

Laptops

ERGONOMIC RISKS ASSOCIATED WITH LAPTOPS:

1. Awkward posturing due to placement of laptop, i.e. "lap"
2. Awkward hand and wrist typing posture due to the laptop's small keyboard, which is often at an unstable angle and non-adjustable.
3. Awkward neck flexion or awkward shoulder, arm and wrist postures depending on height of monitor/keyboard.
4. Use of mouse is awkward and at an unsuitable position/height.

CHANGE YOUR ENVIRONMENT TO PROMOTE THE BEST WORK POSTURE

- Use a full-size mouse whenever possible to avoid hand and finger tension from using the small laptop input device.
- Sit on a cushion or pillow to allow your forearms, wrists and hands to work in the desired position – parallel to the floor – when working at a desk.
- Place a rolled up towel in the back of your chair for increased lumbar support. If your feet do not rest flat on the floor, use phone books as footrests.
- Prop up source documents to reduce awkward neck postures from reading papers flat on the desk surface.
- A reclined posture works well for laptop use because the neck, arms, and hands are all in a neutral posture.

AVOID EYE FATIGUE

Try not to sit with the laptop too close to you. Minimize glare by shielding outside light or by tilting the screen of your computer. Give your eyes a break every 15-20 minutes by closing them or looking off in the distance.

TAKE BREAKS, STRETCH, AND STAY FIT

Frequent breaks should be a high priority for laptop users. Every 15-20 minutes get up and move around or stretch while you are seated.

LIGHTEN THE LOAD

Carrying a laptop can strain the low back and shoulders. Ideally, no more than 15% of a person's body weight should be carried or strapped on for transport. Carry only what is essential and utilize rolling luggage or backpacks with wheels whenever possible.

THE MORE THE MERRIER

When using a laptop top at work, remember the more full size peripherals you have (keyboard, mouse, monitor), the better for maintaining good work posture. A docking station or docking bar may be required.

STRIVE FOR "NEUTRAL" POSTURES...

Ears should be aligned with shoulders and hips. Elbows should rest comfortably at your sides, and forearms should be parallel to the floor with wrists straight.

Position laptops directly in front of your body so no twisting of your neck and torso is required.

Lumbar support is needed to maintain the curve of your back.

Knees should be no higher than the hips and feet should rest flat on the floor or on a footrest.



And keep in mind...

Even the most "perfect" position is not good for a long period of time. Remember to move around and shift your body often!

ERGO



N O N O M I C S

Chair, Computer and Laptop Tips



Student Health Center

For more information:

healthydevil.studentaffairs.duke.edu

681-WELL

Information Provided by the Ergonomics Division
Duke Occupational and Environmental Safety

What is Ergonomics?

Back ache, chronic wrist pain and/or eye strain may be just some symptoms that people can experience from improper body positioning when using computers and other electronic devices, lifting heavy objects or any repetitive body motion required as part of someone's job or living situation.

Ergonomics is a discipline which focuses on alleviating these problems by arranging the environment to fit the person in it. When ergonomics is applied correctly in an environment, visual and physical comfort is significantly increased while fatigue is distinctly lessened.

FOLLOW THESE GENERAL ERGONOMICS PRINCIPLES TO HELP REDUCE REPETITIVE MOTION INJURIES.

- 1. Use neutral postures:** Neutral postures are those that place joints in their optimal position and are the least stressful to the body. This includes keeping the back in its natural "s" curve, keeping the neck aligned, keeping elbows close to the body and keeping wrists straight.
- 2. Reduce excessive force:** Avoid those activities that require extreme force such as pushing, pulling, and lifting. Always try to get help or use a mechanical aid if possible.
- 3. Keep everything in easy reach:** Keep papers, books, and other items that are frequently needed close to avoid excessive reaching. Long reaches are a source of wasted time and increase exertion on the shoulders and low back.
- 4. Work at proper heights:** Most activities should be performed at elbow height. The best way to achieve this is to change the height of the work surface. Changing your height through adjusting a chair or standing on a platform is also helpful.
- 5. Reduce excessive motions:** Decrease repetitive motions whenever possible. Using keystroke shortcuts, macros, and using your non-dominant hand for mousing are all examples of ways to reduce repetition.

- 6. Minimize fatigue and static load:** Avoid holding the same position for long periods of time, especially when heavy loads or high forces are involved.
- 7. Minimize pressure points:** Direct pressure on forearms, hands, and fingers can inhibit nerve function and blood flow. Make sure edges of desks are rounded or padded and try to use padded items such as pens, pencils, and scissors.
- 8. Provide clearance:** It is important to have plenty of room, free of barriers when you perform tasks. This is one of the best ways to ensure you are able to use neutral postures.
- 9. Move, exercise, and stretch:** The human body was never meant to stay in one position for long durations. It needs plenty of activity. Periodic stretch breaks and/or exercise programs are a good way to increase activity during the day. Stretches are available from Student Health.
- 10. Maintain a comfortable environment:** Most people perform best in environments that have optimum temperature and humidity. Lighting, noise, and color must also be considered as they can also affect comfort.

POSTURE TIPS

Do...

Keep wrists straight while keying or mousing.



Don't...

Key or mouse with your wrist bent.



Don't...

Bend your wrists or rest on a wrist rest.



Computers

To stay healthy, remember the **ABC's** of working with your computer...

Arrange your computer equipment properly
Best posture should always be used
Change positions as much as possible

This is the best posture...but humans were never meant to stay like this for 8 hours a day! Get up from your chair often and change positions as frequently as possible.

KEYBOARD AND MOUSE

Keyboard should be just barely above your lap, your hands should just fit between lap and keying surface.



MONITOR

Should be no higher than eye level and an arm's length away.

CHAIR

Try all adjustments to see if you can make the chair comfortable and promote good posture.

