeland Security that focuses on the health and wellness of women firefighters. She has also worked with the International Association of Fire Chiefs Firefighter Safety Through Advanced Research (FSTAR) program to help develop the Provider's Guide, a guideline for primary care physicians working with firefighters. Katie provides full spectrum family health care at SDSM and has provided physical examinations for the firefighters for the last 15 years. As an athlete, Katie served as Captain for the University of Wisconsin Track and Cross-Country Teams for four years.

Wellness program responsibilities:

- Contract administrator
- Performing physical exams
- Program Director for SDSM Firefighter Wellness Program

Physical Therapy/Athletic Training Staff:

Chad Neubrand, M.S., P.T. (See Vol. 2, Tab 13 for curriculum vitae)

Chad is the Director of San Diego Sports Medicine Physical Therapy managing the three physical therapy clinics. Chad earned his Master of Science degree in Physical Therapy from the University of Iowa and has been a practitioner since 1992. Chad, a collegiate basketball player, has vast experience treating athletes at all competitive levels, including Division I college athletes as well as professional athletes. Chad utilizes manual therapy to treat musculoskeletal pain and disability combined with functional therapeutic exercises for optimal patient rehabilitation. Other specialties include foot biomechanics and custom orthotic fabrication.

Working closely with San Diego's top orthopedic surgeons, Chad has co-authored specific rehabilitation protocols for complex hip surgeries and has extensive post- operative shoulder rehabilitation understanding. Chad frequently guest lectures at San Diego State University Doctor of Physical Therapy School.

With over a decade of experience evaluating and treating firefighters and first responders at SDSM Physical Therapy, Chad has exceptional insight to their unique job demands. His instinct and knowledge for treatment methods allows these tactical athletes to return to work quickly, safely, and in peak physical condition. Additionally, Chad has been an instructor and lecturer for numerous 'Firefighter Low Back Injury and Prevention' courses.

Wellness program responsibilities:

- Director of Physical Therapy services for SDFRD & SDPD Wellness Program
- Direct participant physical therapy care

Denise O'Hagan, M.P.T., A.T.C. (See Vol. 2, Tab 14 for curriculum vitae)

Denise graduated from Sacred Heart University in Fairfield, CT in 1998 with a Bachelor's degree in Psychology as well as Human Movement and Sports Science. She received her Athletic Training Certification in 1999 and received her Master of Science in Physical Therapy at Sacred Heart University in 2001. Denise moved to San Diego in the fall of 2001 and has been working in outpatient orthopedics since that time. She joined SDSM in September of 2009. Denise worked as a staff physical therapist at the SDSM Alvarado location for eight years and is now Director of Physical Therapy at our Pacific Beach location. Denise has worked extensively with first responders. Over the last ten years she has developed expertise in treating a multitude of injuries common to firefighters, EMT's and police officers. She has implemented treatment plans with specific demands of the profession in mind to ensure a full and safe return to work.

Wellness program responsibilities:

- Direct participant physical therapy and athletic training patient care

Doreen Hall, M.P.T. (See Vol. 2, Tab 15 for curriculum vitae)

Doreen has been practicing Physical Therapy since 1989, after receiving her Bachelor of Science Degree in Physical Therapy from Quinnipiac University and moving to San Diego. Doreen has a diverse background in physical therapy with emphasis in manual therapy. Her clinical experience includes sports and orthopedic rehab with athletes of all levels as well as firefighters and first responders, prenatal and postpartum rehab, work with seniors and osteoporosis. She has been teaching Pilates since 1999 and has found that it is an invaluable tool for integrating awareness and facilitating the body's innate ability to heal through movement. Doreen has been developing a Pilates-based back pain exercise program over the past several years and continues to help a wide variety of back pain patients. Doreen owned and operated Pilates People with her husband David Hall for 15 years. She completed the Polestar Pilates training in 1998 with Brent Anderson and Elizabeth Larkam and continues to explore the use of the Pilates principles in all her treatments. She enjoys the diversity of working with clients of all ages to improve their quality of life.

Wellness program responsibilities:

- Direct participant physical therapy care
- Oversee Pilates training for SDFRD and SDPD
- Consultant to the SDFRD and SDPD Wellness program

Kathryn Spurrell, D.P.T. (See Vol. 2, Tab 16 for curriculum vitae)

Katie earned her Bachelor of Science degree in Neurobiology, Physiology, and Behavior from UC Davis in 2007. After working in a laboratory for several years, she decided to return to school to follow her passion for helping others regain function and achieve their goals after injury. Katie received her Doctor of Physical Therapy in 2013 from University of Southern California, which has consistently been ranked the number one physical therapy school in the U.S. Katie has worked in a variety of orthopedic and neurologic settings and has been fortunate to further her education and receive mentorship in the treatment of vestibular disorders and post-concussion syndrome. Since joining SDSM in 2018, Katie has enjoyed working with patients across the lifespan, SDSU athletes, and San Diego Firefighters.

Wellness program responsibilities:

- Direct participant physical therapy care

Ben Vasko, D.P.T. (See Vol. 2, Tab 17 for curriculum vitae)

Ben was born and raised in San Diego. He graduated from Mt. Carmel High School where he played baseball and football. He continued his academic and baseball career at San Diego State University, where he graduated with a Bachelor of Science in Kinesiology in 2015 and a Doctor of Physical Therapy in 2018. During this time, he worked at Naval Medical Center San Diego in the Movement Retraining Center, where he corrected the mechanics of individuals who had pain associated with running, squatting, and stair management. He also worked in the Comprehensive Combat and Complex Casualty Care (C5) program, providing specialized care for active duty military with limb trauma and amputations. In November 2018, Ben began working as a physical therapist at SDSM and treats a wide variety of patients from all walks of life including athletes, firefighters and first responders as well as elderly and adolescents. Ben utilizes the most recent evidence-based research and manual therapy techniques to provide each patient with a personal plan of care to address his or her unique needs. He enjoys providing insight to athletes, young and old, and is a devoted lifelong learner. He plans on becoming a certified strength and conditioning specialist and a sports certified specialist. Ben is dedicated to improving the lives of his patients and bettering the City of San Diego as a whole.

Wellness program responsibilities:

- Consultant to the SDFRD and SDPD Wellness program

Shawn Renner, D.P.T., A.T.C. (See Vol. 2, Tab 18 for curriculum vitae)

Shawn received his Bachelor of Science in Health Sciences with a minor in Business in

2013 from the University of Missouri-Columbia. While a Mizzou Tiger, Shawn worked as a student athletic trainer for the wrestling team and spent time volunteering in pediatrics with a hippotherapy program. Upon graduation and moving to Atlanta, GA he worked as a physical therapy aide for Atlanta's largest orthopedic group and continued volunteering with pediatrics in hippotherapy. Shawn graduated from Nova Southeastern University in Fort Lauderdale, FL as a Doctor of Physical Therapy in 2017. Shawn has been living in San Diego since 2016 where he completed his clinical work in a variety of settings including Scripps Mercy Hospital for inpatient care with focus in trauma and orthopedics. Shawn's passion for sports medicine and orthopedics returned him to the outpatient setting where he enjoys working with a variety of patients of all activity levels and goals to return function and performance.

Wellness program responsibilities:

- Consultant to SDFRD & SDPD Wellness program
- Direct participant physical therapy and athletic training services

William Taylor, B.S., P.T.A., A.T.C., O.T.C. (See Vol. 2, Tab 19 for curriculum vitae)

Bill received his Bachelor of Science in Athletic Training at San Diego State University. Bill has worked in the field of sports medicine since 1980, starting with the San Diego Padres minor league and working with varied teams such as the 1984 Gold Medal Olympic Men’s Volleyball Team, San Diego Sockers, San Diego Gulls, San Diego Spirit and the Oracle-BMW racing team for the America’s Cup Challenge in New Zealand. Bill has worked with athletes from the high school level through the elite competitive level designing rehabilitation, training and nutrition programs.

Bill has worked with SDSM for over 20 years providing care for our therapy patients and athletic training programs. Bill has worked with firefighters, police officers, SWAT team members, and lifeguards in the rehabilitation setting. Bill is extensively trained in hands-on manual therapy. He has worked as a surgical assistant which provides invaluable experience with rehabilitation and training techniques.

Wellness program responsibilities:

- Oversee athletic training services
- Direct participant care for prevention and care of injuries

Donald Kessler, ME.d., A.T.C. (See Vol. 2, Tab 20 for curriculum vitae)

Don is the athletic trainer for BUD/S (Basic Underwater Demolition/SEAL training) at the Naval Special Warfare Center in Coronado, CA. He has held that position for seven years, overseeing SEAL candidates in training.

Don has been an athletic trainer for 45 years, working at the Naval Academy, Princeton University and Delran High School (NJ). He was the head athletic trainer at Rutgers University for 18 years and served in that position at SDSU. He was the primary athletic trainer for the gold-medal U.S. Olympic crew team at the 2004 games in Athens. He has also worked and traveled with U.S. Soccer teams (men's and women's World Cup), US Rowing and USA Water Polo.

Don is a past President of the Athletic Trainers Society of New Jersey (ATSNJ), and from 1993-1994 he was President of the Eastern Athletic Trainers Association (EATA). He has also served as a member of the board of directors for the National Athletic Trainer's Association Research & Education Foundation. In 1996, he was recognized for distinguished service by both the National Athletic Trainers' Association (NATA) and the Athletic Trainers Society of New Jersey (ATSNJ) and was inducted into the Hall of Fame of the ATSNJ in March 1998.

Wellness program responsibilities:

- Provide athletic training consulting services

Fitness Staff:

Matt Downs, M.S. (See Vol. 2, Tab 21 for curriculum vitae)

Matt received his undergraduate degree in kinesiology with an emphasis in fitness, nutrition and health. He earned his Master of Science degree in exercise physiology from San Diego State University. Matt currently serves as clinical coordinator for the SDSM fitness staff. Matt oversees all special projects for the SDFRWP and is an integral part of the Peak Performance department.

Additionally, Matt is a personal trainer with a certification from the National Strength and Conditioning Association (NSCA) and is a Certified Strength and Conditioning Specialist (CSCS) utilizing this knowledge to train athletes for the primary goal of improving athletic performance. He is also certified in Functional Movement Screen (FMS) trained to identify movement patterns indicative of increased injury risk causing reduced performance and, similarly, the Y-Balance test.

Wellness program responsibilities:

- Clinical coordinator of fitness staff
- Exercise stress testing
- Strength room testing and movement evaluation
- Nutrition evaluation and body composition measurements

- Education program creation and station visits
- Wellness database IT support and development

Kayli Gibbs, M.S. (See Vol. 2, Tab 22 for curriculum vitae)

Kayli received her undergraduate degree in kinesiology with an emphasis in fitness, nutrition, and health. She earned dual Master of Science degrees in exercise physiology and nutritional sciences from San Diego State University. She serves as the education coordinator for the SDFRWP.

Kayli is a Certified Strength and Conditioning Specialist (CSCS) from the National Strength and Conditioning Association (NSCA) and is certified as an exercise physiologist from the American College of Sports Medicine (ACSM), the prestigious organization that sets the scientifically based standards for the exercise profession.

Wellness program responsibilities:

- Educational coordinator
- Exercise stress testing
- Strength room testing and movement evaluation
- Nutrition evaluation and body composition measurements
- Education program creation and station visits

Nick Shields, M.S., R.D. (See Vol. 2, Tab 23 for curriculum vitae)

Nick received his undergraduate degree in kinesiology from California Polytechnic State University San Luis Obispo. He completed a Didactic Program in Dietetics (DPD) which included inpatient, outpatient, food service and other areas of nutrition. Additionally, he completed a dietetic internship at UC San Diego Health and an internship at the Olympic Training Center in Chula Vista. He earned dual Master of Science degrees in exercise physiology and nutritional science from San Diego State University. Nick Shields is the registered dietitian for the SDFRWP.

