

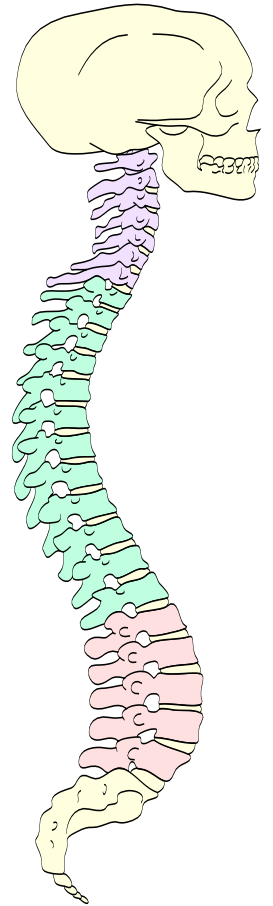


Back Safety and Lifting

Structure of the Back: **Spine**

The spine is the part of the back that supports the trunk and head. It protects the spinal cord as well as giving flexibility to the body.

Vertebrae are small bones that form the spine. They are connected together by discs which act like shock absorbers.



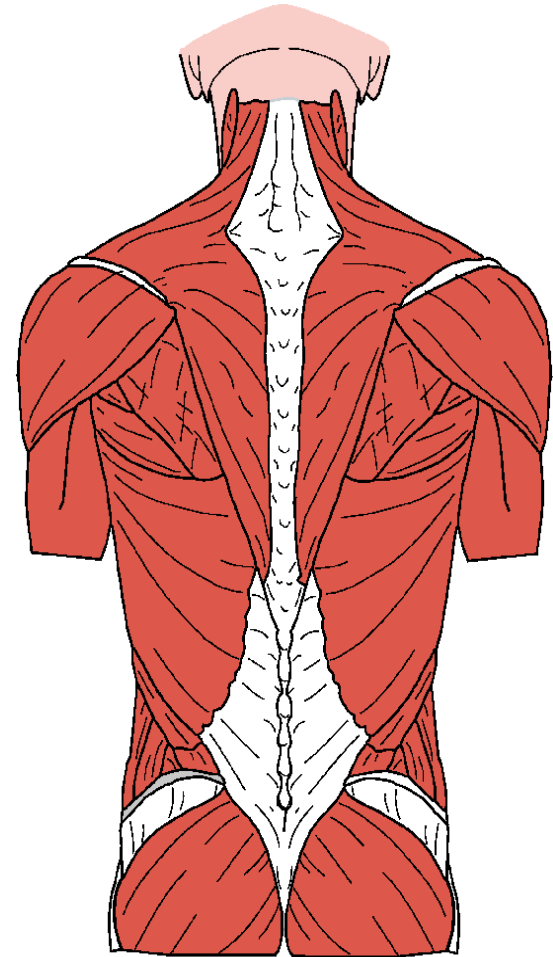
Structure of the Back: **Nervous System**

With the brain, the spinal cord makes up the central nervous system. There are 31 pairs of nerves that extend out of the spinal cord and into the body.



Structure of the Back: **Muscles**

There are approximately 400 muscles that help stabilize the spine and help with proper posture. More than 1,000 tendons connect these muscles to the spine.



Common Causes of Back Injuries

There are several injuries that can occur to the back. Injuries are often the result of years of neglect until the back becomes weak, then any sudden movement or improper lifting technique can cause injury. Back pain can last a few days or even several years.



Common Causes of Back Injuries

Heavy Lifting, especially
repetitive lifting over a
long period of time

Lifting or carrying objects with
awkward or odd shapes

Working in awkward,
uncomfortable positions

Common Causes of Back Injuries

Twisting at the waist while lifting or holding a heavy load.



. . . this frequently happens when using a shovel.

Common Causes of Back Injuries

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



Common Problems in the Back

- ◆ **STRAINS:** A back strain is caused by over stretching, bending & lifting incorrectly, slouching and carry extra body weight. Strains occur when muscles in the back are overused or overstretched.



