Good Body Mechanics for Caregivers

By Kevin Lockette, PT

The nature of care-giving can place great physical stress on you as the caregiver. Practicing proper body mechanics will decrease the stress and strain and help to safely manage the mobility of the care-receiver. The primary rule is to maintain the normal lumbar curve at *all times*. By following this one simple rule, injury to the lower back can be avoided. This means that you may need to get in different positions or use different transfer techniques, based on your own body type/size and that of the care-receiver. The following lifting principles will help keep the normal lumbar curve.

Principles of Safe Lifting

1. *Maintain a sturdy or broad base of support*.
   A stable position is necessary when assisting the care-receiver with moving. A wide base of support is stable – spread the feet at or greater than shoulder-width apart – but keep in mind that having the feet in a scissor position, with one foot forward and one foot backward, also offers a wide base of support. The physical space available will dictate which position to use when assisting with moving. For an example, when assisting someone with a car transfer, there may not be enough room to spread the feet shoulder-width apart; therefore, the scissor position may be the better option.

2. *Keep the load close*.
   This applies to lifting objects as well as to assisting a care-receiver with a transfer. For example, when lifting a chair, if the chair back is close to the body, it feels much lighter than if the chair is lifted with the arms extended, with the chair away from the body. Most likely, with the latter technique a strain will be felt in the low back. The farther away the object (or care-receiver) being lifted, the greater the lever arm, which makes the care-receiver or object feel heavier. It is much easier to lift and much easier to keep that normal lumbar curve when the load is closer.

3. *Bend with knees, not with the back*.
   The take-home message here is that bending forward with a rounded low back (lumbar spine) loses the normal lumbar curve and causes stress to your low back. The larger, stronger leg muscles are more equipped to do the lifting than the low-back muscles. Remember to tighten up the stomach and bend down with your legs.

4. *Push instead of pull, whenever possible*.
   When pulling a load, it is much harder to keep the normal lumbar curve (neutral spine), so whenever possible, push rather than pull. For example, in assisting a care-receiver up from a low chair, it is better to stand on the side of the care-receiver and push him forward so that his center of gravity is over his feet – so that he can use his legs to transfer to standing – rather than standing in front of him and pulling forward where you are performing more work and potentially placing more strain on your lower back.

BACK SAFETY
&
PROPER LIFTING

Healthcare Workers' Compensation Self-Insurance Fund HWCF

Objectives:
Upon completion of this course students will be able to:

- Identify causes of back pain
- Describe spinal physiology
- Practice back injury prevention
- Formulate personal back injury prevention
- Restate back injury prevention to co-workers

Did you know..

- *Next to the common cold, a low back problem is the most common cause of work absenteeism in the U.S.*
- *Back injuries are the number one type of injury in healthcare*
- *An average back injury costs approximately $37,000.00.*

Why do back injuries occur?

Knowing what causes back injuries can help you prevent them.

Back Problems begin with…

- ***Poor Body Mechanics***
- ***Weak and Fatigued Muscles*** *- rob the back from support*
- ***Extra Weight*** *- 10 lbs. of extra weight in the abdomen equals 100 lbs. of pressure on the spine.*
- ***Improper Footwear***
- ***Poor Health Habits*** *- Calcium, Protein and plenty of sleep*

