

Back Injury: A Big Problem

Here are some facts you need to know about back injury:

- ❖ Back injuries account for nearly 20% of all injuries and illnesses in the workplace and cost the nation an estimated 20 to 50 billion dollars per year.
- ❖ Over a million workers suffer from back injuries every year.
- ❖ Back injuries account for one of every five workplace injuries or illnesses.
- ❖ Between 60 and 80 percent of the population in North America will suffer from back pain or injuries at some point during their lives.
- ❖ Back pain is the most frequent cause of activity limitation among those under 45.

Back injuries cause more than 100 million lost workdays annually. Three points are certain back injuries are:

- ❖ Very painful
- ❖ Difficult to heal quickly
- ❖ A problem for moving around

If you have ever had a back injury, you already know these points to be true. Back pain can range from a dull, constant ache to a sudden, sharp pain that makes it hard to move. It can start quickly if you fall or lift something too heavy, or it can get worse slowly.

But you should also know that after you have experienced one back injury, you are more likely to experience another one. So this in-service will address some of the ways you can prevent injury-and help yourself by practicing good back movements.

Even though work-related back injuries are the nation's number one occupational hazard, you could suffer back pain from activities at home as well. So much of what you learn here will help you all around the clock!

By learning proper lifting techniques and the basics of back safety, you may be able to save yourself a lot of pain and constant back problems.

Back injuries alone do not lead to work-related deaths, but they do account for:

- ❖ A lot of pain and suffering
- ❖ Lost productivity
- ❖ Lost wages and economic burden from missed work days
- ❖ Worker's compensation claims

The frequency and economic impact of back injuries on the work force are expected to rise over the next few years. This is because the average age of the workforce is increasing and medical costs continue to go up.

It's really not surprising that Americans spend over \$50 billion each year on low back pain, the most common cause of job-related health problems and a leading contributor to missed work.

Who Gets Back Pain?

While some people associate back pain with "back-breaking" labor, the less active modern lifestyle puts most people at risk for back injury.

Since it is likely that every worker who lifts or does other manual handling tasks is at some risk for back injury, we know that back injury can affect almost anyone. Unfortunately, many of us don't take the safeguards necessary to protect our backs from injury.

The Occupational Safety and Health Administration (OSHA) says that handling objects or moving people without the use of equipment is the main reason for injuries in the workplace. Four out of five of these injuries will affect the lower back.

Healthcare workers have some of the highest rates of back injury. In one study, only half of low-back injured workers, who were off work for six months or longer, returned to their regular jobs. But it's not only healthcare workers and others who perform lifting activities who are at risk. Several studies have shown an increased risk of disc herniation for those who perform desk jobs and are sitting all day.

Men and women are equally affected by back injury. The most common age for back injury is between ages 30 and 50. This is because of the normal aging process and as a result of lifestyles with too little exercise. The risk of having low back pain from disc disease or spinal degeneration also increases with age.

So since anyone can have back pain, look at this checklist. If you check even one point, you are a candidate for back injury. Are you:

- ❖ Moving into middle age? Back pain is more common the older you get.
- ❖ In poor physical condition? Back pain is more common in people who do not exercise.
- ❖ Overweight? A high-calorie diet and excess pounds can stress the back and cause pain.
- ❖ At risk for inherited diseases or conditions? Some kinds of back pain, such as disc disease, can be inherited.
- ❖ Working? If you have to push, pull, or lift while twisting your spine, you may get back pain. If you work at a desk all day and do not sit up straight, you may also develop back pain.
- ❖ Smoking? Your body may not be able to get enough nutrients to the discs in your back if you smoke. Smoker's cough may also cause back pain. People who smoke are slow to heal, so back pain may last longer.
- ❖ A caregiver for an ill or injured patient or family member? You are at highest risk for back pain when pulling the person into a sitting position, transferring the person from the bed to a chair, or leaning over the person for long periods of time.

Understanding the Healthy Spine

The spine, the foundation of your back, is an amazing part of the body. It is a column of small bones created to be strong enough to support the weight of your head and body, yet bendable enough to allow you to walk, sit, and recline. The secret to your spine's supple strength is in its balance of curves.

