Wirehouse Employer Services

Guidance Note

Display Screen Equipment

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Introduction

The use of display screen equipment (DSE) or visual display units (VDU) is associated with a number of health problems. DSE equipment includes desktop computers, portable laptop computers, tablets and workstations where there are monitors and keyboards on machinery and process equipment, such as checkout desks and programmable systems.

While the risks to individual users are often low, they can still be significant if good practice is not followed. DSE workers are also so numerous that the amount of ill health associated with such work is significant and tackling it is important. If dealt with properly the effects of poor workstation design can be negated and users can make a full recovery.

Legislation

There are several pieces of legislation that apply to display screen equipment:

- These include the Health and Safety at Work Act which extends to risks from display screen equipment, which may arise from work activities.
- The Management of Health and Safety at Work Regulations provide a broad framework for controlling health and safety at work.
- More specifically, the Display Screen Equipment Regulations 1992 provides a framework of actions designed to assess, prevent or control the risk from the use of display screen equipment and take suitable precautions.
- The Approved Code of Practice: Work with Display Screen Equipment (L26) contains practical guidance on how to comply with the regulations and avoid the health risks associated with screen–based work.

Hazards

The main risks that may arise in work with DSE are musculoskeletal disorders such as back pain or upper limb disorders (including pains in the neck, arms,

elbows, wrists, hands and fingers and sometimes known as repetitive strain injury or RSI), back ache, visual fatigue, mental stress, temporary eye strain and headaches.

Work related upper limb disorders is a general term used to describe problems that are associated with the neck, shoulders, arms including the forearm, wrists, hand and fingers. Common examples are Carpal Tunnel Syndrome, tennis elbow and tenosynovitis. Early symptoms include tenderness, aches and pains, restrictions in movement, swelling, a reduced sense of touch, reduced dexterity and these are often made worse by repetitive movements, cold and vibration.

These symptoms are often associated with repetitive movements, but other factors play a part. Factors to consider are the task, the environment and the equipment in use.

The following factors need consideration:

- Force and Grip – consideration of how much force and grip is applied to complete the task. More gentle force reduces the stress onto joints whilst a less firm grip reduces the tension applied to the muscles thus reducing overall fatigue.
- Frequency and duration – consideration to how often the task is performed and for how long.
- Vibration – not usually associated with display screen work but does have an impact on upper limb disorders.
- Cold conditions increase the level of fatigue. Circulation is less effective in the cold and increases numbness and fatigue.
- Pre-existing medical conditions are required to be assessed to ensure that the work may not increase the level of risk to the operator.

Persons at Risk

There are some repetitive operations that can increase the chance of work–related upper limb disorders to those workers. Examples include:

- Computer use.
- Assembly lines.
- Bricklaying.
- Checkout operations.

A DSE assessment is required for any person who is defined as a user. Employers must therefore decide which of their employees are DSE users. Where it is clear that use of DSE is more or less continuous on most days, the individuals concerned should be regarded as users or operators. Where use is less continuous or frequent, other factors connected with the job must be assessed. It will generally be appropriate to classify the person concerned as a user or operator if they:

- Normally use DSE for continuous or near–continuous spells of an hour or more at a time.
- Use DSE in this way daily.
- Have to transfer information quickly to or from the DSE.

Part time workers should also be assessed using the same criteria.

Training

Health and safety training should be aimed at reducing or minimising the three risk areas which relate to physical (musculoskeletal) problems, visual fatigue and mental stress. Training will need to be adapted to the requirements of the particular DSE tasks, be adapted to users' skills and capabilities and be refreshed or updated as the hardware, software, workstation, environment or job are modified.

All users of DSE should be trained in:

- The risks from DSE work.
- The importance of good posture and changing position on a regular basis.
- How to adjust furniture correctly such as the chair.
- Organising the workplace to avoid awkward or repetitive movements with commonly used items within easy reach.
- Avoiding reflections and glare on or around the screen from natural and artificial lighting.
- Adjusting and cleaning the screen and the mouse.
- Organising work for activity changes and breaks.
- Who to contact for help or to report symptoms to.

Management of Display Screen Equipment

Each workstation needs to be formally assessed and a record kept, this is normally a pre-prepared workstation checklist or form. Assessments should be reviewed regularly, and when things change. The assessment or relevant parts of it should be reviewed in the light of changes to the DSE worker population, or changes in individual capability, or where there has been some significant change to the workstation.

Risks must be reduced to the lowest level reasonably practicable. The assessment will highlight any particular areas which may give reason for concern, and these will require further evaluation and corrective action as appropriate. Risks identified in the assessment must be remedied as quickly as possible.

Workstation Assessment

Every employer is required to perform a suitable and sufficient analysis of workstations for the purpose of assessing the health and safety risks and reduce the risks identified in the assessment to the lowest extent that is reasonably practicable.