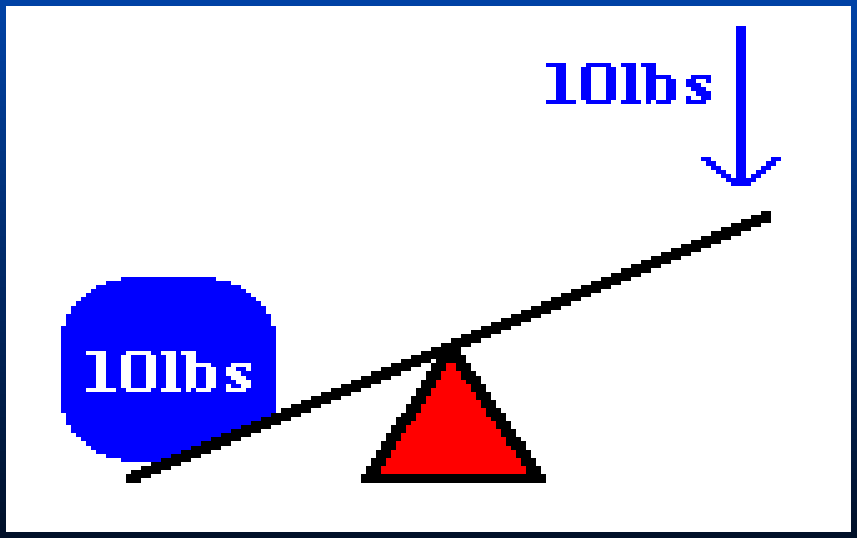
Back Problems begin with…

- ***Stress*** *- Anxiety and depression can cause muscle tension in the back and throw muscles into spasm.*
- ***Lack of Exercise*** *- Causes slower coordination and affects your physical ability to respond quickly in a situation.*
- ***Poor Posture*** *- Over time may make a sudden injury more probable.*
- ***Tobacco Products*** *- Decreases the blood supply to all parts of the body. Chronic coughing can also cause or increase neck and back problems.*

The Forces Involved

The amount of force you place on your back in lifting may surprise you!

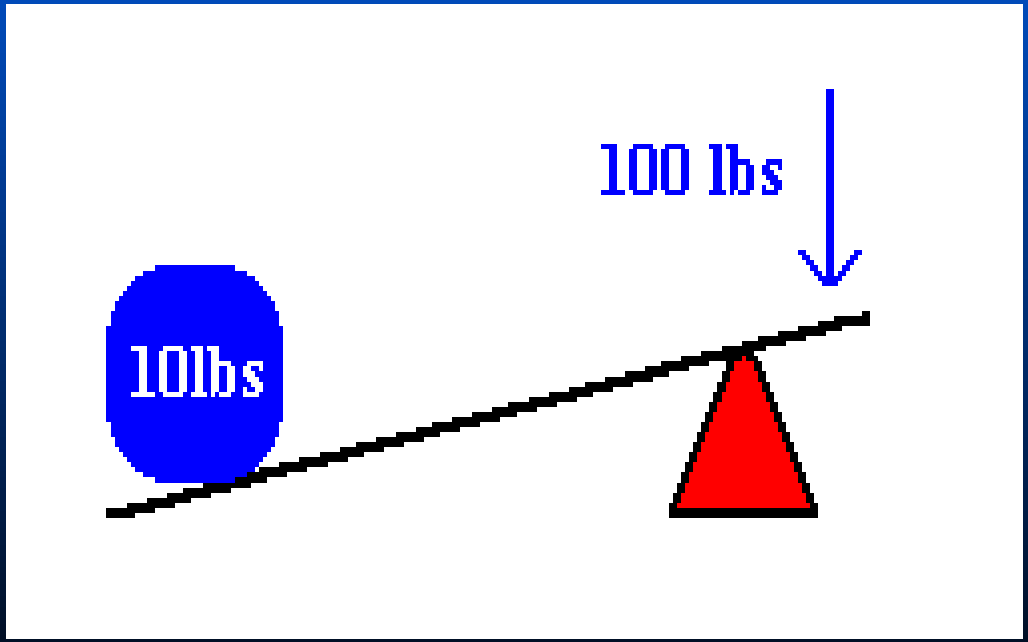
Think of your back as a lever. With the fulcrum in the center, it only takes ten pounds of pressure to lift a ten pound object.



