

It's a fact...

You should know what you can do to solve your computer-related discomfort.

I bend my fingers or thumbs backward.

I use one finger to operate my input device (e.g., trackball, glide point).

- ◆ Use a mouse or large trackball.

I overextend my fingers or thumbs while I'm typing.

- ◆ Do not extend your fingers or lift them from the keyboard. Keep all your fingers curled under and together while typing or using the mouse.

I repeatedly move my fingers.

I type at a high speed.

- ◆ Don't rush.
- ◆ Program macro keys to reduce typing. Macros are small programs that replace highly repetitive typing or mouse actions.

I work for long periods without a break.

- ◆ Take short rest pauses. Relax while working: take deep breaths, alternate tasks, stretch.
- ◆ Redesign your job. Adjust job activities to distribute typing throughout the day. Break up continuous typing tasks with other types of tasks (e.g., photocopying, filing).



I hit the keyboard keys with force or tightly grasp the mouse.

I hit the keys hard.

- ◆ Use as light a touch as possible on keys and buttons.

I tightly grasp the mouse or click the mouse buttons hard.

- ◆ Use as light a grasp as possible on the mouse.
- ◆ Whenever possible, use keyboard shortcuts instead of pull-down or pop-up menus.
- ◆ Let go of the mouse when not actively using it.

The keys on my keyboard are stiff.

- ◆ Use another keyboard. The keys should not require excessive force and should provide sound and touch feedback when struck.

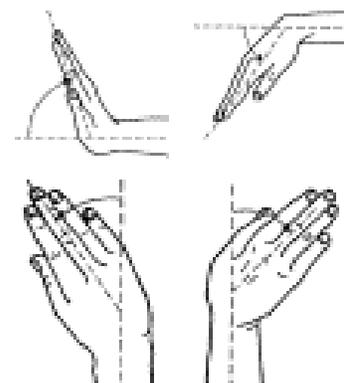
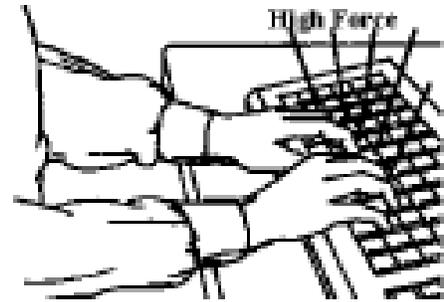
My mouse buttons are stiff.

- ◆ Use another mouse. The mouse should have buttons that do not require excessive force and should provide sound and touch feedback when clicked.

I work with my wrists bent more than 10 degrees in any direction.

My keyboard is too high.

- ◆ Lower your work surface/keyboard tray so your elbows are at the same height as the keyboard. This is the best solution because it doesn't require a footrest.
- ◆ Raise your chair so your elbows are at the same height as the keyboard. This is the best solution when the work surface height is not easily adjustable. Note: a footrest may be needed to support your feet.



I am using a keyboard tray but the mouse is on my desk.

- ◆ Replace your keyboard tray with a larger tray that holds the mouse, keyboard, and palm support.

My work surface is too high.

- ◆ Lower your work surface/keyboard tray so your elbows are at the same height as the keyboard. This is the best solution because it doesn't require a footrest.
- ◆ Raise your chair so your elbows are at the same height as the keyboard. This is the best solution when the work surface height is not easily adjustable. Note: a footrest may be needed to support your feet.

My keyboard is above elbow height.

- ◆ Lower your work surface/keyboard tray so your elbows are at the same height as the keyboard. This is the best solution because it doesn't require a footrest.
- ◆ Raise your chair so your elbows are at the same height as the keyboard. This solution is best when the work surface height is not easily adjustable. Note: a footrest may be needed to support your feet.

My keyboard is too low.

- ◆ Raise the keyboard or work surface. If the work surface or keyboard tray height is adjustable, set the height of the work surface or keyboard tray so your elbows are at the same height as the keyboard. This is the best solution because it doesn't require a footrest. If the work surface height is not adjustable, raise the entire workstation with risers. This works best for free standing furniture but often does not work for modular furniture. This is the best solution because it doesn't require a footrest.

My keyboard is below elbow height, even when my chair height is adjusted, so my feet are flat on the floor.

