

Ergonomics in the Workplace

safetymanagement.ecu.edu/blog/ergonomics-in-the-workplace

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Many on-the-job injuries are a result of poor workplace ergonomics. Knowing how to recognize potential problems and offering solutions can help reduce the number and severity of musculoskeletal disorders, also known as MSDs.

According to the Bureau of Labor Statistics (BLS), about a third of all worker injury and illness cases involve MSDs.

Examples of MSDs affecting the muscles, nerves, blood vessels, ligaments and tendons are:

- Carpal tunnel syndrome
- Tendinitis
- Rotator cuff injuries (shoulder)
- Epicondylitis (elbow)
- Trigger finger
- Muscle strains
- Back injuries

Most MSDs are preventable by applying ergonomic principles, and employers are responsible for providing a healthy and safe workplace. Courses in safety management, through online emergency management degree programs, can provide the information and skills necessary to help managers and supervisors mitigate potential ergonomic problems.

“Ergonomics focuses on refining product designs to optimize them for human use. It’s actually a very broad topic that includes physical, cognitive, and organizational aspects,” said Jen Kenny, an ergonomics consultant with WorkSafeNB and the secretary of the Association of Canadian Ergonomists in Saint John, New Brunswick, Canada, in the article “Ergonomics in the Workplace: How It Affects Employees’ Wellness.”

Causes of MSDs

Workers can be exposed to many risk factors on the job that could cause MSDs. According to the BLS, in 2016, most MSDs involved back injuries, followed by shoulder and leg injuries.

Many tasks can cause MSDs, including:

- Lifting heavy items
- Bending

- Reaching overhead
- Pushing and pulling heavy loads
- Working in awkward postures
- Repetitive tasks

The goal of any manager should be to be proactive and spot possible ergonomic issues before they become a problem. The article “8 Fundamental Ergonomic Principles for Better Work Performance” calls the process having “ergo eyes,” which means seeing the workplace through the lens of several fundamental ergonomic principles:

- **Maintain Neutral Posture:** The body is aligned and balanced while sitting or standing, placing minimal stress on the body. Awkward posture is the opposite, putting stress on the body and joints.
- **Work in the power or comfort zone:** This is where the arms and back can lift the most weight with the least amount of effort. If you can “shake hands” with your work, you are minimizing excessive reach and maintaining a neutral posture.
- **Allow for movement and stretching:** Working for long periods in the same position can cause fatigue. Stretching reduces fatigue and improves posture, muscular balance, and muscle coordination.
- **Reduce excessive force:** Many tasks require a high amount of force on the body, increasing fatigue and risk for MSD.
- **Reduce repetitive and excessive motions.** Many work tasks are repetitive and may be affected by work processes and hourly or daily production targets. Task repetition, especially when combined with risks factors such as high force or awkward postures, can contribute to MSD.
- **Minimize contact stress:** Contact or rubbing between hard or sharp objects or surfaces and body tissue can inhibit blood flow, nerve function, and tendon and muscle movement.
- **Reduce excessive vibration:** Exposure to vibrations can lead to permanent adverse effects including numbness and pain or cause fingers to turn pale and ashen.
- **Provide adequate lighting:** Dimly lit areas and glare can cause eye fatigue and headaches. Adjustable task lighting can help fix the problem.

Improving Workplace Ergonomics

People often think that ergonomics requires a big investment, but Kenny said it doesn't have to be expensive.

“What I do encourage them to do is put money and consideration into chairs and desks,” Kenny said of basic office ergonomics. “People use them for long periods of time, and not every chair and desk are created equal. Think of it like investing in a good mattress or a pair of shoes: They need to be comfortable, they need to fit the person, and they need to last.”

Other office suggestions include:

- Having hands, wrists, and forearms straight and parallel to the floor.
- Keeping the head level, facing forward and in line with the torso.
- Keeping monitors and other displays at eye level so workers don't have to strain their necks or squint. Workers should look up and away from the monitor every 10 to 20 minutes to reduce eye strain. They should not have to turn their necks to see their monitor.
- Making sure the keyboard and mouse are where they can be accessed without breaking neutral position.
- Having proper lighting that reduces glare on computer screens.
- Using footrests, headsets, and document holders to reduce strain on the neck and body.

In any job, workers should change tasks as often as they can and get up and move around at least once an hour.

“One simple thing they should be doing is routinely taking microbreaks. If they don't change positions for extended periods of time, their blood flow decreases, and they start to get drowsy. I challenge employees to stand up every 30 minutes to an hour to stretch or walk around to get that blood moving again and get refocused. Even if they feel like they're in a groove and don't want to stop what they're doing, they should stand up. Those breaks are really important,” Kenny said.

The Occupational Safety and Health Administration (OSHA) suggests creating an ergonomic process to protect workers within an organization. Elements of such a process should include:

- Providing management support by defining goals for creating ergonomic processes and discussing them with workers.
- Involving workers to help identify hazards and voice concerns and suggestions.
- Providing training to help workers become informed about ergonomic concerns.
- Identifying and assessing possible ergonomic problems.
- Encouraging employees to report symptoms of MSDs early to prevent or reduce the progression of symptoms.
- Implementing solutions to control or eliminate hazards that might contribute to MSDs.

- Evaluating progress to assess the effectiveness of the policies your company has implemented.

Online emergency management degree programs that include courses in safety management can help safety managers and directors implement new policies and procedures for their organizations.

About Eastern Kentucky University's Online Master of Science in Safety, Security and Emergency Management Program

Students enrolled in ECU's online emergency management degree program learn the essential components of safety, security, and emergency management.

The program allows students to customize their experience through a Multidisciplinary Track or concentrations in Corporate Security Operations, Occupational Safety, or Emergency Management and Disaster Resilience. The concentrations are also available as stand-alone graduate certificates, independent of a master's degree.

EKU is accredited by the Southern Association of Colleges and Schools Commission on Colleges. For more information, contact Eastern Kentucky University now.

Recommended Reading

Working as a Safety Consultant

Helping Employees After an Injury

Increasing Employee Engagement and Participation in Workplace Safety

Sources

Ergonomics Overview: US Department of Labor

8 Fundamental Ergonomic Principles for Better Work Performance: Ergo Plus

10 Ways to Immediately Improve Workstation Ergonomics: Tech Republic

Ergonomics in the Workplace: How It Affects Employees' Wellness: WellRight

Back Injuries Prominent In Work-Related Musculoskeletal Disorder Cases In 2016: Bureau of Labor Statistics