

BACK SAFETY TRAINING

Introduction

You may not think you have much in common with professional athletes – but you do. Just like the pros, you depend on your body for your livelihood and like the pros, you sometimes overdo it.

More than one million “industrial athletes” hurt their backs every year suffering serious consequences such as lost time from work, lost wages and long-term pain. But these injuries don’t have to happen. The goal of this training is to help you prevent back injury and repetitive stress.

Stay in the Game

To prevent back injury, use a neutral posture as much as possible.

- Your spine is relaxed
- The spine’s “S” curve distributes your weight evenly

Any time you move out of a neutral posture, it puts stress on your back.

The Zone Defense

Your **Safety Zone** is your power position. Your body balances above your base of support and you stand with feet shoulder-width apart. It’s your comfort zone where you feel best.

Just outside your Safety Zone is your **At-Risk Zone**. When you try to lift in this zone, your back muscles have to work overtime. If you do it often enough or with too heavy of a load, you may suffer a painful injury. To protect your back when you must lift in your At-Risk Zone:

- Move one foot out in front of you in the direction you’re traveling
- Keep both feet flat
- Slightly flex your knees
- Bend slightly at your hips to hold your neutral posture

Just outside your At-Risk Zone – five or six inches in front of your feet – is your **Danger Zone**. This is where your back and balance are most vulnerable to injury. To protect your back in the Danger Zone:

- Lighten your load
- Move both feet closer to your load
- Bend at the hips
- Hold your neutral spine position
- Always move smoothly

Get a Grip on Power

Even something as simple as how you grip your tools can cause back injury. Here's an example: grip a tool with your thumb and your index finger. This is the pinch grip. You're using smaller, weaker muscles and that puts your back at risk. Now, take a look at the power grip. Grip a tool with your thumb and the last three fingers. You're using larger, stronger muscles, which mean less chance of injury.

Another bad-back habit is the end-on-end grip many people use with long-handled tools. When you use an over-and-under grip, one arm provides power and the other provides balance. If the tool slips, you keep control and won't strain your back.

Lifting Safely

Preparing for the Lift

- Size up the load. If it's too big, divide it up, get help or use a machine
- Survey your route. Look for hazards such as spills and slanted, uneven surfaces
- Know where you intend to set the load down so you can avoid having to move it twice

Making the Lift

- Make sure your mind is on the job, your spine is in neutral posture and you are in your Safety Zone
- Move as close to your load as you can
- With feet shoulder width apart, put one foot in front of the other
- Bending at the hip, lean over your forward leg
- Keep your spine curved and let your legs do the lifting

Low-Down Lifts

- Drop to one knee
- Lift the load to balance on your other knee
- Pause to adjust your grip
- Rise to standing as you hold the load as close to your body as you can

On-End Loads

- When you can, stand your load on end
- Flex your knees
- Bend at the hips
- Reach down to grip the top of the load
- Lift the load close to your body as you rise

Carrying and Lowering

- If you have to turn, aim one foot toward your destination
- Use your feet, not your waist, to pivot
- Set the load down in one slow movement
- Try not to lift heavy loads above your waist
- If the load is bulky, position the center between your waist and shoulders

Pushing and Pulling

- Pushing is easier on your back than pulling
- When pushing, use the technique that keeps your back neutral. Usually that means pushing with both arms and neutral spine
- If you must pull, stay close to the load. Put one foot in front of you, slightly flexing the front knee over your toes
- Pull steadily, shifting your weight from one leg to the other as you step

Get Flexible

Many back injuries result from weak, tight muscles. To protect your spine, the muscles supporting your back must be strong and flexible. A few pre-shift and pre-lift stretches can help you be more flexible (see the attached “Stretch Reference Sheet”).

Mechanical Advantage

Whenever possible, use machines and devices that help you do your job more efficiently.

- Build platforms and conveyors above knee level and below shoulder height to minimize bending
- Use tilt bins or those with collapsible sides
- Use dollies or other material-handling devices
- Use ladders instead of reaching
- If your job requires bending, find a way to support yourself

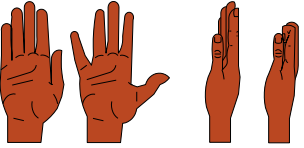
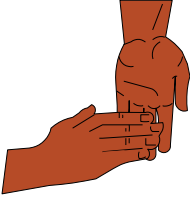


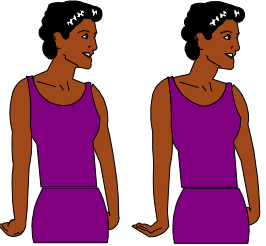


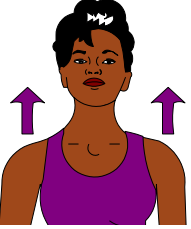
Summary

You can avoid painful back injuries by using proper posture, working in your Safety Zone, lightening your load, using proper lifting techniques that minimize twisting, bending and reaching, and by stretching. Whether you're a professional athlete or an industrial athlete, a few simple steps is all it takes to defend your safety zone and protect your back.