Wellness program responsibilities:

- Nutrition evaluation and body composition measurements
- Exercise stress testing
- Education program creation and station visits
- Individual appointments for high risk individuals

Linda Illingworth, R.D., C.S.S.D. (See Vol. 2, Tab 24 for curriculum vitae)

Linda is the Director of Nutrition at SDSM's Lifewellness Institute in Point Loma. Linda is responsible for patient clinical care and corporate wellness education for individuals and corporations. Linda is a board certified sports nutritionist and is passionate about helping athletes and individuals reach their potential. Linda lectures frequently, provides private nutrition consultations, conducts food sensitivity and nutrition testing, and advises on private label and safe supplementation. Linda advises on nutritional aspects of meal and recipe development and develops specific nutrition literature using current scientific evidence and relevance to client health. Linda received her B.S. from California State University Long Beach and completed her internship at St. Luke's Hospital in Milwaukee, WI, recognized for its innovation in cardiac care. Linda maintains membership in Dietitians in Functional Medicine and Sports and Cardiovascular Nutrition practice groups of the American Dietetic Association, the American Society for Nutrition, American Botanical Society (herbal medicine), and the California Dietetic Association.

Wellness program responsibilities:

- Nutrition consultation services
- Individual appointments for high risk individuals

Mateo Montell, M.S. (See Vol. 2, Tab 25 for curriculum vitae)

After serving for four years in the United States Marine Corps, Mateo received his undergraduate degree in kinesiology with an emphasis in fitness, nutrition and health from San Diego State University. He earned his Master of Science degree in exercise science from Point Loma Nazarene University. Mateo is an exercise physiologist for the SDFRWP.

Mateo is a certified personal trainer, corrective exercise specialist and Level 1 suspension training specialist through the National Academy of Sports Medicine (NASM). His experience includes research assistant at the Defense and Veterans Brain Injury Center in Silver Springs, Maryland and exercise physiologist at Scripps Health and at the exercise physiology lab at California State University San Marcos. Mateo is the founder of Have a Ball! Foundation which provides physical education, wellness services and tools for learning and play to social protection centers in Northern Vietnam, Central Mexico and schools around the United States.

Wellness program responsibilities:

- Exercise stress testing
- Strength room testing and movement evaluation
- Nutrition evaluation and body composition measurements

- Education program creation and station visits

Meghan Beck, M.S. (See Vol. 2, Tab 26 for curriculum vitae)

Meghan received her undergraduate degree in kinesiology with an emphasis in fitness, nutrition, and health. She earned her Master of Science degree in exercise physiology and nutritional sciences from San Diego State University.

Meghan is a Certified Strength and Conditioning Specialist (CSCS) from the National Strength and Conditioning Association (NSCA) and is a certified Pain-Free Performance Specialist (PPSC), optimizing fitness and performance around the presence of pain, dysfunction and injuries. With a passion for helping all types of clientele, Meghan works with children to adults, to elite performers including Navy SEALS and college athletes. Her experience includes research assistant for the Naval Health Research Center Warfighter Performance Laboratory.

Wellness program responsibilities:

- Exercise stress testing
- Strength room testing and movement evaluation

Corey Esquivias, B.S. (See Vol. 2, Tab 27 for curriculum vitae)

Corey received his undergraduate degree in biology with an emphasis in neurobiology, physiology and behavioral sciences at University of California at Davis. Corey competed as a high-level gymnast for 16 years and competed collegiately while at UC Davis. He is currently earnings his Master's in Applied Movement Sciences at San Diego State University and will continue his education to receive his Doctor of Physical Therapy degree. Corey is a certified personal trainer and physical therapy aide displaying keen eye for functional movement and proper body mechanics he accumulated as a competitive gymnast.

Wellness program responsibilities:

- Strength room testing and movement evaluation
- Education program creation and station visits

Davina Fant, Program Administrative Assistant.

Davina has been the administrative coordinator for the SDFRWP for the past 11 years. Davina is responsible for the coordination and administration of multiple facets of the wellness program. She is instrumental to the day-to-day working flow of the clinic, scheduling and coordination of participants' physical exam visits, blood draws, immunizations, and other services that are provided by SDSM. She oversees the process for the completion of all forms for DMV, US&R, Hazardous Materials/Technician/CEDMAT Fire Inspectors, SCUBA and Bomb Squad Technician physicals and coordinates with the City's representatives for each entity.

a. See the above information for a description of the dedicated staff and list of qualifications for all staff assigned to the wellness program.

    i. SDSM acknowledges the City of San Diego Municipal Code Article 2, Division 28 regarding the direction and guidelines regarding the retention of the incumbent workforce. In the case that SDSM is not awarded this Contract, SDSM will continue to operate a Wellness Program for the benefit of 12 other San Diego County fire agencies and will continue to offer employment to our incumbent personnel.

b. Richard A. Parker, D.O., F.A.O.A.S.M. will serve as the Designated Medical Director of the SDFRPWP.

    i. Dr. Parker has been the Medical Director of the SDFRWP for the last 15 years. Dr. Parker has been instrumental in the development and implementation of the WFI Wellness Program for SDFRD from its inception. He is very familiar with all aspects of the initiative and has a great working knowledge of the program. Dr. Parker has overseen greater than 25,000 stress EKG's. He has practiced family medicine and sports medicine for over 30 years and has extensive experience in diagnosing and treating cardiovascular disease. He offers not only extensive knowledge of firefighter health and safety, but also brings a passion for wellness, prevention and health promotion that is unparalleled. Dr. Parker is board certified in family medicine and sports medicine. He has served as team physician for San Diego State University since 1985. A large percentage of his practice involves the diagnosis and treatment of musculoskeletal injury and disease. Over the last 15 years, Dr. Parker has gained invaluable experience administrating the SDFRWP, making intelligent and prudent decisions for the health and well-being of individual firefighters as well as the entire department. He stays current on the latest firefighter research, working at the forefront of ideas and is recognized as an

authority on improving and maintaining firefighter health.

ii. Dr. Parker has extensive knowledge in cardiovascular disease, exercise testing musculoskeletal injury diagnosis and management, preventive medicine and lifestyle management through his thirty plus years as a family medicine and sports medicine practitioner and medical director of the SDFRWP.

iii. SDSM will offer medical consultation from the medical director or his physician designee for a fee of $200.00 per hour for services provided outside the scope of this contract and only with prior authorization from the City.

c. SDSM physicians providing services for this program are board certified in family medicine and sports medicine. The physicians will work onsite during periods of scheduled medical/fitness testing. SDSM has been the provider for multiple municipal fire wellness programs over the last 40 years. It has been our experience that the face-to-face time with the physician is perhaps the most critical component of the evaluation as well as an asset in developing overall trust and confidence of each participant. At SDSM, our physicians lead the wellness team. The physician's presence onsite during the entire evaluation process affords SDSM the opportunity to perform maximal stress testing if desired. Maximal stress testing gives our team a true measure of each firefighter's cardiovascular fitness, allowing us to properly educate and counsel each firefighter toward optimum fitness and provides us the data necessary to create fitness programs that create department-wide fitness which meets and exceed IAFF standards.

d. SDSM staff providing services under the athletic trainer program meet the following qualifications as described in section B.1.c.

i. SDSM's athletic trainer will have experience in Tactical Athletic Rehabilitation and Injury Prevention and have training to the highest standard of an Industrial Athlete.
ii. SDSM's athletic trainer will have a minimum of a Bachelor's degree in athletic training, although a Master's is preferred.
iii. SDSM's athletic trainer will be certified by the National Athletic Trainer Association (NATA) Board of Certification for Certified ATC's and obtain National Strength and Conditioning Association Tactical Strength and Conditioning Facilitator Certification (NSCA TSAC-F). Athletic trainers receive certification rather than licensure.
iv. SDSM's athletic trainer will have a minimum of five years of work experience.
v. SDSM's athletic trainer will have Functional Movement Screen (FMS) Level 1 Certification or equivalent.
vi. SDSM's athletic trainer will have experience working with organizations similar in size to the SDFRD and SDPD.

vii. SDSM's athletic trainer will have knowledge and use of pre-OSHA recordable treatments, and knowledge in creating and managing individualized assessment and treatment programs.

viii SDSM's athletic trainer will have a minimum of basic understanding of injury prevention as it relates to the workers' compensation nexus.

e. SDSM physical therapists providing services under the physical therapy program will meet the following qualifications as described in section B.7.e.

i. Physical therapy staff will be trained in Tactical Athletic Rehabilitation and Injury Prevention and in the highest standard of an Industrial Athlete.

ii. SDSM physical therapy staff are all registered physical therapists. The therapists assigned to this project will have a minimum of five years of experience.

iii. SDSM physical therapy staff has over a decade of working with firefighters, police officers and first responders. The staff has a unique understanding of these tactical athlete's job demands that is uncommon among other therapists. SDSM therapists work vigorously with each individual to ensure they return to work quickly, safely and in peak physical condition to tolerate the demands of the job.

iv. SDSM physical therapy staff has extensive experience working with Division 1 college athletes, professional and elite athletes including San Diego Chargers, San Diego Gulls, San Diego Sockers, USA Men's and Women's Volleyball teams, and the USA Rugby team.

f. SDSM medical and fitness staff have extensive working knowledge of firefighter, lifeguard, and police officer injuries/illnesses and the IAFF Wellness Initiative. Our physicians provide primary care for hundreds of San Diego County firefighters, lifeguards, police officers and their families. Many San Diego City and County firefighters, lifeguards and police officers have chosen our physicians to treat their work-related and athletic injuries as well. SDSM has been the medical provider for the SDFRWP since its inception and has served as the medical provider for multiple other fire agencies for over 30 years. Through this service we have gained valuable working knowledge of health risks associated with a career in firefighting. We have developed many strategies to decrease risk and mitigate disease and injury. The physicians and wellness staff have over 15 years of experience implementing the IAFF Wellness Fitness Initiative and developing additional tests and services including the Nutritional Services, Carotid Ultrasound screening, Y-balance test and more. We have a knowledgeable and well-trained staff and take pride in the quality and efficiency of the delivery of our services. Our program is recognized as one of the most comprehensive programs in the country and is listed on the IAFF Wellness Fitness Initiative website as a resource for other programs.

g. SDSM has demonstrated our ability over the past 30 years to decrease health risks among firefighters, detect disease as it first presents and prevent injury. In the 1980's we developed and implemented a low back injury program for La Mesa Fire Department that demonstrated a significant decrease in workers' compensation costs. We delivered a low back education program for the Heartland Fire District for the next 12 years and developed Wellness programs for multiple fire departments in the county. SDSM is the medical provider for the SDFRWP, which has been in existence for over fifteen years. The improvement in various health/fitness parameters among the participants from the SDFRD has been substantial. We have seen improvement in firefighter's health and exercise habits, reflected in an increase in the percentage of participants who participate in flexibility exercise (10% over 15 years), weight training (19% over 15 years) and aerobic activity has remained stable at a high of 70% of participants. We have seen a reduction in cardiovascular risk factors including cholesterol and blood pressure. The percentage of participants with total cholesterol greater than 200 mg/dl has dropped from 42% in 2005 to 37% in 2019. The percentage of participants with moderate to severe LDL cholesterol has dropped from 30.9% to 25% from 2005 to 2019. Blood pressure has decreased on average from 125/80 mmHg to 121/78 mmHg during this time. At this time there are only 3.6% of participants with high blood pressure above 140/90 compared with 9.8% of individuals at risk in 2005. The department's average cardiovascular fitness is high and has increased from 45.2 ml/kg/min in 2005 to 48.8 ml/kg/min in 2019. 80.4% of individuals are above the NFPA guidelines of 42 ml/kg/min in 2019 compared to 69% in 2005. The number of individuals with metabolic syndrome has decreased from 100 in 2005 to 49 individuals in 2019, or from 12.4% of the participants to 5.9% of the participants since the inception of the program. These improvements within the SDFRD are reflective of the same kind of changes we have seen in other departments participating in the program.

