

Basic ergonomics in the office

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A well designed workstation can help minimise hazards and improve efficiency. When you're setting up an office or installing a workstation, it's important to look at all aspects of the design to ensure compatibility with the user, the exact nature of the activity and the best condition for performance.

Chairs

Getting the right chair is probably the most important aspect of workstation design. A chair should fit the person who sits in it and be appropriate for the task being carried out. However, prolonged sitting, even in a 'suitable' chair, should be avoided. This means users should vary their work activities and posture on a regular basis.

Chairs (for workstations) that are designed using ergonomic principles should have:

- A back rest that is easily adjustable in height and angle;
- An adjustable back rest depth;
- Preferably a cloth covered seat and back;
- A curved front edge;
- A capability to adjust the height; and
- A good quality base for stability.

Gas lift chairs are recommended for workstations with multiple users or when employees have a variation in task that requires adjusting the height of the chair. For example, alternating between keying at a higher desk (seat set high and maybe foot stool used), and writing and reading activities at a regular desk of normal height. Gas lifts are used to make height adjustments quickly and easily. A screw adjustment is satisfactory if only one operator uses the chair.

Desk component

People have a large range of individual physical dimensions, for example height and reach. The implications of this for the selection and use of equipment and furniture needs consideration. Desks should accommodate both the characteristics of the employee using it and the tasks they perform. Using desks of the right height help to reduce strain on the spine, shoulder and neck muscles.

A comfortable and safe height for keyboard work is around 64 – 69cms or just below the operator's elbow. This allows employees to type with shoulders relaxed and elbows by their side bent at a right angle. To achieve an accurate fit, an adjustable keyboard platform is recommended.

Other tasks, such as reading and writing, generally require a level of just above elbow height, around 70 – 76cms. This allows elbows to be rested on the desk. A standard office desk is designed to suit the majority of users at around this height.

Work surface layout

Work surface layouts should be set up for each new task undertaken. To determine the proper size and arrangement of a desk, it is helpful to make a list of routine tasks and the equipment and materials needed to carry them out.

Desk surfaces should be large enough to provide enough room for easy handling of constantly used documents, papers and equipment. Telephones and other frequently used equipment must be readily accessible. Organise the layout to place the most frequently used objects within easy reach and to minimise twisting or over-reaching.

Consideration should be given to the hand that is used for particular tasks when planning layout, so that it's comfortable. For example, most right handed persons will hold a phone in their left hand while writing or dialling with their right.

Clutter and excessive overreaching can be reduced by moving some items off the desk. If a desk is becoming a storage area it suggests that the work area has an insufficient number of storage facilities (or laziness has set in).

It is also important to allow adequate space behind the chair to be able to access the workstation easily. Leg space under the desk must be enough to allow people to cross or stretch their legs.

If discomfort is being experienced, it is more than likely due to ergonomic factors. For example, if discomfort is being experienced in the shoulder/neck region it may suggest that the desk height or position of the computer screen might not be right.

Keyboard

Common problems experienced by keyboard operators include wrist, neck/shoulder and lower back pain. These symptoms can be avoided by using better set-ups and work practices. Position the keyboard as discussed previously just below elbow height. The keyboard should be 6 – 7cms from the edge of the desk. This allows free movement of the forearm/wrist while keying and a surface on which to rest when not keying. A good idea is to purchase a long gel pad which is placed in front of the keyboard to help with supporting your wrists.

Work practices

Prolonged keying without a break must be avoided. Whenever possible, tasks should be varied to allow different muscles to be used and tired muscles to recover. The more varied the tasks the lower the risk of injury. Examples of this may include filing or photocopying, collecting or delivering documents that allow standing or walking. Writing should not be performed during such breaks.

Document position

Documents left flat on the desk top and off to the side encourage extreme neck postures and cause neck strain. The use of a document holder can better position documents and so minimise the likelihood of neck strain.

Documents should be placed in either a level position beside the screen or directly below the screen. If most time is spent looking at the document (not the screen), the document should be placed directly in front of the operator. If most time is spent looking at the screen, the screen should be placed directly in front of the operator. If the document has to be handled frequently, place it on the dominant (right or left) side or centrally.

The Screen

The top of the screen should be at eye level and about 60 – 70cms from the eyes when the neck is comfortable and the head is upright. This distance can vary due to individual preferences and other visual requirements such as short-sightedness.

Using a computer screen does not harm the eyes. Reading is not an eye-damaging activity; however, it can result in eye muscle fatigue through constant use. If employees are over the age of 40 or experiencing eye discomfort or headaches, eye tests are a worthwhile exercise. The work environment should be evaluated for other problems such as glare.

Eye-strain can be reduced by proper adjustment of screen luminance and contrast. Eye strain can be further minimised by the proper positioning of the screen in relation to other light sources or reducing the intensity of the source. Glare from windows or other bright sources of light may cause discomfort or reduced visibility. Avoid these problems by positioning the screen so light is not within the 'line of sight' or reflected onto the eyes.

Reflections on screen can make images hard to see, and may force people to adopt awkward postures to make the images easier to see. Minimise reflections by using a light screen background colour, a flat screen, or positioning and screening off sources of reflection.

Mouse

The mouse should be positioned to allow employees to use it with their elbow held close to their side and with the shoulders in a comfortable position. Often a keyboard may need to be moved so that a mouse can be placed in a better position. If the desk space is too small to use a mouse, a trackball is a good alternative. Employees should not use a mouse on a desk surface higher than keyboard height.