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**DISPLAY SCREEN EQUIPMENT  
REGULATIONS 1992**

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**Code of Practice  
July 2004**

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**Royal Free Hampstead NHS Trust**

**&**

**Royal Free and University College Medical School  
(Royal Free campus)**

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## 1 SUMMARY OF THE REGULATIONS

The main regulations that apply to the use of display screen equipment are the Health and Safety (Display Screen Equipment) Regulations 1992. The main requirements of the regulations can be summarised as:

- \* Assessment of the workstation
- \* Workstations to meet a minimum standard
- \* DSE 'users' daily work routine to include rest breaks
- \* Eye and eyesight testing for DSE users, and provision of corrective spectacles for DSE use if required
- \* Provision of training and information for users.

It should be remembered that the Management of Health and Safety at Work Regulations 1999 overlay all regulations and so may have some effect on the management of display screen equipment.

## 2 INTRODUCTION

This code of practice expands on the general responsibilities of managers and employees described in the trust's *Health and Safety Policy – Organisation and Arrangements*. It also gives guidance on compliance with the regulations.

The aim of these regulations is to prevent ill health arising from the use of display screen equipment. The main types of ill health are musculoskeletal disorders such as back pain or upper limb disorders (sometimes known as repetitive strain injury, or RSI), visual fatigue, and mental stress. These are summarised in Section 4.

Definitions of terms used such as **display screen equipment (DSE)**, **workstation** and **user** are set down at the start of section 3. The classification of a person as a **user** is important since users are the subject of the requirements of the regulations. These regulations also apply to people working from home.

The minimum standards for workstations may be found in Appendix 1 of this document.

## 3 DEFINITIONS

**Display Screen Equipment** this means any alphanumeric or graphic display screen irrespective of the process involved and includes cathode ray (normal TV) and liquid crystal displays, microfiche readers and film and television screens showing text and graphic information.

The following are **excluded**: window typewriters, scientific and medical equipment and portable display screen equipment (eg laptops), provided they are not in prolonged use (eg over 1 hour continuously).

**Workstation** comprises of display screen equipment, accessories such as disk drives, telephones, modems, printers, document holder etc. It also includes the table/desk and chair. The immediate environment also comes within the definition of workstation.

**User** this is any employee who uses a piece of display screen equipment for a significant part of their working day. On the RFH campus this is taken to be 2 hours or more of continuous use or a third of the working day.

## 4 POSSIBLE EFFECTS ON HEALTH

### Main Risk

**Upper Limb Pains and Discomfort** These may be caused by sitting in a fixed or bad posture for extended periods of time. Rapid repetitive movement can also be a source of problems and lead to chronic injury. A number of companies have had to make large settlements where people have suffered from repetitive strain injuries (RSI).

**Eye and Eyesight Effects** There is no evidence that using display screen equipment is associated with damage to eyes or eyesight, nor are existing defects made worse. Visual fatigue, however, can lead to severe headaches, gritty feeling eye or impaired vision. These symptoms can be the result of not seeing the screen properly either through the need to correct eyesight or one of a number of defects associated with the screen. It is often caused by staying in the same position and concentrating for a long time. Having to repeatedly change focus, eg. having documents and screen at different distances to the eye can also lead to fatigue.

**Fatigue and Stress** This can be the result of high volume, high speed work where there may be pressures to complete certain tasks in a given time. Other factors can be poor job design or work organisation or the under utilisation of skills.

### Other Possible Risks

**Epilepsy** – An episode may be triggered in people who suffer from photosensitive epilepsy. This is an extremely rare form of epilepsy and some sufferers find they can work with display screens without experiencing seizures.

**Facial Dermatitis** - There have been reports of people experiencing itching or reddening of skin on the face or neck. Again this condition is very rare and is thought to be associated with environmental factors such as low relative humidity or static electricity near the VDU.

