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- » Your local MSHA office
- » **Metal/Nonmetal Mine Safety and Health**  
Arlington, Virginia  
202-693-9630
- » **Coal Mine Safety and Health**  
Arlington, Virginia  
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- » **Pittsburgh Safety and Health Technology Center**  
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# Watch Your Back - Prevent Back Injuries



## Health Hazard Information Card HH-17

### DID YOU KNOW?

- ✓ That back injuries account for over twenty percent of all lost-time injuries in the mining industry.
- ✓ That many of these injuries could have been avoided if:
  - » workers were trained in and practiced a few basic and simple rules for back conservation,
  - » lifting aids were provided, and/or
  - » equipment and jobs were redesigned to eliminate or reduce the number of lifts required.

**The back** is a complex system consisting of five distinct spinal regions. The lumbar spine, which refers to the five vertebrae and six discs in the curved portion of the lower back, is the part most often injured. Lifting, bending, and twisting motions can cause severe injury and pain. Because the lumbar region is the area of the back at greatest risk during normal work, it should be the main focus of injury prevention through proper work practices and body conditioning.

**REMEMBER:** “The human body is not a crane.” Your back is not designed to “boom up,” “boom down,” or “boom to the side” with ease.

## LUMBAR CONSERVATION

Some ways to keep your back from being injured:

- ✓ **Minimize** the need to move materials manually.
- ✓ **Eliminate** unnecessary lifting; **re-design** and **re-plan** jobs.
- ✓ **Use** mechanical lifting aids, if available.

Stress in the lumbar region multiplies quickly as the center of gravity moves out from the spine. The squat-come-down-lift-with-the-legs maneuver does not come naturally to most people, and it is more tiring than the traditional bent-back lifting technique. Yet, it’s a maneuver well worth learning in order to prevent back injuries.

When lifting and carrying a load:

- ✓ **Avoid** lifting a load *from below* your knee level or *from above* your shoulder level.
- ✓ **Avoid** any lift where the load’s center of gravity is more than a few inches out from your midsection.
- ✓ **Bend** and **straighten** your legs while lifting or transferring loads.
- ✓ **Turn** your entire body with your feet.
- ✓ **Do not twist** your torso while you are lifting or carrying a load.
- ✓ **Return** your back to a vertical position.
- ✓ **Carry** the load close to your body.

Other ways to prevent back injuries during highly physical activities such as mucking or shoveling:

- ✓ **Make** certain that the material is loose.
- ✓ **Use** a long-handled shovel if space permits.
- ✓ **Avoid** overloading your shovel.
- ✓ **Bend** your knees and hips.
- ✓ **Keep** your back in reasonably straight alignment.

## LUMBAR MAINTENANCE

Here are some good practices for maintaining your back, as well as the rest of your body, in peak condition:

- ✓ **Exercise** your back regularly; back conditioning starts with body conditioning. **Consult** your doctor before starting any exercise program.
- ✓ **Stretch** before exercising.
- ✓ **Concentrate** on exercises that strengthen each side equally; for example, low-impact aerobics, high-speed walking, rowing, and swimming.
- ✓ **Avoid** or **reduce** activities with many sudden changes of direction or unnatural twisting, such as tennis or golf.
- ✓ **Use** machines that allow you to simulate rowing, stair-climbing, or cross-country skiing.
- ✓ **Strengthen** your legs and **allow** them to do more of the heavy lifting.
- ✓ **Eliminate** or at least **diminish** your use of tobacco; smoking reduces the supply of oxygen and nutrients to the discs that cushion the vertebrae.