

## Your Monitor

Repeatedly tilting your head up, down, or to the side to look at the monitor can contribute to neck strain and stiffness, back discomfort, and other aches from awkward posture.

- Is the top of your computer monitor at eye level when you are seated? (You might want to ask a co-worker to help you check this.)

If your monitor is too low,

See if one of the following computer aids can be obtained for you:

- A height-adjustable monitor holder. Styles and prices vary.
- A computer support arm, which allows you to raise the monitor and adjust it horizontally.

Seldom is a monitor positioned too high.

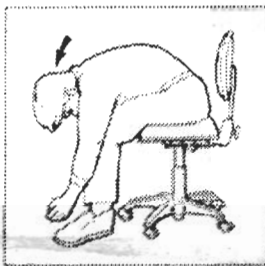
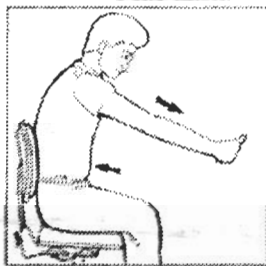
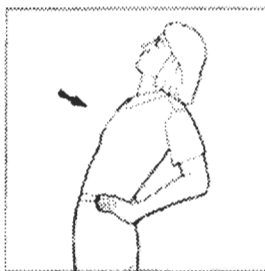
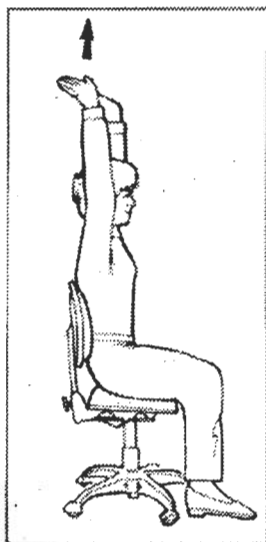
However, if yours is, you can usually remove some or all of the computer equipment such as the keyboard holder, CPU (central processing unit), or other monitor holder.

A few cautions about moving your monitor:

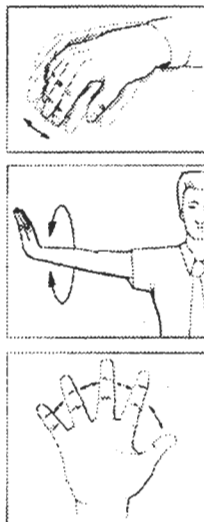
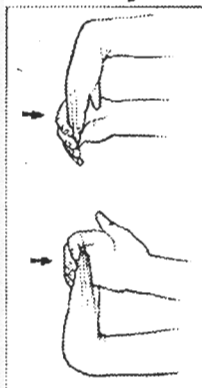


# Movement, Exercise, Task Variety and Stress

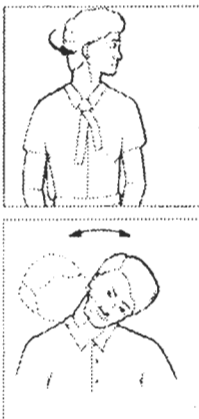
## Upper Body Stretches



## Shoulder, Arm and Hand Stretches



## Neck Stretches



## Relax



### **Variety and movement keep you physically and mentally alert.**

The most interesting task can get boring if you do it for long periods of time, and the most comfortable chair isn't comfortable if you sit in it for hours. Another issue is working under pressure which can contribute to fatigue, physical discomfort and stress.

To reduce boredom, soreness, fatigue, and stress, and to increase your productivity:

- Take some type of break from the computer every two hours.
- Alternate with non computer tasks such as phone calls, filing, meetings, etc.
- Time your computer tasks to end when coffee or meal breaks start.
- Change your posture frequently. Even readjusting your chair slightly changes your posture.
- Stretch periodically. This is particularly important when you work intensively or extensively at the computer.

**Remember: Break up your computer work with breaks, non-computer tasks, and movement.**

- Ask someone to help you if the monitor is heavy or difficult to reach.