The Forces Involved

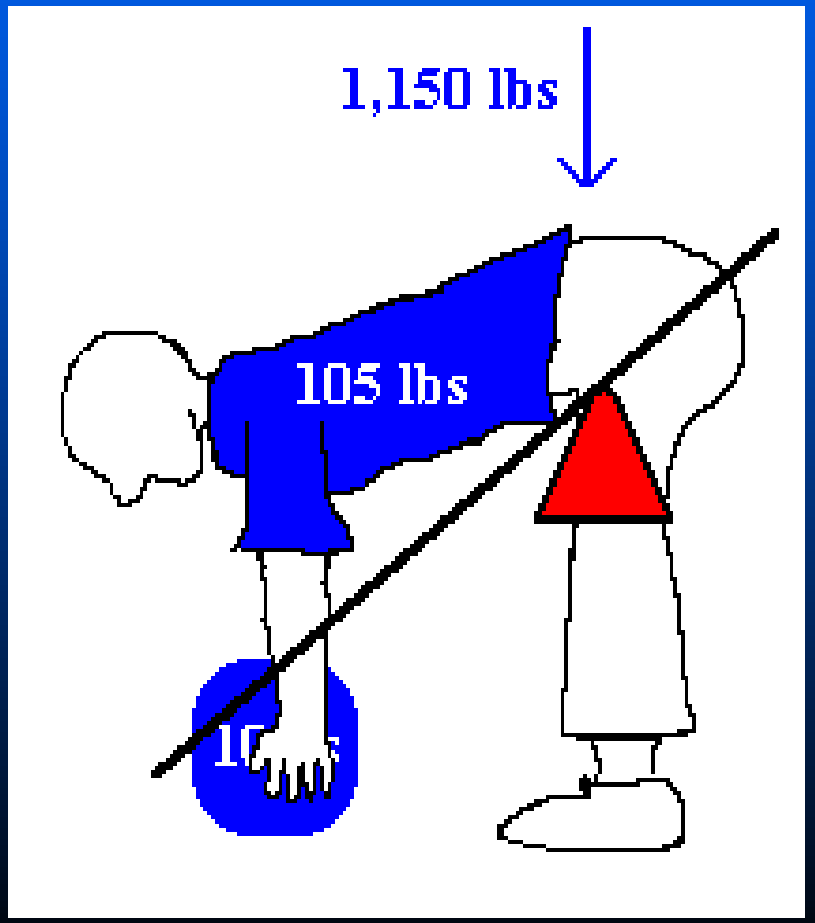
If you shift the fulcrum to one side, it takes much more force to lift the same object. Your waist acts like the fulcrum in a lever system, on a 10:1 ratio.

Lifting a ten pound object puts 100 pounds of pressure on your lower back.



The Forces Involved

When you add in the 105 pounds of the average human upper torso, you see that lifting a ten pound object actually puts 1,150 pounds of pressure on the lower back.



Common Causes of Back Injuries

1 - A single, traumatic event

2 - Cumulative micro-trauma brought on over time

3 - Other factors

Common Causes of Back Injuries

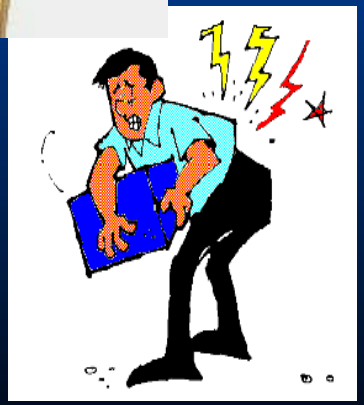
Anytime you find yourself doing one of these things, you should think:

DANGER! ***My back is at risk!***

Try to avoid heavy lifting . . especially repetitive lifting over a long period of time

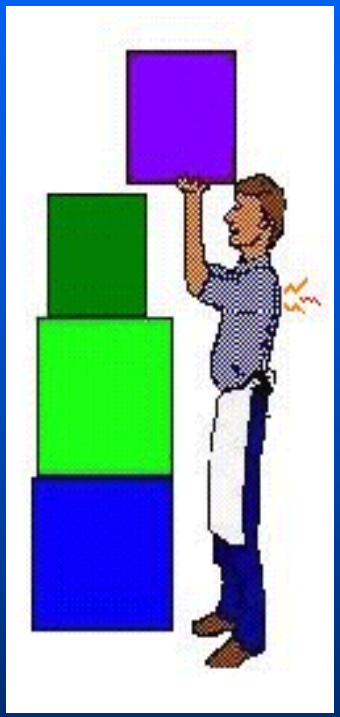
Common Causes of Back Injuries

Twisting at the waist while lifting or holding a heavy load . . . this frequently happens when helping a patient to the restroom



Common Causes of Back Injuries

Reaching and lifting . . . over your head, across a table, or out the back of a truck . . . .



Common Causes of Back Injuries

Lifting or carrying objects with awkward or odd shapes . . .

Ambulating Patients!

