Safe use of laptops

Laptops were originally designed for short duration and irregular use, not for daily continuous operation. If you need to conduct your work on a laptop for an extended period of time – or your laptop is your primary computer, the following guidance can help reduce the risk of musculoskeletal discomfort or injury.

Basic principles

The same principles apply as with regular computer use;

- the desk and laptop should be adjusted so the user can adopt a "neutral" posture – ankles, knees, hips and elbows at about 90 degree angles and hands in alignment with wrists (see figure 1)
- sit about arm's length from the screen (depending on individual eye conditions)
- keying and holding the mouse should be light and hands and arms rested when not keying
- take regular breaks to rest both your eyes and your muscles – stand and walk to the printer, change posture to perform other task such as reading.
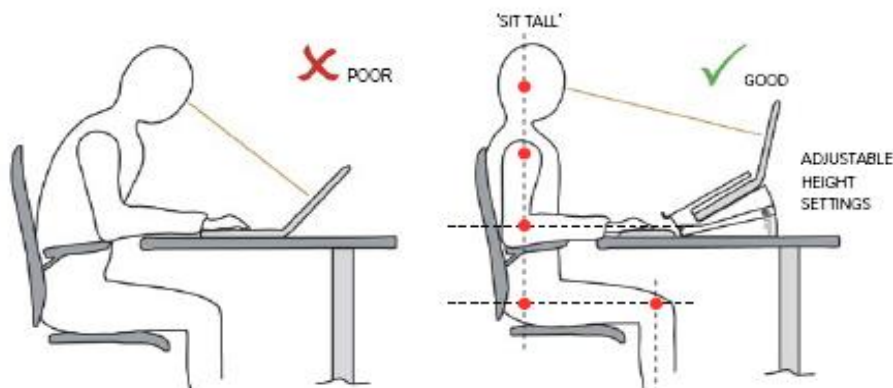

Figure 1.

Laptop feature	Problems	Associated risks
Screen attached to keyboard	Difficult to position laptop well for keying and viewing	Prolonged shrugging of shoulders Neck bent forward
Smaller size and more closely spaced keys	Constrained hand and finger positioning More keying errors	Awkward, static work for the muscles of the hands
Forward position of keys with hand rest area between keys and user	Encourages resting of the hands on the surface while keying or reaching forward to use the keys	Bent wrist postures Increased pressure at base of palms and wrist Increased tension in upper back and shoulders Forward reaching of upper limb
Small pointing devices e.g. touch pad	Requires use of fewer small muscles	Prolonged, static muscle tension leading to fatigue
Smaller screen size	Can be limited resolution	Eye strain Awkward upper body positioning

Setting up your laptop

Position

Chose a position where you can achieve the best posture including the ability to;

☐ adjust the screen position
☐ sit straight in front of the screen
☐ keep the laptop away from glare and
☐ move your arms freely.

External keyboard

This is the most important and easiest solution to poor postures created by the laptop design. The external keyboard allows you to independently adjust the screen and keyboard position and achieve a more appropriate position

External pointing devices/mice

Some people find the internal touchpad or trackball difficult to negotiate. It is preferable to use a full sized mouse – or a mouse that fits your hand size which encourages you to use your whole hand to manoeuvre the mouse and increases comfort for the user.

Document holders

Remember document holders are useful during laptop use to keep your documents at the same height as your screen. This is also an effective strategy to minimise twisting and poor neck postures when using the laptop.

Laptop stations or stands

These adjustable stands hold the laptop in a more upright position providing good screen height. An external keypad and mouse can then be used with the laptop. (see figure 2)

Other accessories and advances

- Laptop supports – cushions used on your lap to adjust the height of your laptop
- Laptop models with screens that tilt back fully – this allows greater options for improved head and neck posture
- Docking stations – that connect the laptop to regular standard sized keyboards, mouse and monitors
- Detachable screens - allow positioning of the screen anywhere

Figure 2.

Transporting your laptop

To minimise the risk of pain or discomfort when carrying your laptop:
- Reduce the weight of the bag by removing any unnecessary items
- Try to pick up and put down the bag with smooth movements, rather than jerky and sudden actions
- If possible, use a backpack design with padded shoulder straps – carry over both shoulders.

Laptops, chargers and electrical safety

Laptops and their power supplies (chargers) are not items of 'specified electrical equipment' and therefore no specific electrical safety precautions are stated in legislation or regulations for these items. There is, however, a general duty to ensure electrical safety for these items. Your school or workplace may choose to take extra precautions in addition to the general care and maintenance of laptops. For example;
- implement a testing and tagging regime (point in time test only); or
- connection to a safety switch (ongoing control measure).

Detailed information, including general care and maintenance information and testing regimes for safety switches, is provided in the Guide to Electrical Safety.

Some schools and workplaces provide laptops and/or chargers which are taken home or permanently used at home. On issue of the laptop, and as a reminder annually, the following advice should be provided to students and staff.

Electrical items used at home

Like all electrical equipment, laptops and chargers should be:
- used according to the manufacturer's instructions; and
- protected from damage through general care and maintenance.

General care and maintenance includes:

- Protect leads and equipment from damage e.g. position leads and equipment where they are not likely to be damaged
- Make visual inspections of the lead, plug and item before use for any cuts, damage, cracks, burnt areas etc. If these are identified, remove the item from use
- Use power boards (with overload protection) instead of double adaptors
- Remove faulty electrical items from use immediately to ensure the item is not used inadvertently by someone else; clearly label them as 'faulty' or 'out of service'
- Discard faulty electrical equipment or have it repaired by an electrician.

Extra measures

It is recognised that items such as laptops may be exposed to damage or greater wear and tear as they are transported from home to work or within the workplace. In the home environment, parents, students and staff may choose to plug laptops and chargers into power points that have safety switch protection. Connecting to a portable safety switch, such as a power board with an inbuilt safety switch, is an alternative where permanent safety switch protection is not installed.

Other information

Creating Healthier Workplaces – Manual Tasks & Ergonomics

Office Ergonomics – self assessment template

Ergonomics guide to computer tablet use