In 2019 we have noticed an increase in average LDL cholesterol from 113 mg/dl in 2018 to 118.4 mg/dl. The percentage of individuals with LDL cholesterol greater than 160 mg/dl has also increased from 5.7% in 2018 to 9.1% in 2019. We believe this is reflective of firefighters following diets similar to the keto diet which is high in fat. This data offers us a unique opportunity to educate Wellness participants on long-term health risks of high fat diets

Aggregate data tells only one part of the story. Over the last fifteen years there have been many individual stories that reflect the impact that the Wellness program and our staff has had on the firefighters of San Diego County. One individual lost 75 pounds, decreased his LDL cholesterol from 173 mg/dl to 92mg/dl, decreased his body fat by 11% and increased his cardiovascular fitness by 4 METs. Over the last 15 years at least 25 prostate cancers have been detected, two firefighters have been

diagnosed with leukemia, 10 firefighters have been diagnosed with testicular cancer and several with malignant melanoma. Four new cases of breast cancer have been diagnosed in the last 15 years. Multiple cases of new onset cardiovascular disease and diabetes mellitus have been diagnosed and treated over the past fifteen years. Several firefighters' lives have literally been saved by early diagnosis at the SDFRWP. There has also been a decrease in new open cases of back, knee and shoulder.

h. SDSM physicians working with the wellness program have extensive experience working in industrial medicine. Our physicians have been selected by over 300 San Diego County firefighters and they are the medical providers for workers' compensation cases for the San Miguel Fire District, Rancho Santa Fe Fire Department, National City Fire Department, Alvarado Hospital and Scripps Healthcare among other employers. SDSM physicians have extensive knowledge of infectious disease from over 30 years in family medicine. They have broad knowledge of cardiology, having performed over 50,000 treadmill tests. The physicians are all board certified in family medicine and sports medicine providing valuable experience in the diagnosis and treatment of orthopedic injuries. They have served as the team physicians for SDSU Aztec Athletics, San Diego Chargers, San Diego Clippers, USA Men's and Women's Volleyball Teams, San Diego Sockers, Olympic Athletes at the Olympic Training Center in Chula Vista, OMBAC Rugby, San Diego Ballet, and the professional women's soccer team San Diego Spirit, Grossmont College, and many local high schools. Over the last 15 years SDSM has had experience treating the physical and psychological stresses of Hurricane Katrina, the Witch Fire, and the Cedar Fire. We have guided fire personnel through debilitating injuries and disease, economic stressors, family stressors, death and retirement.

i. Physicians and wellness staff have gained immense experience and familiarity with the tasks of the firefighter over the past 30 years, and particularly over the past 15 years since opening the SDFRWP. All new wellness staff are sent on ride-alongs so they can experience the demands of a firefighter firsthand. The physicians and wellness staff are well acquainted with the data from the National Fire Protection Association (NFPA) regarding the physiology and psychological stressors that firefighters experience. They have collaborated with other departments locally and nationally to gain more information on what is being done around the nation for the health and safety of our firefighters. One of our providers has completed the fire surgeon course through the Phoenix Wellness Program. Several of our providers have attended and spoken at the IAFF Redmond Health and Safety Conference and Fire World. We have developed relationships with the WFI program providers: Dr. Don

Stewart in Fairfax, Virginia; Dr. Ellen Kessler with Prince Williams County Fire Department; and Dan Treviso, the Wellness Officer from LA County, who are all members of the Wellness Committee for the Wellness Fitness Initiative. The committee members keep us abreast of new developments related to firefighter health at the national level. Our wellness staff has been involved in the work of national fire organizations such as the International Association of Fire Chief's firefighter Safety Through Advanced Research (FSTAR) program. Through this program we have kept current on research and able to translate this information to the larger fire service community. SDSM wellness staff have been involved in local and national research programs keeping us at the forefront of the field as it relates to prevention and emerging health issues. Dr. Parker and Katie Rusk currently serve as stakeholders in a new study by the Department of Homeland Security that focuses on the health and wellness of women firefighters.

j. SDSM physicians and wellness staff will continue to update their working knowledge of local, state, provincial and federal laws related to the health and safety of the firefighter and work in conjunction with the management and union to address any issues related to these laws.

k. Wellness staff responsible for conducting fitness examinations all have Master's degrees in a fitness related discipline such as kinesiology, exercise physiology or athletic training. They each have certification in strength and conditioning from one of the following organizations:

    i. American Council on Exercise (ACE)

    ii. American College of Sports Medicine (ACSM)

    iii. National Strength and Conditioning Association (CSCS)

l. SDSM wellness staff responsible for performing sub-maximal stress EKG testing will be qualified at the Master's degree level in order to have the background necessary to run a submaximal test, read EKG's, deliver appropriate education during testing and to develop appropriate exercise prescription. SDSM currently has five individuals on staff with this education and background. We also work in collaboration with the Master's program at San Diego State University to train students in this capacity. Several staff members originally started as interns in our training program and later became employees. This collaboration has allowed us to work with the professors at SDSU as well as develop these students firsthand.

m. SDSM wellness staff responsible for performing nutrition assessments and counseling either have special training in nutrition at the Master's level or are registered dietitians.

Currently all of SDSM's personnel involved in nutrition meet this requirement. We are fortunate to have a registered dietitian with a Master's degree who oversees the training of our staff and development of our nutritional education. Our registered dietitian is responsible for counseling the high-risk nutrition participants and provides valuable expertise for those individuals.

n. Subcontracted services:

   i. The following services will be subcontracted by SDSM:

      1. Laboratory services will be provided by Quest Diagnostics

      2. Mammograms will be performed by Imaging Healthcare Services

      3. Data collection and database development and maintenance will be performed by SDSM using proprietary Welltivia software with the assistance of subcontractor Steven Birch, PhD.

   ii. SDSM acknowledges that all staff and subcontractors assigned to work at the Police Plaza are subject to a background check.

6. MEETINGS, DATA COLLECTION, AND REPORTING REQUIREMENTS

   a. SDSM medical staff will be able to meet with the City to discuss goals related to the wellness program on a regular, ongoing basis. This will occur on an anticipated monthly basis or more frequently as warranted by the Wellness Officer(s) or other designee.

   b. SDSM will provide an annual Wellness Report (See example in Tab 36) to the SDFRD and Police Chiefs, the Health and Safety Officer and respective Wellness Officer(s) from both fire and police departments. SDSM has collaborated with San Diego State University in providing scientific and technical support related to collection and analysis, confidentiality procedures, research design and implementation, and preparation and development of a unique database designed specifically to support the WFI. Over the last 13 years we have developed this SQL database into a fully functional electronic medical record (Welltivia) that can be used by any organization across the country with a similar wellness program. From this database we are able to quickly and efficiently provide an annual report for management staff. The annual report will address the following:

i. General recognized trends: SDSM will identify general recognized trends in the annual report associated with the health and fitness of wellness program participants in accordance with the IAFF Wellness Fitness Initiative to include:

1. Demographics and age distribution
2. Current diagnoses and current habits
3. Exercise habits
4. Nutrition and diet risk
5. Medical demographic trends including height, weight body fat and body mass index
6. Blood laboratory values trends, including triglycerides, cholesterol (total, LDL, HDL) and glucose.
7. Blood pressure trends
8. Fitness parameters including back endurance, flexibility and cardiovascular values
9. Department behavioral wellness

ii. Strategies: SDSM will include strategies undertaken over the last year toward mitigation of negative trends, or other steps taken to improve the general health and fitness of wellness program participants. Over the last 15 years, SDSM has developed programs based on information derived from our Welltivia database for San Diego as well as other departments. The Stop, Drop, Control program was developed because there were a significant number of individuals with high normal blood pressure not only in San Diego and other departments. The Biggest Burn Challenge was conceived from trends in the data showing that the majority of firefighters had over 20% body fat. Responding to a drop in CV fitness in 2010, we designed a 12 MET challenge to increase fitness. We can confidently say that resolved by 2014 and we have maintained that level of fitness through 2019. In 2019 we developed the LINK program to address the increasing numbers of minor injuries of knees and lower extremities and a SPINE TLC program for the continuing challenge of low back injuries. In 2020 we will develop a nutrition education program to address the increase in cholesterol levels over the last year.

iii. Comparative data with other departments: SDSM has a strong working relationship with LA County and Orange County and has received health and fitness data from these departments as well as from Prince William County in Virginia. The 2019 San Diego Fire-Rescue Annual Wellness report demonstrates comparisons with nine other local fire departments. We have worked with the IAFF in developing our database to be able to match their data dictionary so we will be able to be a part of the national database for firefighters in the future.

iv. Repeat participants: SDSM has developed the mechanism to retrieve data from repeat participants from the Welltivia database. This offers us the unique ability to formulate trends among those firefighters that have been in the program over 15 years. It also gives us the ability to see the effectiveness of the program for mitigating disease over time for these individuals. (See example in Tab 36, pages 54 - 73)

    1. Disease management: The Welltivia database developed by SDSM for this wellness program and the IAFF Wellness Fitness Initiative was uniquely designed to provide information on disease management. Welltivia captures the following information quickly and concisely.

    2. Top Ten (10) diagnoses made by the Physician (See example in Tab 37)

    3. Metabolic syndrome/disease: Welltivia pulls information from different fields (i.e. blood pressure, fasting glucose, triglycerides, waist circumference and HDL level) to determine if an individual has metabolic syndrome. This information is presented to the individual at the time of the exam. From this information we can also query the database to get a report on how many individuals have metabolic syndrome or the risk factors. This allows us to target those individuals and recommend strategies to aggressively treat those risk factors. (See example in Tab 36, pages 31 - 33)

    4. Coronary artery disease: Cardiovascular risk status is current calculated from the Framingham Risk Score. The Framingham Risk Score is a gender- specific algorithm used to estimate the 10-year cardiovascular risk of an individual. The Framingham Risk Score was first developed based on data from the Framingham Heart Study, to estimate the 10-year risk of developing coronary heart disease. In order to assess the 10-year cardiovascular disease risk, cerebrovascular events, peripheral artery disease and heart failure were subsequently added as disease outcomes for the 2008 Framingham Risk Score in addition to heart disease. (See example in Tab 27, page 17)

    5. Diabetes: Our Welltivia database is designed to obtain this information from the assessment by the physician and from ICD-9 diagnosis codes. We are able to query the database to retrieve information on those individuals with diabetes and develop strategies to mitigate this disease. (See example in Tab 38)

v. Our Welltivia database has the ability to query other pertinent information upon demand allowing us to build reports that we deem necessary or important.

Examples of this capability include determining how many participants have been diagnosed with melanoma, or how many participants have abnormal chest X-rays. We can query these variables based on geographical location, age, gender, division, station, rank, etc., and determine if there is a specific reason for a particular diagnosis or problem.

vi. Medical Privacy Laws: During the development of the Welltivia database, SDSM sought the help of individuals and organizations with special training in privacy laws. SDSM procured the assistance of the Homeland Security Department at San Diego State University, who has extensive knowledge in the Health Insurance Portability and Accountability Act (HIPAA), which governs privacy and provide best practices guidelines with respect to security. Welltivia uses a multi-layer security approach, ensuring extreme care in protecting private medical information. We have encrypted data access and storage to ensure only authorized personnel are able to access the data.

vii. SDSM acknowledges that reports and aggregate health and fitness data are property of the City of San Diego. SDSM will not release this information without the express authorization and written consent of the Wellness Officer. Individual health information is protected by HIPAA and will not be released without the consent of the wellness participant.

viii SDSM will work with the information provided by the City in the future to show annual data/graphs indicating average days of Lost Work Days, Restricted Work Days and specific aggregate workers' compensation data.

c. Demonstrable Database: SDSM has created Welltivia, a demonstrable database and electronic medical record (EMR) that captures all information regarding participants' demographics, lifestyle, personal medical history, family history, immunizations, lab values, audiometric and pulmonary function values, vital signs, review of systems, current medical findings and all health and fitness parameters consistent with the Wellness Fitness Initiative. Welltivia has been developed over the past 13 years and holds over 20,000 Wellness encounters and has over 900 fields to collect data on each participant. We are able to demonstrate the use and functionality of Welltivia. Welltivia has the following capabilities as required by this Contract:

i. Welltivia is able to expand to incorporate new medical and fitness tests, diagnostic tools and health risk assessments that are related to the changing Wellness Fitness Initiative and research available on firefighter health. Over the last few years we have added a functional movement screen, the Framingham Risk Score and developed our own Wellness Age. We have also added the data fields to store information on vertical jump, pull-ups, Functional Movement

Screen, depression scale, PTSD questionnaire, and customized the immunization records. We will be able to stream lab results from Quest Diagnostics directly into Welltivia by the start of this Contract. We have the capacity to expand and custom Welltivia at the direction of the Designated Medical Director and Wellness Officer(s).

ii. Welltivia is compliant with all appropriate medical privacy laws as prescribed through HIPAA.

iii. Welltivia contains all of the components of the IAFF data dictionary and is easily expandable to accommodate any new changes that may be determined in upcoming years. Welltivia is able to produce reports outlined in the WFI, 4th Edition.

iv. Welltivia currently holds all data from 2005 to the present on all SDFRWP participants. Information was converted from a previous database and placed into Welltivia so that all retrospective data can be accessed for individual and group reports.

