

BACK SAFETY

Back injuries are one of the most common workplace injuries. So, let's take a look to see how you might injure your back, as well as what you can do to prevent a back injury.

Why Do You Need to Know?

Why do you need to know about back injuries? Because it is likely that you will experience a back injury at some point. In fact:

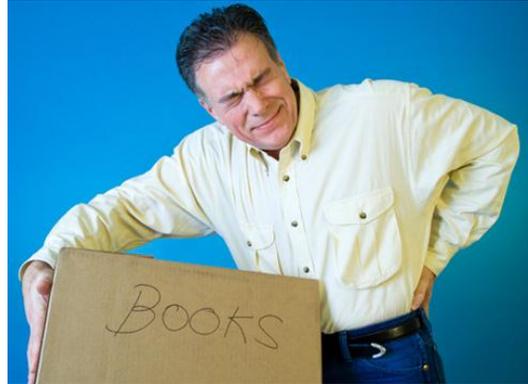
- Eighty percent of employed Americans will have a back injury that requires medical attention at some point in their lives.
- Back injuries are the second most common cause of days away from work, next to the common cold. Twenty percent of all workplace injuries and illnesses each year are related to back injuries.
- Once your back is injured, it is more likely to be reinjured. Back injuries need to be treated carefully to avoid having a constant problem.
- In addition to missing work, an even worse result of back injuries can be a lifetime of constant pain.

Why Back Injuries Occur

It is important to understand why back injuries occur so that we can learn to prevent them.

Your back has many different, interactive parts:

- There are 33 vertebrae in the backbone that extend from the hip bone to the base of the skull. These vertebrae protect your spinal cord. Between the vertebrae are gel-filled pads called "disks," which separate and cushion the vertebrae and allow your backbone to be flexible.
- Your back also contains many muscles, ligaments, and tendons that connect to the spinal cord with nerves. This system allows you to bend and turn your back and keeps everything properly aligned.



- Injuries can happen to these various parts if they are torn, stretched, bruised, strained or cut.

Types of Back Injuries

Strain	Injury due to overusing or overstretching your back – This often happens to people who try to do too much when their backs are not properly conditioned.
Sprain	Ligament in the back is torn or excessively stretched – This could be the result of a sudden forceful movement, or from a small movement that injures an already weak ligament.
Bulging disk	Disk begins to come out from between two vertebrae – This can cause painful pressure on the spinal cord or other nearby organs. Often, the back muscles try to compensate for this type of injury, until the muscles themselves become strained.
Herniated disk	Disk begins to leak its cushioning fluid – The disk loses its ability to cushion the vertebrae, resulting in pressure on vertebrae, the spinal cord, and possibly, other organs

General Causes of Back Injury

There are many causes of back injuries. Often, an injury occurs due to a combination of causes that weaken your back over a period of years until something is seriously damaged. Here are some of the common causes:

- **Poor posture** can cause back pain. People often complain of back pain because they slept in an awkward position, or sat or stood in one place for too long.
- If your back is in **poor condition**, you may have back pain. This often happens when people who normally don't use their back try to do something that requires a lot of lifting or other stress.
- **Being overweight** or having a potbelly can put continuous stress on your back that will gradually weaken it and contribute to injury.
- **Bad lifting techniques** are frequently a main cause of back injuries. Lifting a load improperly can cause a serious and immediate injury if your back is already overstrained or out of shape.
- Finally, an **underlying medical condition**, such as scoliosis, can make the back more susceptible to injury.



Activities That can cause Back Injury

Here are some of the activities at work that can cause or contribute to a back injury:

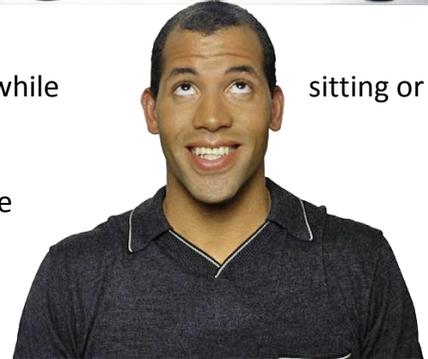
- Reaching into a rack or bin, or reaching overhead while lifting something.
- Bending over to lift or unload something – or even to tie your shoes.
- Sitting for long periods of time, or using poor posture while sitting.
- Finally, bad lifting techniques, such as bending over while twisting.

