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**BRADFORD**  
METROPOLITAN DISTRICT COUNCIL

# **Using Portable Computing Devices: Health & Safety Advice for Staff**

**Issued by Occupational Safety Team**

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# Using Portable Computing Devices: Health & Safety Advice for Staff

Whilst working flexibly can bring about economic and personal benefits, some issues can arise through the use of laptops, and other portable devices, if suitable care and attention isn't paid to how and where they are used. So whilst we're increasingly working on the move, be aware that you need the right tools and use them in the right way.

## The problems

Laptops and other portable devices are not very ergonomic and are often used in less than ideal situations. You need to try to prevent:

**Aches and pains**-particularly in the back, neck, shoulders, arms, wrists and hands. These can occur if you adopt awkward postures, make the same movements repeatedly, and don't vary your posture e.g.

- Neck or eye problems from trying to see the screen at an awkward angle
- Wrist and hand problems from bending your wrists to use the keyboard, or from overusing the other input devices (nipple mouse, rollerball, pad etc)
- Shoulder or back problems from carrying a laptop, or from reaching too far to use it, or from using it extensively in an unusual posture such as prone, slouching, or stooping.
- Over-heating of the groin due to supporting the hot laptop on your lap (despite its name!)

**Visual discomfort:** blurring and sore eyes, and headaches. Causes include long periods of time looking at the screen, reflections on the screen, characters being too small, and inappropriate colours or inadequate contrast.

**Stress**- adverse reaction to excessive pressures and demands. Mobile working can add to this if not used with care.

Laptops and other mobile devices are tempting for thieves and when carrying one you need to take steps to avoid being a victim of theft.

## Best Practice Guidance

### Selecting a laptop

When selecting a laptop consider the work tasks to be undertaken and look out for:

- As low a weight as possible (3kg or less) for computer and accessories.
- As large and clear a screen as possible
- Keys as large as possible
- A battery life suitable for the tasks to be undertaken, or extra transformer/cable sets so you only carry the computer, not the cables etc
- Touch pad, rollerball or external mouse rather than 'nipple' trackpoint device
- Wrist pad between keyboard and front edge of table
- Facility for attaching external mouse, keyboard and numeric keypad

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- Sufficient memory and speed (for the applications used) "Add-ons" that improve usability and reduce maintenance time.
- Lightweight non-branded carrying case with handle and shoulder straps, or rucksack with extra padding inside – this will disguise the fact that you are carrying a laptop at all.
- Avoid carrying it around unnecessarily – have a secure locker, desk, cupboard where you can leave it when you don't need it.

## Selecting a handheld device

When selecting a handheld device think about:

- It's size and weight, so it's comfortable to use and easy to transport
- The size of the screen; consider what you are likely to read on it and what size font you find comfortable to read.
- Screen resolution so it is easier to read and view displayed contents
- The way of navigating the software e.g. touch screen slide or gesture control
- Size of stylus; so that it's easy to hold.
- Size and layout of buttons touch pad, to make sure it's easy to hold in your hand.
- The force to activate buttons; touch pad navigation
- How easy is it to use (the logic of the menus and icons) and how similar is it to what you are familiar with.
- The features it offers – don't select overly complex equipment with features that you won't need to use.

## Working with Portable Equipment

Your manager will ensure working with portable equipment is assessed and measures taken to control risks. Use of portable display screen equipment falls under the Display Screen Equipment (DSE) regulations if in prolonged use. There is no prescriptive definition of 'prolonged use', but portable equipment that is habitually in use for a significant part of your normal work should be regarded as covered by the DSE regulations (see DSE Guidance for Managers for further information).

It's important that you are working comfortably and safely. It's always worth taking some time to adjust the equipment and work area to suit you. Making adjustments and taking regular breaks are the most important things you can do to help yourself work comfortably when using mobile devices.

Breaks or changes of activity are particularly important for portable users. Such users may need longer and more frequent breaks, or changes of activity or task e.g. when using a laptop without a laptop stand, full sized keyboard and or mouse. It is advisable that you restrict the time you use your laptop to spells of 30-40 minutes with task breaks between.

### Good Posture

Poor posture is the biggest cause of discomfort. Awkward postures where you stretch, twist, slouch or lean, place strain on the body. When working -

- If working at a desk or table, make sure you adjust your chair to achieve a good working posture. Use the backrest of the chair and don't slouch forwards; keep your shoulders above your hips. Don't stick your chin forward – hold your head so that your ears are above your shoulders.
- Relax your shoulders.
- Don't stretch when using the equipment – bring them close so you can keep your arms relaxed beside your body.
- Position items so you don't twist your back or neck; the screen should be in front of you.
- Take regular task breaks away from the portable computer. Get up and walk around or undertake other work tasks.
- Don't hold the phone between your ear and shoulder while writing or keying – you're likely to get a sore neck!