- Make sure that whatever you use to support the monitor is sturdy and stable.

- Never place your monitor where any of the ventilation openings are restricted. This can damage it.

**\*Remember:** Place your monitor at seated eye level to reduce neck strain and improve overall posture.

### Quick Fix Ideas

Inexpensive monitor platforms can be:

- An old phone book, or a few taped together.

- Computer printouts taped together.

- A wooden shelf.

- Use your imagination, but make sure the platform is stable.

## Copy Holders & Wrist Rests

These work aids can make your job easier, improve how you feel at the end of the work day, and possibly make you more efficient.

### Copy Holders

Are your documents located at eye level and near the monitor?

If not,

Use a copy holder. You will find that this inexpensive aid can help prevent neck strain from looking up and down between your monitor and documents. It can also reduce eye fatigue from excessive visual refocusing at different distances. Place the copy holder the same distance from your eyes as the

monitor, and fairly close to it.

The best location for it depends on what type of computer work you do, such as data entry, data retrieval, word processing, etc. You will find more information about this in the section "Arranging Your Computer Equipment."

**\*Remember:** Position your copy holder at eye level and near the monitor to minimize neck and eye strain.

## Wrist Rests

**Do your wrists bend downward when you key?**

Does your wrist rest on a hard or sharp surface (such as a desk or sharp edge)

If so, you are possibly working in a posture that stresses your hands and wrists and may increase pressure on tendons and nerves. Over time this can contribute to wrist disorders.

A wrist rest can help. Wrist rests are sold by office and computer supply stores. You can also fashion one temporarily by trying the Quick Fix Ideas. The wrist rest should be cushioned, with the front edge slightly curved. It should be at least as high as the front of your keyboard, but not higher than the "home" row of keys.

### Quick Fix Ideas

For a temporary wrist support:

- Roll up a small towel

- Cut a strip of high-density foam

- Roll up shipping bubble wrap and cover it with fabric.

**\*Remember:** Use a wrist rest to

reduce pressure and improve wrist posture and comfort.

### Put it All Together

Position a hard copy holder close to the monitor to improve neck posture and reduce eye fatigue

Place the top of monitor at seated eye level to improve head and neck posture

Incline the keyboard slightly and place it at seated elbow height to encourage keying with straight wrists and relaxed shoulders

Position seat back to provide lower back support

Use padded and slightly curved wrist rest to keep wrists straight and reduce stress on shoulders and upper back

Allow space behind knees to improve sitting stability

Place feet securely on floor or footrest to improve leg circulation

Allow 90 percent or more angle between lower leg and thigh to improve leg circulation

## Take It Easy On Your Eyes

### Lighting

The appropriateness of illumination depends on its quality and brightness, the requirements of your tasks, and your own needs and preferences. Typically, computer work areas require less overall illumination than other office work areas. Excessive or inappropriate illumination contributes to eye discomfort and headaches.

Do you have mirror images (reflected



light rays) or white spots on your computer screen?

Even if reflected light doesn't seem to bother you, it may still contribute to eye fatigue and soreness by making characters less crisp, clear, and easy to read. Light rays shining directly into your eyes can also make them sore.

To reduce glare:

- Reflect light away from your eyes. Glare becomes a problem only when light bouncing off your monitor strikes your eyes.

- Tilt your monitor slightly if it is reflecting overhead light.

- Swivel your monitor slightly to either side.

- Focus task lights directly onto documents, not onto the screen or into co-workers' eyes.

- Turn off task lights when not in use.

- Ask about getting a glare guard on your screen. It reduces glare by reducing light reflected off your monitor from reaching your eyes. There are dozens of good glare guards at computer and office supply stores.

Mesh guards are NOT recommended, however, since they are hard to keep clean and tend to make the characters appear fuzzy.

- Minimize the amount of highly reflective surfaces in your work area, such as white paper and white or light-colored clothing.