Information provided by users is an essential part of an assessment. The inclusion of such views is likely to result in better information on existing conditions and provide a feeling of ownership over the findings. Employees who are actively involved in the risk assessment process are also more likely to report any problems as they arise.

The assessment or relevant parts of it should be reviewed in the light of changes to the DSE worker population, or changes in individual capability, or where there has been some significant change to the workstation such as:

- A major change to software used.
- A major change to any of the equipment (screen, keyboard, input devices).
- A major change in workstation furniture.
- New users or a change in workstation or workstations relocated (even if all equipment and furniture stays the same).
- A substantial increase in the amount of time required to be spent using DSE.
- A substantial change in other task requirements (greater speed or accuracy).
- If major features of the work environment, such as the lighting, are significantly modified.

Screen

When analysing workstations, the following points should be considered with regard to the screen:

- The characters on the screen shall be well–defined and clearly formed, of adequate size and with adequate spacing between the characters and lines.
- The image on the screen should be stable, with no flickering or other forms of instability.

- The brightness and the contrast between the characters and the background shall be easily adjustable by the operator or user and be easily adjustable to ambient conditions.
- The screen must swivel and tilt easily and freely to suit the needs of the operator or user. It shall be possible to use a separate base for the screen or an adjustable table.
- The screen shall be free of reflective glare and reflections liable to cause discomfort to the operator or user.

Keyboard

Points to consider when assessing the keyboard are:

- The keyboard should be tiltable and separate from the screen to allow the operator or user to find a comfortable working position avoiding fatigue in the arms or hands.
- The space in front of the keyboard should be sufficient to provide support for the hands and arms of the operator or user.
- The keyboard shall have a matt surface to avoid reflective glare.
- The arrangement of the keyboard and the characteristics of the keys shall be such as to facilitate the use of the keyboard.
- The symbols on the keys shall be adequately contrasted and legible from the design working position.

Mouse/Trackball

If a mouse or trackball is used, then it should be confirmed that it is:

- A suitable device.
- Positioned close to the user.
- Adequate support for the wrist/forearm.
- Speed and ease of use.
- Ability to adjust speed and accuracy settings.

Software

Software and systems should be designed to minimise the number of keystrokes and mouse movements required by the operator. The fewer that are required the less the demands and strains placed on the muscles of the wrist and forearm.

Furniture

The work desk or work surface should have a sufficiently large, low reflectance surface and allow a flexible arrangement of the screen, keyboard, documents and related equipment.

The document holder shall be stable and adjustable and shall be positioned so as to minimise the need for uncomfortable head and eye movements. Forearms should be horizontal with the eyes level with the top of the screen and feet flat on the floor. Wrist support may be required for some users. There shall be adequate space for operators or users to find a comfortable position.

Chair

The work chair should be stable and allow the operator or user easy freedom of movement and a comfortable position. The seat back should be adjustable in both height and tilt. A footrest shall be made available to any operator or user who wishes one. Operators should adopt a relaxed upright posture or slightly leaning back.

Environment

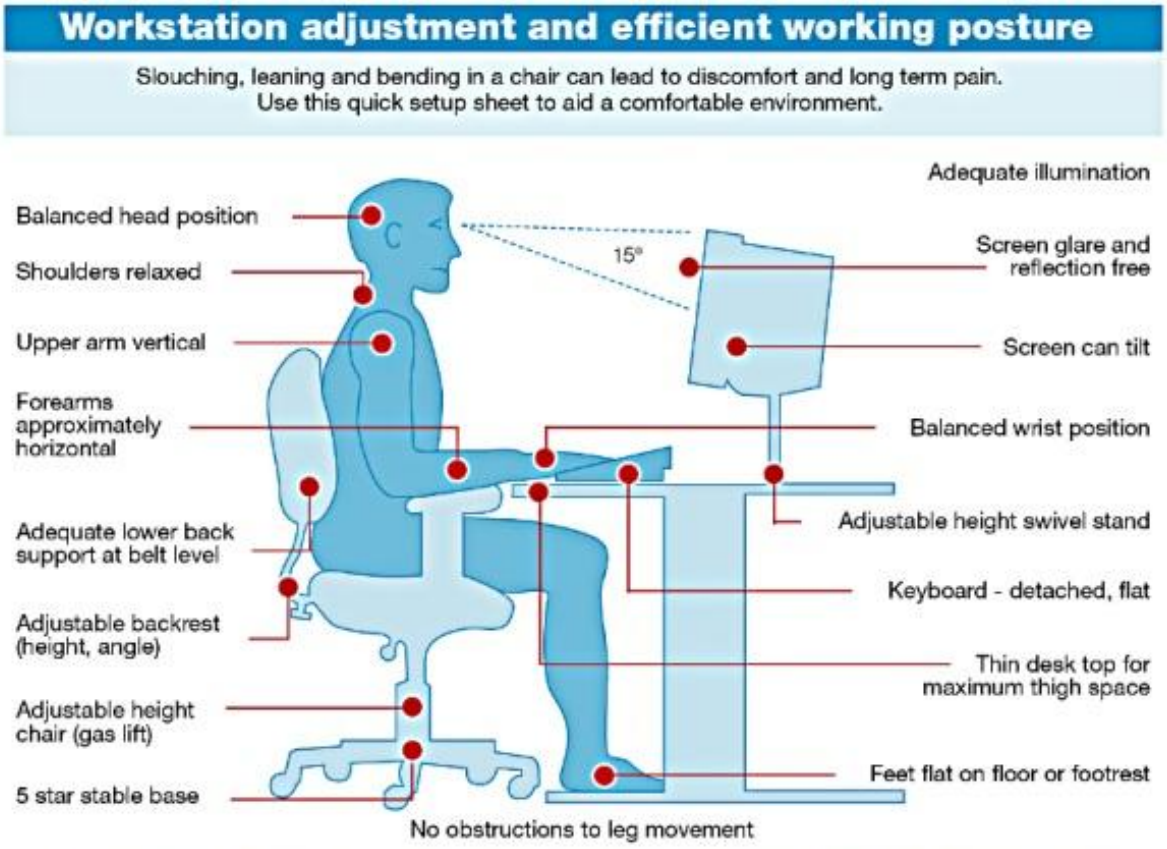
The workstation should be of sufficient dimensions and designed so as to provide sufficient space for the operator or user to change position and vary movements.

