

# Strain Prevention Toolbox Talk



Back injuries are a painful, sometimes debilitating, problem in many industries. Back strains can often be avoided by reducing the size or weight of materials handled by employees, by using mechanical aids such as hoists and cranes, and by making certain that employees are well trained in lifting techniques. But the key to back care lies with the individual worker. Everyone should be a back care "expert" and be able to answer the following questions:

**Q: What's the most important lifting rule to remember?**

A: Keep the load close! There are many other lifting rules, like "bend your knees and lift with your legs," but you can't do this in every situation. Research has also shown that leg muscles become fatigued when frequent lifts are required, so other techniques must be used as well

**Q: If you don't hold a load close to your body, how much heavier is the "experienced" weight than the actual weight?**

A: Ten times as heavy! The back operates as a simple lever, with the fulcrum in the lower back. Back muscles serve as the power arm; the load being lifted is the weight arm, and a 10:1 lever ratio exists in the lower back. The further away you hold the load, the "heavier" it is.

**Q: Why never twist with a load?**

A: Lower back vertebrae, disks, and joints are under the most vertical pressure when lifting a load. Twisting with a load creates a "shearing" effect on these tissues. The more "mileage" you have on your back, the less forgiving it will be under this pressure.

**Q: What time of the day are back strains most likely to happen?**

A: In the morning, or at the beginning of a work shift, when muscles aren't "warmed up." Trends also show an increase following the lunch hour, perhaps because blood circulation is in the stomach instead of the large muscles, and because people may be sleepy and inattentive then.

**Q: How does keeping flexible help prevent back and muscle strains?**

A: Muscles tend to shorten when not used to their full capacity. Flexible muscles are less likely to be strained and injured than "tight" muscles when sudden or heavy power is required. Pre-work stretching programs have been very successful in preventing back and muscle strains.

### Strain Prevention Quiz

1. Back strains can often be avoided by doing all of the following EXCEPT:
  - a. Reducing the size or weight of materials being handled
  - b. Using mechanical aids such as hoists or cranes
  - c. Training employees in proper lifting techniques
  - d. Taking Advil every morning
  - e. Engaging in pre-work stretching exercises
2. What is the most important lifting rule to remember?
  - a. Bend your knees
  - b. Lift with your legs
  - c. Keep the load close
  - d. Wear a back brace
  - e. None of the above
3. If you don't hold a load close to your body, how much heavier is the experienced weight than the actual weight?
  - a. 2 times as heavy
  - b. 3 times as heavy
  - c. 4 times as heavy
  - d. 5 times as heavy
  - e. 10 times as heavy
4. Trends indicate that back strains are most likely to occur in the mornings or at the beginning of a work shift.
  - a. True
  - b. False
5. Muscles tend to loosen when not used to their full capacity. Therefore, tight muscles are less likely to be strained and injured than "loose" muscles when sudden or heavy power is required.
  - a. True
  - b. False

### Answer Key

1. D; 2. C; 3. E; 4. A; 5. B