

**Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population.**

Work Related Musculoskeletal Disorders (WMSDs) result when there is a mismatch between workers and workstations and the physical demands of their jobs. Each year 1.8 million workers in the United States report WMSDs such as carpal tunnel syndrome (CTS), tendonitis, eyestrain, or back injuries. About 600,000 WMSDs are serious enough to result in workers having to take time off work to recover. Ergonomics, the science of fitting the job to the worker, may be able to address many of these.

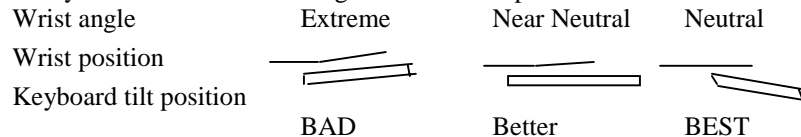
There are a number of basic principles that can be applied by the individual worker that can help lessen the risk factors that can lead to WMSDs. This sheet will help the individual to learn how to apply some of these principles to their own workstation in an office environment. It is important to remember that these are basic principles and the application of these principles will be different for every individual. The idea is to make your workstation as hazard-free as possible.

## THE BASICS...






- Look for opportunities to alternate between types of work periodically to rest and stimulate different parts of your body and mind.
- Look for opportunities to change your daily work activities and routine. Find ways to alternate between right and left hands, sitting and standing postures, etc.
- Stretch at your desk! A regular program of stretching can have a very positive effect.
- Stay fit. Sitting all day should be balanced with more vigorous activity if possible. Exercise can benefit your posture, circulation, concentration, and can help relieve stress.
- Have your eyes examined regularly and use appropriate corrective lenses for work if needed. Work using adequate light, keeping in mind that too much light can cause glare. Look away from your work periodically to rest your eyes.
- Even the most perfect position is not good for a long period of time. Remember to move around and shift your body often for more comfort.
- If you sit down all day during work, do not sit down during breaks. Get up and walk around. This will increase blood and nutrient flow to the different parts of your body.
- Use a program of "microbreaks." If your primary work function is very repetitive stop every 30 minutes or so for about 30 seconds. This is a great time to do a mini stretching routine.
- Place items that you use on a regular basis as close to you as possible. Avoid reaching for anything.

## Get the right angle...

Very small changes in the angle of your keyboard can have a drastic effect on the strain placed on your hands and wrists. Try to adjust your keyboard such that your hands stay in a neutral position. A negative keyboard tilt of about 10 degrees will accomplish this.



## THE STRESS IS KILLING ME

-  Learn to relax when away from work. Stress is a major factor that can increase the impact of the risk factors that contribute to WMSDs.
-  Find an activity away from work that allows you to unwind from the stresses of the workday and allows your body to rest.
-  As you work during the day remember that concentration does not have to include tension. Find ways to make your job more enjoyable without affecting your production.
-  Get a good night's rest, this is the best time for your body to repair itself. Prepare yourself for sleep each night by relaxing for a time before going to bed for the night.
-  Go to sleep and get up at the same time each day. A routine pattern of sleep will allow your body to repair itself as well give you more energy and have a general positive effect



## At The End of The Day

Many activities outside of the workplace can be risk factors for WMSDs. Activities such as knitting, needlepoint, sewing, fly tying, computer games, surfing the internet, etc. can make your potential for problems with WMSDs greater. Always be aware of any activities that may be potential risk factors.

**Additional Resources:** For more information contact EHS by calling 581-6590 or visit our website at [www.ehs.utah.edu](http://www.ehs.utah.edu)

The internet is an excellent source of information on ergonomics. It is important to remember that not all sites contain correct information. Research should be done carefully. The University does not endorse any of the following sites nor does it guarantee the information contained therein is correct and up to date. Nevertheless, EH&S believes these sites to have some merit as a resource for ergonomics related information. [www.office-ergo.com](http://www.office-ergo.com) [www.interface-analysis.com/ergoworld](http://www.interface-analysis.com/ergoworld) <http://ergo.human.cornell.edu> [www.stanford.edu/dept/EHS/work/ergo/index.html](http://www.stanford.edu/dept/EHS/work/ergo/index.html)

