

What is ergonomics?

The word ergonomics is comprised from two Greek words; “ergos” (work) and “nomos” (natural laws). It can be defined as the science of matching work or tasks to the body. Principles of ergonomics are useful in all types of work and leisure settings. It is important to understand the relationship between body posture and characteristics of work, such as repetition (frequency) and force. The more your body or a part of your body is maintained in a position that is not a neutral or natural posture, the greater the effect that increased repetition and force can have. These effects or injuries, which may range from minor to very serious, can occur suddenly or be brought on over a prolonged period of time. This information flyer is focused on the principles of ergonomics as they relate to the use of workstations and video display terminals (VDT's).

What types of injuries can happen?

Repetitive Motion Injuries (RMI) are injuries that involve muscles, tendons and ligaments. Other terminology relating to these types of injuries includes Repetitive Strain Injury (RSI) and Musculoskeletal Injury (MSI). Examples of these types of injuries include back disorders, tendonitis, carpal tunnel syndrome, bursitis and tenosynovitis.

How do I recognize the hazards?

Generally, hazards relate to the three key elements of repetition, force and posture. In the office setting, ergonomic hazards may be related to the workstation design, the job design, repetitive motions, posture, lighting and thermal factors. Being aware of these factors is the first step in preventing RMI's. In addition, your body may provide you with early warning signs of problems such as minor pain and aches, burning sensation, fatigue, headaches, blurry

vision, tingling, numbness, stiffness and tenderness. If ignored, the physical conditions that are causing these symptoms can lead to injury.

How can I control the hazards?

Awareness of ergonomic issues, training on equipment, adjustments to your work habits and adjustments to your workstation are some of the things which can help control these hazards. Once you have established an awareness for ergonomic principles, it is important to gain an understanding of the equipment and how it should be used. Adjustments to the equipment at your workstation are only useful if you use the equipment properly.

Chairs

A seat should provide stability and move easily. The lumbar support should be adjustable and the front edge of the seat pan should be rounded. Arm rests can be used, but are not necessary and sometimes become a disadvantage if they get in the way of your work or prevent proper positioning and inhibit movement in your workspace. The chair should be adjusted so that:

- ***Your elbows are at about a 90 degree angle***
- ***Your hips are at about a 90 degree angle***
- ***Your knees are at about a 90 degree angle***
- ***Your legs have adequate clearance***
- ***Your feet remain flat on the floor***

Some useful exercises

- Subtly stretching your neck toward the left, right, front and back
- Deep breathing
- Rolling your shoulders in a wide circular motion from front to back and back to front
- Flexing and relaxing your hands and fingers
- Stretching your upper torso arms and back
- Touching your toes while in a seated position

The Worksurface

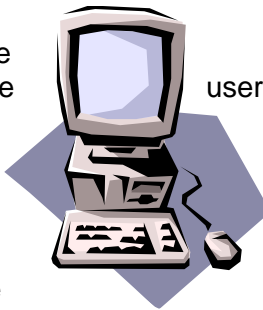
The worksurface should provide adequate space for the tasks you are performing. It should be set at an appropriate height in relation to your chair; approximately the height of your elbows when your arms are hanging straight at your sides. Worksurfaces should be approximately 27.5 – 29 inches in height.

The Keyboard and Mouse

The height of the keyboard should be appropriate to encourage a position of the wrists which is as close to neutral as possible. A wrist rest can be used to help support your wrists, but it also helps keep your wrists in a neutral position. Adjustable keyboard trays should be designed to range between 21.5 – 29.5 inches. If your keyboard tray is not adjustable, you should still be able to find a comfortable position within this range through adjustments to your chair and posture. The mouse should be located at the same height as the keyboard for frequent mousing tasks.

The Video Display

The video display should be placed directly in front of the user such that the user can sit and squarely face the display and the keyboard with the mouse situated just to one side. The top of the screen should be approximately level with the user's eyes with the head in an upright position. The VDT should be placed between 13 – 28 inches away for proper viewing. Although most users find the middle of this range most comfortable, users whose vision has been corrected through the use of glasses, especially bi-focal lenses, may find placement more comfortable in the upper or lower parts of this range depending on the nature of their specific visual capabilities.



Adjusting your work, introducing breaks and exercises

Adjusting your work means changing the way it is done. If possible, your daily tasks should be organized in a manner that alternates the physical requirements of different tasks throughout the work day. This creates natural breaks for you body from remaining in sustained positions for extended periods of time. If you must use a VDT for extended periods, you should try to take a break from VDT tasks for about ten minutes each hour. Simply moving away from the VDT and doing other functions such as filing, and other office work gives your body an opportunity to recover while it changes your posture. Breaks help with eyestrain by allowing the eyes an opportunity to focus at different distances. In addition, there are many exercises that you can do right at your desk.

Adjusting your work station

If you suspect there are ergonomic problems associated with your workstation design making adjustments to your station and your posture is the first step you should take. If you cannot overcome these problems or you are experiencing health problems, you should notify your supervisor and seek assistance through Health Services.

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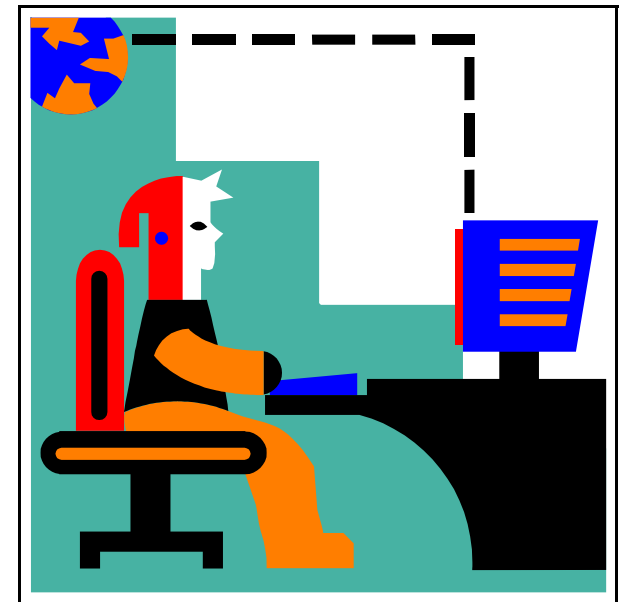
727-4723 ext. 5010

security@algonquincollege.com

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Workstation Ergonomics

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