



1. Introduction

If you are reading this in front of your computer, take a moment to look around you and ask yourself “am I working comfortably?” Whether you are working in Chambers or at home, it is essential that your working environment allows you to work comfortably and efficiently and is not going to be the cause of any physical problems for you. In this Technology Briefing we look at what you can do to make your work area a comfortable and safe place to use.

2. Recognising the symptoms of a poor layout

Unless you are using a computer day in day out and for hours on end, it is unlikely you will encounter any long-term physical damage from such work. However a poor workstation set up combined with a few hours intensive computer use every day may be enough to cause back pain, upper limb disorders (such as repetitive strain injury), visual fatigue and mental stress.

The warning signs can occur in your hands, wrists, arms, shoulders, neck or back and include:

- Numbness, burning or tingling.
- Soreness, aching or tenderness.
- Pain, throbbing, or swelling.
- Tightness or stiffness.
- Weakness or coldness.

There may be other factors which are the causes of these kinds of problems such the stresses of the job or personal issues. If in doubt, always consult your doctor.

3. Positioning yourself

When considering how to position yourself, the aim is to get you comfortable by adopting the “perpendiculars and parallels” approach to any adjustments.

As your work surface is probably set at a fixed height, you should adjust your position by working from the ground up.

- **Seat height**
Adjust the seat height so you can plant your feet firmly on the floor with the backs of your upper legs parallel to the floor. If necessary, use a foot rest to ensure you are at the right level for the work surface.
- **Back support**
Adjust the chair back angle so your back is well supported and perpendicular to the floor. If necessary get a small cushion to support your lower back.
- **Keyboard height**
The forearms and wrists should be parallel to the floor and level with the middle rows of the keyboard.
- **Forearm supports**
If your chair also has forearm supports they, should be adjusted so your forearms are parallel to the floor and your shoulders are not pushed up or down. If the forearm supports prevent you from getting closer to your desk, consider having them removed or replacing the chair
- **Document holder**
A document holder positioned next to your PC display will let you easily view printed material that you are working with or need to refer to regularly.

It is also worth checking the floor area under your desk as this often doubles up as additional storage space. Try to minimise the clutter under your desk so that your feet are free to move around and not likely to get caught in any cables. Also check there are no trapped cables and that cables are not being run over by your chair.

4. Positioning and using the display

Ensure your display is directly in front of you and not to one side. If your setup has two or more screens, position one of the screens is directly in front of you and make this your “primary task” screen. The other screens should be angled so that they are perpendicular to your face when you looking straight at them.

Avoid placing the screen either directly in front of a window or such that your back is to the window. Ideally, the screen surface should be perpendicular to the window to minimise glare and contrast.

The top of the display should be an arms length away from you. In most cases the top of the screen display area should be just below your eye height so that you are looking down slightly when viewing the middle of the screen. Tilt the display slightly so that your face remains parallel with the screen.

If you do not have a height adjustable screen or monitor arm, a few reams of photocopier paper is a quick and easy way to raise the level of your screen. If your screen is in a fixed position and needs to be lowered, please ask us for advice.

Use the brightness and contrast controls to adjust the display so that text is comfortable to read. External flat screens will typically use a menu system that involves a cryptic series of button pushes to be performed. If you are having difficulty adjusting the screen settings, ask us or a colleague to help.

It is also important to keep the display clean and free of dust and smears. We can provide you with appropriate materials for cleaning your screen if needed.

5. Adjusting the size of text on the screen

Since the introduction of flat screens, the image quality of computer displays has increased rapidly however limitations of Microsoft Windows mean that it is not yet capable of displaying crisp clear text (the next version of Windows, Vista, will address this area).

You may therefore find that the text on the screen is very small and so difficult to read. Although it is possible to have Windows adjust the size of text, this is a bit of a hit and miss affair.

A simple way to ensure you get readable text is to adjust the screen resolution as follows:

1. Close any documents etc. that you have open.
2. Click Start and choose Control Panel.
3. Double-click the “Display” icon.
4. The Display Properties window opens.
5. Click the “Settings” tab (along the top).
6. Under “Screen Resolution” make a note of the current setting.
7. Click and drag the Screen Resolution slider to the left (reducing the resolution) from its current setting to the next one down.
8. Click the “OK” button.
9. The screen display will flicker briefly and then be shown working with the new resolution.
10. Repeat the process until you find a setting you are happy with.

When making these adjustments you may find some settings result in a “squashed” image, keep adjusting.

The downside to this method for getting bigger text is that the text may appear to be slightly fuzzy.

6. Positioning and using the keyboard

When in use, your keyboard should be directly in front of you and not to one side – this avoids you having to twist your body. It should also be close enough so that your back remains straight.

The keys on your keyboard will wear out after a period of time and result in an increasing amount of force needing to be used before a key press registers. If you find this to be the case, get the keyboard replaced (a basic keyboard only costs a few pounds).

If you are still encountering difficulties when using your keyboard consider getting a sculptured or "broken" keyboard. Such keyboards are designed to reduce the strain on your hands and wrists but take a little getting used to. Note, we can provide a keyboard for you to try.