### Working on a laptop

Where possible use a desktop computer. You can arrange the desktop equipment much better so you can work with fewer postural problems, and you can see and adjust the screen much more clearly.

If you have to use a laptop, use it with additional equipment e.g. normal mouse, standard keyboard, full sized screen or laptop stand. This will allow you to adopt a reasonably good posture, reduce the likelihood of problems and work on the laptop for longer spells.

Before using a laptop consider the work task(s) to be done and avoid intensive or prolonged use.

- Find a posture in which you can keep your wrists straight (neutral, in line with your forearms), elbow level or slightly higher than the keyboard, upper arms hanging as vertically as possible, your shoulders relaxed with your back supported, and in which you feel comfortable.
- Align the laptop centrally with your body – don't twist round to use it.
- If the chair is not adjustable only use the laptop for short periods
- Don't rest your wrists or forearms on the edge of the desk – raise your seat height to avoid this.
- Take frequent breaks from working on the laptop, and get up and stretch and walk around.
- Change your posture often while sat, particularly if you start to feel uncomfortable - don't stay in one position for more than 15 minutes or so.
- Rest your eyes frequently by looking at something far away, or by closing them for a minute or two.
- Remember to blink more, to prevent your eyes feeling dry.
- Laptop keys are normally lighter with the key bed shallower so try not to hammer the keys.
- If the laptop touch pad is difficult to move then an external mouse should be used or key commands should be used instead.

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- Take whatever software training you can because the more skilled you are with the programs you use, the less time you will need to spend on the laptop.
- Do not support the laptop on your lap (because of the heat).
- Make sure the laptop is supported and stable and will not wobble or slide as you work.
- Make sure there is nothing underneath the workstation that restricts your posture.
- Adjust the laptop screen angle (and height if possible) to reduce stretching your neck, and to minimise glare on the screen.
- If using the laptop for periods over 30 minutes, attach an external full-size keyboard and mouse, use a laptop stand or full sized screen.

If you start to get symptoms such as aches and pains, associated with your use of the laptop inform your manager, review risk assessments and consider consulting the Employee Health & Wellbeing Service.

### Comfortably viewing the screen

Avoid visual discomfort and headaches –

- Look away from the screen regularly to give your eyes a break.
- Adjust the brightness and contrast on the screen. You may also find it helpful to change the font size, or font and background colours.
- Keep the screen clean; smudges from fingers can make viewing it more difficult.
- Ensure your laptop screen is the right distance away (we are all different, but roughly an arms length away from you) and at the right height.
- Close window blinds where these are available; move from a brighter area to shaded areas; turn off any lighting that is causing a problem, switch on lights in a dark area; adjusting the angle of your screen may also help.

### Breaks

Taking a break from computer work, and moving around, gives your eyes and body an opportunity to recover from the strain placed on it by awkward postures or repetitive movements. When working on a standard/normal workstation the DSE regulations recommend 5-10 minutes break after an hour computer use. Extra breaks are required when working on a laptop to compensate for working in possibly /less than ideal working environments which can impact on posture. For example, when using a laptop without additional equipment, it is advisable that you restrict the time you use your laptop to spells of 30-40 minutes with task breaks between.

### Reducing stress

If you feel stressed it's important to talk to your manager or the Employee Health & Wellbeing Service for advice and support. Problems with the equipment and software can cause stress e.g. slow response times, systems frequently crashing. Think about how your work is organised and whether you can make changes to reduce peaks of work or other causes of stress. Separate your home and work life; switch off the equipment when not working.

### Using laptops in different environments

Assess the environment before using your laptop, and don't use it if you don't feel comfortable doing so.

#### Working at Non Territorial Desks, Hot Desks or a Third Party Office Space

- If you share a workstation with other people, always take time to adjust the chair and the position of the equipment, before you start work, to make yourself as comfortable as possible.
- Connect a separate keyboard and mouse to the laptop so you can position them independently of the screen.
- Use a full sized screen where possible, but if you use the laptop screen, raise the height of the screen by placing it on a suitable stand so it's at the right working height for you. Position it at a suitable distance.
- Thin keyboards, mice and lightweight laptop stands can be purchased to carry with you in your laptop bag, allowing you to set up a good workstation wherever you are working.
- Position the screen so that is directly in front of you and the keyboard and mouse are within easy reach –in particular, keep the mouse close to you and don't let it run away!

#### Using a laptop with a fixed height chair e.g. in meeting rooms, hotel rooms, coffee shops.

Avoid using a laptop in this form of seating for extended periods of time without breaks. You are more likely to have poor posture and therefore an increased risk of pain and discomfort if you don't make the right adjustments. Restrict the time you use the laptop to short spells with task breaks between. Pace your work, take frequent breaks, stand up and stretch.