Injury Prevention – Maintain Proper Posture

Now, let's discuss some of the ways to prevent back injuries.

One good way to prevent injury is to maintain proper posture while standing. Here are some points to remember:

- Try to maintain your body's natural curves when you are sitting, standing, or moving about.
- When standing, stand straight with your shoulders back, your head up, and your feet shoulder-width apart. Remember not to slouch or hang your head. If you need to stand for long periods of time, it helps to put a foot up on a rail, ledge, or stool in order to help the body maintain its natural curve.
- Sitting properly is also very important. Don't slouch backward, forward, or to the side. Instead, sit up straight against the chair's backrest, with your shoulders back and your head up. Sometimes, using a footrest helps you maintain proper position. If you need to type on a keyboard for a long period, make sure the keyboard and chair are positioned to allow you to keep your shoulders back and your forearms parallel to the floor.
- If you are already experiencing back pain, you might tend to slouch or bend in order to relieve the pain. However, this contributes to bad posture and is likely to make the problem worse.



- Finally, stretch and change your position as often as you can, and perform activities that are appropriate for your size and condition.

Injury Prevention – Condition Your Back

Another way to prevent back injuries is to improve the condition of your back. Here are some ways to do this:

- Physical conditioning of your back means not only improving your back muscles but also related muscles such as the ones in your stomach and thighs. Regular exercise should help keep your back strong, maintain your flexibility, and prevent strains and sprains.
- Staying flexible and limber is also important. Your exercise program should emphasize flexibility so that you can bend, turn and twist your back without injury.
- Try to lose excess weight that contributes to poor posture and puts a strain on your back muscles. Your exercise program should also help you lose weight – another way that exercise helps keep your back healthy.
- Finally, consult your physician before starting an exercise or weight loss program.



Injury Prevention – Exercise

Here are some of the exercises you can do to prevent back injuries. These exercises are intended to improve your conditioning and flexibility while helping you lose or maintain your weight. But remember to consult with your doctor before starting an exercise program.

- A program of walking for 30 minutes a day will help strengthen muscles and prevent weight gain.



- A daily program of stretching exercises will help improve your flexibility and keep your back in good condition. Stretching exercises might include bending backwards or sideways, rotating your hips, or twisting gently from side to side.

- Sit-ups help strengthen your stomach muscles, which in turn help support your back.

- Leg lifts help strengthen the muscles in your hips and buttocks. These can be done when you are standing or when lying on the floor.
- Another good exercise is squats. These strengthen your back, stomach, and leg muscles, and also help you practice good lifting techniques.

Safe Practices – Use Lifting Equipment

One good way to prevent these injuries is to use lifting equipment rather than trying to lift and carry heavy objects manually. Some of the equipment you can use includes:

- Powered equipment such as forklifts, powered carts, and electric pallet jacks. But remember that you must be trained and authorized before using this kind of equipment.
- Equipment such as hand trucks, carts, and manual pallet jacks can be very helpful, but make sure you choose the right equipment for the job. It's also better for your back to push a hand truck or cart, rather than pulling it.
- Cranes and hoists are good for lifting heavy loads, as long as you are trained and authorized to use them. Make sure that all lifting devices are rated to carry the weight you are trying to lift.
- Patents, which are adjustable tables, can be used to raise and lower loads, or to adjust objects to a comfortable height for working.
- Conveyors are a good way to move material without carrying it manually, but remember, never ride on a conveyor or climb over or under it!

Have a Safe Lifting Plan

Before lifting or carrying a load, have a safe lifting plan. This does not mean a written plan; it simply means thinking about what you are going to do before you pick up and carry a load.

- First, size up the load – how much does it weight? Is it bulky and awkward? Does it need more than one person to lift it? Think about how you will grip it and be able to maintain your grip. Think about whether you will be able to see properly when you carry it.
- Next, make sure your path is clear for carrying the load. Are objects in the way? What about doorways and tight corners, or stairs and steps? Are you sure the load



will fit through any tight spaces? Try to move the load smoothly and without sudden jerks.

