



# City Safe

A Guide To Assist In Training  
Employees About:

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## Lifting Techniques: Avoiding Back Injuries

Number 11



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Sprains and strains are among the most common causes of lower back pain. Your back can be injured by improper lifting of moderate to heavy objects, falling, auto accidents, and sports activities. But of these, lifting improperly is the largest single cause of back pain and injury. Luckily, you can do something about preventing back pain by knowing and using proper lifting techniques. Problems with the lower back are a frequent cause of lost work time and worker's compensation claims in KMIT.

Although our backs hold up well, our lifestyles and activities can lead to back pain. Here are some things that can go wrong.

- **Strains and sprains** can result from injury to muscles and ligaments that support the back. A torn ligament will result in severe back pain.
- **Ruptured or slipped disk** is not uncommon and occurs when the disk (vertebral cushion) presses on a nerve.
- **Chronic tension or stress** can result in muscle spasms and aggravate persistent and painful backache.
- **Other conditions** such as pain "referred to the back" from other organs, such as the kidneys and prostate, can result in nagging back pain.

## Why Back Pain Happens

Using improper lifting techniques can lead to back injuries, but other factors can contribute to this age-old problem as well.

### *Poor Posture:*

Whether you're standing, sitting, or reclining, posture affects the amount of strain put on your back. The wrong posture increases strain on the back muscles and may bend the spine into positions that will cause trouble. When standing correctly, the spine has a natural "S" curve. The shoulders are back and the "S" curve is directly over the pelvis.

Good sitting posture should put your knees slightly higher than your hips. Your hips should be to the rear of the chair with you lower back not overly arched. Also, your shoulders and upper back are not rounded. Reclining posture is important, too. Sleep on your side with knees bent or sleep on your back. Sleeping on you stomach, especially on a sagging mattress with your head on a thick pillow, puts too much strain on the spine often, resulting in morning backache.

### *Poor Physical Condition:*

Your physical condition can lead to back pain. If you are overweight, and especially if you have developed a pot belly, extra strain on your spine results. An estimate is that every extra pound up front puts 10 pounds of strain on your back.

When you are out of shape, the chances for chronic back pain are greater. Infrequent exercise is a major factor, too. A sudden strain on generally unused back muscles leads to trouble, particularly when there is a sudden twisting or turning of the back. Proper diet and exercise is one sensible way to help avoid back problems.

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Stress is another factor that may lead to back pain. Tied in with your general physical condition, stress created from work or play can cause muscle spasms that affect the spinal nerve network. Although stress is part of everyone's life, and a certain amount of stress is normal, excessive stress can cause backache. The solution is a balanced life style with time to relax.

*Repetitive Trauma:*

People often think back injuries result only from lifting heavy or awkward objects. Many back injuries, however, do not come from a single lift, but occur from relatively minor strains over time.

Back injuries, as with other cumulative trauma disorders (CTD), may arise from repeated injuries. (But, repetitive, low-grade strains usually do not cause CTDs.) As the worker repeats a particular irritating movement, the minor injuries begin to accumulate and weaken affected muscles or ligaments. Eventually a more serious injury may occur.

Thus, a specific weight lifted may actually have little to do with any single injury. Remember to use mechanical aids when appropriate, along with good lifting techniques whenever you do any lifting.

Certain jobs require long hours of standing or sitting, which also can create back troubles. Get up and stretch frequently if you are required to sit for long periods. If standing, ease the strain on your lower back by changing foot positions often, placing one foot on a rail or ledge. However, keep your weight evenly balanced when standing; don't lean to one side.

## Basics of Good Lifting

Today, most heavy objects are lifted by forklifts, hoists, dollies, and other types of equipment. However, sometimes it is necessary to load or unload by hand moderate to heavy objects. When this is the case, knowing the proper ways to lift can save you a great deal of pain and misery from a sprained back.

1. Size up the load before trying to lift it. Test the weight by lifting at one of the corners. If the load is too heavy or of an awkward shape, the best thing to do is:

- Get help from fellow worker.
- Use a mechanical lifting device.
- If you must lift, make sure you can handle the weight.

2. Bend the knees. This is the single most important rule when lifting moderate to heavy objects. Take a tip from professional weight lifters. They can lift tremendous weights because they lift with their legs, not their backs.

- When lifting a box, position your feet close to it.
- Center yourself over the load.
- Bend your knees and get a good hand hold.
- Lift straight up, smoothly.
- Allow your legs, not your back, to do the work.

3. Do not twist or turn your body once you have made the lift. Keep the load close to your body, and keep it steady. Any sudden twisting or turning could result in severe injury to your back.

4. Make sure you can carry the load where you need to go before attempting to move it. Also, make sure your path is clear of obstacles and that there are no hazards, such as spilled grease or oil in your path. Turn your body by changing foot positions, and have sure footing before setting out.

