THE SCHOOL DISTRICT OF PITTSBURGH

Proper Lifting and Back Safety

Joint
Labor / Management
Safety Committee

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This is a monthly publication providing appropriate safety information on a different topic each month.

The Joint Labor / Management Safety Committee asks that all employees of the district join us in raising awareness of the monthly safety topic by sharing the enclosed information with others.

June 2005

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Proper Lifting and Back Safety Month

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Awareness Topic

Proper lifting and back safety

The Occupational Safety and Health Administration (OSHA) does not have any specific requirements for back safety training or back injury preventions programs. However, back injury has important considerations.

Every thing you do both at work and at home impacts your back. Most back injuries can be prevented if you think defensively. This awareness topic packet will provide some information on how you can prevent back injuries. As with all educational information, it will only be of benefit if the knowledge is shared with others.

Information categories

- Back Statistics
- Back parts
- Potential back injury
- Causes of injury
- Proper back posture
- Conditioning
- Exercise for the back
- Lifting equipment
- Make a plan
- Proper lifting techniques
- Proper unloading
- Proper overhead lifting and unloading techniques
- Proper techniques for long loads such as lumber, pipes, etc.
- Proper lifting techniques for heavy bags
- Proper team lifting techniques

Back Statistics

- 80% of Americans will have a back injury that requires medical attention.
- Back injuries are the second most common cause of lost work time, next to the common cold.
- Back injuries occur more often at home than they do at work.
- Injured backs are often subject to re-injury
- In addition to missed work, there may be a lifetime of pain.

It is amazing how many people suffer from back pain and how much work is missed due to back injuries. Four out of five employees will have a back injury that requires medical attention. Why do more back injuries occur at home? Possibly because the workplace has material handling equipment such as hand trucks, while most homes do not, so people try to lift more than they should. Backs are sensitive and once injured usually require a considerable amount of attention to remain pain free. Even worse than missing work, which means missing money and the feeling of productivity, is living with constant pain.

Back Parts

- Vertebrae
- Spinal cord
- Disks
- Muscles, ligaments, tendons

Our backbone is made up of 33 bones called vertebrae that extend from our hip bone to the base of our skull. The vertebrae protect the fragile and vital spinal cord. Between the vertebrae are gel filled pads called disks. The disks separate and cushion the vertebrae and also help allow the flexibility of the back. Your back is also filled with numerous muscles, ligaments, and tendons that not only allow your back to bend, turn and twist, but also keep your back properly aligned.

Potential back injury

- Strain
- Bulging
- Herniated disk

- Fractures

Any one of these injuries will cause pain and may limit or even restrict your ability to move. Unfortunately, if you do suffer a back injury, you will probable become much more familiar with some of these terms than you would like. A strain is what most "weekend warriors" experience because they push their unconditioned backs too hard by overusing or overstretching their back muscles. A sprain is diagnosed when a sudden movement causes a ligament to tear. This is usually the result of years of abuse, until the ligament is so fragile that a small movement might cause it to finally tear. A bulging disk is when the disk begins to come out between the two vertebrae it is supposed to cushion and separate. This can result in painful pressure on the spinal cord or other nearby organs. Often, the back muscles will try to compensate for the injury and cause additional pain when they become strained. A herniated disk is diagnosed when the disk is actually leaking its gel-like fluid. The disk may lose its ability to cushion and will result in pressure on the vertebrae, spinal cord, and possibly other organs. A fracture may result from a fall or being struck with sufficient force to crack the bone structure. This type of injury will incapacitate you for a sufficient amount of time that may place you in a pressure relief procedure such as traction or possibly a surgical procedure.

Causes of Injury

- Years of abuse
- Poor posture
- Unconditioned back
- Excess weight and potbellies
- Bad lifting techniques

Back injuries are typically a combination of the causes that weaken the back over years until one day something snaps. Poor posture can result in back pain. How often have you experienced a sore back because you "slept funny"? Sitting or standing for long periods of time can result in back pain. Having an unconditioned back will often result in back pain. This usually occurs when someone who normally doesn't use his or her back becomes a "weekend warrior" and takes on a home project that requires a lot of lifting or stress on the back. This person will suffer pain because the unconditioned back is not used to the strain. Having a potbelly puts constant stress on the back that will gradually

weaken the back and result in pain or injury. Bad lifting techniques such as bending over or twisting can result in sudden back pain.