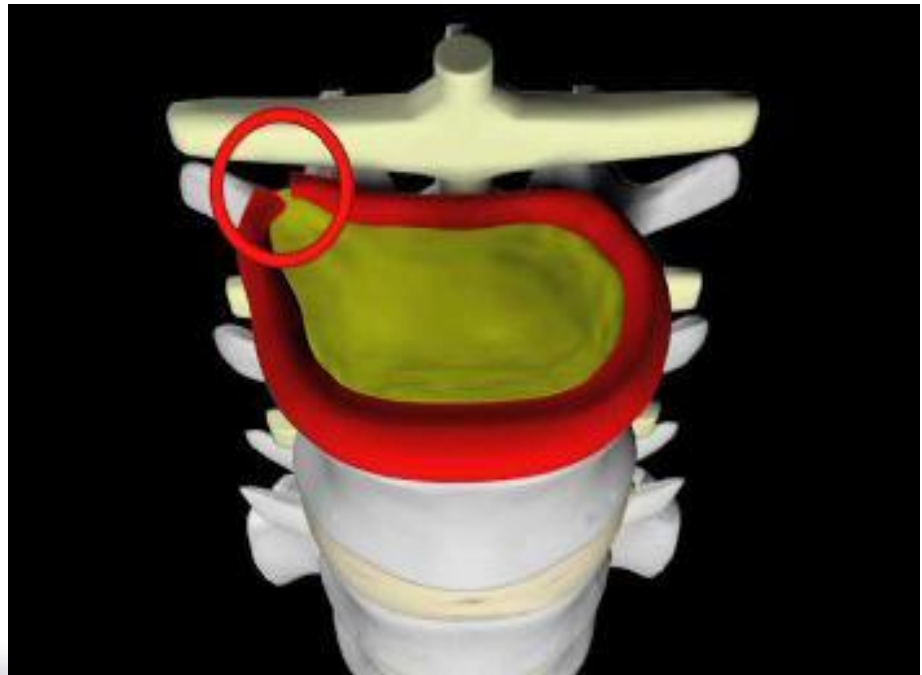
Common Problems in the Back

- ◆ **SPRAINS:** Sudden movements or twisting can cause back sprains. Sprains happen when the muscles don't have time to react quickly enough.



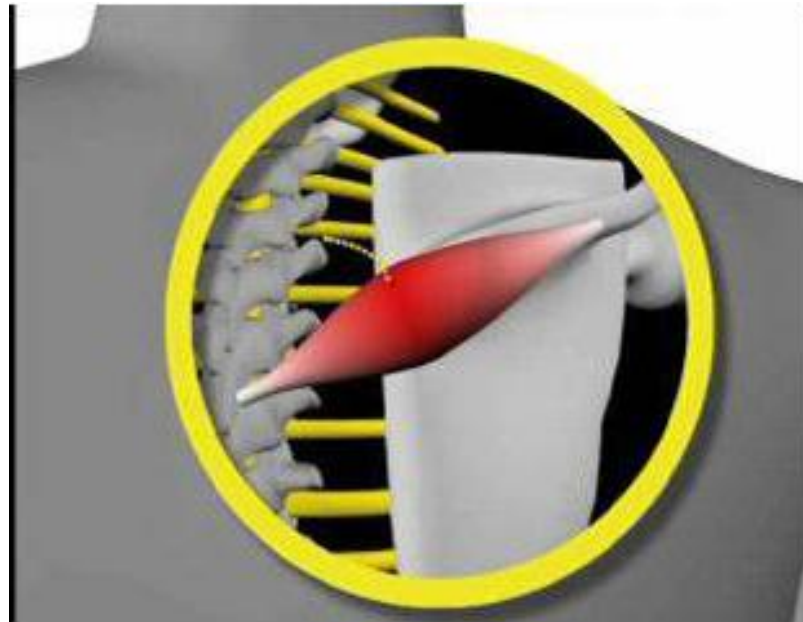
Common Problems in the Back

- ◆ **Ruptured Disc/Pinched Nerves:** Similar to a herniated disc, a ruptured disc is when the jelly like substance actually pours out of a torn disc. The substance puts pressure on the nerves and allows the vertebrae to rub together.



Common Problems in the Back

- ◆ **MUSCLE SPASMS:** When muscles receive too many impulses from the nerves they contract beyond normal capacity and cause muscle spasms.



Proper Lifting Technique

Plan ahead! Before lifting an object, know where it will be placed. The path should be clear of any obstacles. If lifting with another person, agree on the plan before hand.



Proper Lifting Technique

Bend at the knees and keep the back straight. Focus on keeping the spine straight to shift most of the weight off the back and onto the legs. Keep eyes up and look straight ahead. This will help keep the back straight.



Proper Lifting Techniques

Keep feet shoulder width apart. Having a more solid base will help provide more support. If feet are too close together, good balance will be difficult to achieve; too far apart, and movement will be reduced. When turning, move feet. Never twist your back.

Proper Lifting Techniques

Tighten the abdominal muscles. Keeping the abdomen tight will help the back stay in a good lifting position and help keep from straining the back.

Proper Lifting Technique

Lift the object close to the body. This will keep the body stabilized while lifting. When the object is too far from the body, additional stress is placed on the back. Get a firm grip on the object to help keep it balanced.



**Keep the Object
Close to Your
Body**

Proper Lifting Technique

Lift with the legs. The legs are stronger than the back. Use the strong leg muscles in your favor. When lowering the object, bend the knees and keep the back straight.



Using Equipment

- ♦ Carts, dollies, forklifts, hand trucks, wheelbarrows, hoist, chains and ropes are some items which can make lifting and moving items easier.



Preventing Back Injuries

- Avoid lifting and bending whenever you can
- Raise/lower shelves
- Use carts and dollies
- Use cranes, hoists, lift tables, and other lift-assist devices whenever you can
- 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

Posture

Good posture is important for a healthy back. When sitting or standing for long periods of time, posture can effect the back either positively or negatively.



Posture While Sitting

When sitting, keep knees at a 90 degree angle and feet flat on the floor. Slide back in the chair and sit up straight. Putting a pillow behind the lower back will help provide support.