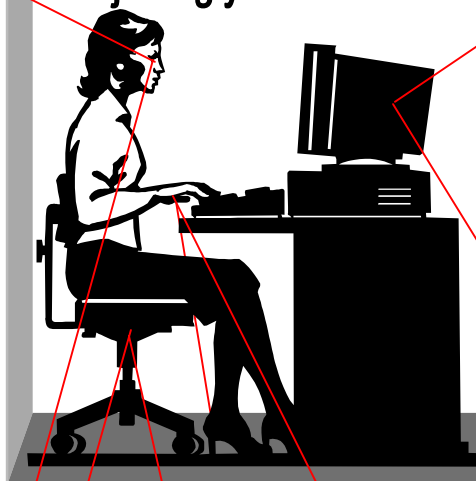


## The Eyes Have It...

Eyestrain can be caused by a number of different things. Try some of these suggestions to help reduce or eliminate eyestrain:

- Reduce the glare. Control the light sources around your workstation in such a way as to reduce glare. Your VDT screen should be completely free from glare. If you can't control the glare on your screen, use a glare screen.
- Use a darker color scheme on your monitor. Darker colors help your eyes relax.
- Use task lighting to supplement overhead lighting when necessary.
- Place your VDT such that it is not backlit by light from a window or other bright light source.
- Minimize the amount of white paper and light colored objects that are lying around on your workstation.
- Look Away. Staring at a VDT screen all day is tiring for anyone. Take a moment several times throughout the day to look away from your VDT screen. Try to look at darker colored objects that are some distance from you. This will give your eyes the opportunity to relax from the strain of close focusing for long periods of time.
- Palm your eyes. Apply gentle pressure to your eyes using the palms of your hands. Hold for 20-30 seconds and slowly uncover your eyes. This helps relieve the tension that can build up in your eye muscles.

## Adjusting your workstation



## Terminal Basics...



Making sure that your video display terminal (VDT) is adjusted properly can help eliminate many potential hazards.

- ☞ Position your VDT such that your head and neck can always be in an upright position. Not bent too far forward or back, not twisted in any way, and not bent to one side or the other.
- ☞ Position your VDT as far away from you as possible while still be able to read the screen comfortably. Longer distances help your eyes relax.
- ☞ Fine tune your VDT's brightness and contrast controls to maximize visibility and comfort while not compromising clarity.

## Need A Hand...



Hand and arm position is VERY important. Follow these guidelines:

- ☞ Keep your wrists as straight and relaxed as possible. Try to maintain a "neutral" position.
- ☞ Train yourself to allow your wrists and hands to float over the keyboard as if you were playing a piano. If this is not possible then use a flat, cushioned wrist rest. Curved wrist rests can create a pressure point on the wrist and actually create more problems.
- ☞ Your elbows should be at your side, free to move, if needed.
- ☞ If you use a mouse, place it as close to the keyboard or as close to you as possible. If you don't have room next to the keyboard, try putting your mouse on a clipboard in your lap periodically.
- ☞ Don't squeeze the mouse! It's already dead. Gripping your pointing device with too much force causes unnecessary strain on your hand and wrist.
- ☞ Keep your wrist in a neutral position. Don't plant your wrist and twist your hand to produce movement, try to make most of the movement in the arm rather than the wrist.



## Thank You for Your Support



Your chair, and how you sit in it, is one of the most important factors in good workstation design and practices. An improperly adjusted or poorly designed chair can contribute to many potential problems.

- ☞ Make sure your chair is adjusted such that your body is well supported. Avoid creating any pressure points. Be especially mindful of supporting your lower back
- ☞ Make sure you keep your feet flat on the floor at all times. If necessary use a foot-rest. Keep your knees, hips and elbows at an angle greater than 90 degrees.
- ☞ Use a chair that has as many adjustments as possible. The greater the adjustability of the chair the easier it is to fit the chair to the person using it.