    1. Integration of data from previous years is already complete and will not cause any additional cost to the City.

    2. SDSM currently holds all the data from previous years and so therefore there will not be any delay in the provision of medical/fitness examinations.

    3. SDSM will continue to obtain approval to release individual data and will adhere to existing privacy laws.

    4. SDSM's data collection presently meets and exceeds the WFI, 4th Edition, requirements.

v. Medical Record Database

    1. SDSM will use our proprietary Welltivia database and electronic medical record (EMR) to meet the City's data collection and reporting requirements. Welltivia has the capacity to collect all health and fitness variables that are outlined in the WFI, 4th Edition, and has the ability to capture pertinent medical findings and record assessments, plans and recommendations for each individual. We have standardized reports that meet the reporting requirements outline in the RFP and will continue to develop new reports as needed.

2. Welltivia is a web browser interface-based system designed around the WFI and the workflow of the wellness program. It is very intuitive to use. Welltivia is scalable in terms of concurrent users, multiple patients, and large multi-year collections of data in geographically dispersed locations. Welltivia uses a relational database to store over 1,000 relevant variables such as demographic, physiologically, and work-related information. Welltivia is capable of producing a rich variety of reports in real time. Both pre-made and ad hoc reporting of individual or group data is available. Welltivia creates a professional copy of results to individuals and group data reports. Welltivia is able to capture all relevant data required through the WFI, 4th Edition.

3. The sample reports represented in Attachment G of the RFP were created by SDSM. SDSM is able to continue to provide these reports throughout the life of the Contract. (See Tab 36 for Annual Report 2019)

4. SDSM is able to provide population data as requested. We have recently developed 15-year average data for the majority of health parameters of participants. The multi-year reports allow us to manage and report disease and show trends on repeat participants over the years. (See Tab 36 for Annual Report 2019)

7. PHYSICAL THERAPY

On-site physical therapy for SDFRD and SDPD personnel is an excellent idea. Given either the City-owned facility or SDSM-owned facilities as host to the SDFRPWP, physical therapy services delivered by experienced and skilled physical therapists as required by the RFP will likely result in the most dynamic, timely and cost-effective physical rehabilitation possible. Collaboration with key medical, fitness and ATC staff members will ensure well-coordinated and progressive care for the city's safety personnel. Post-rehab exercise utilizing the proposed gym facility will be key to rapid, sustained and cost-conscious recovery from injury and surgery.

a. SDSM will enthusiastically treat safety personnel of the Fire-Rescue and Police Departments

   i. SDSM's physical therapy staff will treat non-industrial wellness participants when referred and paid for by an individual's private insurance.

   ii. SDSM's physical therapy staff will treat industrial injuries in accordance with California Labor Code and California Code of Regulations as part of the City of San Diego's medical provider network.

1. Billing for industrial injuries will be in accordance with the Official Medical Fee Schedule

b. SDSM Wellness staff and physical therapy staff will work together to identify and reduce waste (time/regression of patient treatment) wherever found to improve the injury rehab process, ensuring the treatment plan is designed to treat the first responder holistically utilizing the department's and City's integrated health resources to care for the member and ensure consistent injury rehabilitation education is implemented to avoid future injuries.

c. SDSM will provide the necessary number of physical therapy staff to accommodate appointments.

   i. SDSM acknowledges that all physical therapy will be conducted onsite at the facility identified by the City.

   ii. SDSM acknowledges that requested or recommended physical therapy by a physician will be scheduled within five (5) business days.

d. SDSM physical therapy staff has over 160 years of combined experience and are industry leaders in providing state of the art rehabilitation services for outpatient orthopedics. With over a decade of working with firefighters, police officers and first responders, our physical therapy staff has a unique understanding of the job demands unique to these tactical athletes. The physical therapy staff will work vigorously with each individual to ensure participants return to work quickly and safely, fully prepared for the physical demands of their jobs. Our therapists utilize manual therapy techniques and functional exercises to restore maximum movement and functional ability for all injured workers. Our focus is to not just treat the current condition but to look at the body as a whole, taking into account prior injuries, in our rehabilitative efforts focused on prevention of permanent physical disabilities. Our therapists effectively treat all musculoskeletal conditions, including neck and back pain/strains, repetitive use injuries, acute and chronic pain, foot and ankle pain, sports related injuries and post-op rehabilitation for all joints and spine. SDSM physical therapy staff will be responsible to provide services to include the following:

   i. Work with the goal of achieving restoration of maximum movement, functional ability, and maintenance of injured personnel.

   ii. Management and treatment of disorders and injuries of the musculoskeletal system to help restore conventional function.

   iii. Assist in increasing and improving mobility following injuries.

iv. Work with the goal of relief of pain from prior injuries.

v. Work with the goal of prevention or limitation of permanent physical disabilities.

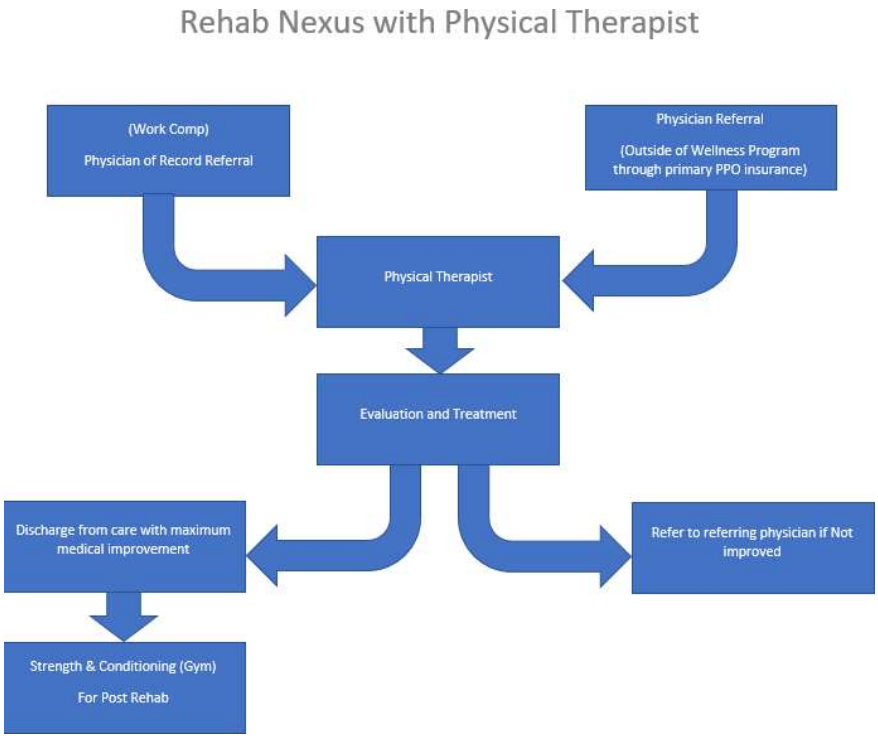
e. SDSM physical therapists will meet all following qualifications:

i. SDSM physical therapists are trained in Tactical Athletic Rehabilitation and Injury and in the highest standard of an Industrial Athlete

ii. SDSM physical therapists are registered physical therapists at the Master's or Doctorate level and have a minimum of five years' experience.

iii. SDSM physical therapists have multiple years of experience working with Tactical Athletes and/or with First Responders.

1. SDSM physical therapists are not only athletes themselves but have years of experience working with prevention and treatment of injuries of athletes from the high school level to the elite athlete level including NCAA Division I, Olympic and professional athletes. SDSM has treated athletes from San Diego State University for over 35 years.



8. HIPAA COMPLIANCE PROGRAM REQUIREMENTS

a. SDSM has developed a comprehensive plan including the appropriate policies and procedures that comply with the provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and the current rules and regulations enacted by the Department of Health and Human Services. SDSM complies with all components of HIPAA including:

i. Standards for privacy and individually identifiable health information.

1. The basic principle of HIPAA's Privacy Rule is to define and limit the circumstances in which an individual's protected health information may be used or disclosed by medical providers and associated entities. Individually identifiable protected health information may not be used or disclosed other than how the Privacy Rule permits or unless authorized by the individual. Detailed information about the Privacy Rule is available at https:// www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html.

ii. Health Insurance Reform: Security standards. These standards include:

1. Ensuring the confidentiality, integrity, and availability of all electronic protected health information created, received, maintained or transmitted by SDSM.
2. Protecting against any reasonably-anticipated threats of hazards to the security or integrity of protected health information.
3. Protecting again any reasonably anticipated uses or disclosures of protected health information that are not permitted or required under privacy regulations.
4. Ensuring compliance with all security standards by SDSM's entire workforce.

iii. Health Insurance Reform: Standards for electronic transaction sets and code standards.

1. HIPAA contains regulations and standards for the electronic transmission of all protected health information to ensure the safety, security, and integrity of data as it is transmitted through electronic means. SDSM will complies with all requirements of preserving the safety and security of protected health information.

iv. SDSM is responsible for all aspects of complying with these security rules with emphasis on the rules enacted to protect the confidentiality of patient information. Any violations of HIPAA rules and regulations will be reported immediately to the City along with SDSM's actions to mitigate the effect of such violations.

iv. SDSM provides annual certified HIPAA training for all staff and providers as required by federal law.

9. SITE INSPECTION AND INTERVIEW OF KEY PERSONNEL AT FACILITY(IES)

    a. SDSM acknowledges the City Evaluation Committee shall conduct a site inspection of any facility or key personnel the Proposer designates will be providing services under this RFP, in accordance with Exhibit A, Evaluation of Proposals. SDSM acknowledges the purpose of the site inspection and interview of the key personnel is to determine if the City is able to establish rapport and a productive professional working relationship with these individuals and to ensure that the facility meets the requirements to conduct examinations and testing as specified in the RFP. SDSM will be prepared to discuss and substantiate any areas of the Proposal submitted, as well as its qualifications to furnish the specified services.

10. CONTRACT ADMINISTRATION

    a. SDSM acknowledges the Contract Administrator for this contract is the City's San Diego Fire-Rescue Department Fire Chief or the designee specified on purchase orders issued under this contract. SDSM acknowledges the Contract Administrator will provide daily oversight of this contract to ensure compliance to the scope of work and/or performance to contract specifications. SDSM acknowledges the Contract Administrator, or designee, is also responsible for oversight of all invoice payments and billing questions for purchase orders issued under this contract.

    b. SDSM acknowledges the Purchasing Agent shall be responsible for all contractual matters and is the only individual authorized to make changes of any kind to the contract. SDSM will not rely upon any oral change from anyone, or a written request for change from someone other than the purchasing agent. All changes must be in writing and signed by the purchasing agent.