Proper back posture

- Maintain the back's natural curves
- Standing
- Sitting
- Sleeping
- Changing posture and stretching
- Adaptive posture

Our backs have a natural "S" curve that we want to try to maintain at all times. Standing straight with your shoulders back, your head up, and your feet shoulder width apart will help prevent back pain. Make a conscious effort not to slouch your shoulders or hang your head down. When required to stand for long periods of time, putting a foot up on a bar rail, ledge, or a step stool will help the back maintain its natural curves and be more comfortable. Sitting properly is also very important. How often have you felt sore after sitting for long periods of time? Do not slouch forward or lean to the side. Sit up straight against the chairs' backrest, with your shoulders back, and your head up. Your thighs should be parallel to the floor and your feet would be flat. For some people, placing their feet flatly on a slanted footrest is beneficial. When required to type for long periods of time, make sure your keyboard and chair are at the right height to allow you to keep your shoulders back and your elbows bent so that your forearms are parallel to the ground. Sleeping properly is also important. Sleeping on your side is the best way to maintain the back's natural curves. Sleeping on your back or stomach my put unnecessary stress or pressure on your back. Changing your posture frequently, getting up to stretch, etc., will dramatically help prevent pack pain. If you do experience back pain, you may tend to slouch or bend to the side to help reduce the pain and be more comfortable. This is bad posture, even if it hurts. Don't adapt bad posture and potentially cause further injury because you back hurts.

Conditioning your back

- Physical conditioning
- Flexibility

- Excess weight and potbellies

Physical conditioning refers not only to your back muscles by also to your stomach and buttock muscles. Maintaining a mild regimen of exercise will go a long way toward keeping your back strong, maintaining your flexibility, and preventing strain and sprain injuries. Flexibility is also important. A healthy back allows you to bend, turn, and twist. Make sure your back exercise program also emphasizes limberness. Excess weight, particularly potbellies, can greatly contribute to poor back posture and back pain. Weight adds stress to the components of the back. An exercise program to reduce or maintain you weight will also help prevent back pain.

Exercises for the back

- Walking
- Stretching
- Sit-ups
- Leg lifts
- Squats

Always consult your doctor before beginning any exercise program.

Your doctor may suggest other types of exercise for keeping you back and stomach muscles in shape. Follow your doctor's directions. The exercises mentioned here are used to help prevent back injuries by improving your conditioning and flexibility while helping you reduce or maintain you weight.

If you have a back injury already, some of the exercises might be inappropriate because they could cause further injury, depending on your situation. Again, always consult your doctor before beginning any exercise program.

- Walking 30 minutes a day will help strengthen muscles and maintain weight.
- A daily regimen of stretching exercises will help improve flexibility and keep your back conditions. Stretches might include bending backwards or sideways, rotating your hips, or even twisting from side to side.
- Sit-ups will help strengthen your stomach muscles, which provide a great de3al of support for your back.
- Leg lift, both when standing or when laying on the ground, will strengthen your buttocks muscles.
- Squats not only strengthen your back, stomach, and buttock, they also help you practice proper lifting techniques.

Lifting equipment

- Powered equipment such a forklifts, powered carts, and electric pallet jacks
- Handtrucks, carts, and pallet jacks,
- Cranes and hoists
- Conveyors

Another great way to prevent back injuries is to avoid manually lifting and carrying object. Use lifting equipment instead. Powered equipment is used by many companies. Remember, do not operate any type of powered equipment (particularly forklifts) unless you're trained and authorized. When using manual equipment such as hand truck, carts, pallet jacks, etc., make sure you choose the right equipment for the job. Push the equipment rather than pull it, because you back is stronger pushing than it is when pulling. Cranes and hoists are very useful material handling tools. Make sure you are trained before using this equipment. You also need to ensure that the lifting devices (rope, chain, straps, etc.) are rated for the eight of the load you intend to lift. Conveyors are very useful for moving material. Do not ride on a conveyor or climb over or under it.

