**Introduction**

**Managers are required to assess and minimise the health risks posed to employees who work with display screen equipment by ensuring that workplaces and jobs are well designed and are compatible with that person’s needs. Employees are also required to act on the training and information provided to them.**

### Definitions

* Display screen equipment (DSE) means any alphanumeric or graphic display screen, regardless of the display process involved.
* Operator means a self-employed person who habitually uses display screen equipment as a significant part of his normal work.
* “Use” means use for or in connection with work.
* “User” means an employee who habitually uses display screen equipment as a significant part of his normal work; and
* “Workstation” means an assembly comprising –

(i) display screen equipment (whether provided with software determining the interface between the equipment and its operator or user, a keyboard or any other input device),

(ii) any optional accessories to the display screen equipment,

(iii) any disk drive, telephone, modem, printer, document holder, work chair, work desk, work surface or other item peripheral to the display screen equipment, and

(iv) the immediate work environment around the display screen equipment.

### Scope

The DSE Regulations are for the protection of people (employees and self employed) who habitually use DSE for the purpose of an employer’s undertaking as a significant part of their normal work.

The regulations apply to protect users whether they are employed to work:

* at a workstation provided by their employer
* at a workstation at home (including portable equipment/laptops)
* at another employees workstation.

**Agency workers**

Many temporary workers supplied by employment agencies/employment businesses will use DSE sufficiently to become users (employees) or operators (self-employed people) and hence be subject to the DSE Regulations.

Where a DSE worker supplied by an agency/employment business becomes an employee of the host employer, the duties under the DSE Regulations will fall to the host employer.

In other situations where the worker is an employee of the agency or is self-employed, both the agency/employment business and the host (client) employer will have duties under the DSE Regulations.

The following list clarifies these responsibilities, host employers should:

* Assess risks to agency workers (whether users or operators) using their workstations.
* Ensure all workstations in their undertaking comply with minimum requirements.
* Ensure activities are planned so that agency worker users can have breaks from DSE work.
* Provide training to agency worker users when their workstation is being modified.
* Provide information to agency workers (both users and operators) about risks, risk assessment and risk reduction measures; and additionally to users about breaks, and training when their workstation is modified.

### The why, what and how

KCC employs a considerable number of employees and has to deal with a significant number of ill health and postural concerns raised by staff who are required to use display screen equipment.

DSE can often be wrongly blamed for a wide range of ill-health and postural problems. Where there are problems they are generally caused by the way in which DSE is being incorrectly used, rather than the DSE itself. These are not unique to DSE work nor an inevitable consequence of it, and indeed there is some evidence that the risk to the individual user from typical DSE work is low if appropriate precautions are taken. Ill health can result from poor equipment/furniture, poor work organisation, the working environment, the job design and poor posture or inappropriate working methods. DSE issues can be prevented in the majority of cases by good ergonomic design of the equipment, workplace and job, and by worker training and consultation.

Possible health risks which have been associated with DSE work relate to:

* Musculoskeletal disorders – covers any injury, damage or disorder of the joints or other tissues in the upper/lower limbs or the back. Upper limb disorders (ULD’s) affect the hands, fingers, wrists, arms and neck. Lower limb disorders (LLD’s) affects the hips, legs, feet or toes. In severe cases, if no action is taken these disorders can become persistent or disabling.
* Stress - from the pace of work and deadlines or through frustration or anxiety when a computer system does not work well or other users do not feel competent to operate it
* environmental conditions - noise, humidity and temperature.
* Eyestrain and headaches - long spells of DSE work can lead to tired eyes, discomfort or headaches.
* Fatigue – this is usually caused by working too long without breaks and exercise, poor posture or poor workstation design**.**

**Suggested solutions to manage DSE risks**

**Postural**

* The workstation must be designed to fit the user. Set up equipment and workstations in the most ergonomic working position, making use of the adjustments and equipment available, such as adjustable chairs, wrist rests, footrests, docking stations, separate mice and keyboards.
* Make sure there is enough workspace to allow documents and other equipment to be placed in convenient positions.
* Users should avoid sitting in the same position for long periods, continually twisting the body or neck to one side, looking up/down repetitively or slouching.
* Ensure that staff are given suitable information and training on how to avoid health risks and encourage users to alert their manager if they get aches and pains.
* Check that the design of the workstation is appropriate and that the correct posture is being adopted.
* Pregnant employees can be particularly vulnerable and require special consideration when working with DSE as they may be more susceptible to postural problems and pressures because of their physical condition. These will need to be addressed when a risk assessment is carried out on a worker who is pregnant.

