

COMPUTATIONAL HAZARDS

The most common computational hazards are related to the (1) Muscles and (2) Eyes. Let's discuss these in detail.

COMPUTATIONAL HAZARDS I

MUSCULOSKELETAL DISORDERS

(Problems related to the posture and muscles)

Musculoskeletal system disorders develop if---

- 1The user maintains an unnatural or unhealthy posture while using the computer
- 2The lower back support is inadequate for the user
- 3The user continues to sit in the same position for an extended period of time

These can be prevented by---

Ideal Chair:

- Your thighs should be horizontal to your hips & making a 90o angle with knees. Thighs should be straight & not droop down or tilting up towards your hip.
- Rest your feet comfortably on the floor or on a footrest if you need one, but feet should touch the ground & not hang loose in air.
- Support your forearms with adjustable armrests that position your elbows near your waist.
- Your shoulder should be straight & again should not be hanging down or moved up, to avoid neck sprain.
- Have a padded seat with a pan at least one inch wider than your hips and thighs.



Position of Computer Screen:

- Consider having the height of the surface holding your keyboard and mouse about 1 to 2 inches above your thighs. Center the keyboard in front of your body.
- Computer screen should be about one arm's length (20 to 26 inches) away.
- With the top of the viewing screen at eye level so you can see it clearly without looking up to avoid neck sprain.
- Position a document holder between the monitor and keyboard or right next to the monitor to avoid twisting your neck to view source material.

Mouse & Keyboard:

- When using the mouse, move from the shoulder rather than the wrist. Grasp the mouse gently.
- Type with your hands and wrists floating above the keyboard, so that you can use your whole arm to reach for distant keys instead of stretching your fingers.
- Use a soft touch on the keyboard instead of pounding keys with unnecessary force.
- Familiarizing yourself with keyboard shortcuts for applications you regularly use like Ctrl + S to save and Ctrl + P to print. This will help minimize the use of the mouse.

Laptop Posture:

- Full-time Users - if you use your laptop at work as your main computer you should position laptop on your desk/ work surface in front of you at an adjustable height so that you can see the screen without bending your neck. To achieve these you can elevate the laptop off the desk surface using a stable support surface, such as a computer monitor pedestal.
- Use a separate keyboard and mouse. You should be able to connect a keyboard and mouse directly to the back of the laptop or to a docking station.
- Use the keyboard on a [negative-tilt keyboard tray](#) to ensure a wrist neutral posture

Basic stretching exercises to avoid back strain:

- General: Stand up and stretch your arms over your head.
- Neck: Tilt your head to one side (ear to shoulder); hold; relax; repeat on other side.
- Shoulders: Slowly bring shoulders up to the ears and hold briefly & then back to normal posture.
- Wrist: Hold arm straight out in front of you; pull hand backwards with other hand, then pull downward; hold; relax; repeat with other hand.
- Taking regular breaks from your computer--a few minutes at least once an hour, mixing tasks that would require the use of computers with those that do not in order to avoid strain. For example, just changing tasks - perhaps from sitting while typing to standing while talking on the phone can help some muscles relax while others remain productive.