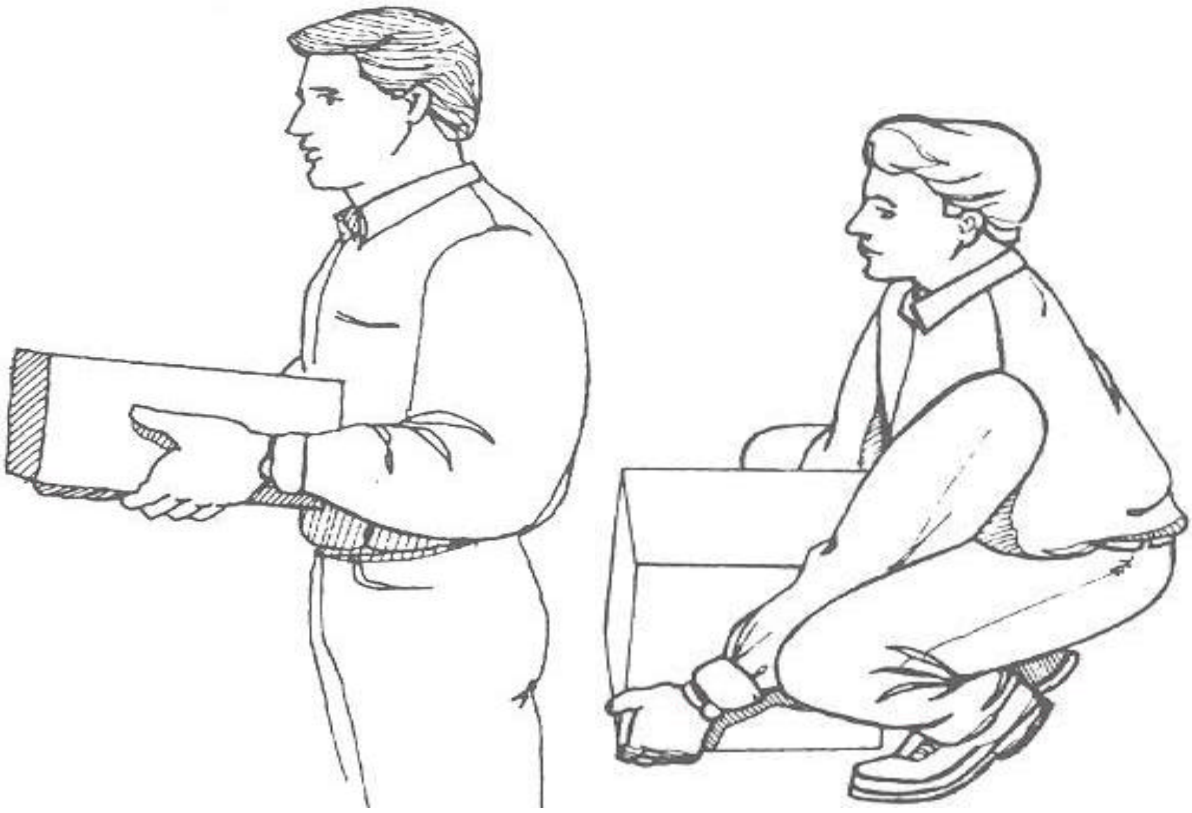


Illustration 1-A

Both examples given in the above illustrations demonstrate proper carrying and lifting techniques.

Plan your lift

- Size up the load; weight, size and shape
- Clear the path; objects, tight doorways and corners, debris
- Unloading zone

A lifting plan does not need to be a formal written process. It just means thinking about the lift before actually picking up the item and carrying it. Evaluate the load. How much does it weigh? Pick up a corner. Can it be lifted and carried by one person? What about the shape and size of the item, "is it bulky"? Even a light object can be difficult to lift if it is bulky or oddly shaped.

Sometimes you may not be able to get a good grip on the object. Maybe you can't see around or over the object when you pick it up. These are times that you should consider getting help. Plan your route of travel and make sure it is clear. Are there steps or stairs along the path? Remove any debris or objects that might be in the way. Do you have to maneuver through any tight doorways, down hallways, or around difficult corners? Have you measured these tight spots to make sure your load will squeeze through them? Make sure you have a clear, accessible place to unload the object.

Proper lifting techniques

- Stand close with a shoulder width stance
- Squat by bending your knees and hips
- Pull the load close to you and grasp it firmly
- Tighten your stomach and lift your head
- Rise up with your legs

Stand close to the object with a wide stance. Feet shoulder width apart and toes naturally pointed outward. Squat next to the object by bending at your knees and hips. Maintain your back's natural curve. Pull the load close to you and grasp it firmly. Tighten your stomach; it will act as a back support. Lifting your head will help you lift with your legs rather than your back. Stand up with your legs. Keep your back straight. Raising your chin wile lifting will help your back maintain its natural curve.

Carrying the load

- Make sure that you can see past the load and that you are carrying or pushing
- Take small, stable and steady steps
- Do not twist your back as you lift, walk, and unload

Make sure that you are able to see past the load that you are handling. Trying to save time by carrying the one extra box is not worth getting injured. Take small steps and make sure that you have good footing before taking the next step.