**Visual**

* Ensure the screen is at the correct height and distance to avoid bending your neck to see the screen. Headaches may occur from several causes as a result of DSE work, this could be glare, poor image quality, poor lighting, the need for spectacles, poor posture, stress or anxiety, or a combination of these.
* Arrange the screen, desk and lighting to avoid glare or bright reflections on the screen, use blinds where required.
* Long spells of DSE work can lead to tired eyes and discomfort, take frequent breaks from the screen to give your eyes a rest and a different focal point throughout the day. Short frequrent breaks are better than longer less frequent ones, it is advised to take a 60 – 90 second break after every half hour of DSE work.
* The heat generated by DSE can make the air seem drier, and some contact lens wearers find this uncomfortable. Contact wearers may consider blinking more often or using tear substitute drops. Practical steps may also be taken to increase the humidity.
* People with bifocal/varifocal prescriptions may find them less than ideal for DSE work. It is important to be able to see the screen easily without having to raise or lower your head. If you can’t work comfortably with either bifocal or varifocal prescription you may need to request a prescription specifically for DSE use. Consult an optician.
* Some people may suffer from photosensitive epilepsy and are susceptible to flickering lights and striped patterns may sometimes be affected when using DSE, but they can often work successfully with DSE without provoking an attack. If you have any concerns about this please contact your Occupational Health or Health and Safety Adviser.
* Demanding screen tasks might make you aware of an eyesight problem that had not been noticed before therefore it is important to visit an optician if you have any concerns. (Refer to claiming for eye tests and glasses on KNet)

**Fatigue and Stress**

* Plan work breaks and changes of activity away from the DSE as prolonged static posture will cause fatigue. It is important to ensure that users get a different range of movement throughout the day so that muscles have time to relax and are not held in constant static positioning. Users should have as much control as possible over their work routines to enable them to do this.
* DSE itself does not cause stress, however if the system does not work well or the user does not feel competent to operate it, stress levels can increase. Stress can be overcome by providing the right training and by designing systems and tasks to match the abilities of the people who work with them.

Managers need to make sure all DSE activities are properly considered and that everyone affected is clear about what is expected of them and understands how to work safely when using DSE.

Managers must inform users about the risks to their health and safety and explain what they can do to prevent or manage them. Specific training and information should include:

* recognising the hazards and risks from display screen equipment and workstations
* what causes risks and how they can harm the user
* the risk assessment process and individual results
* the need for breaks and changes in activity
* eye and eyesight tests
* how to inform the manager about workstation problems.

### DSE risk assessments

Once individuals have been identified as users or operators, managers must ensure they assess the DSE risks of their staff. Managers will be able to carry out workstation assessments themselves either by following the guidance provided within this document or after being trained to do so.

Involving the workstation users in the assessment will ensure they understand the risks involved and how to use their workstation properly, risks arise when work and the work environment do not take the needs of the individual into account.

Once managers have identified any risks by assessing workstations, they need to develop an action plan to control these risks. The action will often be straightforward and will usually cover things like postural and visual issues, fatigue and stress.

Assessments should be reviewed if there is a significant change to the workstation, the users wellbeing, a change in software/hardware, the task, or the working environment.

**Homeworkers and mobile workers**

If a DSE user is employed to work at home on a long term basis, or at other locations away from their main base, the DSE Regulations apply - whether or not the workstation is provided in whole or in part by the employer.

Employees who work at home on a temporary basis are not required to undertake a risk assessment under the DSE regulations, however advice and guidance on how to to work safely at home should be given by the employer.

Homeworkers may encounter both the normal risks associated with DSE work and some potentially increased risks that may arise from social isolation, stress, lack of supervision, lack of employer commitment and difficulties in undertaking risk assessments. There are some easy steps that should be taken to reduce these risks.

