

Ergonomics – What is it?

Ergonomics is the science of creating workplace conditions to fit the physical capabilities of the workforce. Successful ergonomics enhances employees' job satisfaction, reduces employee illness and injury, and increases productivity.

An ergonomics program is aimed at reducing work-related musculo-skeletal disorders (WMSDs). WMSDs are injuries of the muscles, nerves, tendons, joints, and spine. These disorders are not typically the direct result of a single event (slip, fall, contusion, etc). Rather they are caused by gradual or repeated exposure over a period of time.

Workplace factors that directly lead to WMSDs include:

- **Position** – Postures or positions requiring joints to be used in their extreme ranges or remain in a fixed position for extended periods of time
- **Movement** – Static movement (requiring little movement) or repetitive movement
- **Force** – Amount of pressure concentrated on muscles or small parts of the body
- **Environment** – Work pace, temperature, vibration, and available time to rest and recover

Common disorders include:

- **Carpal Tunnel** – Compression of the median nerve in wrist
- **Tendonitis** – Inflammation of tendons
- **Lateral Epicondylitis (Tennis Elbow)** – Inflammation and soreness of the elbow

An employer can develop an ergonomics plan that will help keep employees safe and minimize injuries. The plan will also make workstations user friendly, increase production and employee morale, and create a more comfortable environment. This plan will also help reduce direct and indirect costs that affect profitability, such as lost work time due to injuries or illness, workers' compensation premiums, OSHA fines, etc.

A successful ergonomics plan has seven important steps:

1. Look for indicators of problems in the workplace. Reporting of aches and pains is a common sign. Also look for job tasks that require repetitive or forceful exertions.
2. Show employees that management is committed to addressing these problems, and encourage employees to get involved in creating solutions.



3. Educate managers and employees about ergonomics and ways to identify potential hazards.
4. Using job analysis, injury logs, claims reports, or other means, identify which areas are most problematic. Then determine the root cause factors of the problems. Typical root causes may include gripping, reaching overhead, bending, extension, twisting, pinching, or any other repetitive act.
5. Identify controls for these root causes. The use of job rotation, mechanical aids, reorganization of the work space, or even slight changes in the process are effective controls.
6. Establish ways to monitor the effectiveness of your ergonomics plan. Stress the importance of early detection, and encourage incident reporting. Create an ergonomics committee to do regular job task evaluations and to offer creative resolutions.
7. Include ergonomic controls in the development of new jobs, processes, and operations. It's more cost efficient to incorporate ergonomic solutions in the original workplace design than to have to redesign it later.

The National Institute for Occupational Safety and Health (NIOSH) has developed a primer that has many useful suggestions and materials to help create an effective ergonomics culture.

The full 146-page primer can be found at:

<http://www.cdc.gov/niosh/docs/97-117/pdfs/97-117.pdf>

