

Safety Spotlight

Back Injury Prevention Tips

Back Injury Risk Factors

The risk factors associated with back injury can come from a combination of work-related activities, non-work activities, and the physical and psychological characteristics of the individual.² To reduce the work-related risks of back injury, consider the following factors when designing, planning, and organizing work tasks:

- Limit the weight of the object to a maximum of 51 pounds – whenever possible³
- Reduce the reaching distance
- Keep the heaviest side of the load next to the body
- Adopt a stable position with feet apart and one leg slightly forward to maintain balance
- Provide a handle for a secure grip or hug the load as close to the body as possible, balance the weight being lifted on both arms
- Start the lift as close to waist height as possible
- End the lift as close to waist height as possible
- Maintain posture with slight bending of the back, hips, and knees; lift the load as the legs begin to straighten
- Reduce twisting of torso – if turning is required, move the feet as the object is carried
- Reduce the number of times a lift must be repeated⁴

A visual way to remember some of these tips is to think of a baseball batter and keep the lift within the "strike zone" of the employee.

Other factors that may increase the potential for back injury are listed below.³ Reducing these stressors may also reduce the risk of back injury:

- Whole body vibration
- Static postures
- Prolonged sitting
- Direct trauma to the back

¹ Bureau of Labor Statistics. "Musculoskeletal Disorders by Part of Body Affected, New York." 2016.

² Institute of Medicine and National Research Council. 2001. *Musculoskeletal Disorders and the Workplace: Low Back and Upper Extremities*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/10032>.

³ United States, Congress, National Institute for Occupational Safety and Health, et al. "Applications Manual for the Revised NIOSH Lifting Equation." *Applications Manual for the Revised NIOSH Lifting Equation*, Jan. 1994. www.cdc.gov/niosh/docs/94-110/pdfs/94-110.pdf.

⁴ *Manual Handling - Manual Handling Operations Regulations 1992. 4th ed, Health and Safety Executive, 2016, www.hse.gov.uk/pubns/priced/l123.pdf.*



“ During 2016, there were 0.72 injuries for every 100 local government workers due to musculoskeletal disorders and the median days away from work was 14 days per injury. ”



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Lifting and Back Injury Risk Reduction Tips

Employees and employers have the opportunity to reduce the risk of back injury before, during, and at the end of a lifting task. Consider the following:

Before the Lift

- Determine if the object can be lifted with a mechanical assist
- Evaluate the weight and determine if assistance from a co-worker is needed
- Move other items out of the way to get as close to the item as possible
- Organize work areas so items are not stored on the floor
- Organize storage areas so items are not stored above shoulder level
- Clear pathways so adequate space is available to set the item down easily
- Only carry one item at a time for better visibility
- Store items in containers with good handles or find a spot to grasp them securely

During the Lift

- Secure a stance and put one foot beside the item, if possible
- Beginning the lift:
 - » Keep the item close to the body
 - » Maintain balanced posture allowing for a slight bending of the back, hips, and knees
 - » Lift the load as the legs begin to straighten
- Move feet in the direction the item is being carried

Setting the Item Down

- Keep the time close to the body as it is being placed down
- If lowering the item, position the feet with one foot beside where the item will be placed
- If lifting the object above the waist:
 - » Move body forward as weight is lifted up and outward to reduce reaching distance
 - » Use a ladder with hand rails
 - » Place the item on a level surface at waist level, bend down and pick up the item at chest level before hoisting it above the shoulders⁵
- Move feet in the direction of where the object will be placed

Understanding the primary work-related factors that increase the chance of a back injury is the first step in evaluating work tasks. Applying the lifting task risk reduction tips to the work design may help reduce these stressors on the lower back. Educating employees in these back injury risk reduction principles will possibly help them to assess and alter their daily tasks to further reduce the potential for work-related back injuries.

⁵ Masters, Anne, and Jim Closson. "Back Talk: Why Municipalities Should Implement Back Injury Prevention Programs." *IMLRMA Today*, Sept. 2010, imlrma.org/file.cfm?key=4043.



“ During 2016, there were 0.21 back injuries for every 100 local government workers due to musculoskeletal disorders and the median days away from work was 8 days per injury! ”



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