It is not always practicable for the employer to send someone else to conduct a risk assessment for homeworkers particularly in the case of mobile workers. DSE risks for permanent home workers must be controlled. A good solution is for the employer to train such workers to undertake their own risk assessments. This can be done by training workers to use an ergonomic checklist. Workers should be trained to mentally run through key points from the checklist, and take appropriate steps to ensure they are comfortable and can minimise the risks wherever and whenever they carry out DSE work.

Such training could be done before homeworking starts or when the employee concerned is visiting head office and can use office DSE to work through the topics an assessment should cover. In addition to training in risk assessment, homeworkers will need extra training and information about health and safety relating to DSE use (for example good posture, taking breaks). This is important for all users, but is especially so for homeworkers who are not under immediate supervision and are also unable to pick up good habits by watching colleagues.

**Shared workstation**

Where one workstation is used by more than one worker, whether simultaneously or in shifts, it should be analysed and assessed in relation to all those covered by the DSE Regulations. For example if a very tall and a very short worker are sharing a workstation, the assessor should check the chair has a wide enough range of adjustment to accommodate both of them, and that a footrest is available when required.

### Setting up a workstation – what to consider



**Seating and posture for typical office tasks**

* seat height adjustable
* good lumbar support
* seat back adjustable
* no excess pressure on underside of thighs and back of knees
* foot support if needed
* space to allow change in posture, no obstacles under desk
* forearms approximately horizontal
* wrists not excessively bent (up, down or sideways)
* screen height and angle adjustable to allow comfortable head position
* space in front of keyboard to support hands/wrists during pauses in keying

More detailed guidance on each aspect of the workstation is provided below:

**Chairs**

The seat must be fully adjustable. This means that you must be able to adjust the seat height and the height and tilt of the seat back. The adjustments should be easy to make when seated. The chair should swivel easily, be stable, and have five castors. The chair must be suitable for your frame size both in breadth and length to accommode the adjustments required to fit your back length and your leg length. If the chair base is too long then you are likely to perch on the edge of the seat so will be leaning forward which will mean your back will be unsupported if not in contact with the chair back. You should try various chair types before making a decision on which one is the correct size for you.

Correct posture is achieved by adjusting the chair height setting to enable your forearms to be positioned in a parallel position to the desktop so that your hands are just hovering above the keyboard when you are typing. The upper arms should be in a vertical position so that your elbow joint is at a 90˚ angle with your forearms to enable your forearms to be in a parallel position to the desk.

Lumbar support is achieved by adjusting the back height of the chair by either raising or lowering it to ensure that the lower curve of the spine is supported as well as the shoulder blades.

You should be able to place a 3 finger depth between the edge of the chair seat base and the back of your knees to be sure that there is no undue pressure to the back of the legs.

Feet should be placed flat on the floor once you have adjusted the chair height, it they cannot be placed flat on the floor then a footrest must be used.

Ideally, the seat should not have arms as they tend to induce a sideways slouching sitting position which will affect the position of the spine. Arms on chairs should not interfere with flexibility (prevent you from swivelling, or getting close to the desk). If you do require arms on your chair for support to be able to get in and out of the chair you will need arms that are either retractable or height adjustable. Chair arms can usually be easily removed by undoing the fixing screws under the seat if required.

**Screens**

Position the PC screen/laptop screen approximately an arm’s length away from the edge of the desk and place it centrally on the desk. If you are using a curved edge desk then you will need to place the screen into the centre of the curve.

The top of the PC screen/laptop screen should be approximately at eye level when you are sitting at the correct height. You may need to remove the PC hard drive box from underneath your screen if it is set too high and place the screen/laptop on the desk. If the screen is too low, you will need to raise it on something stable such as a screen riser or a laptop stand if using a laptop. Please note whilst the screen height should be at eye level for users who either do not wear glasses or wear standard reading glasses, this is not the case for a varifocal user who will need to lower their screen height to accommodate their varifocal prescription. This will reduce the likelihood of holding your head in an unnatural postural position to see the screen. You may also find it more comfortable to alter the tilt of your screen backwards if you are a varifocal user.