Common Causes of Back Injuries

- ***Working in awkward, uncomfortable positions . . .***

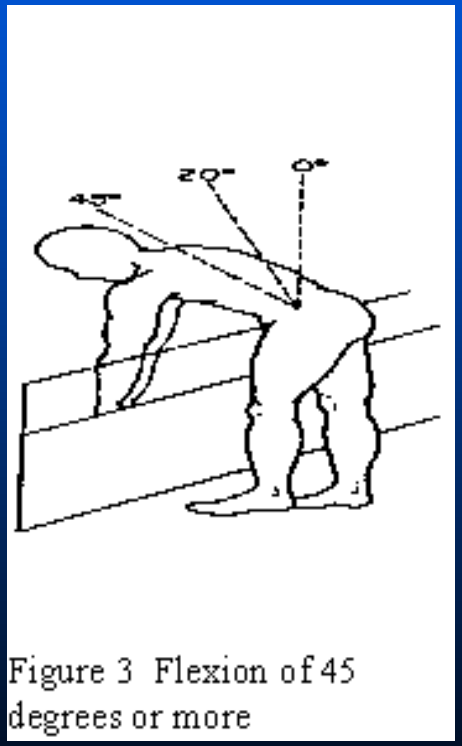


Figure 3 Flexion of 45 degrees or more

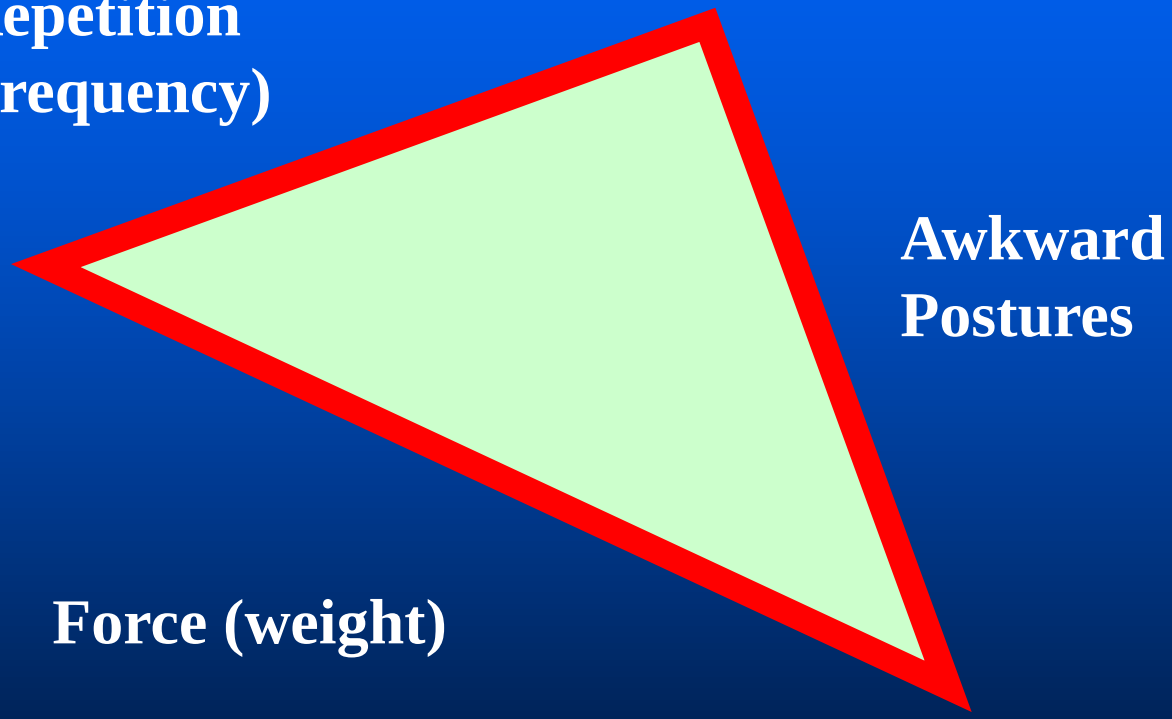
Common Causes of Back Injuries

Sitting or standing too long in one position . . . sitting can be very hard on the lower back . . . .

Common Causes of Back Injuries

It is also possible to injure your back slipping on a wet floor or tripping over an object . . .

