

Before you begin

List the tasks at your facility where manual handling, lifting, or moving product, boxes or packages occur. Use these activities for reference or examples during the Safety Talk.

Review previous back injuries or near misses to identify high risk jobs or work processes. These are good candidates for modifications to prevent future back injuries.



Introduction

Back injuries are a common type of workplace injury. Many workers will have back pain at some time in their lives and most will recover without requiring treatment. A small percentage will require extensive medical treatment and may suffer permanently disabling back pain.

Definitions

Back pain can be either acute or chronic. Acute pain suddenly occurs and usually clears up in a short amount of time. Chronic pain is long term and may require long term medical treatment.

Discussion

Back Anatomy

The spine is composed of 24 bones called vertebrae which serve as “building blocks” for the spine. The three main sections of the spine are: cervical (neck), thoracic (middle back), lumbar (low back). Soft discs are located between each vertebrae and act as shock absorbers. The vertebrae and discs give the spine its flexibility – the spine can bend forward, backward, side-to-side, and can also twist. Spinal muscles move and stabilize the spine.

Back Injuries

Certain postures, such as bending or twisting the spine, increase the pressure within the discs.

Repeated trauma to the discs can lead to degenerative damages. Disc damage is a common type of back injury. The damaged disc may bulge or even rupture (herniate). The bulging section of the disc can press against spinal nerves and cause pain that radiates along the path of the nerve. Another type of back injury is due to spinal muscles that have been stretched too far or too fast, such as from forceful or sudden motions. Ligaments, which connect bones together, can also be torn if they are overstretched.

The low back region is especially vulnerable to injury. Many physical tasks require bending or twisting at the waist which is stressful to the low back. When doing these tasks repeatedly, the damage can accumulate until it causes chronic back pain.

Risk Factors

Some of the job-related risk factors for back injuries include:

- **Force** – The amount of force that you exert with your back to perform tasks such as lifting, carrying, pushing, or pulling.
- **Repetition** – The more often that you repeat an action or motion, the greater the risk.
- **Awkward Postures** – Postures which are awkward or uncomfortable can increase the risk of injury. Examples of awkward posture are bending, twisting, or overreaching. Poor sitting postures, especially those that are held for long periods, can also increase risk.
- **Speed of movement** – Moving very quickly, such as jerking an object when moving it, can injure the back.

Slips, trips, and falls can also increase risk of a back injury. Obviously, a fall can severely injure the back, but even a slip or trip without a fall can cause back pain when the person catches themselves to stop the fall. The risk is greater if this occurs when carrying a heavy load.

Suggestions to Prevent Back Injuries

When storing items on shelves, place small, lighter items on the top. Place heavier items on the middle shelves, with lighter, taller items on the bottom shelves. This helps reduce risky postures such as deep bending or overreaching when shelving, especially when handling heavy items.

Reduce the risk from repetitive lifting by taking breaks or alternating between lifting and non-lifting tasks.

While lifting, keep items at waist level and as close to the body as possible.

Keep floors and walkways in good condition. Fill in or repair any holes or cracks. Clear away clutter from aisles, ramps and stairs, and other walking surfaces and remove any obstacles that could trip a worker carrying a heavy load.

Types of Hazard Controls

Use *engineering controls* to replace the manual part of physically demanding jobs. Engineering controls are physical changes that reduce or remove the risk factors at the source. Because engineering controls protect all workers, they are the preferred control method. Examples of engineering controls include:

- Hoist.
- Scissor lift cart.
- Drum tilter.
- Cart tugger.
- Forklift.
- Powered pallet jack.

Another method of reducing the risk of injury is through *administrative controls*. Administrative controls, such as job rotation or training, protect a worker from the risk of back injury by reducing that worker's exposure to the hazards. But because they don't physically remove the hazard, administrative controls are secondary to engineering controls.

Conclusion

Back injuries are common and costly, but careful planning can greatly reduce the risk of a back injury. Engineering controls such as mechanical lifting devices can pay for themselves by reducing the risk or severity of a back injury. Other changes, such as housekeeping and proper storage, are low cost and easy to implement

Group activity

Review tasks at your facility and ask the group for suggestions to reduce the risk of back injuries. Classify suggestions into those that are engineering controls and those that are administrative controls. Which controls would be the simplest and fastest to implement? Which would require more planning and greater resources?

Resources

[OSHA Ergonomics Page](#)

[BWC/OSU One-Handed Lifting Guidelines](#)

[BWC/OSU Lifting Guidelines](#)

[NIOSH Lifting Equation](#)