



# Back Injury Prevention Principles

Eight out of 10 Americans will eventually suffer a back injury or have some type of back pain. Back injuries are often difficult to treat and can result in lengthy and costly rehabilitation. It is important to stay healthy and in good shape so that we can do our jobs better and more safely.

The specific cause of back pain is not always known. Most authorities believe that changes in the spine as people age cause lower back pain. Lifting heavy loads on and off the job are thought to merely trigger the occurrence of symptoms. When activities involve strenuous work, such as frequent handling of materials, frequent bending or twisting, or handling of heavy loads, the probability of injury increases.

To minimize the chance of back injury and to help eliminate unnecessary hazards, the following basic principles are useful to guide the design of everyday lifting tasks:

- Use proper lifting techniques when manually lifting material. Spread your feet slightly apart, bend your knees, keep your back arched and the load close. Grip the object with a firm grasp. Use your strong leg muscles instead of the weaker and smaller back muscles to bring you and the load to a standing position. Make the lift under control. Do not make quick jerky moves.
- Move material once. Plan jobs so you avoid lifting and lowering the same material several times.
- Use the force of gravity when possible. Convert lifting/lowering tasks into pushing/pulling.
- Avoid extreme body joint movement.
- Avoid static muscle loading (exertion without movement).
- Give support to the body.
- Do not complete tasks that require extreme twisting or reaching behind you.
- Plan lifts so that they take place between waist and shoulder height.
- Use tools or personal protective equipment to reduce vibration.

Following these principles can help to reduce job related back injuries and back pain. Using good lifting and working techniques can also improve production and reduce job related stress.

Good ergonomic job design, including proper workplace layout, appropriate use of mechanical lifting aids, appropriate seat design, optimum work levels, sit/stand workstations, and matching object weights to human capabilities can go far toward reducing low back injuries. Ergonomic job design can reduce work related back injuries by up to 33% according to some sources.

When manual lifts are unavoidable, you must use proper lifting techniques. However, good equipment design and pre-job planning should be the first approach attempted in the prevention of back injuries. Eliminating manual lifts of material also eliminates the possibility of injuring your back while doing so.

