

Minnesota Department of Employee Relations Ergonomics and the Computer Workstation at Home

Most of you are familiar with the meaning of ergonomics, (*Fitting the job to the user, not the user to the job.*) and its importance in your primary work area. But, have you ever considered the impact of ergonomics at your home computer workstation? The following information will allow you to make improvements that will encourage proper postures, placing less stress on the muscles, ligaments, and joints in your body. The outcome of a properly designed workstation will be enhanced comfort, safety, and productivity.

The first step is to survey your existing workstation. (*Please answer the following questions.*)

Computer Use

- yes no Is there more than 1 person using this workstation?
yes no Will you be spending more than 4 hours per day at this workstation?

Legs and Back

- yes no Do you have an adjustable chair?
yes no Do you know how to adjust your chair?
yes no While seated are your feet firmly placed on the floor or a footrest?
yes no Is there 1-3 inches between the edge of your seat and the back of your knees?
yes no While seated, are your hips slightly above your knees?
yes no Does your chair provide adequate low back support?

Arms, Wrists, and Hands

- yes no Are your wrist comfortable straight while operating the keyboard and mouse?
yes no Are your shoulders relaxed?
yes no Are your keyboard and mouse positioned at or slightly lower than elbow height?

Neck and Head

- yes no Is the top of your computer screen at or slightly below eye level and positioned 25-36 inches away from your eyes?
yes no Is the monitor placed directly in front of you and aligned with your keyboard and mouse?
yes no Is the document holder adjacent or directly in front of the monitor?

Additional Ideas

- yes no Is your computer screen positioned so there is not any glare?
yes no Do you clean your computer screen at least 1 time per week?

yes no Do you alternate tasks throughout your day?

yes no Do you incorporate stretching into your daily work routine?

Now, let's make some improvements!!

Computer Use

The number of people who will be using the computer and the amount of time spent on the computer are both important elements when considering workstation design. Height adjustable equipment will be necessary if more than 1 person is using the workstation, or if the computer will be used for lengthy periods of time.

Height adjustable features will be necessary for the following pieces of equipment:

- ⇒ chair
- ⇒ keyboard and mouse
- ⇒ monitor

Legs and Back

When selecting an ergonomically designed chair the following elements are important.

- ⇒ pneumatic height adjustment
- ⇒ adjustable back (height, angle in relation to seat pan)
- ⇒ seatpan with a waterfall edge design
- ⇒ 5 star base with casters
- ⇒ adjustable arm (vertically, and horizontally) *consider the need for arms and the clearance while operating the computer*

Your chair selection should also consider the dimensions of the user/users. Be sure to check out the return policy and ask if the chair can be used on a trial basis prior to purchase.

Chair Adjustment

When seated in a chair position yourself so your hips are slightly higher than your knees and your feet are securely placed on the floor. The backrest should be positioned to support your lumbar spine (well below belt line), and the angle should allow for an upright position. If you chose a chair with arms, raise the arm supports until you can gently rest your elbows and forearms. (Do not allow your shoulders to raise upward.)

Approximate cost \$300.00-\$700.00

- ⇒ A footrest can be added if a user is not able to place their feet securely on the floor.

Approximate cost \$20.00

Arms, Wrists and Hands

The keyboard **and** mouse should be positioned at or slightly lower than elbow height. This can be accomplished by using a height adjustable bi-level computer table, or an articulated keyboard mechanism and a combination keyboard/mouse platform.

Measurements

- ⇒ Seated elbow height _____”
- ⇒ Recommended height for keyboard/mouse surface _____”
(at or *1 inch lower than seated elbow height*)
- ⇒ Recommended reading and writing work surface height _____”
(*2-3 inches higher than seated elbow height*)

Approximate cost bi-level table **\$300.00-\$400.00**, articulated mechanism **\$100.00-\$150.00**,
combo keyboard/mouse platform **\$50.00-\$100.00**

Neck and Head

While performing computer tasks it is recommended to keep your head in a neutral (upright) position. Make sure that the top 1/4 of the monitor is positioned at or slightly lower than seated eye level. (If you use bifocals while viewing your screen; place the top of your monitor significantly below eye level.) The monitor should be positioned approximately 25-36 inches (1 arms length) away from you. Positioning the keyboard, mouse and monitor in direct alignment is critical in maintaining neutral head and neck postures. Most monitors that are positioned on top of CPU's are generally too high, leading to awkward postures.

Single-user work station

- ⇒ monitor riser blocks
- ⇒ quick fixes (phone books, reams of paper)

Multi-user work station

- ⇒ spring assist system
- ⇒ infinite height adjustment through a least a five inch range
- ⇒ appropriate size and weight capacity (consider weight, size of monitor and base)

Approximate cost \$20.00-\$150.00

Document holders reduce excessive neck flexion and/or rotation while viewing documents. Neutral positioning of the head and neck is achieved when documents are placed in an upright position in close proximity to the user's computer monitor. Location preference is between the user's keyboard and monitor.

- ⇒ width appropriate
- ⇒ angle and height adjustable
- ⇒ lower edge should have appropriate depth to hold document

Approximate cost \$10.00-\$70.00

Additional Ideas

When positioning your computer, take windows into consideration. The best placement for your monitor is perpendicular to any outside light sources. This position will decrease the chance of glare or contrast issues that lead to eye strain. Make sure to clean your monitor at least 1 time per week, this also helps reduce eye strain.

Incorporate stretching into your daily work routine, and remember to change your position at least every 30 minutes.

Remember, it is never too early to begin practicing safe work habits, so share this information with your family members and other who may be using computers.