The small bones of your spine are called vertebrae and are made to fit together in an S-shaped column. The column of curves is balanced so that the weight of your body is evenly spread throughout your spine. If the curves are out of balance, the vertebrae are shifted out of line, causing stress and pain to muscles and discs.

The first curve of your spine is the **cervical curve**. It consists of seven small, flexible vertebrae that support your skull.

The second curve of your spine is the **thoracic curve**. The 12 thoracic vertebrae are larger and more rigid. They are the main support of the chest cavity. Twenty-four ribs extend from these long, slender bones.

The third curve of your spine is the **lumbar curve**. Five large lumbar vertebrae carry most of the weight of your body. The lumbar curve is often called the "workhorse" of the spine.

In addition to the three sections of the spine that move, there are nine "fused" vertebrae. Five of these bones form the **sacral** region, which attaches to the pelvis. The remaining four vertebrae make up the **coccyx**, often referred to as the tailbone.

In a healthy spine, the 33 vertebrae form a natural "S" curve. A hollow passage through the vertebrae is

known as the spinal canal, which leads from the top vertebrae down through the sacral region. This spinal canal protects the millions of delicate nerves that make up the spinal cord from damage. A back problem that involves even a few of these nerves could cause pain or numbness in other areas of your body.

To keep your spine lined up and moving smoothly, you must keep a balance for these three curves. Maintaining this position lowers the stress on the spine and helps prevent back pain and injury. Poor posture can put a painful strain on your spine and can lead to more serious problems

Healthy discs compress and release somewhat like springs. They serve as flexible spacers between vertebrae, giving all parts of the vertebrae the chance to move around and breathe.

Causes of Back Pain

Strained muscles and sprained ligaments are the most common causes of back pain. With proper treatment, these injuries can heal within a few weeks.

Back pain is considered an **acute** condition if it lasts less than three months. Most acute back pain is the result of trauma to the lower back or a disorder.

Back pain can also be a symptom of one of the many **chronic** diseases that affect the spine. Arthritis is the most common disease to affect the back. Other chronic diseases include osteoporosis or other bone diseases.

Symptoms may range from muscle ache to shooting or stabbing pain. There may also be restriction of movement and/or range of motion, including the inability to stand straight. Occasionally, pain felt in one part of the body may "radiate" from a disorder or injury elsewhere in the body, pain that some people refer to as "shooting" pain. Some acute pain syndromes can become more serious if left untreated. Many back injuries are not just caused by one thing but are the result of damage suffered over a long period of time. Common situations that can contribute to back pain include:

Working in uncomfortable positions

Some jobs require a person to maintain a bent posture. Also, poor seating at a computer workstation can lead to back pain.

Poor posture

Sometimes poor posture-both sitting and standing-can lead to back problems. When your mother told you to sit and stand up straight, she was giving you good advice. It is best to try to maintain the back in its natural "S" shaped curve. Avoid leaning forward when you sit, or hunching over while you're standing.

Sitting or standing still too long

Stressful working activities-like staying in one position for too long-can mean back problems down the line.

Falls

Poor footing-like on uneven or slippery floors- can lead to falls that result in back problems.

Poor Physical Condition

Your stomach muscles provide a lot of the support needed by your back. If you have weak, flabby stomach muscles, your back may not get all the support it needs, especially when you're lifting or carrying heavy objects. Good physical condition in general is important for preventing strains, sprains, and other back injuries.

Extra weight

Extra weight can be a big problem. The more a person weighs, the more stress on the back every time the person bends over.

Fatigue

If a person is very tired and not thinking about the right ways to move, lift, and carry, back pain may be on the way.

Stress

Tense muscles are more susceptible to strains and spasms.

Lifting and Holding the Wrong Way

Back pain can occur from reaching, twisting, or bending while lifting.

Heavy Lifting

Just lifting an object or person that is too heavy for your muscles to support can cause back pain. Also, lifting awkward items with unusual shapes, heavy equipment, or patients repeatedly can cause back pain.

Overdoing it

Don't be afraid to ask for help when lifting. It's important to recognize your own physical limits.

Sleeping in a Bad Position

Some people suffer from back pain because they sleep in a bad position or because their mattress is too soft or does not provide enough support.

