

Back Injury Prevention



About the Back

The spine consists of irregularly shaped bones, called vertebrae. Discs are spaced between each vertebra to preserve the spacing for joints and nerves.

Just like other joints, vertebral joints are supported by ligaments. The abdominal muscles and the muscles adjacent to the spine provide our spine positioning during all activity. Improper lifting or working techniques can injure one or more of these spinal tissues.



Injury Prevention

One of the most common injuries in any work environment is a back injury. Learning about your back and employing safe lifting techniques can help you avoid injuries at work and home.

Safe Lifting Techniques

There are several basic rules of lifting and moving that can help prevent back injuries:

1. Lift with your legs, not your back; this is because your legs muscles are larger and better positioned over the hips and knees to provide this activity.
2. Do not twist; instead, always position your hips and feet toward the object you are lifting or moving.
3. Maintain the natural curves of the neck, upper back and lower back while lifting, moving, and even sitting.
4. Keep objects close to your body; this reduces the leverage on your spine.
5. Push, rather than pull when possible. Pushing naturally places your legs in a position to do the work whereas pulling naturally places your back in a forward bent position.



Injury Prevention Safety Techniques

- Size up the load. Is it manageable, or will this task take two?
- Inspect the route where the load will be carried. Especially look for tripping hazards and adequate room to maneuver safely.
- Clean off greasy, wet, or dirty items before lifting. Keep your hands free of anything that will prevent a firm grasp, such as, oil, or ragged gloves.
- Bend with your knees keeping your back straight. Get a firm grasp on the load, and make sure to have a solid footing before beginning.
- Once you lift the load, keep it close to your body. Keep fingers away from edges where pinches may occur. This is especially important when carrying through doors, or when setting a load down.
- Create and maintain ease of access to piles or stacks of materials. When piling or stacking materials, make sure one level is resting securely on the one below it. Use proper blocking when necessary and never exceed a safe height. Report any unsafe stacks to your supervisor.

Back Belts

Back belts may be helpful to remind you of the proper back position and to provide some assistance to the abdominal muscles. Back belts should be tightened during periods of heavy lifting and/or strenuous movements, but loosened during periods of relative rest.

Back Injury

If you irritate your back, below are listed important things to keep in mind during the first 48 hours of a back injury:

What should I not do?

1. DO NOT try to aggressively "stretch" your spine for relief.
2. DO NOT repeatedly bend forward or pull your knees to your chest. If the muscle, joint, or disc are irritated, this may damage them further.
3. DO NOT use a heating pad or Jacuzzi. This can increase the swelling and bleeding.
4. DO NOT get a massage, or try a lot of aggressive exercise.

5. TRY NOT to sit on a soft couch, rounded back chair, or lounger. This can allow the fluid of the disc to migrate toward the nerve root in the back of the spine. Swelling or inflammation can also "pool" in the area of the lower spine.
6. TRY NOT to do a lot of driving, or prolonged sitting (computer, movies, etc.).

What should I do?

1. If at work, report all injuries to your supervisor.
2. Gently, "pain-free" try to **S L O W L Y** arch backward, and repeat a few times every hour (unless you have a history of spondylolisthesis or forward slippage of the spine).
3. Try to lay on your non-painful side, with a pillow between your knees for support. This will allow swelling to flow away from the area of irritation or the disc fluid to flow back into the center of the disc.
4. Place a thin cloth on your skin, and a bag of ice (frozen peas, corn, etc.) for 15 to 20 minutes every few hours. This will reduce the muscle spasm, disc, and nerve irritation (professional athletes use this method).
5. Try to do some gentle, short walks if they are comfortable. If not, try to stay off your feet, and rest on your non-painful side or slightly toward your stomach.
6. If you **MUST** travel, try to have someone else drive, and lay down in the back seat if possible.



Consider medical attention if:

1. Your symptoms are causing severe numbness, tingling, or burning down into the left-calf-foot.
2. You are experiencing severe spasms which are not relieved with ice.
3. You are having severe weakness or "giving away" in the legs, or spine.
4. You are experiencing loss of bowel or bladder (lack of control or initiation).
5. Your symptoms are becoming much worse or you are significantly limited in movement.