5. Set the load down properly. Setting the load down is just as important as lifting it. Lower the load slowly by bending your knees, letting your legs do most of the work. Don't let go of the load until it is secure on the floor.





6. Always push, not pull, the object when possible. When moving an object on rollers, for example, pushing puts less strain on the back and is safer, should the object tip.

### Planning Ahead

Planning ahead makes sense. If you know certain loads will have to be carried from storage, place the objects on racks, not on the floor, whenever possible. That way the load will not have to be lifted from the floor. Do not attempt to carry loads that are clearly too heavy for you. Long objects, such as pipes and lumber, may not be heavy, but the weight might not be balanced and such lifting could also result in back sprain. Such objects should be carried by two or more people. If the load can be split up into smaller ones, you're better off doing that, even if loading takes a few extra minutes. Trying to lift it all at once or even in two or three loads may be asking for trouble when the weight is great.

If the situation requires catching falling or tossed objects, your feet should be firmly planted, with your back straight and your knees slightly bent. Your legs should absorb the impact, not your back. If you're working on something low, bend your knees. Keep your back as straight as possible. Bending from the waist can lead to back pain. If you have to use your back, keep your knees bent and your back flat. In both of these situations, frequent rest breaks are necessary to keep from getting back fatigue.

### When a Serious Backache Happens

While with simple care will relieve most back pain, a serious back injury or chronic back pain will require treatment. If the pain does not go away, or is accompanied by weakness or numbness in the lower limbs, you should see your doctor. Pain that radiates from the back to the buttocks and legs is typical of lower back disorders and is called sciatica.

When you go to your doctor, in addition to giving your medical history and having a physical exam, you may need other tests to determine the exact source of the pain. Today, equipment is available to help your physician determine problems.

Treatment may consist of cold or hot packs, traction, physical therapy, or muscle-relaxing drugs. Some treatment requires injections around the spinal nerves and, in some cases, surgery may be necessary.

### Work at Working Safely

By using common sense, you can help keep your back out of trouble. Every time you think about lifting, think defensively about your back and the possibility of a back sprain. Follow good lifting techniques, not only at work, but also at home. It's your back and your life.

With proper exercise, a good diet, and the proper lifting techniques, your chances of being out of work with chronic or severe back pain are greatly reduced. Remember to:

1. Plan ahead when lifting jobs are necessary.
2. Get help to lift objects that are too heavy for you.
3. Never twist or turn suddenly while carrying a heavy load.
4. Make sure your path is clear and be careful of your footing.
5. Lift with the legs, not your back.

6. Be aware of proper posture when sitting, standing, or reclining.
7. Follow a sensible diet and exercise program to help your back.

Following these simple rules reduces your risk of injury to your back. If you have ever had back pain you know how important this is. If you have not suffered from back pain, following these rules will help assure that you never will.



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### Lifting Techniques Review

1. You can avoid back pain by:
  - a. Using proper lifting techniques.
  - b. Sitting with you knees lower than your hips.
  - c. Sleeping on your stomach.
  - d. Being overweight.
2. Which of the following adds stress to the back?
  - a. Sleeping on your side with knees bent.
  - b. Lifting with your back.
  - c. Sitting with knees higher than your hips.
  - d. Proper posture
3. When lifting a load, you want to:
  - a. Turn at the waist.
  - b. Bend your knees.
  - c. Lift at an angle.
  - d. None of the above.
4. Your \_\_\_\_\_ should do the work while lifting.
  - a. Back.
  - b. Arms.
  - c. Shoulders.
  - d. Legs.
5. When dealing with back pain, good therapy methods are:
  - a. Physical therapy.
  - b. Ignoring it until it goes away.
  - c. Cold or hot packs.
  - d. Both a and c.
6. Good posture is important for your back:
  - a. While standing and sitting.
  - b. While sleeping.
  - c. Both a and b.
  - d. Neither a or b
7. Which of the following is a guideline for proper lifting?
  - a. Size up the load before trying to lift it.
  - b. Always pull, not push.
  - c. Set the load down by using your back.
  - d. Don't twist or turn your body.
8. Back injuries often result from:
  - a. A single lift of objects under 25 lbs.
  - b. Using mechanical aids when lifting.
  - c. Relatively minor repeated strains over time.
  - d. All of the above
9. A cause of back pain is:
  - a. A strain or sprain.
  - b. Stress.
  - c. Ruptured or slipped disk.
  - d. All of the above.
10. When back pain doesn't go away and/or you have numbness in your lower limbs; you should:
  - a. Ignore them and continue with normal activities.
  - b. Seek medical attention.
  - c. Self-treat with hot or cold packs.
  - d. None of the above.

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Answers

- |      |       |
|------|-------|
| 1. a | 6. c  |
| 2. b | 7. a  |
| 3. b | 8. c  |
| 4. d | 9. d  |
| 5. d | 10. b |

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