

Computer Ergonomics 101

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With the start of school and the coming of cooler weather many children and parents will be spending more time inside. A good deal of this time will be spent in front of a computer for homework or entertainment. Many of these computer users will utilize poor computer posture. Consequently, we will see an increase at our office of parents and children with neck pain, back pain, and hand/arm tingling or pain.

What Is It?

Ergonomics, *from the Greek ergos (work) and nomics (management)*, is the science of people at work. More specifically it is the study of how people perform their work and the design of the work place to minimize injury or stress on their bodies. Computer ergonomics/posture is important to help anyone using computers avoid injury or stress to their body.

Proper Posture

The proper computer posture is to be seated with your back against the backrest of the chair to maintain the forward curve of your low back. Your feet flat on the floor. The head should be looking straight ahead to maintain the forward curve of your neck. Your arms should be level with the floor when they are on the keyboard with your elbows by your sides.

How to Do It

Now that you know the proper computer posture, let's look at how to practically achieve it. First, get your arms level with the floor when your hands are on the keyboard by adjusting the chair height up or down. It is important to not have your wrists bend up or down while working on the computer because bending causes increased pressure on the median nerve as it passes through the carpal tunnel. Increased pressure on the median nerve can cause tingling and/or pain in the hands and fingers known as carpal tunnel syndrome.

Next, now that your chair is the correct height, sit back against the backrest to maintain the forward curve of your low back this will prevent low back irritation. If your feet are not flat on the floor you will need to make a footrest by placing a box or books (phone books work well) under your feet. Your footrest should be high enough to allow your fingers to be easily slipped between your thigh and the front edge of the chair seat. This will allow proper blood flow from your legs back to your heart and will reduce swelling of the ankles or feet and alleviate achy calves.

With your arms and legs properly positioned, your monitor needs to be positioned. Sitting with your head looking straight ahead, raise your monitor by placing books under it until the top of your monitor's

screen is the same height as your eyes. This will allow you to maintain the forward curve in your neck, which will minimize stress on your neck and mid back and reduce tension headaches.

Utilizing this proper computer posture will minimize the most common complaints associated with prolonged computer use. However, there may be issues that are specific to your workstation, which need custom modifications. You should discuss these issues with your chiropractor or an ergonomic counselor.

Other Problems

There are other common problems we see in computer workstations. One is having the monitor positioned off to the side of the keyboard. This causes the head to be turned while using the keyboard, which can cause neck and shoulder pain.

Mouse placement too far from the keyboard, often causes stress and injury to the shoulder. The mouse should be as close to you and the keyboard as possible. If you are prone to shoulder problems, you may want to consider purchasing a track ball instead of a mouse. This allows the wrist to rest on the desktop keeping the shoulder at rest.

If you need to do data entry from a paper or book, it should be placed upright on a document stand next to your monitor screen. If the document is left flat on the desk you will have to bend your neck forward to read it, which will cause stress to your neck and back.

Often, people with broad shoulders or waists need to deviate (bend sideways) their wrist to place their fingers on the keyboard. This can cause tendinitis of the thumbs or elbows. To correct this, an ergonomic keyboard (a keyboard with the keys in a “V” pattern such as the one sold by Microsoft) will help minimize or eliminate wrist deviation.

Parents or children who wear glasses and spend a lot of time in front of a computer should consider having a pair of computer glasses made. These are glasses that have their focal length set at the exact distance to your monitor. Computer glasses won't be useful for other activities and therefore, should be left at your computer. However, these glasses can significantly reduce eyestrain while doing computer work. Measure the distance from your eyes to the monitor screen and take this information to your optometrist.

Fatigue is another ergonomic factor in computer work. You should take a mini-break every half-hour if possible. Even if you just stretch your arms overhead and do a few shoulder shrugs. Better yet, get up and walk across the room and back.

Prevent Disability

Even with proper ergonomics while working on your computer, it may not be possible to avoid all aggravation or irritations to your body. For this reason you and your child should visit your chiropractor to correct any computer posture related problems before they become permanent.