11. OPTION TO EXTEND SERVICES/TERM

    SDSM acknowledges the City of San Diego may require continued performance of any services within the limits and at the rates specified in the contract within the contract term. SDSM acknowledges these rates may be adjusted only as required by law (for example, pursuant to adjustments in prevailing wage, minimum wage or local living wage rates). SDSM acknowledges upon the City's determination to

exercise an option to extend the services/term, the City may increase the compensation 5%, or based upon the Centers for Medicare/Medicaid Services (CMS), National Health Expenditure Data (NHE), Table 3, annual percent change from previous year shown, other private funds (https://www.cms.gov/NationalHealthExpendData/downloads/tables.pdf), whichever is less. If any such adjustment results in a change in the contract price, that change must be agreed to by the parties in writing pursuant to the General Contract Terms and Provisions (attached). SDSM acknowledges the option provision may be exercised more than once. SDSM acknowledges the Purchasing Agent may exercise the option by written notice to SDSM within 30 days prior to the expiration of the prior term.

SDSM acknowledges if a contract term is applicable, the City of San Diego may extend the term of this contract by written notice to SDSM within 30 days; provided, the City of San Diego gives SDSM a preliminary written notice of its intent to extend at least 30 days before the contract expires. SDSM acknowledges the preliminary notice does not commit the City of San Diego to an extension.

SDSM acknowledges if the City of San Diego exercises this option, the extended contract shall be considered to include this option clause.

Exhibit C

THE CITY OF SAN DIEGO

GENERAL CONTRACT TERMS AND PROVISIONS

APPLICABLE TO GOODS, SERVICES, AND CONSULTANT CONTRACTS

ARTICLE I
SCOPE AND TERM OF CONTRACT

1.1 Scope of Contract. The scope of contract between the City and a provider of goods and/or services (Contractor) is described in the Contract Documents. The Contract Documents are comprised of the Request for Proposal, Invitation to Bid, or other solicitation document (Solicitation); the successful bid or proposal; the letter awarding the contract to Contractor; the City's written acceptance of exceptions or clarifications to the Solicitation, if any; and these General Contract Terms and Provisions.

1.2 Effective Date. A contract between the City and Contractor (Contract) is effective on the last date that the contract is signed by the parties and approved by the City Attorney in accordance with Charter section 40. Unless otherwise terminated, this Contract is effective until it is completed or as otherwise agreed upon in writing by the parties, whichever is the earliest. A Contract term cannot exceed five (5) years unless approved by the City Council by ordinance.

1.3 Contract Extension. The City may, in its sole discretion, unilaterally exercise an option to extend the Contract as described in the Contract Documents. In addition, the City may, in its sole discretion, unilaterally extend the Contract on a month-to-month basis following contract expiration if authorized under Charter section 99 and the Contract Documents. Contractor shall not increase its pricing in excess of the percentage increase described in the Contract.

ARTICLE II
CONTRACT ADMINISTRATOR

2.1 Contract Administrator. The Purchasing Agent or designee is the Contract Administrator for purposes of this Contract, and has the responsibilities described in this Contract, in the San Diego Charter, and in Chapter 2, Article 2, Divisions 5, 30, and 32.

2.1.1 Contractor Performance Evaluations. The Contract Administrator will evaluate Contractor's performance as often as the Contract Administrator deems necessary throughout the term of the contract. This evaluation will be based on criteria including the quality of goods or services, the timeliness of performance, and adherence to applicable laws, including prevailing wage and living wage. City will provide Contractors who receive an unsatisfactory rating with a copy of the evaluation and an opportunity to respond. City may consider final evaluations, including Contractor's response, in evaluating future proposals and bids for contract award.

2.2 Notices. Unless otherwise specified, in all cases where written notice is required under this Contract, service shall be deemed sufficient if the notice is personally delivered or deposited in the United States mail, with first class postage paid, attention to the Purchasing Agent. Proper notice is effective on the date of personal delivery or five (5) days after deposit in a United States postal mailbox unless provided otherwise in the Contract. Notices to the City shall be sent to:

Purchasing Agent
City of San Diego, Purchasing and Contracting Division
1200 3rd Avenue, Suite 200
San Diego, CA 92101-4195

ARTICLE III
COMPENSATION

3.1 Manner of Payment. Contractor will be paid monthly, in arrears, for goods and/or services provided in accordance with the terms and provisions specified in the Contract.

3.2 Invoices.

3.2.1 Invoice Detail. Contractor's invoice must be on Contractor's stationary with Contractor's name, address, and remittance address if different. Contractor's invoice must have a date, an invoice number, a purchase order number, a description of the goods or services provided, and an amount due.

3.2.2 Service Contracts. Contractor must submit invoices for services to City by the 10th of the month following the month in which Contractor provided services. Invoices must include the address of the location where services were performed and the dates in which services were provided.

3.2.3 Goods Contracts. Contractor must submit invoices for goods to City within seven days of the shipment. Invoices must describe the goods provided.

3.2.4 Parts Contracts. Contractor must submit invoices for parts to City within seven calendar (7) days of the date the parts are shipped. Invoices must include the manufacturer of the part, manufacturer's published list price, percentage discount applied in accordance with Pricing Page(s), the net price to City, and an item description, quantity, and extension.

3.2.5 Extraordinary Work. City will not pay Contractor for extraordinary work unless Contractor receives prior written authorization from the Contract Administrator. Failure to do so will result in payment being withheld for services. If approved, Contractor will include an invoice that describes the work performed and the location where the work was performed, and a copy of the Contract Administrator's written authorization.

3.2.6 Reporting Requirements. Contractor must submit the following reports using the City's web-based contract compliance portal. Incomplete and/or delinquent reports may cause payment delays, non-payment of invoice, or both. For questions, please view the City's online tutorials on how to utilize the City's web-based contract compliance portal.

3.2.6.1 Monthly Employment Utilization Reports. **RESERVED**

3.2.6.2 Monthly Invoicing and Payments. Contractor and Contractor's subcontractors and suppliers must submit Monthly Invoicing and Payment Reports by the fifth (5th) day of the subsequent month.

3.3 Annual Appropriation of Funds. Contractor acknowledges that the Contract term may extend over multiple City fiscal years, and that work and compensation under this Contract is contingent on the City Council appropriating funding for and authorizing such work and compensation for those fiscal years. This Contract may be terminated at the end of the fiscal year for which sufficient funding is not appropriated and authorized. City is not obligated to pay Contractor for any amounts not duly appropriated and authorized by City Council.

3.4 Price Adjustments. RESERVED

ARTICLE IV
SUSPENSION AND TERMINATION

4.1 City's Right to Suspend for Convenience. City may suspend all or any portion of Contractor's performance under this Contract at its sole option and for its convenience for a reasonable period of time not to exceed six (6) months. City must first give ten (10) days' written notice to Contractor of such suspension. City will pay to Contractor a sum equivalent to the reasonable value of the goods and/or services satisfactorily provided up to the date of suspension. City may rescind the suspension prior to or at six (6) months by providing Contractor with written notice of the rescission, at which time Contractor would be required to resume performance in compliance with the terms and provisions of this Contract. Contractor will be entitled to an extension of time to complete performance under the Contract equal to the length of the suspension unless otherwise agreed to in writing by the Parties.

4.2 City's Right to Terminate for Convenience. City may, at its sole option and for its convenience, terminate all or any portion of this Contract by giving thirty (30) days' written notice of such termination to Contractor. The termination of the Contract shall be effective upon receipt of the notice by Contractor. After termination of all or any portion of the Contract, Contractor shall: (1) immediately discontinue all affected performance (unless the notice directs otherwise); and (2) complete any and all additional work necessary for the orderly filing of documents and closing of Contractor's affected performance under the Contract. After filing of documents and completion of performance, Contractor shall deliver to City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials created or received by Contractor in performing this Contract, whether completed or in process. By accepting payment for completion, filing, and delivering documents as called for in this section, Contractor discharges City of all of City's payment obligations and liabilities under this Contract with regard to the affected performance.

4.3 City's Right to Terminate for Default. Contractor's failure to satisfactorily perform any obligation required by this Contract constitutes a default. Examples of default include a determination by City that Contractor has: (1) failed to deliver goods and/or perform the services of the required quality or within the time specified; (2) failed to perform any of the obligations of

this Contract; and (3) failed to make sufficient progress in performance which may jeopardize full performance.

4.3.1 If Contractor fails to satisfactorily cure a default within ten (10) calendar days of receiving written notice from City specifying the nature of the default, City may immediately cancel and/or terminate this Contract, and terminate each and every right of Contractor, and any person claiming any rights by or through Contractor under this Contract.

4.3.2 If City terminates this Contract, in whole or in part, City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, equivalent goods or services and Contractor shall be liable to City for any excess costs. Contractor shall also continue performance to the extent not terminated.

4.4 Termination for Bankruptcy or Assignment for the Benefit of Creditors. If Contractor files a voluntary petition in bankruptcy, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors, the City may at its option and without further notice to, or demand upon Contractor, terminate this Contract, and terminate each and every right of Contractor, and any person claiming rights by and through Contractor under this Contract.

4.5 Contractor's Right to Payment Following Contract Termination.

4.5.1 Termination for Convenience. RESERVED

4.5.2 Termination for Default. If, after City gives notice of termination for failure to fulfill Contract obligations to Contractor, it is determined that Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of City. In such event, adjustment in the Contract price shall be made as provided in Section 4.3.2. City's rights and remedies are in addition to any other rights and remedies provided by law or under this Contract.

4.6 Remedies Cumulative. City's remedies are cumulative and are not intended to be exclusive of any other remedies or means of redress to which City may be lawfully entitled in case of any breach or threatened breach of any provision of this Contract.

ARTICLE V
ADDITIONAL CONTRACTOR OBLIGATIONS

5.1 Inspection and Acceptance. The City will inspect and accept goods provided under this Contract at the shipment destination unless specified otherwise. Inspection will be made and acceptance will be determined by the City department shown in the shipping address of the

Purchase Order or other duly authorized representative of City.

5.2 Responsibility for Lost or Damaged Shipments. Contractor bears the risk of loss or damage to goods prior to the time of their receipt and acceptance by City. City has no obligation to accept damaged shipments and reserves the right to return damaged goods, at Contractor's sole expense, even if the damage was not apparent or discovered until after receipt.

5.3 Responsibility for Damages. Contractor is responsible for all damage that occurs as a result of Contractor's fault or negligence or that of its' employees, agents, or representatives in connection with the performance of this Contract. Contractor shall immediately report any such damage to people and/or property to the Contract Administrator.

5.4 Delivery. Delivery shall be made on the delivery day specified in the Contract Documents. The City, in its sole discretion, may extend the time for delivery. The City may order, in writing, the suspension, delay or interruption of delivery of goods and/or services.

5.5 Delay. Unless otherwise specified herein, time is of the essence for each and every provision of the Contract. Contractor must immediately notify City in writing if there is, or it is anticipated that there will be, a delay in performance. The written notice must explain the cause for the delay and provide a reasonable estimate of the length of the delay. City may terminate this Contract as provided herein if City, in its sole discretion, determines the delay is material.

5.5.1 If a delay in performance is caused by any unforeseen event(s) beyond the control of the parties, City may allow Contractor to a reasonable extension of time to complete performance, but Contractor will not be entitled to damages or additional compensation. Any such extension of time must be approved in writing by City. The following conditions may constitute such a delay: war; changes in law or government regulation; labor disputes; strikes; fires, floods, adverse weather or other similar condition of the elements necessitating cessation of the performance; inability to obtain materials, equipment or labor; or other specific reasons agreed to between City and Contractor. This provision does not apply to a delay caused by Contractor's acts or omissions. Contractor is not entitled to an extension of time to perform if a delay is caused by Contractor's inability to obtain materials, equipment, or labor unless City has received, in a timely manner, documentary proof satisfactory to City of Contractor's inability to obtain materials, equipment, or labor, in which case City's approval must be in writing.

