
Strains, Sprains and Material Handling Safety Tips for Employers

Construction is a physically demanding occupation. Improper manual handling of material may cause common injuries such as strains and sprains that result in lost workdays. Strains and sprains make up about a third of non-fatal injuries in construction. Here are some tips for the reduction of sprains and strains.

1. Pre-plan the job with the human interface in mind to minimize manual material handling hazards such as heavy and repetitive lifting, repetitive reaching, and carrying of material. The human interface is when a person lifts, lowers, carries, pushes, or pulls, material, tools, or equipment. A pallet jack, fork lift, or other mechanical means should be considered as the first alternative during the pre-planning.
2. Develop protocols for handling material on the jobsite. Try to eliminate heavy lifting, bending, and reaching.
 - Stage materials close to where they will be used
 - Stage materials off the ground preferably at waist height, especially items that are heavy or frequently used, to prevent stress. Determine if the material can be raised from ground level even if it only a small percentage of the time. Simple solutions such as strapping three to four pallets together or using saw horses with plywood to raise materials off the ground can have great effect.
 - When possible, use platform ladders or scaffolds where the workers can turn their feet and the body to eliminate twisting and reaching.
 - Position scissor lifts at the proper working height when possible. Many workers get in habit of working overhead more than they have too.
 - Have material delivered in small quantities that weighs less and is easier to use.
 - Arrange for tools such as forklifts, pallet jacks, or carry alls to reach material positioned out of the power zone and also to move heavy material.
 - Use low vibration tools. Compare vibration levels from different vendors before purchase.
 - Plan to minimize high force, awkward postures, and vibration by providing assists such as hand carts, motorized carts, dollies, power hand tools, anti vibration gloves, and floating seats.
3. Conduct regular material handling and lifting inspections. Look for places where the principles discussed above are violated such as:
 - Materials (conduit, connectors, elbows, etc.) placed on the floor or ground.
 - Tools or equipment on the ground or floor (i.e., chop saw on ground).
 - Work methods that encourage repetition or awkward postures. For example, how many times does a worker unnecessarily pick up material off the ground and then place it back on the ground before making final installation?
 - Trailers or conex boxes improperly laid out and labeled, with heavy items or repeatedly used items stored on the top and bottom shelves.
4. Where possible, incorporate variety into the job so workers can perform less stressful tasks which utilize different muscle groups following heavy lifting, bending and carrying. It is desirable to alternate between higher periods of stress and less stressful periods to allow the body to recover and thus reduce the cumulative trauma to the body.
5. Encourage workers to warm-up by performing the motions they will use on the job for a few minutes before full exertion. Consider bringing in a professional (e.g., ergonomist, exercise therapist, or physical therapist) to help start and monitor any warm up and range of motion program.

6. Provide workers with appropriate personal protective equipment (PPE), such as vibration damping gloves and gel knee pads.
7. Train workers on the proper techniques for lifting, bending and carrying. For example:
 - Don't twist when lifting.
 - Keep the load close to the body. If possible, arrange for work to be done in the power zone. (The power zone for lifting is close to the body, between mid-thigh and mid-chest height.)
 - Grip the load firmly with your whole hand, not just your fingers.
 - Lift in a smooth motion, don't jerk
 - Use two people to handle loads heavier than about 40 to 50 pounds. If the load looks like more than you can handle, get help either from another person or by using a mechanical lifting/moving aid. Being macho and getting injured is just plain stupid. If the load can be divided into smaller units that can be safely handled, do so.

This Safety Tips Sheet was developed through the Construction Roundtable of OSHA's Alliance Program for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. Oct. 2010. For more information from the Occupational Safety and Health Administration (OSHA): Visit OSHA's Website at www.osha.gov or call 1-800- 321-OSHA.

Strains, Sprains and Material Handling Safety Tips for Workers

Strains and sprains are painful injuries that result from improper material handling techniques. These injuries could eventually end your career. Here are some tips to help you avoid unnecessary strains and sprains.

1. Read and understand your company's procedure for handling material. Ask about any policy you don't understand.
2. Speak up about ways work could be modified to make it safer.
3. Plan the job to minimize manual handling.
4. Use mechanical equipment to lift and carry material when possible.
5. Pushing or pulling using a cart or hand truck is preferable to carrying; pushing is preferable to pulling.
6. Participate in your employer's education and training on proper techniques for lifting, bending, and carrying.
7. Minimize repetition, force, exertion, awkward positions and vibration where possible. For example, use assists such as hand carts, motorized carts, dollies, power hand tools, anti vibration gloves, and floating seats.
8. Try to work at waist height as much as possible. Use a ladder or work platform to prevent stretching and bending. Using a platform or platform ladder allows you to turn your feet and body, which changes your reaching position and angle.
9. Use proper techniques for lifting, bending and carrying. For example:
 - Don't twist when lifting.
 - Keep the load close to the body. If possible, arrange for work to be done in the power zone. (The power zone for lifting is close to the body, between mid-thigh and mid-chest height.)
 - Grip the load firmly with your whole hand, not just your fingers.
 - Lift in a smooth motion, don't jerk
 - Use two people to handle loads heavier than 40 to 50 pounds. If the load looks like more than you can handle, get help either from another person or by using a mechanical lifting/moving aid. Being macho and getting injured is just plain stupid. If the load can be divided into smaller units that can be safely handled, do so.
10. Participate in warm up activities before heavy lifting.
11. Wear appropriate personal protective equipment (PPE) such as vibration damping gloves and gel knee pads when completing the job task. Back belts are not considered to be effective in preventing injuries.
12. Report all injuries immediately, even if they may not at first appear to be serious.

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