



# Computer Workstation Ergonomics

Do you work with a computer? A video display terminal? Well if you do you're not alone, there are more than 15 million VDT's in use in the United States and Canada today.

Ok, have you ever thought about VDT safety? Do you know the hazards involved? Yes, you heard that correctly, there are hazards involved in working with VDTs. You may not even realize it, but working every day at your terminal can be causing physical problems if you don't do it correctly. Let's take a look at some basics.

1. Back aches, neck fatigue and shoulder/arm pain. These discomforts are usually caused when the operator's work station doesn't fit the operator correctly. For example, let's say that the chair is too high. You'll have to bend too far forward to see the VDT screen properly. This can cause muscle aches in the back, neck, shoulders and arms. Working in this position for extended periods of time can lead to numbness, stiffness or even muscle damage. Incorrect posture generally leads to back and neck pain.
2. Hand, wrist and finger injuries. These are the second, and perhaps most common VDT related injuries. Generally, muscle, nerves and tendon injuries to the hands and wrists can be directly linked to one of two causes, either improper height of the keyboard, or much of the same repetitive movements done by the VDT operator day after day.
3. Headaches, eye strain, blurred vision and dizziness. All of these problems are caused by the VDT screen itself. A screen that is too high or too low, or even tilted at the wrong angle can cause eye fatigue. Also, a screen that is too dark or does not have enough contrast will cause eye strain, headaches and even dizziness. Most screens will have a brightness control.
4. Radiation. Although some computer screens do emit some electro magnetic radiation, just as your home TV set, studies by the National Institute for Occupational Safety and Health have revealed that there is no cause for alarm from video display terminals.

So what can you do to work safer with more comfort? Well, the first and most important thing that you can do to prevent the injuries we've just mentioned is to properly 'fit' your workstation. The easiest way to do this is to have your workstation fit your body. Let's take a look at what we mean.

## Your chair

Your work chair should be adjustable and comfortable. The adjustments that you'll have to make usually depend on your body size. If you are 6' 2" you'll have a different chair height than

someone who is 5' 4". Your chair should have an adjustable seat height of approximately 16 to 21 inches. Always adjust the seat for the position that is most comfortable for you. If you share a workstation, be sure to re-adjust the chair for your comfort. Don't be uncomfortable! Make sure the chair will give your back the support it needs. A well-cushioned chair with a lumbar support is an excellent idea. If a chair does not have a lumbar support or cannot be adjusted to your height - don't use it! You'll only be straining your back and neck! Ask your supervisor for another chair.

## Your desk and keyboard area

Your desk should be roomy enough for your VDT, keyboard, computer, document holder, etc. A good desk or table will be tall enough to allow a minimum of one inch between your knee and the underside of the table. If you have more than one inch of space between your knees and the table, you may need a footrest. A table or desk that is somewhere between 23 and 28 inches tall at the table top is good. Your keyboard should also adjust to fit your specifications. The angle or slope of the keyboard should be adjustable so that it feels comfortable to you. You may want to use a wrist rest pad. Some manufacturers provide a padded keyboard that rests upon an adjustable pillow-type base. These same manufacturers also make adjustable footrests, which can help position your legs for better posture while sitting. If your feet get a little tired, just turn the footrest over and you have a nice foot massager.

## The VDT screen

Your screen should be just below eye level, and should be properly angled for easy viewing, somewhere between 16 and 20 degrees. If the screen isn't high enough you can raise it up with an old telephone book or two! Be sure to keep the screen clean at all times, remember, looking at a dirty screen is kind of like looking through a dirty pair of glasses! Try not to position your VDT screen too close to a window; you don't want to have any unnecessary glare. If this is not possible, make sure to draw the blinds or drapes. This can reduce some of the harsh glare. You may further reduce eye fatigue by making sure that the contrast on the monitor is sharp, thereby making the images much easier to read.

Finally, you can reduce the level of brightness in your office. Most office lighting is too bright. A light level of between 300 and 500 lux is ideal. This proper level of brightness can be achieved by simply removing half of the fluorescent tubes in the light fixtures. (Your maintenance department can work with you to try and find the best level of lighting). Not only will this make it easier for you to see your VDT screen, but you'll save energy as well!

Continued on reverse...

If you use a document holder try to position it at the same height as the VDT screen. This will help reduce further strain in your neck and now that we've properly adjusted and angled all of the fixtures and workstation furniture, it's time to properly align the VDT operator. Don't forget that you are the last and most important part of the equation; you have to fit properly as well!

### Sit straight in your chair

Keep your back flat against your chair, that way you can properly support your lumbar region. Don't slouch! When you slouch over, such as in the 'praying mantis' position, you're straining your whole body!

Keep your upper legs parallel to the floor and keep your feet flat on the floor.... If you can't reach the floor with your feet, get a footrest or re-adjust your chair.

Keep your elbows as high as the "home" key row.... If you're sitting back in your chair and have your feet on the floor, your elbows should line up properly. Once your elbows are lined up with the "home" row, then your wrists and lower arms will be in the correct position as well, keep your head bent slightly downward, but don't be a chin-to-chest person, keep far enough away from the screen.

Remember when you were reminded not to sit too close to the TV? The same thing applies with your VDT. Try to be 20 to 26 inches away from the screen.

### Adjust, adjust, adjust

If you've done everything we've mentioned and still you aren't comfortable, then go back and begin the re-adjusting process. Move your chair up and down, adjust your table height, or re-angle your screen. Remember to make everything fit your specifications. You're the only one who can tell when you're comfortable!

Keep your computer happy...! Don't allow extra papers, books and files to pile up around your computer. The cooling fan needs to have access to air in order to keep your computer from overheating. Also keep coffee and other liquids away from your computer and monitor. Ok, is there anything else you need to know? Well, just one simple thing-stop and take a break periodically.

The human body wasn't designed to sit in one position for three or four hours. You should get up, stretch or walk around. Try arching your back and flexing your fingers. Don't forget about your eyes. Try to focus your eyes on an object at least 20 feet away. This will use different eye muscles and allow you to rest the muscles you've been using for close work. Be sure to take a break from your VDT frequently. Take scheduled breaks or try to vary your tasks. Remember that you have to change positions every now and then. Get up and stretch and when you return to your VDT workstation, make sure that you follow the guidelines we've discussed in this program. Think about VDT safety, then act upon it. You'll find that you'll not only have fewer chances for injury, but you'll be more comfortable, productive and effective.