5.6 Restrictions and Regulations Requiring Contract Modification. Contractor shall immediately notify City in writing of any regulations or restrictions that may or will require Contractor to alter the material, quality, workmanship, or performance of the goods and/or services to be provided. City reserves the right to accept any such alteration, including any resulting reasonable price adjustments, or to cancel the Contract at no expense to the City.

5.7 Warranties. All goods and/or services provided under the Contract must be warranted by Contractor or manufacturer for at least twelve (12) months after acceptance by City, except automotive equipment. Automotive equipment must be warranted for a minimum of 12,000 miles or 12 months, whichever occurs first, unless otherwise stated in the Contract. Contractor is

responsible to City for all warranty service, parts, and labor. Contractor is required to ensure that warranty work is performed at a facility acceptable to City and that services, parts, and labor are available and provided to meet City's schedules and deadlines. Contractor may establish a warranty service contract with an agency satisfactory to City instead of performing the warranty service itself. If Contractor is not an authorized service center and causes any damage to equipment being serviced, which results in the existing warranty being voided, Contractor will be liable for all costs of repairs to the equipment, or the costs of replacing the equipment with new equipment that meets City's operational needs.

5.8 Industry Standards. Contractor shall provide goods and/or services acceptable to City in strict conformance with the Contract. Contractor shall also provide goods and/or services in accordance with the standards customarily adhered to by an experienced and competent provider of the goods and/or services called for under this Contract using the degree of care and skill ordinarily exercised by reputable providers of such goods and/or services. Where approval by City, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.

5.9 Records Retention and Examination. Contractor shall retain, protect, and maintain in an accessible location all records and documents, including paper, electronic, and computer records, relating to this Contract for five (5) years after receipt of final payment by City under this Contract. Contractor shall make all such records and documents available for inspection, copying, or other reproduction, and auditing by authorized representatives of City, including the Purchasing Agent or designee. Contractor shall make available all requested data and records at reasonable locations within City or County of San Diego at any time during normal business hours, and as often as City deems necessary. If records are not made available within the City or County of San Diego, Contractor shall pay City's travel costs to the location where the records are maintained and shall pay for all related travel expenses. Failure to make requested records available for inspection, copying, or other reproduction, or auditing by the date requested may result in termination of the Contract. Contractor must include this provision in all subcontracts made in connection with this Contract.

5.9.1 Contractor shall maintain records of all subcontracts entered into with all firms, all project invoices received from Subcontractors and Suppliers, all purchases of materials and services from Suppliers, and all joint venture participation. Records shall show name, telephone number including area code, and business address of each Subcontractor and Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

5.10 Quality Assurance Meetings. Upon City's request, Contractor shall schedule one or more quality assurance meetings with City's Contract Administrator to discuss Contractor's performance. If requested, Contractor shall schedule the first quality assurance meeting no later than eight (8) weeks from the date of commencement of work under the Contract. At the quality assurance meeting(s), City's Contract Administrator will provide Contractor with feedback, will note any deficiencies in Contract performance, and provide Contractor with an opportunity to

address and correct such deficiencies. The total number of quality assurance meetings that may be required by City will depend upon Contractor's performance.

5.11 Duty to Cooperate with Auditor. The City Auditor may, in his sole discretion, at no cost to the City, and for purposes of performing his responsibilities under Charter section 39.2, review Contractor's records to confirm contract compliance. Contractor shall make reasonable efforts to cooperate with Auditor's requests.

5.12 Safety Data Sheets. If specified by City in the solicitation or otherwise required by this Contract, Contractor must send with each shipment one (1) copy of the Safety Data Sheet (SDS) for each item shipped. Failure to comply with this procedure will be cause for immediate termination of the Contract for violation of safety procedures.

5.13 Project Personnel. Changes in staffing must be reported in writing to the City within 30 days.

5.13.1 Criminal Background Certification. Contractor certifies that all employees working on this Contract have had a criminal background check and that said employees are clear of any sexual and drug related convictions. Contractor further certifies that all employees hired by Contractor or a subcontractor working on this contract shall be free from any felony convictions.

5.13.2 Photo Identification Badge. Contractor shall provide a company photo identification badge to any individual assigned by Contractor or subcontractor to perform services or deliver goods on City premises. Such badge must be worn at all times while on City premises. City reserves the right to require Contractor to pay fingerprinting fees for personnel assigned to work in sensitive areas. All employees shall turn in their photo identification badges to Contractor upon completion of services and prior to final payment of invoice.

5.14 Standards of Conduct. Contractor is responsible for maintaining standards of employee competence, conduct, courtesy, appearance, honesty, and integrity satisfactory to the City.

5.14.1 Supervision. Contractor shall provide adequate and competent supervision at all times during the Contract term. Contractor shall be readily available to meet with the City. Contractor shall provide the telephone numbers where its representative(s) can be reached.

5.14.2 City Premises. Contractor's employees and agents shall comply with all City rules and regulations while on City premises.

5.14.3 Removal of Employees. City may request Contractor immediately remove from assignment to the City any employee found unfit to perform duties at the City. Contractor shall comply with all such requests.

5.15 Licenses and Permits. Contractor shall, without additional expense to the City, be

responsible for obtaining any necessary licenses, permits, certifications, accreditations, fees and approvals for complying with any federal, state, county, municipal, and other laws, codes, and regulations applicable to Contract performance. This includes, but is not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work.

5.16 Contractor and Subcontractor Registration Requirements. Prior to the award of the Contract or Task Order, Contractor and Contractor's subcontractors and suppliers must register with the City's web-based vendor registration and bid management system. The City may not award the Contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified by the City, the City reserves the right to rescind the Contract award and to make the award to the next responsive and responsible proposer of bidder.

ARTICLE VI
INTELLECTUAL PROPERTY RIGHTS

6.1 Rights in Data. If, in connection with the services performed under this Contract, Contractor or its employees, agents, or subcontractors, create artwork, audio recordings, blueprints, designs, diagrams, documentation, photographs, plans, reports, software, source code, specifications, surveys, system designs, video recordings, or any other original works of authorship, whether written or readable by machine (Deliverable Materials), all rights of Contractor or its subcontractors in the Deliverable Materials, including, but not limited to publication, and registration of copyrights, and trademarks in the Deliverable Materials, are the sole property of City. Contractor, including its employees, agents, and subcontractors, may not use any Deliverable Material for purposes unrelated to Contractor's work on behalf of the City without prior written consent of City. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City, without the prior written consent of the City.

6. 2 Intellectual Property Rights Assignment. For no additional compensation, Contractor hereby assigns to City all of Contractor's rights, title, and interest in and to the content of the Deliverable Materials created by Contractor or its employees, agents, or subcontractors, including copyrights, in connection with the services performed under this Contract. Contractor shall promptly execute and deliver, and shall cause its employees, agents, and subcontractors to promptly execute and deliver, upon request by the City or any of its successors or assigns at any time and without further compensation of any kind, any power of attorney, assignment, application for copyright, patent, trademark or other intellectual property right protection, or other papers or instruments which may be necessary or desirable to fully secure, perfect or otherwise protect to or for the City, its successors and assigns, all right, title and interest in and to the content of the Deliverable Materials. Contractor also shall cooperate and assist in the prosecution of any action or opposition proceeding involving such intellectual property rights and any adjudication of those rights.

6. 3 Contractor Works. Contractor Works means tangible and intangible information and material that: (a) had already been conceived, invented, created, developed or acquired by

Contractor prior to the effective date of this Contract; or (b) were conceived, invented, created, or developed by Contractor after the effective date of this Contract, but only to the extent such information and material do not constitute part or all of the Deliverable Materials called for in this Contract. All Contractor Works, and all modifications or derivatives of such Contractor Works, including all intellectual property rights in or pertaining to the same, shall be owned solely and exclusively by Contractor.

6. 4 Subcontracting. In the event that Contractor utilizes a subcontractor(s) for any portion of the work that comprises the whole or part of the specified Deliverable Materials to the City, the agreement between Contractor and the subcontractor shall include a statement that identifies the Deliverable Materials as a "works for hire" as described in the United States Copyright Act of 1976, as amended, and that all intellectual property rights in the Deliverable Materials, whether arising in copyright, trademark, service mark or other forms of intellectual property rights, belong to and shall vest solely with the City. Further, the agreement between Contractor and its subcontractor shall require that the subcontractor, if necessary, shall grant, transfer, sell and assign, free of charge, exclusively to City, all titles, rights and interests in and to the Deliverable Materials, including all copyrights, trademarks and other intellectual property rights. City shall have the right to review any such agreement for compliance with this provision.

6. 5 Intellectual Property Warranty and Indemnification. Contractor represents and warrants that any materials or deliverables, including all Deliverable Materials, provided under this Contract are either original, or not encumbered, and do not infringe upon the copyright, trademark, patent or other intellectual property rights of any third party, or are in the public domain. If Deliverable Materials provided hereunder become the subject of a claim, suit or allegation of copyright, trademark or patent infringement, City shall have the right, in its sole discretion, to require Contractor to produce, at Contractor's own expense, new non-infringing materials, deliverables or works as a means of remedying any claim of infringement in addition to any other remedy available to the City under law or equity. Contractor further agrees to indemnify, defend, and hold harmless the City, its officers, employees and agents from and against any and all claims, actions, costs, judgments or damages, of any type, alleging or threatening that any Deliverable Materials, supplies, equipment, services or works provided under this contract infringe the copyright, trademark, patent or other intellectual property or proprietary rights of any third party (Third Party Claim of Infringement). If a Third Party Claim of Infringement is threatened or made before Contractor receives payment under this Contract, City shall be entitled, upon written notice to Contractor, to withhold some or all of such payment.

6.6 Software Licensing. Contractor represents and warrants that the software, if any, as delivered to City, does not contain any program code, virus, worm, trap door, back door, time or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being used in accordance with its user manuals, either automatically, upon the occurrence of licensor-selected conditions or manually on command. Contractor further represents and warrants that all third party software, delivered to City or used by Contractor in the performance of the Contract, is fully licensed by the appropriate licensor.

6.7 Publication. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City without prior written consent from the City.

6.8 Royalties, Licenses, and Patents. Unless otherwise specified, Contractor shall pay all royalties, license, and patent fees associated with the goods that are the subject of this solicitation. Contractor warrants that the goods, materials, supplies, and equipment to be supplied do not infringe upon any patent, trademark, or copyright, and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City, its elected officials, officers, and employees from all liability, loss and damages, whether general, exemplary or punitive, suffered as a result of any actual or claimed infringement asserted against the City, Contractor, or those furnishing goods, materials, supplies, or equipment to Contractor under the Contract.

ARTICLE VII
INDEMNIFICATION AND INSURANCE

7.1 Indemnification. To the fullest extent permitted by law, Contractor shall defend (with legal counsel reasonably acceptable to City), indemnify, protect, and hold harmless City and its elected officials, officers, employees, agents, and representatives (Indemnified Parties) from and against any and all claims, losses, costs, damages, injuries (including, without limitation, injury to or death of an employee of Contractor or its subcontractors), expense, and liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, and litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, any goods provided or performance of services under this Contract by Contractor, any subcontractor, anyone directly or indirectly employed by either of them, or anyone that either of them control. Contractor's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the sole negligence or willful misconduct of the Indemnified Parties.

7.2 Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by Contractor, his agents, representatives, employees or subcontractors.

Contractor shall provide, at a minimum, the following:

7.2.1 Commercial General Liability. Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than $1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

7.2.2 Commercial Automobile Liability. Insurance Services Office Form Number CA 0001 covering Code 1 (any auto) or, if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than $1,000,000 per accident for bodily injury and property damage.

7.2.3 Workers' Compensation. Insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

7.2.4 Professional Liability (Errors and Omissions). For consultant contracts, insurance appropriate to Consultant's profession, with limit no less than $1,000,000 per occurrence or claim, $2,000,000 aggregate.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City requires and shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

7.2.5 Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:

7.2.5.1 Additional Insured Status. The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 if a later edition is used).

7.2.5.2 Primary Coverage. For any claims related to this contract, Contractor's insurance coverage shall be primary coverage at least as broad as ISO CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7.2.5.3 Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to City.

