DISPLAY SCREEN EQUIPMENT

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GUIDANCE NOTES FOR USE OF DISPLAY SCREEN EQUIPMENT

INTRODUCTION

The main risks and hazards associated with the use of Display Screen Equipment workstations are from visual and postural hazards. The risks from these hazards can be reduced to suitably low levels by understanding the hazard and how to reduce the risks. The main risks are:

- Visual fatigue
- Postural fatigue

To consider these in turn firstly visual then postural fatigue.

VISUAL FATIGUE

As its name implies this is tiredness of the eyes. This can be the result of concentrating on the screen for extended periods of from uncorrected vision problems. Monitors which have flicker or lack of clarity of the image. The brightness and contrast controls if adjusted to give an excessive level of brightness or insufficient contrast can also lead to visual fatigue. The height of the monitor should avoid the eyes viewing the screen above the level of the horizon, i.e. looking up. The height of the monitor should be adjusted for each individual to suit their comfort.

To avoid visual fatigue the following techniques can be employed.

- Exercise the eyes by periodically focussing on objects at varying distances
- Adjust the brightness control for comfort.
- Keep the screen clean
- Practice blinking regularly
- Adjust the contrast to keep characters distinct from the background.
- Report faulty equipment.
- Use any prescribed glasses necessary for such work.

POSTURAL FATIGUE.

Can be caused by an unhealthy position. Sitting with the back incorrectly supported or leaning forward or hunched over or with the chair incorrectly adjusted. Can also be caused by incorrect adjustment of the relative heights of the user, keyboard, mouse, desk and monitor.

Musculoskeletal problems occurring with display screen equipment use may range from simple muscle fatigue or neck and back ache to cumulative trauma disorders. Cumulative trauma disorders are associated with tasks that require repetitive motions occurring over long periods of time The two that may be experienced by display screen equipment via the keyboard users include Tenosynovitis and Carpal Tunnel Syndrome (CTS). Tenosynovitis is an inflammation of the sheaths through which the tendons of the fingers pass. It is caused by rapid flexing of the fingers and wrists. Symptoms are pain in the wrist and back of the hand. Tendonitis, an inflammation of the tendon itself, may also be a problem for display screen equipment users. Carpal Tunnel Syndrome is a condition caused by compression or squeezing of the median nerve which passes through the carpal tunnel of the wrist bones. Pressure on the nerve causes numbness, tingling, burning or pain in the palms, fingers or wrists. The problem can intensify over time, spreading up the arm and weakening the muscles, so that one may drop objects being carried or fail to sense hot or cold. CTS can be aggravated by swelling of the tendon sheaths such as in Tenosynovitis.

Musculoskeletal complaints involving muscular fatigue or cumulative trauma disorders are usually the result of the following conditions:

- Maintaining an unnatural or unhealthy posture while using the computer.
- Inadequate lower back support.
- Static load placed on the body by sitting in the same position for an extended period of time (i.e., turning head to the side to view poorly placed document)

To avoid these conditions the following are suggested:

The Monitor

- Should swivel, tilt and elevate (use an adjustable stand, books or blocks to elevate monitors that are not adjustable)
- Should be located so the top line of the monitor is no higher than the user's eyes or no lower than 20° below the horizon of the user's eyes or field of vision or as required to suit an individual user.
- Should be at the same level and beside the document holder if used.
- Should be between 18 to 24 inches away from the user's face or as required to suit an individual user.

The Keyboard

- Should be detachable and adjustable (legs to adjust angle)
- Should be placed to allow the forearm to be parallel to the floor without raising the elbows.
- Should allow the wrist to be in line with the forearm so the wrist is not flexed up or down.
- Should include sufficient space to rest the wrist or should be provided with a padded detachable wrist rest if required by the user.
- Should be placed directly in front of the monitor and at the same elevation as the mouse, track ball or touch pad.

