

## BACK INJURY PREVENTION IN CONSTRUCTION

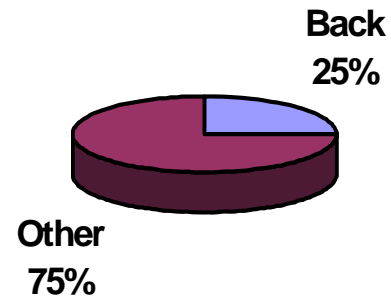
Construction work puts physical stress on the body. Various studies have shown that the construction trades have a higher incidence of back injuries and muscle strains than many other occupations.

### INJURIES

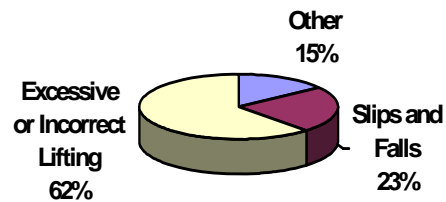
Over the years, back injuries have consistently accounted for about 25% of all the lost workday injuries in the construction trades according to the Bureau of Labor Statistics. Pain in the back and joints is a major factor in forced retirement from the construction trades and in workers seeking less demanding occupations. Such changes are often accompanied by a serious reduction in living standard.

### INJURY CAUSES

In construction, over half of the back injuries are attributed to cumulative trauma while roughly 23% are the result of slips, trips and falls. Workers lifting and carrying equipment or materials can be injured when they use improper techniques, twist repeatedly, stand in awkward positions, or try to handle heavy loads without help. Most back injuries are the result of everyday wear and tear rather than a single traumatic event. The cause is generally not a single lift but damage done over time. Back injuries also result from slips, trips, and falls caused by bad weather or poor housekeeping. Repeated twisting, awkward postures, heavy lifting, and prolonged vibration can all contribute to back pain and injury. Unfortunately, once back pain is experienced, the chances of it recurring increase greatly.



Construction Lost Workday Injuries



Causes of Back Injuries

For more information please call us toll-free at (866) 262-0540 or visit us online at [www.cna.com/riskcontrol](http://www.cna.com/riskcontrol)

The information and suggestions presented in this document have been developed from sources believed to be reliable, but they should not be construed as legal advice. CNA accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. Consult competent legal counsel and/or other appropriate legal advisors before deciding how to proceed in any specific situation. This document is for illustrative purposes only and is not a contract. Only an insurance policy can provide actual terms, coverages, amounts, conditions and exclusions. CNA is a service mark registered with the United States Patent and Trademark Office. Copyright © 2005 Continental Casualty Company. All rights reserved.

### INJURY PREVENTION PROGRAM

To reduce back injuries on the job, an operational process is necessary, covering factors such as housekeeping, workplace postures, proper positioning/staging of materials and stretching and flexing.



### HOUSEKEEPING

Back injuries from slips, trips, and falls can sometimes be prevented through good housekeeping. Proper storage of material and regular clean up of debris is critical. Debris and clutter accumulate quickly in construction. In addition to creating trip/fall hazards, poor housekeeping can prohibit the effective operation of mechanical materials handling equipment. As a result, more material is handled manually, creating greater risk of back and other injuries. Failure to keep work and travel areas clear can impede the handling of materials and increase the risk of injury. Plans for housekeeping should cover storage, garbage disposal, and clear work and travel areas.

Well planned storage is an important part of back injury prevention. When storage locations are not designated, material tends to get dumped anywhere. Sooner or later the material has to be moved elsewhere, often by hand and in a rush. This increases the risk of back injury.

Management should designate storage areas, get as much material off the floor and ground as possible, arrange for bins and disposal, put housekeeping provisions in contracts, and ensure that subcontractors meet storage and clean up requirements.

Clean up should take place:

- At the end of each work day or shift
- When trades finish one job and are ready to move on to another area
- When workers or crews change
- When scrap and clutter start to impede work progress and material flow

### WORKPLACE POSTURE

Maintaining proper posture is the most critical part of good back care. Using your muscular system to control posture minimizes the effects of everyday wear and tear on your spine.