7.2.5.4 Waiver of Subrogation. Contractor hereby grants to City a waiver of any right to subrogation which the Workers' Compensation insurer of said Contractor may acquire against City by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation

endorsement from the insurer.

7.2.5.5 Claims Made Policies (applicable only to professional liability). The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of work.

7.3 Self Insured Retentions. Self-insured retentions must be declared to and approved by City. City may require Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

7.4 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-VI, unless otherwise acceptable to City.

City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of California and is included on the List of Approved Surplus Lines Insurers (LASLI list). All policies of insurance carried by non-admitted carriers are subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7.5 Verification of Coverage. Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

7.6 Special Risks or Circumstances. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

7.7 Additional Insurance. Contractor may obtain additional insurance not required by this Contract.

7.8 Excess Insurance. All policies providing excess coverage to City shall follow the form of the primary policy or policies including but not limited to all endorsements.

7.9 Subcontractors. Contractor shall require and verify that all subcontractors maintain

insurance meeting all the requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a format at least as broad as the CG 20 38 04 13 endorsement.

ARTICLE VIII
BONDS

8.1 Payment and Performance Bond. Prior to the execution of this Contract, City may require Contractor to post a payment and performance bond (Bond). The Bond shall guarantee Contractor's faithful performance of this Contract and assure payment to contractors, subcontractors, and to persons furnishing goods and/or services under this Contract.

8.1.1 Bond Amount. The Bond shall be in a sum equal to twenty-five percent (25%) of the Contract amount, unless otherwise stated in the Specifications. City may file a claim against the Bond if Contractor fails or refuses to fulfill the terms and provisions of the Contract.

8.1.2 Bond Term. The Bond shall remain in full force and effect at least until complete performance of this Contract and payment of all claims for materials and labor, at which time it will convert to a ten percent (10%) warranty bond, which shall remain in place until the end of the warranty periods set forth in this Contract. The Bond shall be renewed annually, at least sixty (60) days in advance of its expiration, and Contractor shall provide timely proof of annual renewal to City.

8.1.3 Bond Surety. The Bond must be furnished by a company authorized by the State of California Department of Insurance to transact surety business in the State of California and which has a current A.M. Best rating of at least "A-, VIII."

8.1.4 Non-Renewal or Cancellation. The Bond must provide that City and Contractor shall be provided with sixty (60) days' advance written notice in the event of non-renewal, cancellation, or material change to its terms. In the event of non-renewal, cancellation, or material change to the Bond terms, Contractor shall provide City with evidence of the new source of surety within twenty-one (21) calendar days after the date of the notice of non-renewal, cancellation, or material change. Failure to maintain the Bond, as required herein, in full force and effect as required under this Contact, will be a material breach of the Contract subject to termination of the Contract.

8.2 Alternate Security. City may, at its sole discretion, accept alternate security in the form of an endorsed certificate of deposit, a money order, a certified check drawn on a solvent bank, or other security acceptable to the Purchasing Agent in an amount equal to the required Bond.

ARTICLE IX
CITY-MANDATED CLAUSES AND REQUIREMENTS

9.1 Contractor Certification of Compliance. By signing this Contract, Contractor certifies

that Contractor is aware of, and will comply with, these City-mandated clauses throughout the duration of the Contract.

9.1.1 Drug-Free Workplace Certification. Contractor shall comply with City's Drug-Free Workplace requirements set forth in Council Policy 100-17, which is incorporated into the Contract by this reference.

9.1.2 Contractor Certification for Americans with Disabilities Act (ADA) and State Access Laws and Regulations: Contractor shall comply with all accessibility requirements under the ADA and under Title 24 of the California Code of Regulations (Title 24). When a conflict exists between the ADA and Title 24, Contractor shall comply with the most restrictive requirement (i.e., that which provides the most access). Contractor also shall comply with the City's ADA Compliance/City Contractors requirements as set forth in Council Policy 100-04, which is incorporated into this Contract by reference. Contractor warrants and certifies compliance with all federal and state access laws and regulations and further certifies that any subcontract agreement for this contract contains language which indicates the subcontractor's agreement to abide by the provisions of the City's Council Policy and any applicable access laws and regulations.

9.1.3 Non-Discrimination Requirements.

9.1.3.1 Compliance with City's Equal Opportunity Contracting Program (EOCP). Contractor shall comply with City's EOCP Requirements. Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractors shall ensure that their subcontractors comply with this program. Nothing in this Section shall be interpreted to hold a Prime Contractor liable for any discriminatory practice of its subcontractors.

9.1.3.2 Non-Discrimination Ordinance. Contractor shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring or treatment of subcontractors, vendors or suppliers. Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, or other sanctions. Contractor shall ensure that this language is included in contracts between Contractor and any subcontractors, vendors and suppliers.

9.1.3.3 Compliance Investigations. Upon City's request, Contractor agrees to provide to City, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor further agrees to fully cooperate in any investigation conducted by City pursuant to City's Nondiscrimination in Contracting Ordinance. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment,

and other sanctions.

9.1.4 Equal Benefits Ordinance Certification. Unless an exception applies, Contractor shall comply with the Equal Benefits Ordinance (EBO) codified in the San Diego Municipal Code (SDMC). Failure to maintain equal benefits is a material breach of the Contract.

9.1.5 Contractor Standards. Contractor shall comply with Contractor Standards provisions codified in the SDMC. Contractor understands and agrees that violation of Contractor Standards may be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.6 Noise Abatement. Contractor shall operate, conduct, or construct without violating the City's Noise Abatement Ordinance codified in the SDMC.

9.1.7 Storm Water Pollution Prevention Program. Contractor shall comply with the City's Storm Water Management and Discharge Control provisions codified in Division 3 of Chapter 4 of the SDMC, as may be amended, and any and all applicable Best Management Practice guidelines and pollution elimination requirements in performing or delivering services at City owned, leased, or managed property, or in performance of services and activities on behalf of City regardless of location.

Contractor shall comply with the City's Jurisdictional Urban Runoff Management Plan encompassing Citywide programs and activities designed to prevent and reduce storm water pollution within City boundaries as adopted by the City Council on January 22, 2008, via Resolution No. 303351, as may be amended.

Contractor shall comply with each City facility or work site's Storm Water Pollution Prevention Plan, as applicable, and institute all controls needed while completing the services to minimize any negative impact to the storm water collection system and environment.

9.1.8 Service Worker Retention Ordinance. If applicable, Contractor shall comply with the Service Worker Retention Ordinance (SWRO) codified in the SDMC.

9.1.9 Product Endorsement. Contractor shall comply with Council Policy 000-41 concerning product endorsement which requires that any advertisement referring to City as a user of a good or service will require the prior written approval of the Mayor.

9.1.10 Business Tax Certificate. Unless the City Treasurer determines in writing that a contractor is exempt from the payment of business tax, any contractor doing business with the City of San Diego is required to obtain a Business Tax Certificate (BTC) and to provide a copy of its BTC to the City before a Contract is executed.

9.1.11 Equal Pay Ordinance. Unless an exception applies, Contractor shall comply with the Equal Pay Ordinance codified in San Diego Municipal Code sections 22.4801 through 22.4809. Contractor shall certify in writing that it will comply with the requirements of the Equal

Pay Ordinance throughout the duration of the Contract.

9.1.11.1 Contractor and Subcontract Requirement. The Equal Pay Ordinance applies to any subcontractor who performs work on behalf of a Contractor to the same extent as it would apply to that Contractor. Contractor shall require subcontractors performing work for contractor under their contract with the City to certify compliance with the Equal Pay Ordinance in their written subcontracts.

9.1.11.2 Notice Requirement. Contractor must post a notice informing its employees of their rights under the Equal Pay Ordinance in their workplace or job site.

ARTICLE X
CONFLICT OF INTEREST AND VIOLATIONS OF LAW

10.1 Conflict of Interest Laws. Contractor is subject to all federal, state and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices including, but not limited to, California Government Code sections 1090, *et. seq.* and 81000*, et. seq.,* and the Ethics Ordinance, codified in the SDMC. City may determine that Contractor must complete one or more statements of economic interest disclosing relevant financial interests. Upon City's request, Contractor shall submit the necessary documents to City.

10.2 Contractor's Responsibility for Employees and Agents. Contractor is required to establish and make known to its employees and agents appropriate safeguards to prohibit employees from using their positions for a purpose that is, or that gives the appearance of being, motivated by the desire for private gain for themselves or others, particularly those with whom they have family, business or other relationships.

10.3 Contractor's Financial or Organizational Interests. In connection with any task, Contractor shall not recommend or specify any product, supplier, or contractor with whom Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.

10.4 Certification of Non-Collusion. Contractor certifies that: (1) Contractor's bid or proposal was not made in the interest of or on behalf of any person, firm, or corporation not identified; (2) Contractor did not directly or indirectly induce or solicit any other bidder or proposer to put in a sham bid or proposal; (3) Contractor did not directly or indirectly induce or solicit any other person, firm or corporation to refrain from bidding; and (4) Contractor did not seek by collusion to secure any advantage over the other bidders or proposers.

10.5 Hiring City Employees. This Contract shall be unilaterally and immediately terminated by City if Contractor employs an individual who within the twelve (12) months immediately preceding such employment did in his/her capacity as a City officer or employee participate in negotiations with or otherwise have an influence on the selection of Contractor.

ARTICLE XI
DISPUTE RESOLUTION

11.1 Mediation. If a dispute arises out of or relates to this Contract and cannot be settled through normal contract negotiations, Contractor and City shall use mandatory non-binding mediation before having recourse in a court of law.

11.2 Selection of Mediator. A single mediator that is acceptable to both parties shall be used to mediate the dispute. The mediator will be knowledgeable in the subject matter of this Contract, if possible.

11.3 Expenses. The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator, and the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties, unless they agree otherwise.

11.4 Conduct of Mediation Sessions. Mediation hearings will be conducted in an informal manner and discovery will not be allowed. The discussions, statements, writings and admissions will be confidential to the proceedings (pursuant to California Evidence Code sections 1115 through 1128) and will not be used for any other purpose unless otherwise agreed by the parties in writing. The parties may agree to exchange any information they deem necessary. Both parties shall have a representative attend the mediation who is authorized to settle the dispute, though City's recommendation of settlement may be subject to the approval of the Mayor and City Council. Either party may have attorneys, witnesses or experts present.

11.5 Mediation Results. Any agreements resulting from mediation shall be memorialized in writing. The results of the mediation shall not be final or binding unless otherwise agreed to in writing by the parties. Mediators shall not be subject to any subpoena or liability, and their actions shall not be subject to discovery.

ARTICLE XII
MANDATORY ASSISTANCE

12.1 Mandatory Assistance. If a third party dispute or litigation, or both, arises out of, or relates in any way to the services provided to the City under a Contract, Contractor , its agents, officers, and employees agree to assist in resolving the dispute or litigation upon City's request. Contractor's assistance includes, but is not limited to, providing professional consultations, attending mediations, arbitrations, depositions, trials or any event related to the dispute resolution and/or litigation.

12.2 Compensation for Mandatory Assistance. City will compensate Contractor for fees incurred for providing Mandatory Assistance. If, however, the fees incurred for the Mandatory Assistance are determined, through resolution of the third party dispute or litigation, or both, to be attributable in whole, or in part, to the acts or omissions of Contractor, its agents, officers, and employees, Contractor shall reimburse City for all fees paid to Contractor, its agents, officers,

and employees for Mandatory Assistance.

12.3 Attorneys' Fees Related to Mandatory Assistance. In providing City with dispute or litigation assistance, Contractor or its agents, officers, and employees may incur expenses and/or costs. Contractor agrees that any attorney fees it may incur as a result of assistance provided under Section 12.2 are not reimbursable.