**Radiation Effects** - The National Radiological Protection Board have found that the level of radiation emitted by VDUs is very low and well below national and international limits for occupational exposure. Radiation from visual display units (VDUs) is not considered a hazard.

**Pregnancy** - Although there has been some concern on this subject, recent reliable studies have not demonstrated a link between miscarriages or birth defects and VDUs. Again the levels of radiation are far below those that could put unborn children at risk. It is possible that pregnant women might be more prone to postural discomfort caused by sitting too long in one position, and so more-frequent breaks may be called for.

## 5. RESPONSIBILITIES & GUIDANCE

In accordance with the Health and Safety policy, every Head of Department has a number of duties, as detailed below.

### USERS

Every Head of Department shall ensure that:

- 5.1 'users' are identified and that this is recorded in their personal records

#### **Guidance**

*See 3 for definition of User.*

### ASSESSMENT

Every Head of Department shall ensure that:

- 5.2.1 suitable and sufficient assessments of all 'user's' workstations is carried out in conjunction with the user,
- 5.2.2 assessments are repeated where there has been a significant change from the original assessment,
- 5.2.3 where an assessment identifies risks, these risks are reduced to lowest reasonably practical levels.

#### **Guidance**

*The regulations require that the assessment be carried out by a trained person and in conjunction with the user(s) of the workstation. The assessment needs to be repeated if it is not found to be satisfactory, or if equipment or the user changes. It should be reviewed at regular intervals (yearly).*

*Problems identified by the assessment will need to be rectified. This should be carried out in order of priority and those causing symptoms for the user should be dealt with as soon as possible.*

*Heads of Department may carry out assessments themselves or nominate a member of their staff, such as the Departmental Safety Officer, to carry out assessments. All assessors will need to be trained. The Ergonomics and Manual Handling Team is available for advice or help with assessments, but will not normally carry them out.*

- 5.2.4 Corrective actions specified in the risk assessment are completed with the minimum of delay.

### MINIMUM STANDARDS

Every Head of Department shall ensure that:

- 5.3 all workstations meet the minimum standards set down in Appendix 1.

#### **Guidance**

*All workstations – whether or not they are used by a 'user' - need to comply with the minimum requirements as set out in the Schedule of the Health and Safety (Display Screen Equipment) Regulations 1992.*

See Appendix 4 for a discussion on laptops.

## DAILY WORK ROUTINE

Every Head of Department shall ensure that:

- 5.4 activities of 'users' at display screens are so planned that they take regular breaks away from the screen.

### **Guidance**

*Users are required to take breaks away from the DSE work at regular intervals. Breaks should be taken before the onset of fatigue, and frequent short breaks (eg. 5 minutes every hour) are better than less-frequent but longer breaks (eg 10-15 minutes every 2 hours). Breaks must not be accumulated in order to shorten the working day. The term 'breaks' should be taken to mean a change in activity. Tasks undertaken during breaks should not involve hand movements similar to these used at the keyboard or be a strain on eyesight.*

## EYE AND EYESIGHT TESTS AND CORRECTIVE SPECTACLES

Every Head of Department shall ensure that:

- 5.4.1 where a 'user' wishes to have an eye or eyesight test, the agreed procedures are followed,
- 5.4.2 where tests indicate that corrective spectacles for DSE work are required by users, these are supplied as prescribed by the opticians.

### **Guidance**

*Users are entitled to have their eyes and eyesight tested on first starting work, at regular intervals or when eye problems are experienced. The regularity of tests is determined by the optometrist or the Director of Occupational Health. The tests are performed by a local optometrist.*

*Should tests indicate an eye or eyesight problem, requiring corrective spectacles specifically for VDU work, will be supplied. All costs associated with the above tests and spectacles will be born by the Trust or the School of Medicine.*

*For further information see Appendix 2.*

## TRAINING AND INFORMATION

Every Head of Department shall ensure that:

- 5.5.1 training is provided for all users and potential users, prior to starting work with VDU's,
- 5.5.2 relevant information is supplied to all users detailing risks on how to avoid problems and the arrangements made by the Trust and School of Medicine to comply with the Display Screen Equipment regulations.