- ◆ Raise the keyboard or work surface so your elbows are at the same height as the keyboard. This is the best solution because it doesn't require a footrest. If the work surface height is not adjustable, raise the entire workstation with risers. This works best for free standing furniture, but often does not work for modular furniture. This is the best solution because it doesn't require a footrest.

I rest my wrists on a wrist rest while I'm typing.

- ◆ Keep your wrists free and straight while typing. Do not allow the weight of your hands and arms to press on your wrists. Rest your hands in your lap or on armrests while pausing and avoid bending your wrists while resting. Use an arm movement to move around on the keyboard rather than a wrist movement.
- ◆ Only use a wrist rest or palm rest when *not* typing. A wrist rest or palm rest at about the same height as the keyboard provides a comfortable place to rest when not typing and encourages a relaxed wrist position.

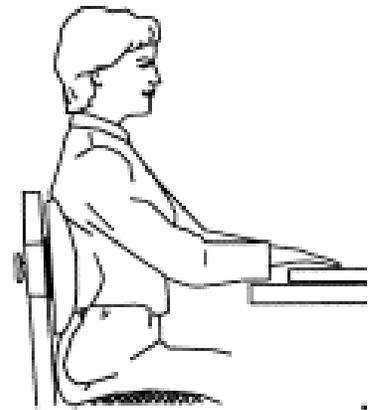
My keyboard slopes towards me.

- ◆ Lower the feet on the back and underside of your keyboard.

I hold my arms away from my body.

My keyboard is too high.

- ◆ Lower your work surface/keyboard tray. Set the height of the keyboard/mouse support surface so your elbows are at the same height as the keyboard.
- ◆ Raise your chair. Set the height of the chair so your elbows are at the same height as the keyboard or mouse. Note: a footrest may be needed to support your feet.



My chair is too far away from my work surface.

- ◆ Move your chair closer to the work surface.
- ◆ Remove obstacles that prevent you from getting close to your work surface (e.g., chair arms, clutter under your desk, floor surface).

The arms of my chair keep me from getting close to my work surface.

- ◆ Remove or lower the armrests.
- ◆ Replace loop arms with adjustable "T" shaped arms. Adjust the arms down so the chair can be pulled closer to the work surface.
- ◆ Remove pencil drawers or other obstructions if they keep you from moving close enough to the work surface.

My work surface isn't deep enough to provide a place to rest my hands in front of the keyboard.

- ◆ Move your keyboard so your forearms rest evenly on the work surface. If the work surface is deep enough, simply push the keyboard back on the work surface. If the work surface is not deep enough, replace it with a deeper one, or get a keyboard tray.

There isn't enough leg clearance under my desk.

- ◆ Remove clutter from under your work surface. Do not store files, equipment, and other materials under your desk—these items will keep you from having enough leg room.

My mouse is positioned too high.

- ◆ Lower the keyboard/mousetray or work surface so your elbows are at the same height as the mouse.
- ◆ Raise your chair so your elbows are at the same height as the keyboard or mouse. Note: a footrest may be needed to support your feet.

My mouse is not next to my keyboard.

- ◆ Place the mouse next to the keyboard, side by side and at the same height. Rest your forearm on the work surface while using the mouse and typing.

I use a keyboard tray but the mouse is on my desk.

- ◆ Place the mouse next to the keyboard. The work surface or keyboard tray should be large enough to support a keyboard and mouse. Increase keyboard tray space by adding an extension or mouse bridge over the numeric keyboard.

Items I use frequently are not within easy reach.

- ◆ Move frequently used items into the "work zone," close to your body.

My hands, wrists, or arms are exposed to hard edges (e.g., from the desk, keyboard, tray, or armrests).

I rest my wrists on the front edge of my keyboard or work surface.

- ◆ Move your keyboard forward so your forearms rest evenly on the work surface. This will keep you from resting your wrists/forearms on the hard edge. Note: if your work surface depth is restricted, use a different work surface or keyboard tray.
- ◆ Lower your work surface/keyboard tray so your elbows are at the same height as the keyboard.
- ◆ Raise your chair so your elbows are at the same height as the keyboard. This is the best solution when the work surface height is not easily adjustable. Note: a footrest may be needed to support your feet.
- ◆ Use a palm or wrist rest to provide a comfortable resting place when not typing. Note: using a palm or wrist rest is not recommended when using a mouse because it leads to awkward wrist movements.
- ◆ Use a desk with a rounded front edge. This solution is preferred over using a palm or wrist rest.