After 48 to 72 hours

1. Begin with more walking and gentle, pain-free stretching. Unless instructed otherwise, NEVER be at bed rest for over three to four days **MAXIMUM**. Short, 10 minutes walks, continuing with the gentle extension, cloth with the ice bag for 15 minute sessions will help you through this transition phase.
2. Using heat,(only for 15-20 minutes) is acceptable. However, DO NOT sleep with a heating pad.
3. Heating up with the shower, Jacuzzi, or heating pad (15 minutes) then walking, stretching (15 minutes), is the best order of events.
4. Stretch **GENTLY**, in a pain-free manner. Again, **AVOID** prolonged reaching forward or touching your toes. Repeated extension (arching backward) is still the primary motion which is desired. Side bending and rotation should all be done slowly without going to the extremes of motions.
5. Avoid sitting or kneeling for over 15 to 30 minutes without taking a standing extension break.



Stretching the Back

Stretching and mobility exercises for the back and key leg muscles can be used prior to work as a warm-up, as well as after work to restore flexibility. Strengthening of your key leg muscles can also be helpful in preparing and maintaining your ability to perform work and/or activity safely.

[Click here to view mobility and flexibility exercises for the workplace.](#)

For more information and exercises, see the American Academy of Orthopedic Surgeons website at <http://orthoinfo.aaos.org>



Common Questions and Answers

Click on the link below for the answer.

1. What positions or postures predispose me to an irritation?

Prolonged sitting without a break (driving), being bent forward gardening, workbench, etc.), or crouched down on your knees.

2. Why would those positions cause problems?

All of the above postures are "flexed forward spines" (rounded forward), which cause the fluid the disc to migrate backward toward the nerve, stressing the back section of the disc, and places the muscles and ligaments (attaching bone to bone) on a prolonged stretch. Driving adds fatiguing vibrations.



in

3. How can I minimize the potential for an irritation?

Move out of the forward posture often (every 30 minutes at most) and gently, pain-free arch your lower back the opposite directions (hands on hips and lean back) repeating for 10 repetitions. Use a small towel roll behind your lower spine while driving. Try to remember to "extend" or lean back a few times BEFORE you begin to lift something (especially after sitting).

4. Why is twisting such a concern?

It places "shear" compressions plus grinding on the disc and joints of the spine. Over time, or with a repeated task, (loading or unloading items) the disc or joint can wear and breakdown. Instead, move your feet which also protects your knees. Be sure to keep centered ("nose between your toes").

5. Why is reaching and lifting a risk?

A ten pound item next to your body is only ten pounds of force on your spine. However, when you lift from an arm's length away from your body, that ten pound force now becomes 100 pounds of stress and shear on your lower spine. Twisting while lifting a ten pound item will add 120 pounds of force on your lower spine.

MOBILITY AND FLEXIBILITY EXERCISES FOR THE WORKPLACE



1.

With arms at sides, perform slow circular motions with your shoulder blades. Perform 5 times to the front and 5 times to the rear.



2.

Slowly lower your chin down towards your chest then return to an upright position with the head over the shoulders. Repeat 3-5 times.



3.

Slowly turn your head from side to side without lowering or raising the level of the chin. Repeat 3-5 times to each side.



4.

Set up tall; place your right hand over your head and place it on your head just above your left ear. Use your right arm/hand to pull your head towards the right shoulder then again towards your right knee. These two stretching positions should cause a stretching sensation in the left neck and shoulder blade area. Hold each position 8-10 counts and repeat 3-5 times. Repeat to stretch the right side using opposite hand positions.



5.

Hold your right arm straight out in front of you (elbow straight) with palm down. Use your left hand to stretch your right hand back/up by pulling back/up on the hand/fingers, bending the wrist up. This should create a stretch across the bottom of the right wrist and/or the forearm areas. Hold the position 8-10 counts, repeat 3-5 times. Repeat for the left arm using opposite hand placement.

6.

Hold your left arm out in front of you (elbow straight) with the palm down. Place your right palm on the back/top side of your left hand then gently use the right hand to push the left hand down, bending the wrist down. This should create a stretch across the top of the left wrist and/or forearm areas. Hold 8-10 counts, repeat 3-5 times. Repeat for the right arm using opposite hand placement.



7.

Pinch your shoulder blades back/towards each other and downwards towards your waist. Hold 3-5 seconds and repeat 8-10 times.



8.

Pull your leg up to your chest slowly by grasping the shin. Hold 8-10 seconds, then repeat with the other leg. Perform 3-5 times with each leg.

9.



Be upright on the edge of a chair. Widen your feet, leaning forward, bend your trunk to one side and reach toward the floor on that side. Hold 3-5 counts. Repeat 8-10 times, alternating side to side.



10.



11.



12.