Back Safety: The Right Ways to Move

Back pain can often be avoided by paying attention to life's situations and learning the right ways to move about. Whether you're on the job or at home, taking care of your back is important for most activities you need to do.

Let's take a look at the right ways to move as you go through your day. Sitting; standing, lifting, exercising, reaching, and sleeping are all activities that use your back. The way you move can make a big difference in how you feel.

It is important to keep in mind that healthy backs are just the result of how you work in your job environment. There are hundreds of ways you can prevent injury to your back if you know how to protect it. Watching out for your back around the clock means you have a better chance of showing up for work injury-free.

Think about it. Do you perform any of these activities?

- ❖ Sit
- ❖ Drive a car
- ❖ Stand
- ❖ Carry groceries
- ❖ Lift children
- ❖ Lift a heavy object or a person who is ill or impaired
- ❖ Wear a backpack
- ❖ Move and lift furniture
- ❖ Shovel snow
- ❖ Rake leaves
- ❖ Run or play contact sports
- ❖ Pull weeds
- ❖ Sleep

If you checked even one of these activities, you need to know more about how you can reduce the risk for back pain.

Sitting

Let's start with sitting in your car since so many people use **their** vehicles to travel to and from work. Did you know that maintaining a good posture can help you avoid back and neck problems? Think about these tips:

- ❖ Position your car's seat so that your hips and knees are bent, and you don't have to stretch your leg to reach the pedals.
- ❖ Position your rearview mirror so that you can see what is going on behind you without straining your neck.
- ❖ Don't slouch while you're driving. Good posture counts here as well!
- ❖ The best way to achieve a good sitting posture is to adjust your chair to fit you.
- ❖ Your seat should be high enough so that your forearms are at a 90-degree angle to your upper arms, and are level with your work surface.
- ❖ Your feet should rest flat on the floor, with your thighs at a right angle to your lower legs.
- ❖ Get a footrest if your feet don't reach the floor.
- ❖ If you need to support your lower back while sitting, use a "lumbar cushion," small pillow or rolled up towel.

Standing

Standing still for long periods of time can be as harmful to your back as lifting heavy objects incorrectly. Your body is designed to move, so it's important to take breaks, move around, stretch and maintain good posture. Having good posture is important because slouching puts unwanted strain on your back.

Standing in one spot can put a lot of strain on your lower back. Here are some tips to remember:

- ❖ Prop one foot up on a short stool to keep the lumbar region of your spine in its natural curve.
- ❖ Regardless of whether you are sitting or standing, don't stay in one position for hours. Take a break and stretch occasionally.

Lifting

Listen to your back. If the weight seems unbearable, find someone to help you lift. Decrease the weight of objects to acceptable limits. Reduce the weight by assigning two people to lift the load or by splitting the load into two or more containers.

Lowering objects causes less strain than lifting. Pulling objects is easier than carrying. Pushing is less demanding than pulling.

Assign more time for repetitive handling tasks. This reduces the frequency of handling and allows for more work/rest periods. Alternate heavy tasks with lighter ones to reduce the build-up of fatigue.

Chores such as raking leaves and shoveling snow can often be a strain on your back too. The important thing to remember with these activities is to maintain good posture and use your arms rather than your back to handle the weight of the leaves and snow.

Carrying groceries is another activity that can leave you with back pain. Be sure to make the extra trip rather than carry too much at once. Keep the groceries close to your chest if they are in bags with no handles. If the bags have handles, distribute the weight of the groceries evenly so your frame is balanced as you carry them.

Picking up small children is a leading cause of back injuries. Children are heavy and they also move around. As they shift their body weight, your back is likely to be injured. Try to explain to older toddlers the need to keep still while they are being carried.

For those who love to garden, pulling weeds is an unavoidable task. Gardening sometimes forces you to bend in awkward positions. Bending at the knees in a stooped position, or sitting if the knees don't bend well, is always better than bending at the waist to get at those weeds.

Lifting furniture is something many of us do, whether rearranging it or cleaning behind it. There is really a good and bad way to move and lift these heavy objects around.