- If the chair is too low for you to sit with your forearms horizontal you may find sitting on a cushion or pillow to raise your seat height is helpful.
- Be careful about resting your arms on the edge of the table as high pressure on your forearms can cause discomfort.
- Consider using a cushion, item of clothing or rolled up towel, to support the small of your back if the chair does not offer appropriate support.

#### On the train – if you have to use the laptop whilst on the train

- Restrict the time you use the laptop to short spells with long task breaks between.
- Position laptop so you can reach it comfortably without leaning forwards.
- Ensure forearms are not leaning on the edge of the table.

**Using a laptop on your knees** - avoid working in this way, the screen is likely to be too low for comfortable viewing. If you have to place a laptop directly on your knee, put something e.g. files, magazines, to protect yourself from the heat generated by the laptop and to raise the laptop to a more suitable height for keying; your wrists should be straight when typing.

### **Carrying your mobile equipment**

Lifting and carrying mobile equipment can place a strain on the body. To reduce this:

- Use a double strapped backpack or trolley bag rather than shoulder bag for laptops.
- Choose a long battery life, to avoid carriage of extra batteries and cables.
- Reduce the amount of documents you carry – store electronically, or post/email them in advance.
- Think about the weight of equipment when selecting it.
- If you're sitting in the driver seat of a car, don't lift your laptop from the passenger or rear foot well; you should get out and lift it to avoid strain on your back.

### **Comfortable use of hand held devices (PDAs, touch phones, smart phones)**

Hand held devices allow you to undertake familiar desktop applications while on the move, they can be useful for management of diary, address book, emails that require a short response etc. Obviously they have small screens and keyboards and they should not be used as your sole computing equipment.

General recommendations –

- Avoid using these devices for long periods; take regular breaks; stretch and relax your fingers and hands often.
- Write short messages; be succinct and use acceptable abbreviations. You may be able to programme the software to autocorrect an abbreviation to the full word. Set up an auto-signature containing contact details to save typing them repeatedly.
- Keep the screen clean and free of finger marks to reduce visual fatigue.
- Investigate what changes you can make to the display size and colours so you can adjust to suit your needs.
- Protect the device in a case so the screen doesn't get scratched and become more difficult to read.
- If using it for any length of time, rest the device on a work surface. This will also allow you to use fingers from both hands rather than your thumb to reduce the risk of discomfort. However, make sure you don't lean forward over the device in order to see the screen; angling it slightly by leaning it on something may help to avoid this. Alternatively, some devices have an angled screen.
- If you cannot rest the device on a work surface, hold it so that your inputting hand is supported.
- A separate keyboard may be helpful if you have to use the device for a significant amount of data input.
- Try to keep the wrists straight and relaxed when holding and using the device.
- Avoid pressing the keys too heavily and don't grip the device. Muscle tension increases the risk of discomfort.
- Alternate between fingers and thumbs when keying. Repeated use of the thumb with the range of movement required can pose a risk of discomfort.
- If you find the keys are too small for your fingers, you may find using the rubber end of a pencil helps to press keys more easily. This allows larger muscles to be involved with activating the keys, and they are better able to withstand repeated movements and force.
- Remember to turn it off so you can separate your home and work life!

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**Touch screens** allow the user to interact with images on the display and can be useful for navigating through software. The most appropriate input method will depend on the software being viewed, size of images, size of screen and the characteristics of the user – those with large fingers may find touch screens difficult to use precisely.

Repeated or prolonged use of the fingers on touch screens may cause discomfort and there is potential for altered sensation on the fingertips with prolonged use. It can be useful to have a stylus or keyboard as an alternative to the touch screen if using it for any length of time or entering data.

A **Stylus** is typically very thin and light, and can be difficult to hold and control if you have large hands or limited finger mobility. Consider using something larger which is easier to hold e.g. a pen with the nib retracted.

- Support the hand that is holding the stylus e.g. rest the hand on the base of the device or on the work surface.
- Configure the whole screen to accept stylus input rather than just one small area; larger hand movements reduce the physical stress on the hand.
- Writing higher up the screen may allow your hand to be supported while writing.
- Train the device to read your handwriting; if it expects input in a particular format, take the time to learn these.
- Consider whether you find keyboard input, using the stylus on a display-based keyboard or writing on the screen better for some tasks and change between them as appropriate.

### Mobile Phones

Programme in regularly dialled numbers so that you don't have to press as many keys. Consider an ear piece or headset so that you don't have to hold the phone to your ear- this is strongly recommended if you are required to use the laptop whilst speaking on the phone.

## Summary

Flexible and mobile working can bring benefits to our work and personal lives, but it's important to follow good practice and taking time to adjust the equipment and work area to suit you. Most problems can be resolved reasonably easily so speak to your manager or Employee Health & Wellbeing if issues arise.