Lower back muscles are short, small muscles designed to keep us upright. They are called "anti-gravity" muscles and are usually very strong since they have to work almost continuously.

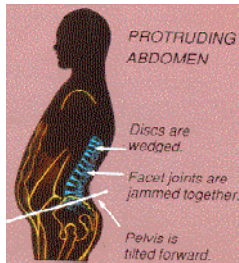
Any position held too long (static loading) is not good for your back. Aches and pains from prolonged working postures are nature's way of warning you to change positions. If these warnings are continuously ignored, you will be vulnerable to low back injury.

For more information please call us toll-free at (866) 262-0540 or visit us online at [www.cna.com/riskcontrol](http://www.cna.com/riskcontrol)

The information and suggestions presented in this document have been developed from sources believed to be reliable, but they should not be construed as legal advice. CNA accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. Consult competent legal counsel and/or other appropriate legal advisors before deciding how to proceed in any specific situation. This document is for illustrative purposes only and is not a contract. Only an insurance policy can provide actual terms, coverages, amounts, conditions and exclusions. CNA is a service mark registered with the United States Patent and Trademark Office. Copyright © 2005 Continental Casualty Company. All rights reserved.

## Unbalanced Pelvis – Weak position vulnerable to injury

When you stand with your stomach protruding, your pelvis is tilted down and your back has an increased curve. In this position, stress is concentrated in your lower back, making it vulnerable to injury. Tightening the lower stomach muscles will straighten the pelvis and correctly align the lower spine.



## Balanced Pelvis – Strongest position for the back

When you stand properly with chin tucked in, shoulders back and down, and pelvis level, there is a slight natural inward curve in your lower back. This is the correct posture and the strongest position for your back. Maintaining a level, balanced pelvis is essential to proper back care and helps prevent potential back problems.

### Correct Posture

Correct posture is not an erect, military pose but an alignment that maintains the naturally occurring curves in your spine. You have an inward curve (lordosis) at two places in your spine—neck and lower back. You have an outward curve (kyphosis) in your upper back. Keeping your spine aligned in this manner reduces everyday stresses on your back and minimizes the effects of the normal aging process on the spine.

## LIFTING TECHNIQUES

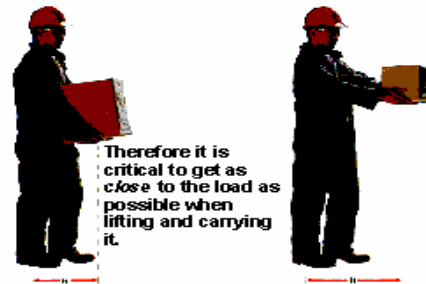
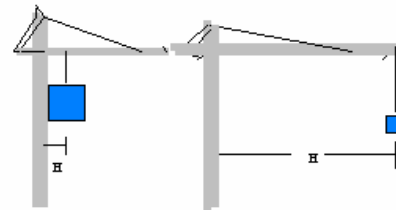
### Lifting Capacity

Lifting a weight that is too heavy, lifting in an awkward position, twisting your body when lifting or doing excessively heavy work are all common causes of low

back problems. The following lifting models illustrate the need for good work technique.

**A Tower crane's lifting capacity is reduced the further the load is away from the mast. Our lifting capacity is also reduced the further a load is away from our spine.**

H = The horizontal distance  
When H is increased, the crane's capacity to lift the load is decreased.



### Lifting Grip

To ensure solid contact when lifting heavy objects, use your entire palm, not just your fingertips.

### Unloading

1. Lower the load, maintaining the natural curve of your back.
2. Push the load into place.
3. When lowering a load onto a deep shelf, put it on the edge of the shelf first. Then push it into place.

