



# TDCJ Risk Management's Training Circular

## August 2018

### Proper Lifting and Injury Prevention

The back supports the weight of the entire upper body. When an object is lifted or heavy loads are moved, the back supports even more weight. If the body's natural limits are exceeded, the back cannot support both the body and the extra load. The excess, unsupported pressure is transferred to the lower back, where injury is imminent. By using arm and leg muscles and exercising proper lifting techniques, loads can be moved safely while protecting the back from injury.

Remember the proper lifting techniques should be used to avoid injury when lifting heavy objects. Use proper lifting techniques and aides to safely lift an object and request assistance if needed.



#### Proper Lifting

#### Check the weight of the object before attempting to lift it.

- Test every load before lifting by pushing the object lightly with hands or feet to see how easily it moves. This will indicate about how heavy it is. A small size does not always mean a light load.

Clear a path to your destination before lifting and carrying the object.

#### Verify load is packed correctly.

- Make sure the weight is balanced and packed so it will not move around. Loose pieces inside a box can cause accidents if the box becomes unbalanced.

#### Verify grip.

- Be sure a tight grip is on the object before lifting. Handles applied to the object may help lift it. Use slow and smooth movements. Hurried, jerky movements can strain your back muscles.

#### Verify load is within easy reach.

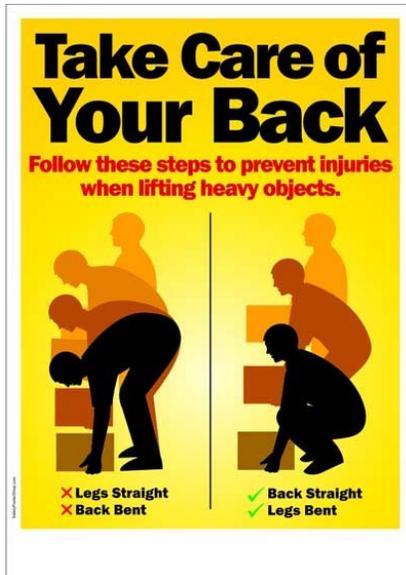
- Injury can result if your back is arched while lifting a load over the head. Use a ladder to reach high areas. When climbing with a load, maintain "three-point" contact.

This means two hands and a foot or both feet and a hand must be in contact with the ladder or stairs at all times.

#### The Diagonal Lift

- Feet are apart, with one foot slightly ahead of the other. This gives a wide base of support, provides more stability, energy and power.
- Bend knees and squat down; keep back arched and head up while lifting. This position allows more power to come from the larger muscles of the legs and keeps the weight off the back.
- When lifting and carrying, keep objects close to the body.





### Common Lifting Mistakes

- When lifting, you should not bend forward at the waist with your legs straight. When you bend forward at the waist with your legs straight, it requires the use of the muscles in your lower back, and the weight of the object being lifted will include the weight of your upper body.
- Using fast jerky motions puts stress on your lower back muscles and may cause sprains and strains.
- Bending and twisting when lifting forces the spine into a position of weakness and removes the natural "S" curve of strength from the lifting process.
- The back is like a lever system. The distance between the load and the fulcrum (point of support) can be considered the distance between the body and the object being lifted.
- Most do not effectively plan the lift. You need to check the path of travel to be sure it is clear. Size up the load and if it is too heavy or bulky for you to lift alone, ask for help.

### Prevention

You may be able to avoid back pain or prevent its recurrence by improving your physical condition and learning and practicing proper body mechanics.

To keep your back healthy and strong:

- **Exercise.** Regular low-impact aerobic activities — those that do not strain or jolt your back — can increase strength and endurance in your back and allow your muscles to function better. Walking and swimming are good choices. Talk with your doctor about which activities are best for you.
- **Build muscle strength and flexibility.** Abdominal and back muscle exercises (core-strengthening exercises) help condition these muscles so that they work together like a natural corset for your back. Flexibility in your hips and upper legs aligns your pelvic bones to improve how your back feels. Your doctor or physical therapist can tell which exercises are right for you.
- **Maintain a healthy weight.** Being overweight strains back muscles. If you're overweight, trimming down can prevent back pain.

### References

- Texas Department of Criminal Justice Environmental Advisory EA-05.04 Back Injury Prevention
- Mayo clinic: Prevention. (2015). Retrieved from <http://www.mayoclinic.org/diseases-conditions/back-pain/basics>

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The Training Circular, a publication of the Texas Department of Criminal Justice Risk Management Department, is published monthly in an effort to promote and enhance risk management awareness on issues relating to TDCJ employees. Comments, suggestions and safety related items are welcome. Send suggestions to:

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