



What is ergonomics?

More and more work today is being done by machines. This increase in mechanization and automation often speeds up the pace of work and at times can make work less interesting. On the other hand, there are still many jobs that must be done manually, involving heavy physical strain. One of the results of manual work, as well as the increase in mechanization, is that more and more workers are suffering from backaches, neckaches, sore wrists, arms and legs, and eyestrain.

Ergonomics is the study of work in relation to the environment in which it is performed (the workplace) and those who perform it (workers). It is used to determine how the workplace can be designed or adapted to the worker in order to prevent a variety of health problems and to increase efficiency; in other words, to make the job fit the worker, instead of forcing the worker to conform to the job. One simple example is raising the height of a work table so that the worker does not have to bend down unnecessarily to reach his or her work. A specialist in ergonomics, called an ergonomist, studies the relation between the worker, the workplace and the job design.

There are many obvious benefits of applying ergonomics in the workplace. For the worker, the benefits are healthier and safer working conditions. For the employer, the most obvious benefit is increased productivity.

Ergonomics is a broad science encompassing the wide variety of working conditions that can affect worker comfort and health, including factors such as lighting, noise, temperature, vibration, workstation design, tool design, machine design, chair design and footwear, and job design, including factors such as shift work, breaks, and meal schedules. The information in this Module will be limited to basic ergonomic principles for sitting and standing work, tools, heavy physical work and job design.

For many workers in developing countries, ergonomic problems may not be high on the list of priority health and safety problems they face. However, the large and increasing numbers of workers affected by poor work design make ergonomic issues important. As a result of the importance and prevalence of health problems related to a lack of ergonomics at work, these issues have become points of negotiation for many unions.

Ergonomics applies principles of biology, psychology, anatomy and physiology to remove from the work environment the conditions that may cause workers to experience discomfort, fatigue or poor health. Ergonomics can be used to prevent bad design from being built into a job if applied when a job, tools or workstations are being set up. For example, a worker's risk of developing musculoskeletal injuries can be greatly reduced, or even eliminated completely, if he or she is provided with properly designed hand tools from the time he or she begins a job requiring the use of hand tools.

It is only in recent years that some workers, trade unions, employers, manufacturers, and researchers have begun to give attention to how workplace design can affect the health of workers. Without the application of ergonomic principles, tools, machines, equipment and workstations are often designed without much consideration of the fact that people are of all different heights, shapes and sizes, and have different levels of strength. It is important to consider these differences in order to protect worker health and comfort. Without the application of ergonomic principles, workers are often forced to adapt themselves to poor working conditions.