Ergonomics - Posture

Posture is the position or carriage of the body in a sitting or standing position. It is very easy to have a bad posture when sitting at a computer workstation. Even good posture when held for a long time can lead to fatigue or discomfort.

The position of workstation equipment has to be taken into consideration when initially designing a new workstation to prevent future problems. A good looking workstation should not be the primary design criterion. The effects of postural discomfort should be considered in the design - a person may be able to tolerate an uncomfortable posture for a limited amount of time but over a long period this will cause problems.

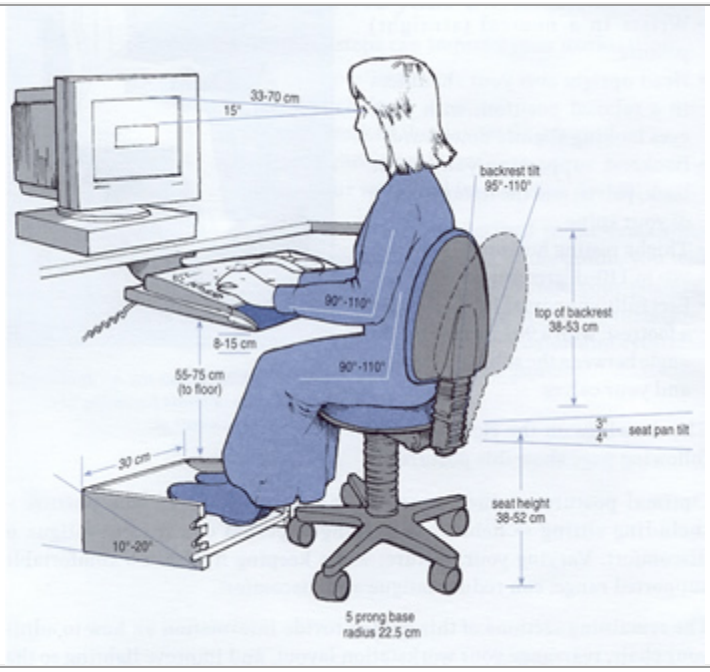
Office seating has to support the body. If the body is expected to sit in the same, uncomfortable position for periods of time the body experiences a number of reactions, including:

- increased compressive load on the spine
- reduced blood flow to muscles resulting in compression of soft tissue and associated numbness and pain
- increased pooling of blood in the legs and feet which further reduces blood flow
- holding the body in one position means that muscles have to contract leading to tiredness and fatigue.

The chair is an important ergonomic tool. The body conforms to the curves of the seat pan and back. Not only is the chair design important the rest of the workstation is too. The height of the work surface, keyboard, mouse and monitor all play an important role in posture. The position of the telephone, lighting and documents may affect how you have to sit at the workstation. No item should be considered in isolation when achieving an ergonomic workstation.

In order to accommodate as many people in the population as possible furniture tends to be adjustable. By being adjustable all but the smallest and largest 5% of the population can be accommodated. The wider the range of adjustment available the more people it will fit. If there are multiple users at a workstation who carry out a variety of tasks at the workstation then the more adjustable the workstation needs to be to accommodate everyone using it.

Workstation dimensions and adjustment ranges



This drawing shows the recommended dimensions and adjustments ranges for the chair, footstool, monitor, keyboard and work surfaces. The operator in this drawing is using good posture.

The computer workstation should allow you to sit with:

- your head should be held upright to follow the curve of the spine
- your arms held horizontally with an approximately 90-degree angle at the elbow
- your wrists in neutral position
- your thighs parallel to the floor so that the hip angle is 90-degrees
- your feet should be supported by a foot rest or the floor so that there is a 90-degree angle at the ankle
- the lumbar support of your chair fitting into the small of your back to support the lower spine and pelvis (this also maintains the natural curve of the spine) - see diagram below

Improper positioning of the arm can lead to a number of problems - these include:

- shoulder discomfort
- elbow discomfort
- wrist discomfort
- hand/finger discomfort

When sitting at your computer your forearms should be parallel to the floor, with your elbow creating a right angle (90 to 110 degrees) between the upper and forearms. Your shoulders and upper arms should be relaxed.

The wrists should be in a neutral position (flat over the keyboard).

Wrists should not be resting against a hard and/or sharp surface. Wrist rests can provide a soft, padded surface for the palm of the hand. The wrist rest should only be used when not typing.

Diagrams of stretches that can be done when sitting at a computer workstation are available from OH&S, please contact OH&S or phone 5139.