Here are some points to remember:

- ❖ Before you lift an object, estimate its weight
- ❖ Use a hand truck or dolly if it is too heavy for you to lift safely.
- ❖ If you can lift it, stand close to the load, facing the way you need to move.
- ❖ Move your legs apart to gain balance.
- ❖ Get a good grip on the load
- ❖ Keep your arms straight
- ❖ Make your stomach muscles tight
- ❖ Tuck your chin into your chest
- ❖ Lift the load close to your body
- ❖ Lift smoothly without jerking
- ❖ Avoid twisting and bending to the side while lifting.
- ❖ Get close to the object you want to pick up.
- ❖ Lower yourself by bending at the knees.
- ❖ Make sure that your shoulder blades are centered above your hips.
- ❖ Then lift the load slowly and steadily with your legs.
- ❖ If you need to turn while you are lifting or carrying a load, change direction by moving your feet.
- ❖ Be careful not to twist or bend at the waist.

Remember: Do not lift if you aren't sure that you can handle the load safely!

To put a load down, keep your back straight and slowly bend your knees, using the muscles in your legs for control.

Some people like to strap on a backpack when going out. Be sure to keep the weight at a level that the back can support.

Exercise and Stretching

Loosen up your muscles by stretching. High impact activities, such as running and contact sports, can often be hazardous to your back. Always stretch before running.

Wear the required protective equipment during contact sports to keep your back from injury.

When you get up in the morning, warm up your muscles and get your back in alignment before you begin your day. Try to:

- ❖ Avoid moving suddenly, which could cause you to strain stiff muscles.
- ❖ Walk around a bit or take a hot shower to limber up.
- ❖ Do some stretches to relax your muscles and align your spine, but be sure to talk to your doctor before beginning any exercise program.

Reaching

Avoid reaching with your arms raised above your shoulders. If the object is over your head, use a sturdy ladder or movable stairs to put yourself in the best possible position.

Sleeping

Even an activity like sleeping, which doesn't seem to have any connection to back pain, can result in injury if you're not careful.

Most people spend about a third of their lives sleeping. But sleeping incorrectly can contribute to back problems. Maintaining a good sleeping position is just as important as sitting or standing correctly. By

properly supporting your head, back and legs, you can keep your spine in a neutral position.

Here are the tips to remember about a mattress:

- ❖ You need a mattress with a good foundation
- ❖ Test the mattress by lying on your back and sliding both hands under the lumbar region of your spine. If your hands slide in with little resistance, the mattress is most likely right for you.
- ❖ Here are some tips on sleeping position:
- ❖ Sleep on your side or your back, with a pillow supporting the natural curvature of your neck.
- ❖ If you find that you wake up with pain in your lower back, try sleeping on your side with your knees bent. Position a pillow between your knees to keep your legs in a neutral position.
- ❖ If you prefer sleeping on your back, place a pillow under your legs to support your bent knees.
- ❖ Avoid sleeping on your stomach (this twists your neck and puts a lot of pressure on the cervical region of your spine).

Back Pain Diagnosis and Treatment

Helping Yourself Before Going to The Doctor

Many of us don't like going to the doctor's office and think about ways we can help ourselves instead. Here are some things to remember.

- ❖ If you "pull your back out," applying ice packs to the injury may help to reduce swelling. After a few days, switching to a heating pad can lessen stiffness.
- ❖ It is really important to give a sore back plenty of rest, but this doesn't mean confining yourself to bed.
- ❖ To speed recovery, it is important to move around as much as possible.
- ❖ To get on your feet, you can take over-the-counter medications that help to reduce pain. But just because the pain goes away, it doesn't mean that your back is completely healed.
- ❖ A partially healed back is likely to be injured again, so be sure to ease into your normal routine slowly.

When to See the Doctor for Pain

If your back problem doesn't go away, make an appointment with a back care expert, such as an orthopedist, physical therapist, or chiropractor.

In general, you should see a doctor if you have:

- ❖ Numbness or tingling
- ❖ Severe pain that does not improve with rest
- ❖ Pain after a fall or an injury
- ❖ Pain along with trouble urinating
- ❖ Pain and weakness
- ❖ Pain and numbness in your legs
- ❖ Pain and fever
- ❖ Pain and weight loss when not on a diet

How Back Pain is Diagnosed

- ❖ To diagnose back pain, your doctor will take your medical history and do a physical exam. Your doctor may order other tests, such as:
- ❖ X rays

Treatment for Back Pain

Treatment for back pain depends on what kind of pain you have. Acute back pain usually gets better without any treatment, but you may want to take over-the-counter medications. Exercise and surgery are not usually used to treat acute back pain.

