

Ergonomics Overview

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Musculoskeletal disorders (MSDs) affect the muscles, nerves, blood vessels, ligaments and tendons. Workers in many different industries and occupations can be exposed to risk factors at work, such as lifting heavy items, bending, reaching overhead, pushing and pulling heavy loads, working in awkward body postures and performing the same or similar tasks repetitively. Exposure to these known risk factors for MSDs increases a worker's risk of injury.

Work-related MSDs can be prevented. Ergonomics — fitting a job to a person — helps lessen muscle fatigue, increases productivity and reduces the number and severity of work-related MSDs.

Examples of Musculoskeletal Disorders (MSDs)

- Carpal tunnel syndrome
- Tendinitis
- Rotator cuff injuries (affects the shoulder)
- Epicondylitis (affects the elbow)
- Trigger finger
- Muscle strains and low back injuries

Impact of MSDs in the Workplace

- Work related MSDs are among the most frequently reported causes of lost or restricted work time.

- According to the Bureau of Labor Statistics (BLS) in 2013, MSD¹ cases accounted for 33% of all worker injury and illness cases.

¹ BLS defines musculoskeletal disorders (MSDs) to include cases where the nature of the injury or illness is pinched nerve; herniated disc; meniscus tear; sprains, strains, tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration.

A Process for Protecting Workers

Employers are responsible for providing a safe and healthful workplace for their workers. In the workplace, the number and severity of MSDs resulting from physical overexertion, and their associated costs, can be substantially reduced by applying ergonomic principles.

Implementing an ergonomic process is effective in reducing the risk of developing MSDs in high-risk industries as diverse as construction, food processing, firefighting, office jobs, healthcare, transportation and warehousing. The following are important elements of an ergonomic process:

- **Provide Management Support** — A strong commitment by management is critical to the overall success of an ergonomic process. Management should define clear goals and objectives for the ergonomic process, discuss them with their workers, assign responsibilities to designated staff members, and communicate clearly with the workforce.
- **Involve Workers** — A participatory ergonomic approach, where workers are directly involved in worksite assessments, solution development and implementation is the essence of a successful ergonomic process. Workers can:
 - Identify and provide important information about hazards in their workplaces.
 - Assist in the ergonomic process by voicing their concerns and suggestions for reducing exposure to risk factors and by evaluating the changes made as a result of an ergonomic assessment.
- **Provide Training** — Training is an important element in the ergonomic process. It ensures that workers are aware of ergonomics and its benefits, become informed about ergonomics related concerns in the workplace, and understand the importance of reporting early symptoms of MSDs.
- **Identify Problems** — An important step in the ergonomic process is to identify and assess ergonomic problems in the workplace before they result in MSDs.
- **Encourage Early Reporting of MSD Symptoms** — Early reporting can accelerate the job assessment and improvement process, helping to prevent or reduce the progression of symptoms, the development of serious injuries, and subsequent lost-time claims.
- **Implement Solutions to Control Hazards** — There are many possible solutions that can be implemented to reduce, control or eliminate workplace MSDs.
- **Evaluate Progress** — Established evaluation and corrective action procedures are required to periodically assess the effectiveness of the ergonomic process and to ensure its continuous improvement and long-term success. As an ergonomic process is first developing, assessments should include determining whether goals set for the ergonomic process have been met and determining the success of the implemented ergonomic solutions.

Note: An ergonomic process uses the principles of a safety and health program to address MSD hazards. Such a process should be viewed as an ongoing function that is incorporated into the daily operations, rather than as an individual project.

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