Use adjustments (swivel, tilt, contrast and brightness etc) throughout the day to reduce glare and reflections on your screen. Screens should usually be at right angles to windows, to reduce the effects of glare and reflections, this may be difficult in large open plan offices. Use window blinds to reduce glare or reflections.

Sit squarely in front of the screen, do not sit at an angle to it as this will mean that you are twisting your torso which will lead to musculoskeletal issues.

Check to see that the characters on screen are in sharp focus and are legible and that the screen image is stable.  The screen should be kept clean.

When using dual screens, ensure that they are both placed centrally on your desk and butt the screens together at right angles to each other. Ensure that both screens are set to the same height as each other to minimise any repetative up and down head movements.

**Keyboards**

The keyboard should be placed no further than 10cms away from the edge of the desk to eliminate arm stretching bent wrists or over stretching of the fingers. As a guide, place the full length of your middle finger where it joins your hand onto the edge of the desk, then place the keyboard where the fingertips end. You should have enough room to provide support for your hands when resting between typing tasks when they are placed in front of your keyboard and between the edge of the desk. Avoid surface pressure contact with firm surfaces.

The keyboard should be placed squarely in front of the user. Do not use the keyboard at an angle, otherwise you will need to twist your body in a slightly awkward angle to reach it. Your hands should be in a relaxed parallel position with each other when you are keying and should not be angled either inwards or outwards causing over flexion of the wrists or splaying of the elbows when typing.

Your arms should be in a relaxed position close into your body so that the elbows are held approximately at right angles when typing.

If you have support legs at the rear of the keyboard to adjust the slope of your keyboard use them if you prefer a sloped keboard.

Ensure characters on the keyboard are legible and working. If not you may need a new keyboard or a modification.

Always use a separate keyboard and a separate mouse when using a laptop computer for a significant period of time.

**Mouse**

Place the mouse close into the keyboard to reduce the risks that arise when over stretching. Ensure that the wrist is in a straight alignment with your arm when using the mouse to ensure that you do not hold your wrist in a strained flexed position as this may cause upper limb issues.

Rest the hand gently on the mouse when using it and click gently on the function buttons. Do not hold your hand in a tight tense posture when using the mouse as this can cause tension in the hand and result in significant issues. Remove your hand from the device when not using it to reduce any risk of repetitive strain injury.

Left-handed mouse users should not use a mouse shaped for right-handed use - a straight one would be better. The buttons can be programmed for left/right hand use (go to start, settings, windows settings,devices, mouse & touchpad to make changes).

If you are using a laptop computer for significant periods of time you are advised to use a separate mouse rather the mouse pad on the laptop.

**Work desk or work surface**

The work desk or work surface should have sufficient space to allow a flexible arrangement of the screen, keyboard, documents and related equipment and should have a low-reflectance surface.

The working area should be large enough to carry out your work (but it should not become cluttered - use good housekeeping practices.

Work desk heights are generally a standard height and are suitable for most users, however some users may require the desk height to be raised if they are tall and have a long leg length. Desks can be raised by either purchasing the appropriate desk riser suitable for the shape of the desk leg or wooden blocks can be placed underneath the desk.

**Docking stations**

If you are going to use your laptop for significant periods of time in an office environment you should be provided with, or have access to, a docking station which has a purpose built port which will automatically connect your laptop to the existing system or network.

Whilst using a docking station you should have access to a separate screen, keyboard, mouse, a suitable chair with a five point base with adjustable height and lumbar support along with any ancillary items like a footrest, laptop riser, wrist rest, mouse mat and task light if required

If a docking station is unavailable you should try to use a separate mouse and keyboard. You should be able to connect a keyboard and mouse directly to the laptop using a USB port. Use a laptop riser to ensure that you are able to raise the laptop screen height to the correct working height as outlined in the screen guidance.

**Wrist rests**

Wrist rests are not a requirement under the DSE regulations, however users can benefit from using one if they suffer with pins and needles in their wrists as a result of a specific medical condition or when leaning on a hard surface such as the edge of a desk.
NB: wrist rests are not for resting on while you are actually keying, they should be used to rest your wrists when you are not typing.

**Document holder**

Always place copy paper work on a document holder so that the paperwork is directly in front of the user.

