

Ergonomics

Approximately one-third of all workers' compensation claims are due to ergonomic issues (e.g. forceful exertions, awkward postures, repetitive motions), according to the U.S. Bureau of Labor Statistics. Ergonomics is an applied science that considers people's abilities, limitations, and characteristics in the design and evaluation of work systems. But ergonomics is not just limited to the workplace. It also touches people in their everyday lives. Consider the design of cars in the 1970s versus cars today. Seats and control panels have been engineered to fit most drivers. The science of ergonomics applies to activities and chores around the house too, ranging from painting and yardwork to knitting and playing computer games.

The goal of ergonomics is to design systems that preserve the wellbeing of all employees, minimize the risk of injury and illness, especially musculoskeletal disorders, and maximize your work performance and the performance of your organization. Ergonomics looks at tasks, jobs, workstations, tools, equipment, and the work environment to identify risk factors that might lead to illness or injury. Then, once identified, the next step is to find the best solution to eliminate these risks or manage the exposures.

What are musculoskeletal disorders?

Musculoskeletal disorders (MSDs) are injuries or disorders of the muscles, nerves, tendons, joints, cartilage and spinal discs. They are disorders that affect the human body's movement. To avoid confusion from other types of injuries, it should be noted that MSDs do not include injuries that are caused by slips, trips, falls or motor vehicle collisions.

A few common MSDs include: strains, sprains, muscle tears, tendinitis, tennis elbow, trigger finger, pinched nerves, carpal tunnel syndrome, rotator cuff injuries, back pain, and ruptured or herniated discs.

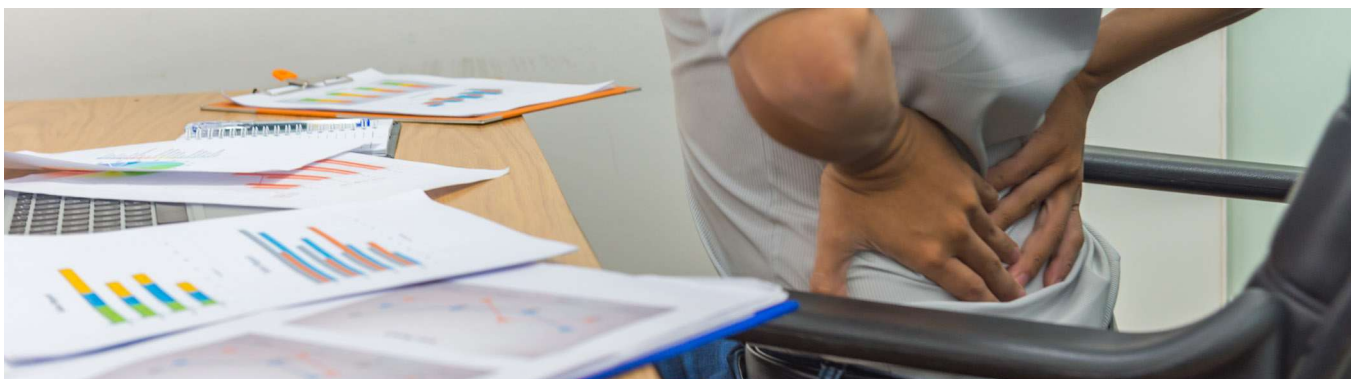
Recognizing the signs & symptoms of MSDs

Signs of MSDs include swelling, redness, reduced range of motion, and loss of strength. The symptoms of MSDs include tenderness, numbness, tingling, burning, aching, and pain. If you are experiencing any of these signs or symptoms, talk to your supervisor or contact your human resources representative or safety professional.

Ergonomic risk factors

Ergonomic risk factors are workplace conditions or exposures that increase the likelihood of experiencing an MSD. The primary risk factors are:

- **Forceful exertions** – Such as lifting, pushing or pulling heavy objects, and using a manual torque wrench, utility knife or metal sheers
- **Awkward postures** – Such as reaching above the head, at full arms length, behind the body and from the ground, and looking at a screen that is too high, requiring the neck to look up
- **Static postures** – Such as prolonged sitting or standing in the same place for an extended period
- **Repetitive movements** – Such as prolonged, intensive computer keying, and short cycle assembly work



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Exposure to vibration, cold temperatures and contact stress (resting a body part against the sharp edge of a worksurface or tool) can also increase the risk of developing an MSD. The more risk factors present in a job, the greater the risk of developing an MSD.

An ergonomic evaluation looks for ergonomic risk factors in all of the following aspects of the work system:

- Workstation
- Equipment and machinery
- Tools
- Task and work practices
- Work environment

Implementing ergonomic solutions

After identifying ergonomic risk factors present in a job, the next step is to redesign the work systems to eliminate or minimize your exposure to those risk factors.

Steps that you can take to help minimize and possibly eliminate exposure to risk factors include:

- Use special carts made for moving things and machines that can lift heavy objects to avoid having to lift them by hand
- Arrange your tools and materials with the most frequently used and heaviest items in easy reach
- Use tables and chairs that can be adjusted to fit your body size and shape; this helps you sit comfortably and keep a good posture while you work

- Take frequent breaks if you perform repetitive work
- Alternate repetitive tasks with non-repetitive tasks at regular intervals
- Alternate between work that uses different muscle groups – if you have to manually stack items, alternate with more sedentary tasks like entering data into a computer
- Use anti-fatigue mats if you stand for long periods of time, particularly on concrete surfaces
- If you work on a computer, follow the 20-20-20 rule: Every 20 minutes, look away from the screen at something about 20 feet away for at least 20 seconds

Applying ergonomic principles to your work systems will optimize your wellbeing, minimize your risk of injury and illness, especially musculoskeletal disorders, and maximize the system as well as your own personal performance.