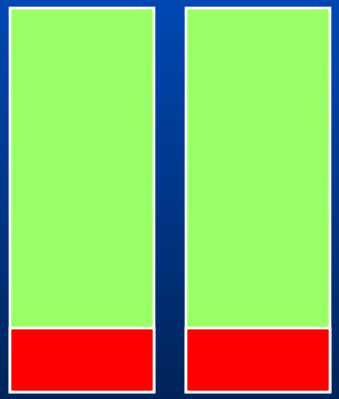
How to Prevent Back Injuries



How to Prevent Back Injuries

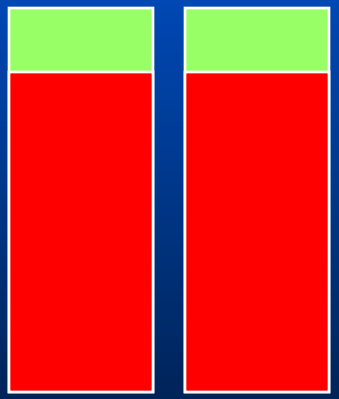
Static Postures:

RESTING



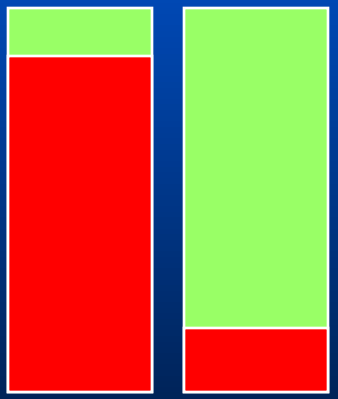
Blood Needed **Blood Flow**

DYMANIC EFFORT



Blood Needed **Blood Flow**

STATIC EFFORT

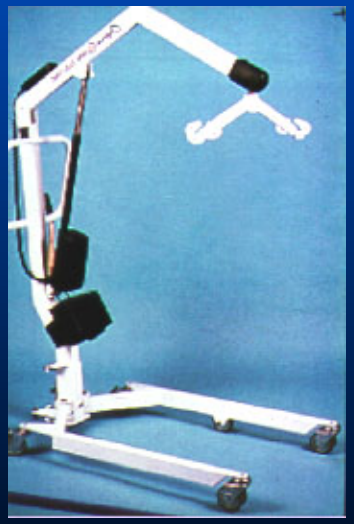


Blood Needed **Blood Flow**

Examples: Stooping, holding the arms out, bending over a patient

How to Prevent Back Injuries

- **Use Gait Belts**
- **Use mechanical or other lifting devices whenever you can.**



How to Prevent Back Injuries

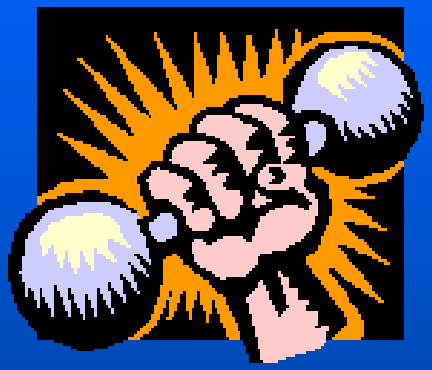
- **Avoid lifting and bending whenever you can.**

Place objects up off the floor.

- **Raise/lower shelves.**
- **Use carts and dollies.**
- **Be aware of the load…lift with your head first!**
- **Test the weight of an object before lifting by picking up a corner.**
- **Get help if it's too heavy for you to lift it alone.**

How to Prevent Back Injuries

The Position of Strength



VS.