ARTICLE XIII
MISCELLANEOUS

13.1 Headings. All headings are for convenience only and shall not affect the interpretation of this Contract.

13.2 Non-Assignment. Contractor may not assign the obligations under this Contract, whether by express assignment or by sale of the company, nor any monies due or to become due under this Contract, without City's prior written approval. Any assignment in violation of this paragraph shall constitute a default and is grounds for termination of this Contract at the City's sole discretion. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

13.3 Independent Contractors. Contractor and any subcontractors employed by Contractor are independent contractors and not agents of City. Any provisions of this Contract that may appear to give City any right to direct Contractor concerning the details of performing or providing the goods and/or services, or to exercise any control over performance of the Contract, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

13.4 Subcontractors. All persons assigned to perform any work related to this Contract, including any subcontractors, are deemed to be employees of Contractor, and Contractor shall be directly responsible for their work.

13.5 Covenants and Conditions. All provisions of this Contract expressed as either covenants or conditions on the part of City or Contractor shall be deemed to be both covenants and conditions.

13.6 Compliance with Controlling Law. Contractor shall comply with all applicable local, state, and federal laws, regulations, and policies. Contractor's act or omission in violation of applicable local, state, and federal laws, regulations, and policies is grounds for contract termination. In addition to all other remedies or damages allowed by law, Contractor is liable to City for all damages, including costs for substitute performance, sustained as a result of the violation. In addition, Contractor may be subject to suspension, debarment, or both.

13.7 Governing Law. The Contract shall be deemed to be made under, construed in accordance with, and governed by the laws of the State of California without regard to the conflicts or choice of law provisions thereof.

13.8 Venue. The venue for any suit concerning solicitations or the Contract, the interpretation of application of any of its terms and conditions, or any related disputes shall be in the County of San Diego, State of California.

13.9 Successors in Interest. This Contract and all rights and obligations created by this Contract shall be in force and effect whether or not any parties to the Contract have been succeeded by another entity, and all rights and obligations created by this Contract shall be vested and binding on any party's successor in interest.

13.10 No Waiver. No failure of either City or Contractor to insist upon the strict performance by the other of any covenant, term or condition of this Contract, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this Contract, shall constitute a waiver of any such breach of such covenant, term or condition. No waiver of any breach shall affect or alter this Contract, and each and every covenant, condition, and term hereof shall continue in full force and effect without respect to any existing or subsequent breach.

13.11 Severability. The unenforceability, invalidity, or illegality of any provision of this Contract shall not render any other provision of this Contract unenforceable, invalid, or illegal.

13.12 Drafting Ambiguities. The parties acknowledge that they have the right to be advised by legal counsel with respect to the negotiations, terms and conditions of this Contract, and the decision of whether to seek advice of legal counsel with respect to this Contract is the sole responsibility of each party. This Contract shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Contract.

13.13 Amendments. Neither this Contract nor any provision hereof may be changed, modified, amended or waived except by a written agreement executed by duly authorized representatives of City and Contractor. Any alleged oral amendments have no force or effect. The Purchasing Agent must sign all Contract amendments.

13.14 Conflicts Between Terms. If this Contract conflicts with an applicable local, state, or federal law, regulation, or court order, applicable local, state, or federal law, regulation, or court order shall control. Varying degrees of stringency among the main body of this Contract, the exhibits or attachments, and laws, regulations, or orders are not deemed conflicts, and the most stringent requirement shall control. Each party shall notify the other immediately upon the identification of any apparent conflict or inconsistency concerning this Contract.

13.15 Survival of Obligations. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with this Contract, as well as all continuing obligations indicated in this Contract, shall survive, completion and acceptance of performance and termination, expiration or completion of the Contract.

13.16 Confidentiality of Services. All services performed by Contractor, and any sub-

contractor(s) if applicable, including but not limited to all drafts, data, information, correspondence, proposals, reports of any nature, estimates compiled or composed by Contractor, are for the sole use of City, its agents, and employees. Neither the documents nor their contents shall be released by Contractor or any subcontractor to any third party without the prior written consent of City. This provision does not apply to information that: (1) was publicly known, or otherwise known to Contractor, at the time it was disclosed to Contractor by City; (2) subsequently becomes publicly known through no act or omission of Contractor; or (3) otherwise becomes known to Contractor other than through disclosure by City.

13.17 Insolvency. If Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the Contract, written notification of the bankruptcy to the Purchasing Agent and the Contract Administrator responsible for administering the Contract. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of City contract numbers and contracting offices for all City contracts against which final payment has not been made. This obligation remains in effect until final payment is made under this Contract.

13.18 No Third Party Beneficiaries. Except as may be specifically set forth in this Contract, none of the provisions of this Contract are intended to benefit any third party not specifically referenced herein. No party other than City and Contractor shall have the right to enforce any of the provisions of this Contract.

13.19 Actions of City in its Governmental Capacity. Nothing in this Contract shall be interpreted as limiting the rights and obligations of City in its governmental or regulatory capacity.

EXHIBIT D

Fiscal Year 2021-2022

PRICE SCHEDULE - SDSM (PROVIDER) FACILITY (FIRE ONLY)

See E-mail 5/10/2020 for Detail

This will require an amendment to the SCOPE OF SERVICES SECTION OF THE RFP reflecting changes for services in indivdual exam.

City's Estimated Need. NOTE: Estimated quantities are provided to calculate estimated contract value only. Pricing score will be assessed utilizing the City's formula separately per item section noted below.

1. a. Pricing Section - all inclusive of requirements specified in B.1.a & B.1.b exam costs (excluding pricing section b)

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*SERVICES INCLUDED IN PARTICIPANT FEE FOR ALL WELLNESS PROGRAM PARTICIPANTS*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per Participant)
1000	EA	EACH PER YEAR PER PARTICIPANT) ***800 Guaranteed by SDFD**	$1,499.80	$1,499,800.00
			TOTAL SECTION 1a:	$1,499,800.00

b. Pricing Section - all inclusive of requirements specified in B.1.b.xvi & B.1.b.xvii & B.1.b.xviii additional screenings

EST. ANNUAL QTY. OF PARTICIPANTS	U/M	*Additional Screenings for Firefighters with Specialties*	ANNUAL COST PER PARTICIPANT	TOTAL (Est. Annual Qty. x Annual Cost Per Participant)
109	EA	Returning Participant: Hazmat Team (B.1.b.xvi) & Bomb Squad (B.1.b.xvii) (ONE EACH PER YEAR PER PARTICIPANT)	Included in Complete Physical Wellness Medical Evaluation	$0.00
20	EA	New Hazmat Participants' Heavy Metals and Cholinesterase	$329.93	$6,598.60
130	EA	Returning Participant: US&R TEAM (B.1.b.xviii) (ONE EACH PER YEAR PER PARTICIPANT)	Included in Complete Physical Wellness Medical Evaluation except Annual Cholinesterase at $81.04	$10,535.20
20	EA	New US&R Participants' Heavy Metals and Cholinesterase	$ 329.93	$6,598.60
4	EA	Cedmat	$ 658.54	$2,634.16
14	EA	Bomb Squad Cholinesterase	$ 81.04	$1,134.56
2	EA	Bomb Squad Heavy Metals and cholinesterase Initial and exit exam	$329.93	$659.86
				$28,160.98

c. Pricing Section - all inclusive of requirements specified in B.1.c & B.1.d exam costs

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	TOTAL (Est. Weekly Qty. x Hourly Cost)
40	HR	Athletic Trainer (Section B.1.c)	$94.69	$3,787.60
40	HR	Clerical Staff Member (Section B.1.d)	$40.00	$1,600.00
			TOTAL SECTION 1c:	$5,387.60
			ANNUAL TOTAL: (52 X TOTAL SECTION 1c)	$280,155.20

PRICE SCHEDULE - SDSM (PROVIDER) FACILITY (FIRE ONLY)

See E-mail 5/10/2020 for Detail

This will require an amendment to the SCOPE OF SERVICES SECTION OF THE RFP reflecting changes for services in indivdual exam.

1. d. Pricing Section - all inclusive of requirements specified in B.2.a & B.2.b

EST. ANNUAL QTY.	U/M	*SERVICES AVAILABLE WELLNESS PROGRAM NON-PARTICIPANTS* (once per year per Non-Participant)	ANNUAL COST PER NON-PARTICIPANT	TOTAL (Est. Annual Qty. x Cost)
20	EA	Respiratory Fit Exam	$150.00	$3,000.00
20	EA	DMV Exam	$150.00	$3,000.00
20	EA	Respiratory Fit and DMV Exams Performed Concurrently	$200.00	$4,000.00
		*Total Respiratory Fit Exams (40) plus Total DMV Exams (40)	TOTAL SECTION 1d:	$10,000.00

e. Pricing Section - all inclusive of requirements specified in B.3.a

EST. WEEKLY QTY.	U/M	*SERVICES*	HOURLY COST	(Est. Weekly Qty. x Hourly Cost)
20	HR	Education Program Services (Section B.3.a)	$62.50	$1,250.00
			Total Section 1e:	$1,250.00
			ANNUAL TOTAL: (52 X TOTAL SECTION 1e)	$65,000.00

f. Pricing Section - all inclusive of requirements specified in B.3.b & B.3.c

EST. ANNUAL QTY.	U/M	ADDITIONAL SERVICES [MAY BE PERFORMED FOR WELLNESS PROGRAM PARTICIPANTS AND/OR WELLNESS PROGRAM NON-PARTICIPANTS]	COST (Per Participant or Non-Participant unless otherwise indicated below)	TOTAL (Est. Annual Qty. x Cost)
1000	EA	Influenza Vaccinations - Quadrivalent	$30.00	$30,000.00
1000	EA	TB/PPD testing	$30.00	$30,000.00
50	EA	Hepatitis A Vaccination - Series of 2	$150.00	$7,500.00
50	EA	Hepatitis B Vaccination - Series of 3	$297.00	$14,850.00
20	EA	Hepatitis B Titer	$145.07	$2,901.40
0	EA	Hepatitis C Antibody	$20.00	$0.00
50	EA	MMR	$140.00	$7,000.00
50	EA	MMR Titer	$50.00	$2,500.00
50	EA	Varicella - Series of 2	$400.00	$20,000.00
50	EA	Varicella Titer	$55.00	$2,750.00
10	EA	Quantiferon Gold80.	$110.00	$1,100.00
50	EA	Adacel (Tetanus)	$90.00	$4,500.00
0	EA	Pneumovax	$110.00	$0.00
400	EA	Hemoccult	$29.17	$11,668.00
10	EA	Pap smear with HPV	$212.14	$2,121.40
500	Ea	Prostate Specific Antigen (PSA)	$54.69	$27,345.00
20	EA	Mammograms	$243.11	$4,862.20
150	EA	Chest x-rays (Positive PPD's & Symptomatic individuals)	$79.00	$11,850.00
50	EA	General Labs	$58.35	$2,917.50
			TOTAL SECTION 1f:	$183,865.50

PRICE SCHEDULE - SDSM (PROVIDER) FACILITY (FIRE ONLY)

See E-mail 5/10/2020 for Detail

This will require an amendment to the SCOPE OF SERVICES SECTION OF THE RFP reflecting changes for services in indivdual exam.

FINAL COST TOTALS	
TOTAL SECTION 1a:	$1,499,800.00
TOTAL SECTION 1b:	$28,160.98
TOTAL SECTION 1c:	$280,155.20
TOTAL SECTION 1d:	$10,000.00
TOTAL SECTION 1e:	$65,000.00
TOTAL SECTION 1f:	$183,865.50
FINAL COST TOTAL PER YEAR	$2,066,981.68

Physical Guarantee: SDFRD agrees to a guarantee of a minimum of 800 physicals per year unless SDFD is not allocated sufficient funds to meet this guarantee
Medical Consultation: SDFRD agrees to $200.00 per hour for consultation fee services outside the scope of this contract only with prior authorization from SDFD
Vacancy fee: SDFRD agrees to discussion of changes to either pricing or scheduling if the department exceeds 50 vacancies in a fiscal year. SDSM must rely on some degree of efficiency to keep our costs reasonable.