My work surface isn't deep enough to provide a place to rest my hands in front of the keyboard.

- ◆ Use a keyboard tray that holds the mouse, keyboard, and palm support. If available, use a larger work surface.

My chair's armrests are hard.

- ◆ Modify, replace, or remove the chair's armrests. Pad the edges of your chair to eliminate hard edges.

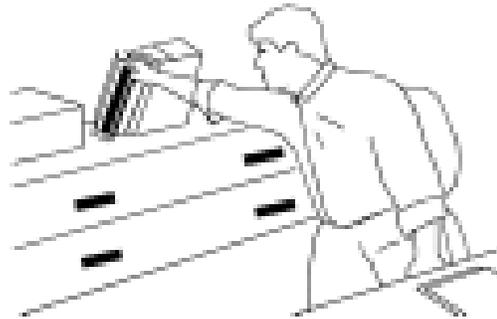
I repeatedly bend forward or sideways.

The arms of my chair prevent me from getting close to my work surface.

- ◆ Remove or lower the armrests.
- ◆ Replace loop arms with adjustable "T" shaped arms that allow the chair to be pulled closer to keyboard and work surfaces.
- ◆ Remove pencil drawers or other obstructions if they keep you from moving close enough to the workstation.

Items I frequently use are not within easy reach.

- ◆ Move items used every few minutes into the "work zone," close to your body.



My monitor is too far away and I have to lean forward to read the computer screen.

- ◆ Move the monitor closer to a comfortable viewing distance. A good range is 18-30 inches away from your eyes. Most people find that 22-24 inches is a good distance. The font size should be at least 12 point for these distances.

I lean forward while I'm typing or using the mouse.

- ◆ Sit fully back against the chair backrest while typing or using the mouse. Lower or remove armrests, pencil drawers, or other obstructions if they keep you from moving the chair close enough to the work surface.

My mouse is too far away from my body.

- ◆ Place the mouse next to the keyboard at the same height. Allow your forearm to rest on the work surface while you use the mouse and type. Use a keyboard tray that is large enough to hold the mouse, keyboard, and palm or wrist support.

I move the mouse with my wrist rather than with my arm.

- ◆ Use a forearm movement to move the mouse rather than a wrist movement. This reduces the tendency to bend the wrists while using the mouse.

I lean forward while I'm working.

- ◆ Move your chair closer to the work surface.
- ◆ Sit against the chair's backrest and relax while working. Lower or remove armrests. Remove pencil drawers or other obstructions if they keep you from moving close enough to the workstation.

My chair is not adjusted to fit me.

- ◆ Adjust the backrest to support your lower back. Pull your chair forward and lean back while working. Attach a pillow to the backrest to decrease seat depth and support your lower back. Make sure the pillow is the right size—a pillow that is too large may increase discomfort. The pillow should rest in the small of your back.

The font/character size is too small to read on the computer screen.

- ◆ Increase font size and use a more readable font style on both documents and the computer screen. The distance from the screen should be no greater than 30 inches. However, if your work or work area arrangements require a distance of more than 30 inches from your eyes to the screen, the font size should be greater than 12 point.

I work with my head or neck bent, tilted, or twisted.**My monitor is too low.**

- ◆ Raise your monitor so the top of the screen is just below eye level, or 0-4 inches below eye height. Use a monitor riser, CPU/hard drive, or other stable surface to lift the monitor to the correct height.

**My monitor is too high.**

- ◆ Lower your monitor so the top of the screen is between 0-4 inches below eye height.
- ◆ Raise your chair so your elbows are at the same height as the keyboard. Note: a footrest may be required to support your feet.

My monitor and keyboard are not aligned.

- ◆ Place the monitor in front of you and directly behind the keyboard. This keeps your body in alignment and prevents you from twisting your neck. The work surface should be deep enough to hold the keyboard and the monitor. With large monitors, you may need a keyboard tray if the work surface is not deep enough.

My monitor is too far away, causing me to lean forward to read the computer screen.

- ◆ Move the monitor to a comfortable viewing distance between 18-30 inches from your eyes. In general, 22-24 inches from the eyes is a good distance for most people.