7. Positioning and using the mouse

The mouse should be to the immediate left or right of the keyboard. If your mouse is connected by a cable, ensure that there is enough slack so it can easily be moved around. Cleaning your mouse regularly will ensure you don't have difficulty pointing and clicking.

Like the keyboard, the buttons on your mouse will also wear out after a period of time and an increasing amount of force is needed before a click registers. The mouse should be replaced if this is the case.

If you are having difficulty with double-clicking on icons or find the pointer moves too quickly, ask us or a colleague help you adjust the mouse sensitivity or you can do it yourself through the **Start... Control Panel... Mouse**.

8. Using a phone and a computer

Dealing with an enquiry on the phone whilst using your computer usually results in the phone being cradled between your ear and your shoulder. If you do this frequently, it will result in neck, shoulder and back discomfort. To avoid such problems:

- Get or ask for a headset (typically £50). This will allow you to continue the conversation without your voice being muffled and distorted and be able to use the computer more efficiently because you are properly "hands free".
- Put the caller on hold whilst you use the computer.
- If you must cradle the handset, learn how to use the mouse more effectively to do some of the tasks needed.

9. Typing style

"Bashing" away at the keyboard is no longer necessary. Unlike older style computer keyboards and typewriters, very little force is required for a key press to register.

If your typing is on the heavy side, make an effort to press the keys more gently. Not only will it increase the lifetime of your keyboard it will also be less of a strain on you.

10. Using a notebook computer

For many legal practitioners, increasing amounts of material are being handled in electronic form and if all you have is a laptop PC, this will be forcing you to work in position that is difficult to adjust. The following are a few ways that you can make life a little more comfortable:

- **External Mouse (£10+)**
Consider getting yourself an external mouse, not only will it be more comfortable but also easier to use. If you don't want the hassle of plugging in wires every time you need a mouse, various "wireless" mice are available.
- **External Keyboard (£10+)**
An external keyboard is also strongly recommended. Laptops with screens smaller than 14" will tend to have keyboards that are slightly smaller. Your laptop keyboard may also require you to press several keys together in order to use the Page Up/Page Down, Home, End, etc. functions. A full size keyboard will have dedicated keys for these functions.
- **Notebook stand (£30)**
The quickest and easiest way to make your laptop more comfortable to use is by using a notebook stand along with a full-sized keyboard and mouse. The stand raises the laptop screen to the correct height and those with a built-in USB hub provide a single connection for the keyboard/mouse, printer, iPod, etc.

- **External display (£100+)**

You can plug a second, external display, into your laptop which not only gives you a bigger picture but with most new laptops it also allows you to "extend" the desktop onto your second display. This means you can use the external screen as additional desktop area – useful if you need to work on several things at once.

- **Second power adaptor (£30)**

If your practice involves lots of travelling, every gram of additional weight you need to carry soon starts to tell. With 2 power adaptors, one can be left at home the other in Chambers. Not only does this save weight but you no longer need to remember to pack the adaptor.

- **PDA (£300)**

If all you need on the move is the ability to check your E-mail and view documents then consider getting a PDA. Increasingly PDAs are also now phones and so are capable of sending and receiving E-mails as well as allowing you to view and work with attachments.

- **Carry case (£30+)**

If you cannot afford the luxury of a thin and light laptop, you may be stuck with dragging around 3kg of metal and plastic in addition to your usual papers. A laptop rucksack or carry case with built-in wheels will help take the strain.

11. Your daily routine

Just as important as ensuring your working environment is suitable is making sure your working routine is appropriate. Take regular breaks (at least once an hour) that involve walking around and vary the tasks so that physical repetition is avoided.

12. Duties of the employer

The Health and Safety (Display Screen Equipment) Regulations 1992 required employers to:

- Analyse workstations, and assess and reduce risks.
- Ensure workstations meet minimum requirements.
- Plan work so there are breaks or changes of activity.
- On request arrange eye tests, and provide spectacles if special ones are needed.
- Provide health and safety training and information.

Whether you are an employee or employer it is in your interest to ensure your working environment is suitable and that any health problems are reported as soon as possible.

For further information

Whilst every effort has been made to ensure the information in this briefing is useful and correct, we strongly recommend that you also consult the sources below for further information and guidance.

Working with VDUs

This downloadable leaflet answers many of the questions associated with use of VDUs, provides a summary of the responsibilities of employers and suggests simple adjustments that can be easily made.

<http://www.hse.gov.uk/pubns/indg36.pdf>

Work with display screen equipment

Published by the HSE, it provides detailed and comprehensive guidance about work with computers and how to comply with the Display Screen Equipment regulations.
HSE, £8.95, ISBN 0-7176-2582-6

Note that we also have a copy of "Work with display screen equipment" which includes a workstation assessment available for partners to borrow.

Who are we?

Chambers Technology Support is a small and dedicated support service staffed by a team of experienced professionals. We meet the challenges of providing technology support to barristers' Chambers by bridging the gap between in-house and outsourced technology support and through a flexible and inclusive partnership arrangement.

For further information, please visit www.ctsltd.net