Any room lighting or task lighting provided should ensure satisfactory lighting conditions and an appropriate contrast between the screen and the background environment, taking into account the type of work and the vision requirements

of the operator or user. Possible disturbing glare and reflections on the screen or other equipment should be prevented by co–ordinating workplace and workstation layout with the positioning and technical characteristics of the artificial light sources. Workstations should be so designed that sources of light, such as windows and other openings, transparent or trans lucid walls, and brightly coloured fixtures or walls cause no direct glare and no distracting reflections on the screen. Windows should be fitted with a suitable system of adjustable covering to attenuate the daylight that falls on the workstation.

Any noise emitted by equipment belonging to any workstation should be taken into account when a workstation is being equipped, with a view in particular to ensuring that attention is not distracted and speech is not disturbed.

Equipment belonging to any workstation should not produce excess heat which could cause discomfort to operators or users. An adequate level of humidity should be established and maintained.



You can do a basic DSE assessment yourself using a diagram like this. However your local DSE assessor should provide more help.

Daily Work Routine of Users

Employers should plan the activities of users at work so their daily work on display screen equipment is periodically interrupted by breaks or changes of activity as reduce their workload at that equipment. In many tasks, natural breaks or pauses occur as a consequence of the inherent organisation of the work. Whenever possible, jobs using DSE should be designed to consist of a mix of screen–based and non–screen–based work to prevent fatigue and to vary visual and mental demands. Where the job unavoidably contains spells of intensive DSE work (whether using the keyboard or input device, reading the screen, or a mixture of the two), these should be broken up by periods of non–intensive, non–DSE work. Where work cannot be so organised, for example in jobs requiring only data or text entry or screen monitoring requiring sustained attention and concentration, deliberate breaks or pauses must be introduced.

Users should stretch and change their position and encouraging users to look into the distance and blink often. Breaks should be taken before fatigue sets in rather than recovering from tiredness and breaks should be taken away from the screen.

Eyes and Eyesight Tests

Users are entitled to eye and eyesight tests to be paid for by the Employer. The provision of eye and eyesight tests and of special corrective appliances under the DSE Regulations is at the expense of the user's employer. This is the case even if the user works on other employers' workstations.

If the test shows they need glasses specifically for their DSE work, the Employer has to pay for a basic pair of frames and lenses. If users wish to choose more costly appliances (for example with designer frames, or lenses with optional treatments not necessary for the work), the employer is not obliged to pay for these. In these circumstances' employers may either provide a basic appliance or may opt to contribute a portion of the total cost of a luxury appliance equal to the cost of a basic appliance.

Users are entitled to further tests at regular intervals after the first test, and in between if they are having visual difficulties which may reasonably be considered to be caused by their DSE work.

Summary

The principal health risks associated with DSE work are physical (musculoskeletal) problems, visual fatigue and mental stress. These problems often reflect bodily fatigue. None of them are unique to DSE work, nor are they an inevitable consequence of it. Risks to typical users should be low if the DSE Regulations are complied with and ergonomic principles are taken into account in the design, selection, installation and use of the equipment; the design of the workplace; and the organisation of the task.

However, it is important not to be complacent about this. DSE workers are so numerous that low risk to the average individual may still equate to many thousands of cases of ill health in the working population. In addition, risks to individuals in a particular workplace may not remain low if control measures are poorly designed from the start, or if circumstances change.

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