Be especially careful when walking up and down stairs or ramps and uneven flooring. Twisting your back while carrying a load can have severe consequences. Always move your feet when turning instead of twisting your back.

Proper unloading

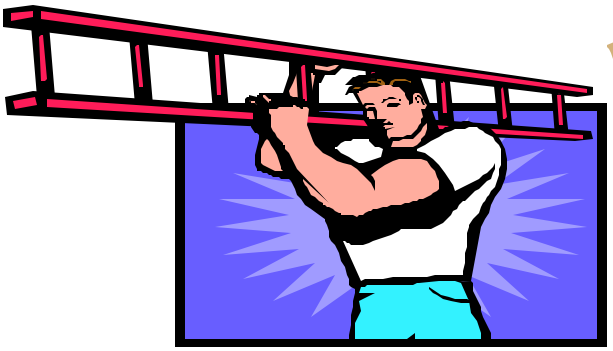
- Squat down with the load
- Do not bend your back over with the load
- Be careful of fingers

Putting down a load is just the opposite of picking it up. You still need to maintain good posture and lift with your legs. Bend your knees to lower yourself and the load toward the ground. Keep you back straight; do not bend it over the load. Keep your fingers away from the bottom or the sides where they might be pinched between the load and floor or another object.

Overhead Loads

- Shoulders level with the load
- Slide the load close
- Use your legs

Do not reach up to pick up a load off of a shelf that is over your head. Use a step stool or a ladder to climb up so your shoulders are level with the load. Do not stand on a chair, box or some other unapproved device. Pull the load close to your body and grip it firmly. While maintaining good posture, use your legs to carefully step down from the ladder or step stool. If necessary, consider using a spotter to help you maintain your balance.



Long loads

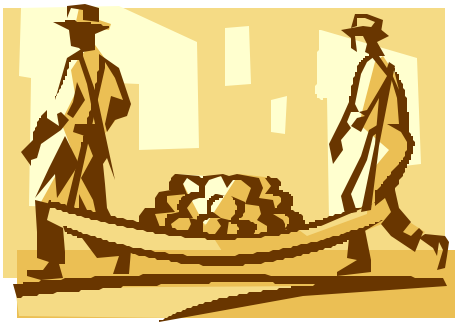
- Pick up one end at a time
- Place the balance point on your shoulder
- Watch the ends

When moving long loads such as pipe or lumber, pick up one end of the load to make sure you can safely pick it up by yourself. Walk yourself down the load until you have reached the center or balance point of the object. Place the balance point on one shoulder and stabilize it with both hands. Watch the ends of the load to make sure they do not strike any people or object. Consider raising the end in front of you so it is higher than a person's head. This in turn will lower the end behind you so it is near the ground. This will keep the long object from striking someone in the head or other sensitive area.

Lifting bags

- Squat down next to the bag
- Grab it at opposite corner
- Lift it up to your thigh or waist
- Stand up
- Keep load close to your body during the move

Bend your kneed to squat down next to the bag. Grab the bag at opposite corners. Use your arms to pull it up to your thigh or waist. Stabilize yourself and the load. Get a better grip if necessary. Use your legs to stand up. Hoist the bag to a comfortable position in front of your body at arms length. Once your have bent your knees and you have squatted to lift the load, this is the time to "test the weight" of the load to make sure that you can make a safe lift. Never carry the loads for long distances. Use hand trucks or other devises to move the load to distant locations.



Team lifting

- Designate a person to lead the lift
- Lift at the same time
- Keep the load level
- Unload slowly together

This technique should be used whenever a load is too heavy for one person to safely make a proper safe lift. The technique can be used with two or more employees. The lift leader should direct all phases of the lift. No one would act until the lift leader says to. Following the lift leader will help prevent someone from being injured when another person on the lift team does something unexpected. Slowly lift together at the same time. Keep the load level. This is also important when going up or down stairs. The person at the lower end of the stairs will take on more of the weight of the load unless he or she lifts up at that end so that the load remains level. Slowly unload at the same time. Make sure everyone is communicating with the lift leader.

Summary

- **Think about your back**
- **Think long tem**
- **Do not try to lift too much at one time**
- **Consider your back in all things**
- **Maintain back posture and conditioning**
- **Use available lifting equipment**
- **have a lifting plan**
- **Always use your legs**
- **Get help if the load is too heavy**

Remember to treat your back with respect at all times. One wrong move could cause you a lifetime of pain.