



MIOSHA Fact Sheet

Construction Safety & Health Division Ergonomics in Construction

What is Ergonomics?

Simply put, Ergonomics is fitting the task to the person. Too often employees perform job tasks that expose them to potential injuries and illnesses due to the poor design of a workstation or tool they are using. Ergonomics involves the assessment of job tasks to identify ergonomic risk factors and appropriate engineering or work practice controls to reduce or eliminate the identified risk factors. Generally, ergonomic changes are made to improve the fit between the demands of the job tasks and the capabilities of the employees.

What are Ergonomic Risk Factors?

Ergonomic risk factors are characteristics of a job that contribute to the creation of ergonomic stress on the body. Risk factors are present at varying levels for different jobs and tasks. Generally, the greater the exposure to a single risk factor or combination of risk factors, the greater the probability of an ergonomic injury or illness, also called Work-Related Musculoskeletal Disorders (WMSD). The big three ergonomic risk factors are **Force** (how much you lift/push/pull), **Repetition** (how often you perform the task), and **Posture** (body position). Other potential ergonomic risk factors include **vibration, contact stress, sustained exertions, and cold temperatures.**

The construction trades have many risk factors that may cause WMSDs that are not always easy to identify or brought to our attention. Some examples are masons with back problems due to the repeated lifting of cement block, and carpenters with wrist problems due to repeated use of a hammer.

Employers can sometimes identify recurring ergonomic problems by reviewing injury and illness data required under MIOSHA Part 11,

Recording and Reporting of Occupational Injuries and Illnesses:

http://www.michigan.gov/documents/CIS_WSH_part11ad_37844_7.pdf

What Can the Employer Do?

Much like overall health and safety programs, effective ergonomic programs utilize a systems approach involving the following:

- **Management Commitment and Employee Involvement** – Successful ergonomic programs are those that have everyone moving in the same direction working towards a common set of goals. The full backing of management is necessary which includes allocating resources and time resolving identified issues. Employees perform the job tasks and often are best prepared to assist with solving the problem.
- **Worksite Hazard Assessments** – Establish an ergonomic committee comprised of management and employees to devote time to ergonomic issues. Conduct assessments of job tasks to identify risk factors, and identify jobs that are showing early signs of, or are actually causing WMSDs.
- **Hazard Prevention and Control** – Pursue equipment purchases, workstation design, modified work practices, and other tools that are designed to reduce or eliminate ergonomic risk factors.
- **Education and Training** – Provide ergonomic training for appropriate employees and management staff on how to recognize the primary ergonomic risk factors of Force, Repetition, and Posture. Educate personnel on the early symptoms of WMSDs and the proper procedures for reporting and/or recording them. Encourage early reporting of symptoms.
- **Medical Management** – Implement a medical management program that includes establishment of

one occupational physician or group that is familiar with your work operation. Refer all employees who have suspected workplace WMSDs to this physician or group for appropriate diagnosis and treatment.

How Do I Control Ergonomic Hazards?

There are simple things that employers can implement and workers can do to reduce ergonomic stress, such as:

- Use a buddy system or the proper lifting device to carry heavy loads. To the extent feasible, use your legs to push up and lift the load, not the upper body or back. Do not twist the body during a lift - step to one side or the other to turn.
- Design work activities so employees do not have to work on their knees. If the job requires it, use knee pads.
- Avoid repeatedly twisting the hands and wrists. Provide proper hand tools that are designed to keep the hand and wrist in a comfortable, neutral position.
- Avoid stretching or unnecessary stress to do overhead work where possible. For example, adjust scaffolds to the appropriate working height and use a lifting device to hold drywall or other material in place for overhead work.

- Use vibrating tools such as a jack-hammer or abrasive wheel saw that are equipped with built-in vibration dampers. Wear gloves to help absorb energy.
- Use the appropriate tools such as hammers that are designed to absorb shock and tools with handles that aid in maintaining a neutral wrist position when used.
- Rotate job tasks to reduce repetitiveness.

How Can I Get More Information?

More information is available from the MIOSHA Consultation Education and Training Division at 517-284-7720 or on-line at www.michigan.gov/cet. There is a considerable amount of information on ergonomics including industry specific help on the Federal OSHA website at www.osha.gov. Another excellent source of information on ergonomics specific to construction is NIOSH Document 2007-122, Simple Solutions: Ergonomics for Construction Workers; <http://www.cdc.gov/niosh/docs/2007-122/>.

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