Posture While Standing

Make sure when standing, to not slouch with the back bent. Keep the back straight, shifting weight from leg to leg every few seconds. Hold shoulders slightly back and keep chin, abdomen and buttocks tucked in.



Posture

- Occasionally, get up and walk around if sitting for prolonged periods.
- Standing puts less stress on the back than sitting. Shift positions frequently. Raise one foot on a stool or step when standing stationary for long periods of time.

Things You Can Do

- Minimize problems with your back by exercises that tone the muscles in your back, hips and thighs.
- Before beginning any exercise program, you should check with your doctor

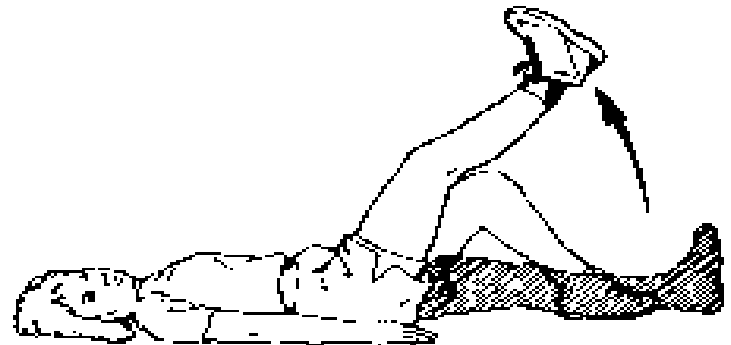
Exercise!

- Exercise regularly, every other day.
- Warm up slowly . . . A brisk walk is a good way to warm up
- Inhale deeply before each repetition of an exercise and exhale when performing each repetition.

Exercises To Help Your Back

Leg raises to strengthen back and hip muscles

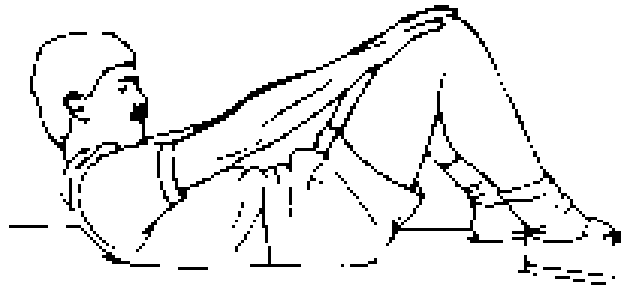
Lie on back, arms at your sides. Lift one leg off floor and hold for count of ten. Do the same with the other leg. Repeat 5 times with each leg. If this is too difficult... keep one knee bent and the foot flat on the floor while raising the other leg.



Exercises To Help Your Back

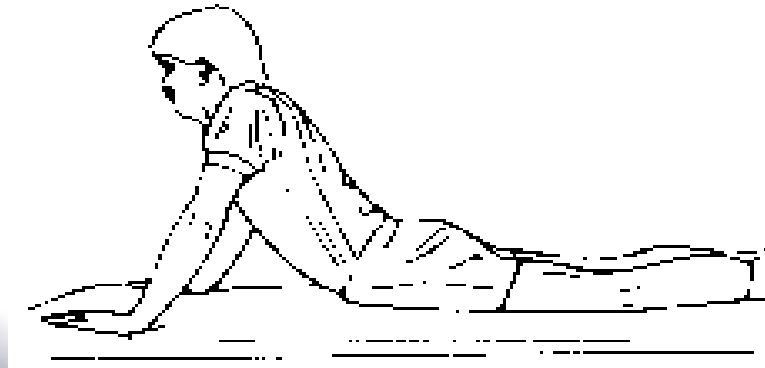
Partial sit-up to strengthen stomach muscles

Lie on back, knees bent and feet flat on floor. Slowly raise head and shoulders off floor and reach both hands toward your knees. Count to 10. Repeat 5 times.



Exercises To Decrease the Strain on Your Back

Lie on stomach, hands under shoulders, elbows bent and push up. Raise top half of body as high as possible. Keep hips and legs on floor. Hold for one or two seconds. Repeat 10 times, several times a day.



Exercises To Decrease the Strain on Your Back

Stand with feet apart.
Place hands in small of
back. Keep knees straight.
Bend backwards at waist
as far as possible and hold
for one or two seconds.

(Repeat as needed.)



Take care of your back...

- And it will take care of you
- Exercise daily
- Avoid Heavy Lifting
- Get Help with heavy or bulky objects
- If you must bend over, do it properly
- Avoid twisting at the waist when carrying objects
- Always watch where you're going



Quiz

Click on the link below to take a 10-Question Quiz.

<https://secure.rutherfordcountyttn.gov/insquiz/backfsafety.aspx>

Once you have linked to the quiz, please enter your Social Security Number at the top. You will need to enter it according to the example shown (ex. 999-99-9999 with hyphens included).

Once finished with the questions, please click the submit button and your training will be recorded.

Note: It takes 90 days for newly hired employees to be loaded to the training database. In this case print out the quiz and submit to your supervisor or safety training point of contact.