STRETCH REFERENCE SHEET

Hand, Arm, Neck, Shoulder, and Back Stretches




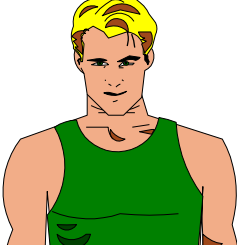



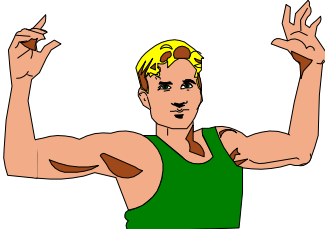
STRETCHING TIPS: • Breathe slowly • Relax your mind and body • Stretch within comfortable limits
HEALTH NOTE: If you are stretching correctly, the feeling of stretching should subside slightly as you hold the stretch. You should not feel any pain. If you do, please notify your supervisor.

1.	HOLD-UPS	2.	WRIST PRONATOR	3.	THUMB FLEXORS	4.	WRIST FLEXORS
 <ol style="list-style-type: none"> 1. Separate and straighten your fingers until tension of stretch is felt. Hold for 10 seconds. 2. Relax, then bend your fingers at knuckles and hold for 10 seconds. 3. Repeat stretch 1 time. 		 <ol style="list-style-type: none"> 1. Flex arm and stretch fingers down and back with opposite hand. 2. Straighten arm while keeping tension on fingers. 3. Rotate arm by twisting fingers inward. 4. Repeat on other side. 		 <ol style="list-style-type: none"> 1. Flex arm. 2. Extend wrist back, allowing fingers to curl in. 3. Stretch thumb back toward arm. 4. Repeat on other side. 		 <ol style="list-style-type: none"> 1. Flex arm with palm up (like holding a tray). 2. Reach through with opposite hand and stretch last two fingers down. 3. Repeat on other side. 	
5.	DUCK STRETCH	6.	TRICEPS STRETCH	7.	HEAD ROLL	8.	SHOULDER SHRUG
 <ol style="list-style-type: none"> 1. Place arm straight down at side with palm facing back. 2. Stretch hand back, allowing fingers to cup. 3. Rotate hand outward. 4. Make a loose fist for more stretch. 5. Repeat stretch 1-2 times. 		 <ol style="list-style-type: none"> 1. Hold right elbow with left hand, then gently pull elbow behind head until an easy tension-stretch is felt. 2. Hold for 10-15 seconds. Do not overstretch. 3. Repeat on other side. 		 <ol style="list-style-type: none"> 1. Slowly tilt head to left side to stretch muscles on right side of neck. 2. Hold stretch 5-10 seconds. Do not overstretch; feel a good, even stretch. 3. Tilt head to right side and stretch. 4. Repeat 2-3 times on each side. 		 <ol style="list-style-type: none"> 1. Raise shoulders toward your ears until slight tension in neck and shoulders is felt. 2. Hold for 3-5 seconds, then relax shoulders downward. 3. Repeat 2-3 times. 	

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<p>9. BACK SCRATCHER</p>  <ol style="list-style-type: none"> 1. Hold right elbow with left hand. 2. Gently pull elbow behind head until an easy tension-stretch is felt. 3. Repeat on other side. 	<p>10. NECK STRETCH</p>  <ol style="list-style-type: none"> 1. Point chin toward elbow. 2. Tilt head so chin touches collarbone. 3. Repeat stretch 1-2 times on each side. 	<p>11. TUG HUG</p>  <ol style="list-style-type: none"> 1. Gently pull elbow with opposite hand on top of arm until shoulder rotates underneath chin. 2. Repeat on other side. 3. Do stretch 1-2 times on each side. 	<p>12. ATTEN-TION!</p>  <ol style="list-style-type: none"> 1. Tuck chin inward, as if making a "double chin", while raising chest up and out. 2. Repeat 2-3 times.
<p>13. HOOP SCOOP</p>  <ol style="list-style-type: none"> 1. Interlace fingers, then turn palms outward. 2. Raise arms overhead and push palms toward ceiling. 3. Repeat stretch 1 time. 	<p>14. TWISTER</p>  <ol style="list-style-type: none"> 1. Maintain feet shoulder-width apart. 2. Swing extended arms while rotating torso and arms completely to left and right. 3. Repeat 2-3 times. 	<p>15. R&R ISOMETRIC</p>  <ol style="list-style-type: none"> 1. Looking straight ahead, raise chin 2 inches. 2. Interlace hands at junction of skull and neck, placing equal pressure on each. 3. Without moving neck, pull arms forward at 50% capacity. 4. Repeat 2-3 times. 	<p>16. HIGH FIVES</p>  <ol style="list-style-type: none"> 1. Place hands above head at shoulder level. 2. Stretch arms backward while squeezing shoulder blades. 3. Repeat 1-2 times.