Here are some types of treatments for chronic back pain:

Hot or Cold Packs (or Both)

Hot or cold packs can soothe sore backs. Using hot or cold packs may relieve pain, but this treatment does not fix the cause of chronic back pain.

- ❖ Heat reduces muscle spasms and pain.

- ❖ Cold helps reduce swelling and numbs deep pain.

Exercise

Proper exercise can help ease chronic pain but should not be used for acute back pain. Your doctor or physical therapist can tell you the best types of exercise to do.

Medications

The following are the main types of medications used for back pain: Over-the-counter drugs such as:

- ❖ acetaminophen
- ❖ aspirin
- ❖ prescription pain medications

Creams, ointments, and salves rubbed onto the skin over the site of pain. Nonsteroidal anti-inflammatory drugs (NSAIDs) over-the-counter drugs such as Ibuprofen. Muscle relaxants and some antidepressants have also been prescribed for chronic back pain.

Behavior Changes

Remember the right ways to move:

- ❖ Lift, push, and pull with less stress on your back
- ❖ Change how you exercise, relax, and sleep
- ❖ Eat a healthy diet
- ❖ Stop smoking

Injections

Your doctor may suggest steroid or numbing shots to lessen your pain.

Other Medical Treatments

When back pain becomes chronic or when other treatments do not help the pain, some people try other treatments. The most common of these treatments are:

Manipulation:

Professionals use their hands to massage the spine or nearby tissues.

Electrical nerve stimulation (TENS): A small box over the painful area sends mild electrical pulses to nerves. Studies have shown that TENS treatments are not always effective for reducing pain.

Acupuncture: This Chinese practice uses thin needles to relieve pain and restore health. Acupuncture is sometimes used as part of a total treatment plan for low back pain.

Surgery

Most people with chronic back pain do not need surgery. It is usually used for chronic back pain if other treatments do not work. Common situations that sometimes require surgery are:

Herniated disc: When one or more of the discs that cushion the bones of the spine are damaged, the center of the disc leaks and causes pain.

Degenerative disc disease: As people age, some have discs that break down and cause severe pain. The good news is that lowest back pain can be treated without surgery. Exercise may be best way to speed recovery from low back pain and help strengthen back and abdominal muscles.

Back Safety and the Workplace

Helping Others and Yourself Maintain Back Safety

Now that you have completed this in-service and read about back safety, you can help others in your workplace by:

- ❖ Watching how they lift heavy objects or patients and lending a hand if they seem to be struggling
- ❖ Offering to help if you think that a heavy load may be too much of a burden for the person about to lift it
- ❖ Reminding co-workers about good ways to lift

You can help yourself by:

- ❖ Asking your supervisor to help you if your work environment is giving you back pain
- ❖ Remembering the right ways to move to avoid back pain
- ❖ Treating your spine with respect by not taking chances when the load is more than you can manage

Back Safety Belt

There is disagreement among medical professionals about the use of back safety belts. These are wide elastic belts that can be tightened to "pull in" lumbar and abdominal muscles to prevent low back pain.

A study of the use of lumbar support belts worn by persons who lift or move found no evidence that the belts reduce back injury or back pain. The 2-year study was done by the National Institute for Occupational Safety and Health (NIOSH) in December 2000 and found no significant difference in back injury. Although there have been case reports of less injury among workers using back belts, many companies that have back belt programs also have training and ergonomic awareness programs. So it may be the education about back safety-not the belts-that prevent back injuries. The decision to wear a back belt is a personal choice, but NIOSH believes that workers and employers should have the best available information to make that decision. A pamphlet outlining the current knowledge on back belts and the importance of a back safety education program can be found at: <http://www.cdc.gov/niosh/backbelt.html>

NIOSH says workers wearing back belts as protective equipment against back injury should:

- ❖ Be aware of the lack of scientific evidence supporting the use of back belts
- ❖ Not lift more weight than they would attempt without a belt.
- ❖ Back belts may give a false sense of security and may subject workers to greater risk of injury.