

Basic ergonomics training for construction workers

by Mike Lampl



Before you begin

Observe your work areas and write down your observations. Pay attention to:

- Homemade adaptations to accommodate personal preferences and needs;
- Job tasks that require forceful exertions (e.g., heavy lifting, pushing and pulling);
- Job tasks that require awkward postures (e.g., bent wrists, bent backs, etc.);
- Job tasks that require repetitive motions (e.g., working at a fast pace);
- Information on injuries that may relate to ergonomic conditions.

Introduction

Construction is a vital part of Ohio and its economy. But, this industry can be physically demanding. According to the Bureau of Labor Statistics, during 2007 overexertion caused more than 17 percent of construction's workplace injuries and illnesses.

During this session you will discuss:

- What is ergonomics?
- What are cumulative trauma disorders (CTDs)?
- What are workplace risk factors that contribute to CTDs?
- How can you reduce these risk factors?
- What else can reduce CTDs?

Start the discussion by asking what is ergonomics? Ask the group each corresponding question, and listen for the members' input. Discuss the answers below, and consider giving the group a copy of the questions and answers.

What is ergonomics?

Ergonomics is applying engineering and scientific principles when designing a work environment that accommodates the employee in relation to the workplace, product, equipment, tools, workspace and the work's organization. The objective of ergonomics is to fit the task to the worker, rather than force the person to adapt to the work environment.

Ergonomics is making jobs user friendly. The benefits include:

- Fewer injuries and cumulative trauma disorders;
- Improved productivity;
- Better performance and quality.

What are CTDs?

Cumulative trauma refers to the wear and tear on the musculoskeletal system. Common CTDs include carpal tunnel syndrome, tendonitis and lower back disorders.

Symptoms associated with CTDs or that may lead to CTDs are pain, swelling, inflammation, burning and stiffness.

Ergonomics is not an overnight proposition. It is a continuous improvement process that minimizes or eliminates workplace risk factors.

What are workplace risk factors?

They are:

- Forceful exertions;
- Repetitive motions;
- Awkward postures;
- Mechanical pressure on soft tissue;
- Inadequate rest.

Because one or more of these risk factors are present in a job does not necessarily mean a CTD will develop. However, especially with exposure to multiple risk factors, the potential for CTD is higher. Conversely, if you eliminate any or all of these risk factors, the potential for overexertion or injury decreases. The next section will illustrate ways to minimize or eliminate these risk factors.

How do you reduce workplace risk factors?

You can reduce workplace risk factors by planning, changing how you do your work and training workers and supervisors.

Plan

- Cut down on carrying. To help minimize bending and reaching, deliver materials close to where you will use them.
- Try to store materials at waist height.
- If you can, raise your work to waist level for heavy work or to elbow height for lighter work. For example, pipefitters use pipe stands. To keep their work at waist height, masons use adjustable scaffolds.
- Ensure floors and walkways are clear and dry. Slips and trips are also a big cause of back injuries.
- Use the appropriate tool with the proper thickness, length and shape.
- Take rest breaks. When you are tired, the chance of injury increases.

Get help

- Use carts, dollies, forklifts and hoists to move materials — not your back.
- Use carrying tools with handles to get a good grip on wallboard or other odd-shaped loads.
- If materials are too heavy, do not lift them by yourself. Get help from another worker or use a cart.

Move carefully

- When lifting or carrying materials, keep the load as close to your body as you can.
- When lifting and lowering materials, try not to twist. Instead, turn your whole body.
- Lift and lower materials in a smooth, steady way. Try not to jerk the lift.

Apprentices

Apprentices often have the hardest work to do. Because they are young and strong, they sometimes lift and carry more weight than they should. Protect apprentices against back injuries so they do not have to leave their trades. Decide how you can change the work to protect you and your co-workers from back injuries.

What about back belts?

Some workers wear back belts. If a doctor prescribes a back belt, it may help a worker recovering from a back

injury. However, a study by the National Institute of Occupational Safety and Health found no evidence that back belts prevent injuries. Do not rely on a back belt to protect you; instead try to change the work.

What else can reduce CTDs?

Other important points to consider for reducing CTDs and/or the severity of CTDs include:

- Reduce repetition or duration when possible. Job rotation can help;
- Understand what is adjustable at your work site;
- Report work-related pain and discomfort. When necessary, get a medical evaluation;
- Try new work methods and tools;
- Give suggestions for ergonomic job improvements;
- Exercise and maintain a healthy lifestyle;
- Use good ergonomic principles at home as well as work;
- Keep your work area organized and the area as clean as possible.

Group actions

Conclude by asking each member what is one key point he or she can apply from today's discussion. If the discussion leads to making physical changes, such as raising or lowering a work height, document the discussion and follow up as needed.

References

Web sites

Simple Solutions: Ergonomics for Construction Workers: <http://www.cdc.gov/niosh/docs/2007-122>

Back Belts: Do They Prevent Injury?: <http://cdc.gov/niosh/docs/94-127>

Ergonomics tools and resources: <http://www.ohiobwc.com/employer/programs/safety/ergotools.asp>

Mike Lampl is a certified ergonomics professional and BWC's Division of Safety & Hygiene acting ergonomics technical advisor. He has 15 years of safety and health experience in private industry and at BWC. Lampl also is a member of the planning committee for the Applied Ergonomics Conference sponsored by the Institute of Industrial Engineers.

BWC strives to improve the *Safety Leader's Discussion Guide*. Your feedback can help. Please send your comments via e-mail to Safety@ohiobwc.com.

BWC is not associated with some of the websites, and we do not endorse them.