

Intro to Ergonomics

Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population. Effective and successful "fits" assure high productivity, avoidance of illness and injury risks, and increased satisfaction among the workforce. Ergonomics involves designing and arranging workspaces so people work efficiently and safely. It is used to evaluate how you do your work and identifies risk factors that might lead to injury. We use this information to then find the best solution to eliminate or manage the hazard. Your capabilities and limitations are considered to

What Are Ergonomic Conditions?

Ergonomic conditions are disorders of the soft tissues, specifically of the muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels and spinal discs. If you experience pain or injury in your soft tissues, it might be caused by factors such as repetition, force, awkward postures, contact stress or vibration which may develop over time.

Recognizing Ergonomic Symptoms:

Many people associate ergonomics with office environments, but ergonomics can be seen in custodial work, laboratories, industrial settings and many other types of environments. Common ergonomic symptoms include pain, swelling, tingling, tenderness or numbness in the soft tissue areas. Sometimes difficulty moving or using the extremity is a symptom. These symptoms may indicate trauma or disorder related to ergonomic conditions. If you are experiencing any of these symptoms, make sure to see your physician or an occupational physician as soon as possible to determine the cause of your pain.

Ergonomic Risk Factors

The main categories of ergonomic risk factors are:

- Environmental-risks found in your work environment such as heat stress, lighting or noise.
- Equipment-risks associated with the equipment you use.
- Work practices-risk caused by work requirements, processes or procedures (i.e. force, vibration, awkward postures or contact stress).
- Individual-risk that is unique to you as an individual, such as physical characteristics, habits and behavior.
- Repetitive movements that may be non-strenuous or strenuous can cause ergonomic conditions. Some conditions can be brought on by:
 - Sudden increases in your workload
 - Introduction of a new process to your work routine
 - Use of vibrating tools
 - Maintaining a rigid posture

Common examples of ergonomic risk factors are found in jobs requiring repetitive, forceful or prolonged exertions of the hands; frequent or heavy lifting, pushing, pulling or carrying of heavy objects; and prolonged awkward postures. Vibration and cold may add risk to these work conditions. Jobs or working conditions presenting multiple risk factors will have a higher probability of causing a musculoskeletal problem. The level of risk depends on the intensity, frequency and duration of the exposure to these conditions and the individuals' capacity to meet the force of other job demands that might be involved.

Common Ergonomic Conditions:

You probably have heard of many of these common ergonomic problems:

- Bursitis
- Carpal tunnel syndrome
- Osteoarthritis
- Tendonitis
- Tension of the neck or shoulder
- Trigger finger

If you have been diagnosed with one of these conditions and your work tasks, equipment, or environment have not changed, be sure to talk with your supervisor or safety personnel to find ways to adjust your work patterns to ones that will not stress your soft tissues.

General Ergonomic Solutions:

To help minimize and possibly eliminate ergonomic risk factors, there are some steps you can take. By following the steps listed below, you will likely experience fewer injuries and fewer lost work days.

- Be sure to talk with your supervisor about what to do if you are experiencing pain in the soft tissues.
- Talk with ergonomic experts to identify what is causing the pain and to find a solution to eliminate or reduce the risk.
- Reduce the pace of work.
- Stretch before or during the work-shift to loosen your muscles (**if you have a pre-existing injury consult with a physician**).
- Alternate repetitive tasks with non-repetitive tasks at regular intervals, or increase the number of breaks from repetitive work to reduce or eliminate ergonomic risk factors you are subjected to on the job.

Custodial Ergonomic Solutions:

- Custodial work is generally very labor intensive, and involves high cardiovascular and muscular loads. Here are some tips to help reduce ergonomic risk factors for custodians:
- Increase the frequency of waste disposal, particularly recycling waste, which can be very heavy.
- Provide training for any employee using custodial equipment, such as floor buffers/polishers, backpack vacuums and electronic sweepers.
- Utilize proper posture while cleaning restrooms or other areas (i.e. squat instead of bending, don't over-reach while cleaning).
- Perform equipment maintenance and cycle out damaged materials accordingly.
- Don't mix chemicals together while cleaning.
- For cleaning hard to reach areas or stairs, it's best to use a light-weight backpack vacuum.

- When performing detail work that requires being on the knees, utilize knee pads to reduce fatigue.
- Stretch before and during work to help loosen the muscles and increase mobility and range of motion. **Any employees who are under a doctor's care or has a pre-existing injury should consult with a physician prior to participation.**
- Utilize team lifting for heavier items where necessary.
- If using a wheeled waste container for waste disposal, employees should tie off bags when they are half full (or no more than 25 pounds) and start a new bag on top of the first. Where applicable, tip the wheeled container over and pull the bag out from the side to reduce the force needed to overcome the suction.
- Spread tasks out during the work shift. For example, if you have a task that requires a lot of exertion, perform a light-duty task after that.

Questions for Discussion

1. **True or False:** Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population.

Answer: True

2. **True or False:** Ergonomics conditions associated with repetitive movements are only caused if I am participating in a strenuous work activity.

Answer: False. Repetitive movements that may be non-strenuous or strenuous can cause ergonomic conditions.

3. Which of the following is not an example of a common ergonomic condition:

- a. Carpal Tunnel Syndrome
- b. Bursitis
- c. Migraine
- d. Tendonitis

Answer: C. A migraine is not an example of a common ergonomic condition.

4. **True or False:** One example of an ergonomic solution is alternating repetitive tasks with non-repetitive tasks at regular intervals.

Answer: True