### **Guidance**

*Training will need to be provided to assessors and to DSE users. Managers should consult the Ergonomics and Manual Handling Team about training courses. Assessors would normally be expected to give information and training to users in their area.*

## APPLICATION OF REGULATIONS TO STUDENTS

Every Head of Department shall ensure that:

- 5.6.1 workstations meet the standards set out in Appendix 1.
- 5.6.2 information is provided to students on safe working with display screen equipment.
- 5.6.3 safety training is included in any general training on how to use display screen equipment. This should include correct setting up of the components of workstations, the importance of regular breaks and possible eyesight problems.
- 5.6.4 students experiencing problems are referred to the Occupational Health & Safety Unit or advised to see an ophthalmic optician or their own GP, as appropriate.

### ***Guidance***

*Students on work placement in the Trust or School should be treated as staff for the purposes of setting up workstations and rest breaks. Postgraduate students should be treated as employees for the purposes of these regulations.*

*Although undergraduate and other students are not directly covered by these regulations, there is a general duty of care under section 3.1 of the Health and Safety at Work Act 1974 for student health and safety, and a duty to carry out risk assessments under the Management of Health and Safety at Work Regulations 1999. Furthermore all workstations have to meet the minimum standards set out in the DSE regulations.*

## 6 REFERENCES

1. Health and Safety (Display Screen Equipment) Regulations 1992 - Guidance on Regulations (L26), HSE, Published by HMSO. (Copy available in the Medical School Library).
2. Working with VDUs – INDG36, HSE Books 1998
3. BS EN ISO 9241 – Ergonomic requirements for office work with visual display terminals (VDTs) (in several parts). British Standards Institution.
4. The law on VDUs: an easy guide, HS(G)90, HSE Books 2003.
5. The webpage [www.openerg.com/dse/setup.html](http://www.openerg.com/dse/setup.html) demonstrates some of the workstation layout issues raised above.

## APPENDIX 1

### WORKSTATION MINIMUM REQUIREMENTS

#### 1. INTRODUCTION

- 1.1 Under Regulation 3 of Health and Safety (Display Screen Equipment) Regulations 1992 (as amended in 2002), all workstations must meet certain minimum standards.
- 1.2 The precise requirements are set out in the schedule to the regulations and in HSE guidance to the regulations, L26.

#### MINIMUM REQUIREMENTS

#### 2. EQUIPMENT

The workstation should comply with British Standard BS EN 9241.

- 2.1 **DISPLAY STABILITY** - to be flicker free as perceived by 90% of the users. The display is to be persistent and must not jump, jitter or swim.
- 2.2 **BRIGHTNESS AND CONTRAST** - Negative (light on dark) or positive (dark on light) image polarities are both acceptable. Negative polarity is generally easier to work with, however, positive polarity is less susceptible to reflections and luminance balance is easier to achieve. Brightness and contrast controls must be adjustable.
- 2.3 **SCREEN POSITION ADJUSTABILITY** - The screen is to have an adjustment mechanism whereby it can be swivelled and tilted so that it may be adjusted to the person's comfort (it may be necessary to provide an external adjustment mechanism where the screen is not fitted with one – for instance with some flat panel displays). Furthermore there should be some means of adjusting screen height where this is necessary.
- 2.4 **KEYBOARD** - The keyboard is to be easily accessible and the keys easy to operate. The keyboard is to be tiltable if required.  
There is to be some method of supporting the arm/hand/wrist which the user/operator finds comfortable.
- 2.5 **WORK DESK/SURFACE** - The work surface is to be large enough for the activities being performed and for all of the equipment that is to fit on it.  
It should be easy to position and use the hands for each task.
- 2.6 **WORK CHAIR** - The primary requirement is for the person sitting in it to achieve a comfortable position. Certain adjustments are required which are listed below:
  - i) Height of seat (relative to the ground)

- ii) Height of back support (relative to the ground)
- iii) Tilt of back support

Automatic backrests are acceptable provided they give adequate support.

