

What Is Ergonomics and Why Is It Important?



Ergonomics comes from the Greek words “ergon,” meaning work, and “nomos,” meaning “laws.” So ergonomics literally means “the laws of work.” A modern way of saying it is: “designing the job, equipment and tools to fit the worker, and fitting the worker to the job.”

The science of ergonomics was first defined in 1717, but only recently have its disorders attracted widespread attention as occupational health concerns.

Ergonomics covers all physical aspects of a job:

- **biomechanical**, including stress on the muscles, nerves, bones, tendons and joints
- **sensory**, including hearing and vision
- **environmental**, including lighting, noise, temperature and humidity

Ergonomic Problems

Ergonomic “stressors” (factors that can lead to disorders) include repetitive motions, excessive force, vibration, glare, poor air quality in an office and an awkward or prolonged posture.

In some cases, new technologies have created ergonomic concerns. For instance, the increased use (and misuse) of computer keyboards has contributed

to a rise in wrist disorders. In fact, at least half of all reported ailments are cumulative trauma disorders, injuries from the gradual repetition of stresses that would not be harmful if performed once.

The most common ergonomic disorders are:

- **carpal tunnel syndrome**, characterized by pain in the wrist from pressure on a nerve. Repetitive, frequent or unsupported wrist movements from an unnatural angle can inflame the wrist tendons and other tissues that press on the nerve.
- **back injuries** and **chronic back pain** from improper lifting or from attempting to lift heavy objects alone.
- **tennis elbow** and **tendinitis** from repeatedly and sharply twisting an arm in a jerking motion.
- **neck strain** from incorrect posture or telephone use.
- **eyestrain** from improper lighting or incorrect posture.
- **sick building syndrome** (rashes, headaches, fatigue, itchy eyes or congestion) from poor air quality in an office.
- **white finger disease** (*Raynaud's phenomenon*) from the destruction of blood vessels in the fingers.

Ergonomic Solutions

There are two main ways to prevent ergonomic injuries and to lessen their impact if they strike. One way is to correctly use your equipment and tools. The second way is to modify work habits—in other words, avoid undesirable motions, improve your posture, spend less time on certain tasks and take all allowable breaks.

Pay attention to your body so you can correct ergonomic disorders as soon as you detect them. Learn to adjust chairs, keyboards, lighting and other controllable factors for your maximum comfort and health. For instance, an easy way to improve air quality is to add house plants that require low light. With such ergonomic solutions, you can learn to work in harmony with your workplace environment.