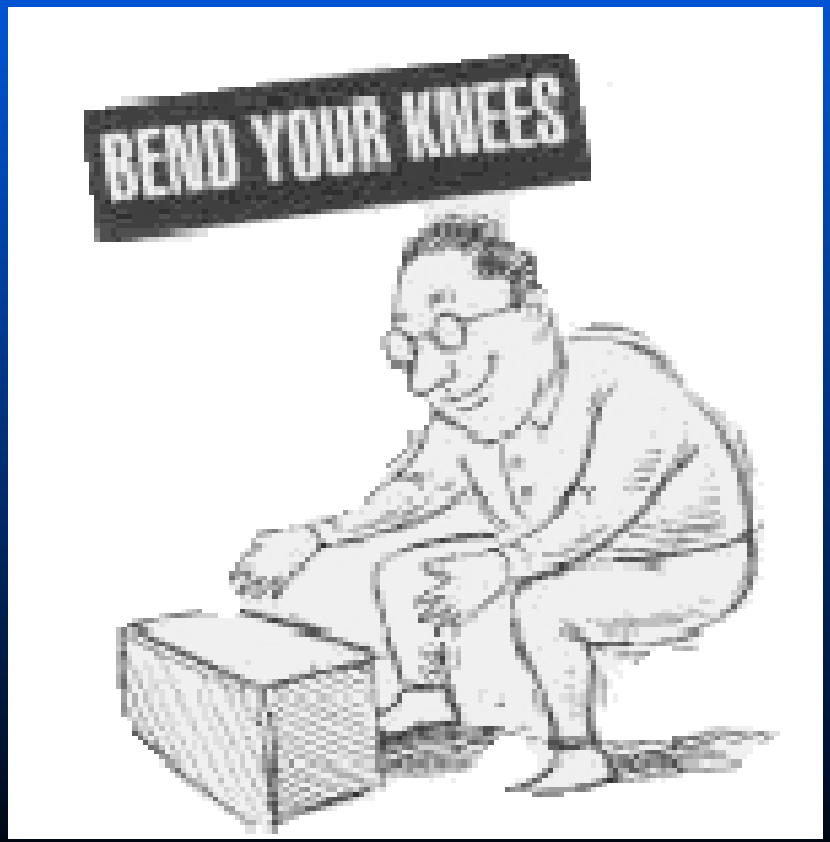
The Position of Weakness

Types of Lifts

- ***Squat***
- ***Golfer's***
- ***Team***

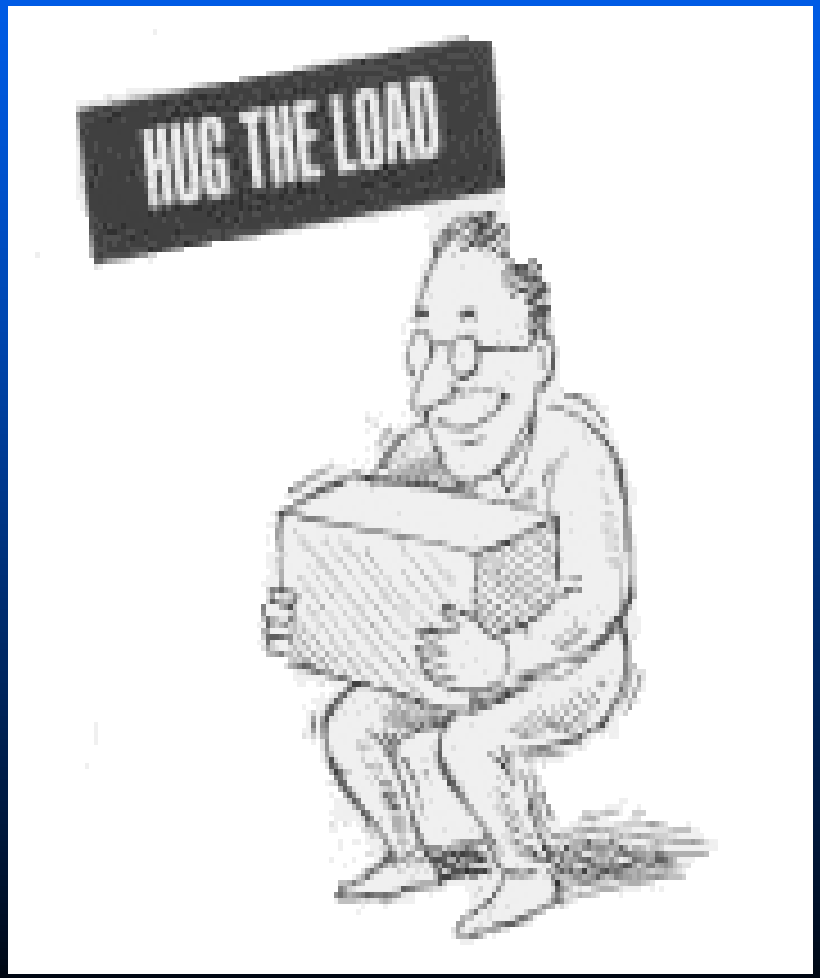
How to Prevent Back Injuries

- ***Use proper lift procedures . . . follow these steps when performing a squat lift . . . .***
- ***Take a balanced stance, feet shoulder-width apart.***
- ***Squat down, bending at the knees and hips, NOT at the waist.***