The holder should be stable and adjustable and should be positioned so as to minimise the need for uncomfortable head and eye movements. Ideally the correct position would be to place the document holder directly in front of you and be placed between the keyboard and the screen, if this is not possible, then it can be placed immediately next to the screen so that you are not moving your head to be able to read the document. Your head weighs approximately 15% of your total body-weight, so if it is continually bent downwards and sideways it places great strain on the neck, shoulders and upper back. If you have to regularly take written notes when undertakeing phone calls or have to undertake significant work from paper to screen from larger documents, you may require the use of a writing slope/document holder which should be placed between the keyboard and the screen.

**Pedestals**

Pedestal units or fixed drawers should not interfere with leg space under the desk, or force twisting of the body as this can put undue strain on your back or pelvis causing musculoskeletal issues. If pedestals/drawers restrict movement of the legs, remove them from under the desk to another area in the office. Many people have more than one pedestal, which further restricts movement; think seriously about moving or getting rid of one of them.

**Screen filters**

Screen filters should only be used if glare and reflections cannot be eliminated by other means; they are a last resort and not a requirement of the regulations. Reposition screens on your desk to reduce glare or alter your screen settings such as the brightness controls. Open/close window blinds as required or reduce the number of lighting tubes which are directly above your screen to try to obtain comfortable lighting. You will need to consider the affect on other people in the office when making adjustment to the lighting.

**Footrest**

The regulations say that you should have an adjustable footrest if your feet cannot rest flat on the floor. Do not use a make shift footrest such as a plastic or wooden box as it will not have the availability of being able to be angled downwards.

When using a footrest place both of your feet on the angled footrest at a height that is comfortable for you. Most footrests have differing adjustable height levels which can be adapted to suit the user. A standard footrest is suitable for most users, however there are a variety of different footrest types some of which have a significant height range which cater for particualry short users.

**Telephones**

The telephone should be within comfortable reach so that you are not overreaching when taking calls. Do not cradle the telephone between the ear and shoulder, as this can place a strain on your neck, upper back and shoulder. If the telephone is used constantly while typing or writing at the same time, you will require the use of a telephone headset.

**Cabling for workstation equipment**

Do not accept discomfort because cables are too short to place the equipment in the most convenient and comfortable position on your desk.  Contact ICT for any advice on extending cabling to reduce the likelihood of overreaching, stretching or sitting awkwardly**.**

**Precautions to consider when using a laptop**

Laptops can be used in a variety of situations and are helpful in promoting flexible working. It is thought, though that the risks associated with using DSE could be higher for people who use portable computer equipment (if not used appropriately). Those choosing a laptop should consider its ergonomic features such as weight, size of screen, keypad, mouse, the adaptability of its set up options and its robustness for outdoor use.

Managers are required to ensure DSE risk assessments are carried out for staff who are required to use portable computer equipment (e.g. laptops) or desktop computers at work or at home. The Line Manager should then arrange to provide employees with any equipment they need to carry out their duties safely. Laptop users will require training in:

* health and safety issues related to using DSE e.g. good/poor posture, taking breaks
* carrying out a DSE assessment
* reporting any problems that may arise during use or need addressing before starting work
* manual handling considerations when transporting portable equipment.

**Setting up your laptop**

* Where possible the best approach would be to use a docking station when using a laptop when working in an office environment.
* Position your laptop on the desk/work surface in front of you so that you can see the screen without bending your neck. This can be done by raising the laptop off the desk/work surface using a either a monitor raiser or a laptop stand.
* Always use a separate mouse and a separate keyboard when using a laptop for prolonged periods by plugging the cables directly into the laptop USB ports.
* Take the same ergonomic working precautions when using a laptop as you would if working on a standard PC by following the advice given for each element of the workstation setup outlined in this document.
* Note that sitting unsupported on the sofa or in the car for long periods of time working on a laptop is not suitable and you should always limit laptop working in these situations for a short duration only.

**Other useful documents**

Access to work guidance

Display Screen Regulations 1992 (as amended 2002)

DSE user classification form

DSE workstation protocol

DSE self assessment form

DSE how to adjust your office chair

DSE tips for working from home at short notice

DSE reasonable adjustments when working from home

DSE setting up and safe use of your laptop

KCC optometrist form

New and expectant mothers risk assessment