The Chair

- Should support the back.
- Should have a vertically adjustable independent back rest that returns to its original position and has tilt adjustment to support the lower back.
- Should have a pneumatic height adjustment, so that the chair height can be adjusted while the user is in a seated position.
- Should be adjusted so the back crease of the knee is slightly higher than the pan of the chair (use a footrest to elevate the feet if the chair is too high)
- Should be supported by a five prong castor base.

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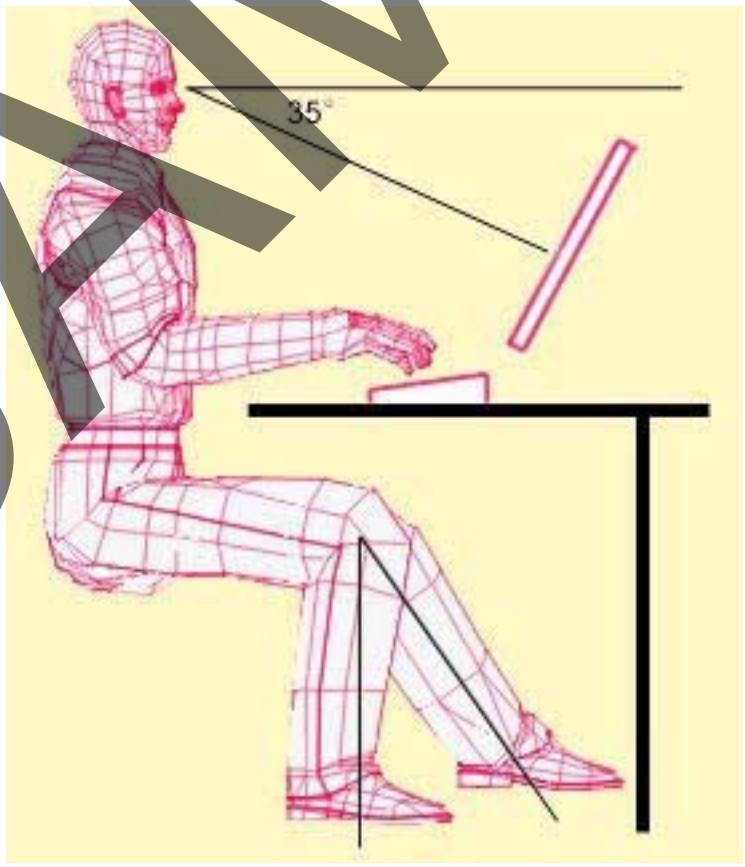
The diagram below shows an operator and their relative positions to the work equipment. The adjustment of the chair should allow the majority of users to achieve the correct height for them relative to the desk and keyboard. The height of the monitor should be adjusted to what the individual finds comfortable. The diagram shows the suggestion which should be appropriate to most users as a starting point.
Note particularly the angle and direction of the wrist which should not be angled up.



CONCLUSION

Display Screen Equipment workstation should be able to be used without serious risks provided that the hazards are adequately controlled. The measures detailed above should provide most users with sufficient information to allow them to set up their workstations in such a way as to minimise the risks. The work design should also allow for regular breaks from the on screen activities. These breaks can take the form of other work such as filing, collecting documents etc. which allow the user to move away from the workstation. It is also good practice to allow users who recognise visual or postural fatigue to alleviate these by taking either a short break or performing other activities to prevent the initiation of any cumulative problems.

The greater the user's control over their workload and how the work is performed with on and off screen activities integrated to prevent prolonged use of display screen equipment in one block the lower the risk of harm.

LAPTOPS

The use of laptop computers should be restricted to either use where risers, keyboard etc are provided or for short periods of time when these are not available. Avoid using laptops on coffee tables whilst sitting on a settee or arm chair as the relationship between the user and the equipment is incorrect. Use laptops on tables with hard back chairs which as closely as possible resemble equipment provided in a workplace. Take sensible precautions when using these at home or in hotels etc.