How to Prevent Back Injuries

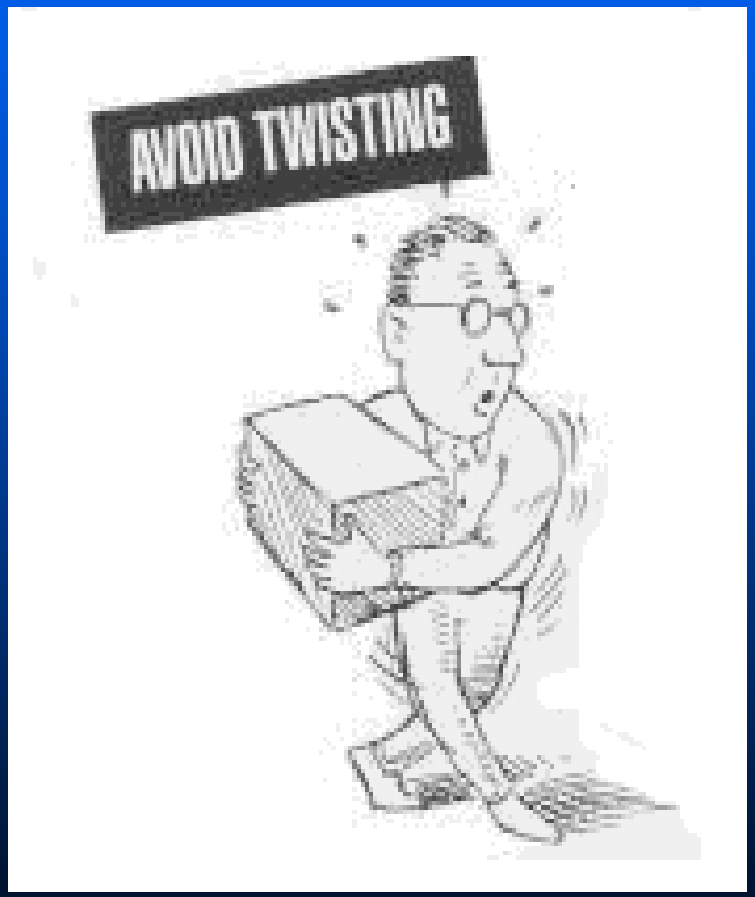
- ***Arch your lower back inward by pulling shoulders back & sticking your chest out. Tighten your stomach muscles!***
- ***Get a secure grip, hug the load.***
- ***Lift gradually using your legs, keep load close to you, keep back and neck straight.***



How to Prevent Back Injuries

- ***Once standing, change directions by pointing your feet and turn your whole body. Avoid twisting at your waist.***

- ***Put the load down the same way you picked it up- by bending at the hips and knees. Keep your lower back arched inward by pulling your shoulders back and sticking your chest out.***



How to Prevent Back Injuries

- ***Use proper lift procedures . . . follow these steps when performing a Golfer's lift . . . .***
  - ***Face the object***
  - ***Brace one hand on your knee or work surface to help offset the weight of the load and help in stabilizing your body***
  - ***Tighten your stomach muscles and bend at the hip, not at the waist, lifting the opposite leg up and out behind you.***
  - ***Pick up the object***
  - ***Pull your leg down and tighten your stomach muscles to power yourself to a standing position.***

How to Prevent Back Injuries

- ***Use proper lift procedures . . . follow these steps when performing a Team lift . . . .***
  - ***Plan ahead and work together to prevent sudden load shifts***
  - ***Lift together, with one person calling directions so everyone can lift in unison, walk in step, and lower the load together***

Remember..

- ***If the load is too heavy or bulky…do one of the following.***
  - ***Ask for help***
  - ***Use mechanical or other type of lifting device***
  - ***If you can, break the load down into smaller parts***