



**arts, culture,
sports & recreation**

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ERGONOMICS IN THE WORKPLACE

1. What is Ergonomics?

Ergonomics is the science of fitting jobs to workers instead of trying to get the worker to fit the job. It focuses on designing workstations, tools and work tasks for safety, efficiency and comfort. Ergonomics seeks to decrease fatigue and injuries, along with increasing comfort, productivity, job satisfaction and safety, because work injuries are not inevitable and a well-designed job should not hurt employees. It is a holistic term that primarily refers to **the overall process of arranging a workplace, systems, and equipment in a way that makes it easy for people to use them.** In many ways, ergonomics can be defined as the study of people who operate in a work environment.

Ergonomics is important because when you are doing a job and your body is stressed by an awkward posture, extreme temperature, or repeated movement your musculoskeletal system is affected. Your body may begin to have symptoms such as fatigue, discomfort and pain which can be the first signs of a musculoskeletal disorder (MSD)

2. Types of Ergonomics in the workplace

There are three types of ergonomics: **physical, cognitive, and organizational.** Each of these differently affects how people interact with their environment, contributing to how effective they are in their work.

▪ **Physical ergonomics**

Ergonomic risk factors are workplace situations that cause wear and tear on the body and can cause injury. These include **repetition, awkward posture, forceful motion, stationary position, direct pressure, vibration, extreme temperature, noise, and work stress.**

- **Elements of cognitive ergonomics**

Cognitive ergonomics as defined by the International Ergonomics Association "is concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system".

- **Organizational ergonomics**

The goal of organizational ergonomics is to achieve a harmonized system, taking into consideration the consequences of technology on human relationships, processes and organizations. Examples of organizational ergonomics include: **Teamwork. Communication.**

3. What are Musculoskeletal Disorders (MSDs?)

Musculoskeletal disorders or MSDs are cumulative and chronic injuries of the soft tissue- muscles, tendons, ligaments, nerves, joints and blood vessels. The body has limits and can fail or wear out when abused or misused.

MSDs are defined as injuries to muscles, tendons, ligaments, joints, nerves and discs that are caused or aggravated by our actions and /or environment that does not follow safe and healthy work practices.

4. Symptoms of MSDs

○ Pain	○ Weakness	○ Stiffness	○ Drowsiness	○ Burning sensation
○ Swelling	○ Sensitivity	○ Tingling	○ Clumsiness	○ Difficulty moving

5. Ergonomic Risk Factors

The following are factors for developing an MSD.

- Force
- Heavy lifting
- Push or pull
- Carrying
- Gripping
- Awkward or prolonged postures
- Repetitive activities
- Overhead work
- Contact stress
- Vibration

6. Ways to Reduce Ergonomic Risks

a. Engineering Improvements –

Engineering improvements include rearranging, modifying, redesigning, or replacing tools, equipment, workstations, packaging, parts, or products. These improvements can be very effective because they may reduce or eliminate contributing factors. (For example, if your job requires sitting for long periods of time, having an adjustable seat or foot stool so that your knees are higher than your hips helps protect your lower back.)

b. Administrative Improvements

Administrative improvements include changing work practices or the way work is organized.

- Providing variety in jobs
- Adjusting work schedules and work pace
- Providing recovery time (i.e., muscle relaxation time)
- Modifying work practices
- Ensuring regular housekeeping and maintenance of work spaces, tools, and equipment
- Encouraging exercise

c. Personal Protective Equipment

Safety gear, or personal protective equipment (PPE), includes gloves, knee and elbow pads, footwear, and other items that employees wear.

Adjusting your seat so that your feet are flat on the ground. Shoulders should not strain the neck. Being able to adjust the screen easily according to the different postures that you adopt. The strain on the cervical spine due to poor posture should be avoided.

What is good ergonomics in the workplace?

They should be able to **sit or stand in a neutral body position with a relaxed posture that requires no stressful angles or excessive reaching to complete tasks.** Office workers should sit with hands, wrists, and forearms that are straight, inline, and parallel to the floor

7. Advantages of ergonomics

7.1 Increased savings

- a. Fewer injuries
- b. More productive and sustainable employees
- c. Fewer workers' compensation claims

7.2 Fewer employees experiencing pain

Implementing ergonomic improvements can reduce the risk factors that lead to discomfort.

7.3 Increased productivity

Ergonomic improvements can reduce the primary risk factors for musculoskeletal disorder, so workers are more efficient, productive and have greater job satisfaction.

7.4 Increased morale

Attention to ergonomics can make employees feel valued because they know their employer is making the workplace safer.

7.5 Reduced absenteeism

Ergonomics leads to health and pain-free workers who are more likely to be engaged and productive

8. Principles of ergonomics - Simple Ergonomic Principles to Follow

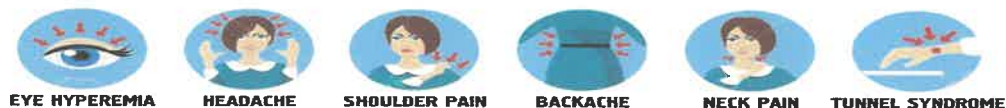
- Keep joints in a neutral position. ...
- Avoid bending forward. ...
- Keep work close to your body. ...
- Avoid twisting your torso. ...
- Alternate posture and movements. ...
- Limit tasks above the shoulder level. ...
- Avoid long reaches. ...
- Avoid lifting heavy loads.
- Take interval breaks in-between task performed

OFFICE HEALTH HAZARDS

ENSURE PROPER POSITIONING



OFFICE SYNDROME



The purpose of **cognitive ergonomics**

Cognitive ergonomics (task analysis) is concerned with **understanding the behavior of humans as they interact with machines**. This information is used to design machine display interfaces and controls to support operator needs, to limit their workload, and to promote awareness of the operation.



* Examples of physical ergonomics in the workplace

Some common examples include: **Using an adjustable ergonomic chair**. Using wrist supports and footrests. Adjusting the height and angle of work surfaces.


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