

BACK BASICS: AN OUNCE OF PREVENTION

Back injuries

Back strains are one of the nation's most common types of workplace safety and health injuries. Approximately 80% of the population will have a back injury during their lifetime.

The City of Stamford employees average 25 back injuries every year and average \$200,000 on claims, not including lost time from work or the complications of an acute injury becoming a chronic lifetime of pain.

Back injuries can be very painful and have the potential to significantly impact daily activities. Seldom the result of a single event, they are usually caused from years of not maintaining a healthy back. However, there are a number of ways to lessen your chance of a back injury: using proper lifting and material handling techniques, exercising regularly, eating properly and maintaining good posture.

Structure & Function

The back (spinal column) protects the spinal cord, serves as the main structure of the body, provides a lever for lifting, and supports the internal organs. The back is composed of vertebrae, discs, nerves, muscles, ligaments, and tendons. The vertebrae, when lined up in their natural position, form three curves. This natural position optimizes muscle use by ensuring the back, leg, and abdominal muscles work together.

The human back operates at approximately 7:1 ratio. This means with the average human torso weighing about 100 pounds, you begin a lift with a 700-pound load placed on your back as you are bending down and bending back up if not keeping the back in a vertical position. When adding the weight of lifting a 50-pound object ($7 \times 50 = 350$ lb.), you are in fact lifting approximately 1,050 ($700 + 350$) pounds, or more than half a ton! The back, when lifting, can be viewed as a lever with the lower back incurring the greatest stress. The lower back is the area most susceptible to injury as a result of this stress.

Back Pain & Disorders

The majority of back pain is related to muscle and ligament strains. Typically, these types of injuries heal quickly with no lasting effect on back health. Discs, however, naturally degenerate over time, beginning relatively early in life – usually somewhat after age 30. This degeneration can be accelerated by poor back health, such as improper lifting, carrying, pushing, and pulling of objects involved in many day-to-day activities.

Lifting Guidelines

Before lifting an object, it is important to consider its weight, size, contents, and shape. Other factors to consider are the frequency of lift, the vertical distance of the lift, and the horizontal distance between the object and the person performing the lift. When moving heavy and

awkward items, it may be necessary to ask for help or use a hand or pallet truck, repackage a large container into smaller containers, or order smaller packages. Regardless of the weight of the object, always use proper lifting techniques.

Getting Assistance

City of Stamford Safety Officer Nancy Barton and Matthew Stuhlman provide consultation and training in office ergonomics, material handling, and lifting techniques. Additional information is readily assessable in the [Risk Management Policy & Procedure Manual](#).

Maintaining A Healthy Back

Back health involves more than just using proper lifting techniques. Other contributing factors include:

- *Good posture*, whether at home or work, reduces back, neck, and shoulder strain.
- *Learning to relax* can reduce stress and muscular tension that builds in the back during the day.
- *A well balanced diet* will keep your weight under control. Carrying extra weight can alter the back's natural curves and place unnecessary stress on the lower back.
- *Smoking* negatively impacts your back by reducing the amount of oxygen and nutrients available to spinal discs needed for good health and healing.
- *Regular exercise* appears to be more effective at preventing back injuries than lifting training programs, smoking cessation, and losing weight. Exercising strengthens and improves the flexibility of the back and abdominal muscles. Exercising also lessens the severity of a back injury and promotes the healing process.
- *Using proper lifting techniques* lowers stress placed on the back. No single lifting technique works in all situations. Sometimes you have to make the best of a difficult situation. This mean always lifting properly when possible, whether at home or work.

Basic Lifting & Lowering Technique

- Plan the lift, including the route, obstacles, doors, and stairs.
- Estimate the weight of the object by tilting the corner.
- Spread feet apart about shoulder width.
- Bend your knees.
- Securely grip the load.
- Keep the load close to the body.
- Tighten stomach muscles.
- Lift slowly and evenly, avoid rapid, jerky motions and simultaneous lifting and twisting.

- When changing directions, step in the direction of intended travel, turning the entire body at the hips. Don't twist at the waist.

Other Back Stressors

Prolonged sitting and standing can also lead to back strain. If sitting for long periods of time, it is important to use good posture, frequently change your position, and take regular walk breaks. When standing, use good posture, wear soft-soled shoes, use foot supports and do not lock your legs in position.

Slips, trips and falls are a leading cause of back injuries. Proper housekeeping of spills and debris, and keeping aisle-ways clear of materials and equipment can significantly reduce the potential for back injuries caused by falls.

If you have any questions or are interested in training for your department in overexertion with the back and shoulders please contact;

Nancy Barton 203-977-5129 NBarton@stamfordct.gov

Matt Stuhlman 203-977-4908 MStuhlman@stamfordct.gov