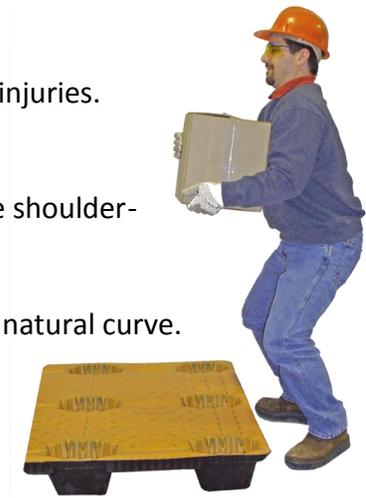
- Finally, think about how you are going to unload the object. Make sure you have a clear, accessible area so that you can unload safely.

Lift Properly

Let's discuss techniques for lifting objects properly to prevent back injuries.

When lifting an object, remember to always:

- Stand close to the object with a wide stance. Feet should be shoulder-width apart, with toes pointing outward.
- Bend at the knees and hips, and try to maintain your body's natural curve.
- Pull the load close to you and grip it firmly.
- Tighten your stomach, to act as a back support, and lift your head, which will help you lift with your legs rather than your back.
- Finally, when you're ready to lift, use your legs and keep your back straight.



Try to practice this proper lifting technique, even if you are lifting a very light load.

Lift Bags Properly

Bags can be heavy and awkward to lift. Here are some techniques for lifting them properly:

- Bend your knees to squat next to the bag.
- Grab the bag at its opposite corners. Know where the load's center of gravity is so you can handle it appropriately.
- Pull the bag up to your thigh or waist. Make sure the load is stable and that you have a good grip.
- Use your legs, not your back, to stand up.
- Finally, hoist the bag onto your shoulders in order to carry it.

Team Lifting

Some loads are too big or heavy for one person. These require team lifting, which also requires proper techniques in order to be safe.



- First, designate a team leader for the lift to direct all the motions. No one should do anything unless the leader says so. This will prevent someone from being injured if another member of the team does something unexpected.
- Members of the team should lift the load slowly and at the same time.
- Keep the load level. This is particularly important if you are going up or down the stairs. The person at the bottom will take more of the load if it is allowed to tilt downward instead of remaining level.
- When it is time to unload, team members should unload slowly and together, following the directions of the team leader.

Carry the Load Properly

To prevent back injuries, it is as important to carry the load properly as it is to lift it properly.

- Make sure you can see where you are going. Trying to save time by stacking objects is not worth getting injured because you can't see clearly.
- Take small steps, and make sure your footing is stable. Be especially careful on steps, ramps, and areas with uneven surfaces.
- Don't twist your back when carrying a load. To turn, move your feet rather than twisting your back.



Unload Properly

Unloading properly is also important for preventing back injuries. Basically, unloading is the mirror image of lifting a load. Remember these rules for proper and safe unloading:

- Squat with the load, bending your knees.
- Don't bend your back; instead, keep your back straight and let your legs do the work.

- As a final tip, keep your fingers away from the bottom and sides of the load so they don't get pinched or crushed.

Handling Overhead Loads

When handling loads that are over your head, it is very important to observe safety procedures in order to avoid an injury.

Remember:

- Stand facing the load. Don't reach up to pick up a load. Instead, use a step stool or ladder to get your shoulders level with the load. But don't stand on a chair or a stack of boxes; this could cause you to fall.
- Slide the load close to your body and grip it firmly.
- Finally, maintain good posture and use your legs to step carefully down from the ladder or step stool. If necessary, have someone else spot you to make sure you don't lose your balance.



Handling Long Loads

Long loads, such as lengths of pipe or lumber, can be very tricky to handle even if they are not that heavy. Here are some techniques for handling long loads safely:

- First, pick up one end of the load to make sure you can handle it by yourself. Walk toward the center of the load until you have found the center or balance point.
- Place the balance point on your shoulder, and stabilize the load with your hands.
- Watch the ends of the load to make sure they don't strike people or objects. You may want to raise the forward end and lower the end behind you, so that you will avoid striking someone in the head.