The chair should have a 5 star base with castors suitable for either hard floor or carpet as appropriate.

Foot rests are necessary for individual users who are unable to rest their feet flat on the ground whilst sitting in a good working posture. Foot rests should not be used where they are not necessary.

Further information in HSE Publication 'Seating at Work' (HS(G)57).

### 3 ENVIRONMENT

#### 3.1 SPACE REQUIREMENTS

There must be adequate space (on desk and around person) to permit postural changes. This includes thighs, knees, lower leg and feet.

Note: BS EN ISO 9241-5:1999 gives the following dimensions for the work desk/surface.

Floor to top clearance	705mm - 735mm
Floor to thigh clearance	min 650mm
Kneehole depth	min 600mm
Kneehole width	min 600mm
Desk Depth	600mm + depth of monitor

#### 3.2 ILLUMINANCE

There should be sufficient lighting without generating glare. Lighting for DSE workstations should ideally be between 300 - 500 lx.

#### 3.3 REFLECTIONS AND GLARE

These can cause visual fatigue and stress as can an imbalance between brightly and dimly lit areas. The screen should be positioned in such a way so as not to have reflections of lights, windows or strongly lit light coloured objects. Strong reflections from the operator or their background can also cause problems.

The operator should not be able to see other strong light sources or reflections that fall in the operator's field of vision and therefore cause a distraction from the screen.

Anti-glare screens are not usually necessary. According to the HSE guidance, 'anti-glare screens should be considered as the last resort if other measures fail to solve the problem.'

#### 3.4 NOISE

Noise from printers and other machinery etc. should not be great enough to impair the users concentration.

#### 3.5 HEAT AND HUMIDITY

The room temperature should ideally be between 18°C and 24°C and relative humidity be between 30%-70%. Air that is too dry can cause sore eyes.

### **3.6 RADIATION**

HSE and National Radiological Protection Board studies have indicated that working at a VDU screen causes no ill effects and that the amount of radiation that comes from screens is within safe limits. Therefore, anti-radiation shields are not recommended.

## **4 TASK DESIGN AND SOFTWARE**

### **4.1 TASK**

Inappropriate task design can cause stress, which in extreme cases can lead to illness. Stress can also reduce work output.

The task should allow the user to have:

- Variety
- Discretion
- Feedback
- Opportunities to learn

The user should not be overworked or under-worked since both can result in stress.

The user must have regular breaks and should be allowed to choose when to take them. See section 5.4 above for guidance.

The user should be allowed to contribute to planning the task.

### **4.2 SOFTWARE**

Poor software design will lead to increased mistakes and decreased output. Software should:

- . allow the user to complete the task efficiently
- . allow the user to master the commands easily
- . be within the users capabilities
- . where appropriate, be adaptable to the situation
- . allow for corrections where errors have occurred
- . give feedback and help
- . be paced appropriately for the task and the user's capabilities

Quantitative or qualitative checking facilities built into the software can lead to stress if they have adverse results such as an overemphasis on output speed. If a monitoring system is to be used, it should avoid these drawbacks and provide information that is helpful to workers as well as managers. In all cases workers, or their representatives, should be consulted and kept informed.

## APPENDIX 2

### EYE AND EYESIGHT TESTING AND CORRECTIVE SPECTACLES

#### INTRODUCTION

Regulation 5 of the Regulations deals with an employee's entitlement to be given, on request, eye/eyesight testing and in certain cases be provided with corrective spectacles. The cost of testing and spectacles is to be borne by the employer (Trust or School of Medicine).

#### ENTITLEMENT TO EYE TESTS AND SPECTACLES FOR DSE WORK

**Who qualifies as a 'user'?** This is a person who spends at least 30% full time or 2 hours a day using display screen equipment. This applies to all staff employed directly by the Trust or School. Hospital agency staff should consult the agency co-ordinator in Human Resources.