### Carrying

1. Keep your lower back in its normal arched position and use your legs to lift.



For more information please call us toll-free at (866) 262-0540 or visit us online at [www.cna.com/riskcontrol](http://www.cna.com/riskcontrol)

The information and suggestions presented in this document have been developed from sources believed to be reliable, but they should not be construed as legal advice. CNA accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. Consult competent legal counsel and/or other appropriate legal advisors before deciding how to proceed in any specific situation. This document is for illustrative purposes only and is not a contract. Only an insurance policy can provide actual terms, coverages, amounts, conditions and exclusions. CNA is a service mark registered with the United States Patent and Trademark Office. Copyright © 2005 Continental Casualty Company. All rights reserved.

2. Maintain a good grip and keep the load close to your body.
3. Maintain a clear line of vision. Pick up your feet to turn. Do not twist.

### Material on Floor

When possible, before lifting from the floor, every effort should be made to stage the material off the floor at approximately waist height. By placing the material at this height it eliminates the poor postures and high forces on the back when lifting from the floor. In addition, it will improve the efficiency of the job task.

### Proper Lifting



1. Plan your Move.
  - Size up the load and make sure your path is clear.
  - Get help as needed.
  - Use a dolly or other materials handling equipment if possible.
2. Use a wide, balanced stance with one foot slightly ahead of the other.
3. Get as close to the load as possible.
4. When lifting, keep your lower back in its normal arched position and use your legs to lift.

5. Pick up your feet and pivot to turn. Don't twist your back.
6. Lower the load smoothly, maintaining the natural curve in your lower back.

### Transferring Weight

1. Pull the object towards you while transferring your weight to the lift side.
2. Lift only to the level required.
3. Shift your weight to the other leg while pushing the object into position. Do not twist.

### Stretching & Flexing

To protect your spine, the muscles supporting your back must be both strong and flexible.

Construction work strengthens some muscles while others that are not being used become shorter and weaker, creating a muscle imbalance. A regular stretching program can help to keep muscles balanced and reduce the risk of lower back injury. A pre-work stretching program is highly recommended as part of a good ergonomic process. Warming up prepares your body for the physical work ahead and helps minimize the risk of injury.

A good stretching program should include both stretching and strengthening exercises. The three essentials are:

- Warm up
- Workout
- Cool down

Remember; check with your doctor before starting any stretching program.

Disregard the old maxim "no pain—no gain." Your muscles can be brought to excellent condition by using a sensible and slow approach. If the stretching and flexing causes pain, don't do it. With a new stretching program, however, temporary muscle ache is normal and may be expected.

For more information please call us toll-free at (866) 262-0540 or visit us online at [www.cna.com/riskcontrol](http://www.cna.com/riskcontrol)

The information and suggestions presented in this document have been developed from sources believed to be reliable, but they should not be construed as legal advice. CNA accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. Consult competent legal counsel and/or other appropriate legal advisors before deciding how to proceed in any specific situation. This document is for illustrative purposes only and is not a contract. Only an insurance policy can provide actual terms, coverages, amounts, conditions and exclusions. CNA is a service mark registered with the United States Patent and Trademark Office. Copyright © 2005 Continental Casualty Company. All rights reserved.

Spending 5 – 10 minutes a day on stretching the back can help make a significant difference in how good your back feels and how well you function during the day.

Remember – practicing the principles of proper back care will help to prevent or minimize back problems.

Practice these four rules for back injury prevention.

1. WARM UP – before you start work.
2. TONE UP – with a good stretching program.
3. SIZE UP – the load. Don't lift more than you can safely handle.
4. WISE UP – by using good lifting techniques and materials handling equipment

For more information please call us toll-free at (866) 262-0540 or visit us online at [www.cna.com/riskcontrol](http://www.cna.com/riskcontrol)

The information and suggestions presented in this document have been developed from sources believed to be reliable, but they should not be construed as legal advice. CNA accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. Consult competent legal counsel and/or other appropriate legal advisors before deciding how to proceed in any specific situation. This document is for illustrative purposes only and is not a contract. Only an insurance policy can provide actual terms, coverages, amounts, conditions and exclusions. CNA is a service mark registered with the United States Patent and Trademark Office. Copyright © 2005 Continental Casualty Company. All rights reserved.