Think About Your Back

The next few slides bring together what we've been discussing about proper lifting and carrying techniques to save your back.

It is most important to think about your back with every movement you make.

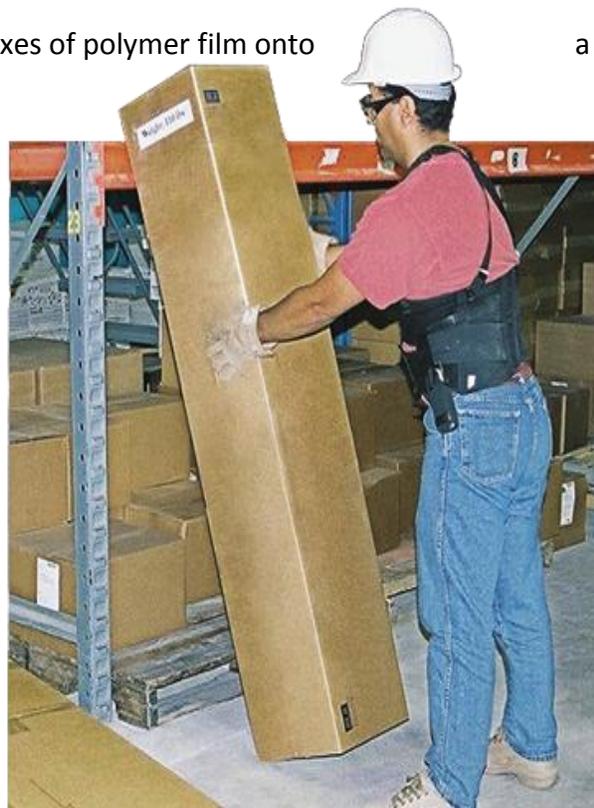
- Be diligent. Sometimes it seems easier to simply bend over to pick something up rather than squatting and lifting it properly. Be sure to use the proper technique.
- Think long term about your back. Lifting something improperly may not hurt you at the time, but long periods of improper lifting and carrying will increase the chances of a back injury eventually.
- Don't try to lift too much. Get help if a load is too heavy for you – 50 pounds is the limit for most people. Remember that you are not competing with anyone or trying to win an award – you are trying to save yourself from injury.
- Always consider your back in all your daily activities. Think about your posture, or whether you are in the right condition for a physical activity, or whether you are using proper techniques when lifting and carrying an object or even a child.



What's Wrong Here?

Take a look at the picture to the right. This picture shows an example of how a back injury can occur.

- It shows a man trying to move heavy boxes of polymer film onto a pallet by himself. Each box weights 100 pounds and is long and thin: 6-feet long by 1-foot wide. The man is wearing a back belt and has been trained in lifting techniques.
- He tilts the box toward his body.
- The man stands the heavy box on its end, then rotates it on its bottom edges so that he doesn't have to lift it onto the pallet.
- Suddenly, the box starts to fall over as he is moving it.



- He tries to catch the box as it is falling...and strains his back.

What went wrong? Could the employee have prevent his back injury?

- First of all, the box was probably too heavy. Although he tried to avoid lifting it by standing it on its end, 100 pounds is too heavy a load for most people to handle.
- Second, the box was probably too big to move alone. A 6-foot box may be too big and awkward to trip and handle without help.
- Did the employee follow proper lifting techniques? The accident happened when the employee tried to prevent the box from falling over. He did not maintain good posture when he had to bend and twist suddenly. When he tried to stop a heavy box from falling, his awkward posture contributed to the injury. And clearly, he did not have a good grip on the box.
- What about the back belt he was wearing? Many workers think they can do more than they really can if they are wearing a back belt.

Key Points to Remember!



Always maintain good posture when standing, sitting, lifting, carrying, and simply moving about.



Try to get exercise regularly to keep your back in good condition.



Use lifting equipment rather than trying to lift something manually. Have a plan in mind before you lift and transport any object.



When lifting or unloading an object, use your legs rather than your back; bend at the knees when you lift or unload.



Finally, always be thinking about your back and what you should be doing to lift and carry safely without risking a serious injury.

Now take the Back Safety Test for Credit.