- Reduce the background light level by using lower wattage bulbs, removing some bulbs, relocating or eliminating lighting fixtures, or adjusting the blinds or curtains.

**\*Remember:** Reduce glare by changing the position of your monitor and reducing area illumination. Reduce contrast by adjusting background illumination.

### Contrast

Too much contrast between the amount of light at your monitor and the area surrounding it can contribute to eye soreness

and fatigue. There are no guidelines as to how much contrast is ideal; it depends on your own comfort level and the amount of time you spend at the computer.

To reduce contrast:

- Move computer monitors away from windows or other sources of bright light.

- Avoid positioning monitors parallel to windows.

- Adjust window coverings.

- Adjust the contrast and brightness levels on your monitor to find the setting that gives you the best clarity.

### Eye Discomfort

Do you get sore or dry eyes, or blurry vision by the end of the work day?

Even after you have controlled your glare problems, you may still experience eye discomfort.

Part of the problem is related to how people's eyes work when using the computer.

**Excessive or inappropriate illumination contributes to eye discomfort and headaches.**

### Sore Eyes

Spending long periods of time staring at the monitor fatigues the eye muscles.

- After every hour of computer work, exercise your eye muscles to relieve some of their stiffness.

- Close your eyes for a few minutes.

- Keep your monitor screen and glare guard clean. A dirty screen is harder to read, and thus contributes to eye strain.

### Dry Eyes

When you concentrate on the monitor, you tend to blink infrequently, so your eyes are more likely to become dry. This is especially true if you wear contact lenses.

- Keep a bottle of eye drops at your work area and use them frequently during intensive computer tasks.

- Try to remember to blink more often.

- Deflect air flow from vents or fans away from your eyes.

### Blurred Vision

Constant staring at the monitor can stress the focusing muscles of your eye.

- Periodically look at objects far away from your work area.

- Look off to the far corners of your work

area or, if you have a window, look off into the horizon.

**\*Remember:** Reduce eye soreness by doing eye exercises, closing your eyes, preventing dryness, and looking off into the distance.

### Visual Demands

To date there is no evidence that using a computer causes visual problems. However, visually demanding tasks such as computer work can make an existing problem more noticeable. It is important to have periodic eye exams and accurate visual correction.

### Contact lenses

Because people blink infrequently during computer work, your eyes are more likely to become dry and uncomfortable. This is particularly true for contact lens wearers.

Here are some suggestions:

- Clean your lenses regularly.
- Use eye drops.
- Wear your glasses when working on the computer.

### Bifocals

Some people who use the computer intensively have a pair of bifocals with a correction just for computer use. It is possible, for example, to have the focal point set for computer monitor distance rather than for reading distance. Talk with your eye doctor about other available options.

If you wear bifocals or trifocals, the easiest way to avoid the change of visual fields is to lower the computer monitor until your bifocal correction works comfortably. However, keep the monitor high enough to maintain a comfortable neck posture.

**\*Remember:** Maintain good eye care and appropriate visual correction to increase eye health and comfort. ■

An Ergonomics Guidebook for Computer Users is available from Ergonomic Solutions, 111 Palis Way S.W., Calgary, Alberta T2V 3V5  
Phone: (403) 281-0880; fax: (403) 281-1690

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# Summing It Up

## Arranging Your Computer Equipment

- Feet flat on floor or stable on footrest.
- Ninety degree angle or more between upper and lower legs.
- Space behind knees.
- Back support.
- Top of monitor at eye level.
- Documents at eye level and near monitor.
- Keyboard at elbow height.
- Wrist support.
- Equipment arranged appropriately.

## Movement, Exercise & Task Variety

- Varied tasks.
- Posture changes.
- Stretches.
- Minimal glare.
- Clean monitor screen.
- Comfortable contrast.
- Visual breaks and eye exercises.
- Regular eye exams.
- Appropriate visual correction.
- Appropriate distance from monitor.

## Environmental Issues

- Equipment noise dampened.
- Conversation level controlled.
- Social exchanges away from the work area.