**Entitlement to Eye and Eyesight tests** - 'Users' are entitled to request a free eye test on the following occasions:

- i) when they first start work or first become a 'user',
- ii) if they are already a 'user',
- iii) when they experience difficulties that seem to be related to display screen equipment work,
- iv) on the direction of the Occupational Health and Safety Unit (OHSU),
- v) repeat screening tests are offered at 2 yearly intervals.

#### Entitlement to Corrective Spectacles

If the tests indicate that special spectacles are required for display screen equipment work, where normal spectacles cannot be used, then a pair of spectacles will be provided free of charge to the user.

**Note:** These spectacles are specifically for DSE or VDU type work, usually covering a distance of about 50-60cm. The most basic type of spectacle will be provided free of charge, however, if the person wishes to have a more expensive pair of frames or other additional features, then the Trust or School will only contribute the equivalent of the cost of the most basic pair of spectacles.

#### PROCEDURE

An employee who qualifies as a user and wishes to exercise their option for an eye and eyesight test should:

- a) Download the Eye Test Referral Form from Freenet
- b) Complete the form and have it countersigned by their Head of Department. (In certain circumstances, it may be signed by a doctor from the Occupational Health and Safety

Unit).

- c) arrange a suitable time for a test with the appointed opticians, as indicated on the application form. (Employees have the right to have eye tests and make collection of spectacles during normal working hours.)
- d) take the referral form with them to the opticians
- e) If the tests indicate that the user requires special corrective spectacles, then they either:
  - choose a pair of frames from the basic range or
  - they may count the cost of the most basic spectacles towards a more expensive pair and make up the difference in cost themselves.

If in subsequent years tests indicate a change of lenses, then the Trust or School will only pay for changing the lenses and not for a new pair of spectacles.

The optometrist may recommend when re-examination of the eyes and eyesight should take place and this interval will be dependent on factors such as the person's age. If users wish to have their eyes re-examined, after the interval indicated by the optometrist then they will need to fill in a new form. Users wanting a re-examination before the time indicated by the optometrist, should consult the OHSU.

## **RECORDS**

The OHSU will keep records of test dates, whether spectacles were prescribed, and recommended re-test dates. The OHSU does not receive prescription information.

### **APPENDIX 3: WORKSTATION ASSESSMENT**

The workstation assessment is to be carried out by an appointed assessor jointly with the user.

The assessor must have been trained – either on a course provided by an external trainer or the course offered by the Ergonomics and Manual Handling Team.

Following the assessment, any corrective actions shown to be needed should be prioritised and a timetable for their completion agreed. Progress towards completion should be monitored and reported at departmental/divisional meetings.

The workstation assessment form may be downloaded from Freenet (via the Health and Safety folder on the Freenet home page).

### **APPENDIX 4: Laptops and other portable DSE**

#### **Discussion**

The situation regarding laptops is complicated. Provided they are not in extensive use, laptops and other portable DSE are not covered by the DSE regulations. However, there is an over-riding duty under the Management of Health and Safety Work Regulations 1999 to carry out risk assessments and take appropriate action for all employees (and others) – even if they are not users/operators under the DSE Regulations.

It has become generally accepted that this type of equipment should be regarded as coming under the DSE regulations except in exceptional circumstances.

There are two major disadvantages with this type of equipment:

- The screen cannot be separated from the inbuilt keyboard and so correct posture cannot be achieved
- The inbuilt keyboard is small, with small keys. This type of keyboard is less easy to use and also contributes to poor posture.

#### **Action**

To avoid these problems, laptops should be provided with a separate keyboard and some form of support to allow the screen to be moved to a comfortable height and position .

### **APPENDIX 5: telephones**

If employees routinely have to use the keyboard to access the screen whilst using the telephone, they should be provided with a hands-free telephone, for instance one with a speaker or a head-set.