

Workplace ergonomics

Control work processes to avoid strains and sprains

Ergonomics risk factors:

Posture: Can you maintain a neutral posture while performing the task? (Neutral posture supports the natural curve of the spine and body alignment, and can be sustained with minimal effort.) Do you avoid awkward and static postures?

Frequency and duration: How often do you repeat the same motion or motions? How much time do you spend performing the task? How often do you rest between motions?

Force/exertion: How much energy or effort is needed to perform a task?

Vibration and contact stress: Are equipment vibrations or contact stress causing discomfort or pain?

Ergonomics is about fitting the task to the individual. It's an important part of employee safety and health, whether you work in an office, on a factory floor, or other environment.

Good ergonomics can improve efficiency and productivity as well as reduce the risk of strains and sprains.

If you observe risk factors in your workplace, look for ways to modify the task to minimize the impact on employees. Here are some guidelines:

Optimize the process.

- Place frequently used items within arm's reach; provide easy access to the load.
- Mechanize operations; use gravity, carts, and conveyors when possible.
- Break down the load. Lift fewer items at once, or buy items in smaller packages.
- By contrast, increase the size or weight of items, so that they cannot be lifted manually.
- Push or pull loads instead of lifting, lowering, or carrying.
- Keep forces low during movement.
- Reduce prolonged static postures and contact stress.
- Consider work/rest cycles.
- Standardize the types and sizes of materials and equipment.

Design for the person.

- Design jobs to accommodate a wide range of body sizes and strengths.
- Consider any special job demands, for instance heavy thinking or sharp vision. Vary tasks; allow time to learn a new task.

- Provide adjustable workstations, anti-fatigue mats, and footrests.
- Use and promote proper body mechanics.
- Maintain neutral postures; redistribute loads to larger muscle groups.
- Adjust lighting higher or lower to suit the task.
- Minimize exposure to heat and cold.

Match the tool to the task.

- Avoid pinch grip or repetitive gripping; allow power grip for forceful tasks.
- Spread contact over several fingers.
- Consider how tool design (shape, contour texture) makes it harder or easier to grip.
- Reduce or isolate equipment vibration.
- Consider inline vs. pistol tool handles, depending on surface orientation.
- Consider lift assists, fixtures, turntables, counter-balancers, and holsters.
- Provide good coupling or handles.
- Use versatile methods and equipment that can perform a variety of tasks.

Job redesign approaches:



Job enlargement: Increase physical variety by performing more components of a job.

Job enrichment: Expand role by increasing ownership and responsibility.

Job rotation: Introduce alternative tasks with differing, less cumulative physical demands.