

# Ergonomics

## What is Ergonomics?

Ergonomics is a science that studies people and the work they do. It involves applying knowledge about human characteristics (such as your height, your comfortable reaching distance, and your hand strength) to the work you do. If your work is modified to match your characteristics, you can work comfortably, efficiently, safely, and avoid problems such as back pain, sore wrists and hands, or sore shoulders.

Ergonomics looks at all of the things that you do at work, including

- The design of the total work environment, including tools, machinery in use, tables, chairs or benches, noise, and lighting;
- Pace of the work, and how the work is organized;

## Why Bother?

In many workplaces, you can find people trying to adjust to difficult situations. Sometimes the difficulties are minor, sometimes serious. Often, the reason for the difficulty is that too little thought has been given to matching the task to human capacities. Seats are uncomfortable, street names cannot be read easily, boxes are too heavy, doors are too narrow, instructions are confusing, shelves are too high or hand tools are awkward.

Sometimes, people adapt to these situations with only slight frustration, discomfort, or loss of speed.

Over a period of time, the discomfort, frustration, loss of efficiency, and errors will accumulate, leading to chronic health problems and decreases in performance.

All too often, these effects combine to create accidents. Ergonomics tries to minimize these problems.

## What are the results of practicing ergonomics?

Properly applied, ergonomics can improve both the well being and the performance of individual workers. Good ergonomics reduces discomfort, fatigue, accidents and health problems while promoting job satisfaction, safety, and personal health.

## How do I get ergonomics at my workplace?

To ensure comfort, safety, and well being, an ergonomics program should be set up at your workplace. A good ergonomics program is an organized approach to protecting workers while actively involving workers and management. It requires:

**Management commitment:** to ensure that resources are available to improve the workplace.

**Ergonomics Education:** to explain injuries, “risk factors”, and control procedures

**Looking for Injuries/Illnesses** (and identifying “high-risk” jobs)

**Job Analysis:** looking carefully at jobs and work methods to find hazardous “risk factors”

**Job Modification:** changing jobs to reduce or eliminate the hazards (“risk factors”)

**Medical Management:** making sure that sick or injured workers get early, effective treatment, and making sure that workers report their injuries.

Some common job hazards and some ways ergonomics can help you

<b>Hazards and Body Part Affected</b>	<b>Examples on the Job</b>	<b>Possible Injuries</b>	<b>Possible Solution</b>
<b>Back</b>			
Lifting	Moving heavy or awkward boxes	Muscle strain/disc injury	Reduce weight of boxes, use mechanical aids, eg. dolly, hoist, forklift
Prolonged sitting without a foot support	Sitting for long hours at a computer or a machine	Muscle pain/strain, reduced blood circulation in the legs	Provide foot support, change job to allow movement from sitting to standing
<b>Neck</b>			
Working with head tilted down or up	Inspecting parts; looking at controls or a computer monitor	Neck/upper back muscle pain and spasms	Tilt inspection table towards worker, place computer monitor at eye level
<b>Shoulders</b>			
Reaching above the chest	Placing materials on high shelves, pulling material from a machine	Shoulder tendinitis, wrist/back pain	Lower shelf height, reduce machine height
Working with raised elbows	Sewing, inspection	Tendinitis, bursitis, upper back pain	Lower work table
<b>Hands</b>			
Rapid turning or bending of wrists	Sewing, poultry cutting, sorting, inspecting, assembly	Carpal tunnel syndrome, tendinitis	Use tools that fit the hand, rest breaks
Bent wrists	Typing, assembly	Tendinitis, carpal tunnel syndrome, ganglions	Modify keyboard, eliminate awkward postures with better tools and assembly processes
<b>Hips/Legs</b>			
Standing in the same position for long periods	Assembly, finishing, machine operation	Reduced blood to legs, varicose veins	Provide a chair, anti-fatigue matting,

(adapted from 'Stop the Pain! A Workers Guide to Job Design' UNITE, 1995)

If you need more information contact the  
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