I have uncorrected vision problems, causing me to lean forward to read the computer screen or documents.

- ◆ Schedule an eye appointment to assess and correct vision problems. Sometimes mono-focal or tri-focal computer glasses help. Make sure that any prescription lenses are suitable for computer work.

I wear bifocals.

- ◆ Place the monitor directly on the work surface so your head is upright and not tilted back. Note: make sure this placement does not cause glare problems.
- ◆ Schedule an eye exam to assess and correct any vision problems. During your exam, tell your doctor how far you sit from your monitor (measure the distance before you go for the exam). Sometimes mono-focal or tri-focal computer glasses help.

I cradle the telephone between my neck and shoulder.**I talk on the telephone using a handset while both my hands are occupied (e.g., typing).**

- ◆ Use a telephone headset. A variety of headsets are available, including over-the-head and over-the-ear styles. For short-term use, a shoulder cradle can be used.
- ◆ Use a speaker phone if you are in a private office.
- ◆ If you are right handed, arrange the phone on your left in order to answer with your left hand and take notes with your right hand. Reverse the arrangement if you are left handed.



I work with my shoulders raised as if I'm shrugging my shoulders.

My keyboard is too high.

- ◆ Lower the keyboard tray or work surface so your elbows are at the same height as the keyboard.



My chair is too low.

- ◆ Raise your chair so your elbows are at the same height as the keyboard. Note: a footrest may be required to support your feet.

There's a drawer under my work surface that restricts my chair height.

- ◆ Remove drawer or use another work surface with no obstructions under it.

My shoulders tense while I'm working.

- ◆ Relax while working: take deep breaths, alternate tasks, take short rest pauses, stretch.
- ◆ Let your shoulders drop down and relax while typing.

My legs, knees, or feet are exposed to hard edges.

The seat of my chair is too deep.

- ◆ Add a back support to your chair. Attach a pillow to the backrest to decrease seat depth and support your lower back. Make sure the pillow is the right size—a pillow that is too large may increase discomfort. The pillow should rest in the small of your back.



A lack of foot support keeps me from leaning against the backrest.

- ◆ Use a footrest that allows both your heels and toes to be supported and move freely (16" x 20" is best). It should be as wide as your hips, adjustable in height and inclination, and easy to remove. It should not restrict leg movement. As a quick fix, make a footrest from a box or several three-ring binders taped together. The best long-term solution is an adjustable footrest that is designed as a footrest and can be used by other workers or at other workstations.

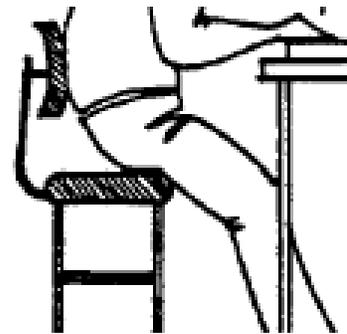
My chair is too high.

- ◆ Lower your chair so your elbows are at the same height as the keyboard. If possible, adjust the chair height so your heels and toes can both rest comfortably on the floor. If not, a footrest may be needed. Make sure when you adjust your chair for your feet it does not cause problems with your hands, wrists, or arms.

I have obstructions under my work surface that interfere with my leg clearance.

- ◆ Remove clutter from under your work surface. Do not store files, equipment, and other materials under your desk. These items will keep you from having enough room for your legs. Many people bump their knees on the pencil drawer—remove it and see if this helps.

My legs are in awkward positions.



There isn't enough leg clearance under my desk.

- ◆ Clear any clutter from under your work surface to create adequate leg room.
- ◆ Raise your work surface or lower your chair if you have long legs that tend to bump into desktop edges. Be sure to maintain good eye level with the monitor.

After my chair is properly adjusted, my feet don't rest flat on the floor.

- ◆ Use a footrest that has adjustable height and inclination.

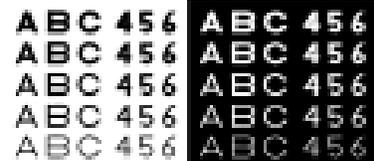
My work requires close or prolonged examination of the computer screen, work objects, or documents.

I work for long periods of time without changing the position of my eyes.

- ◆ Relax while working: take deep breaths, alternate tasks, take short rest pauses, stretch.
- ◆ Periodically look away from the screen. This will help reduce eye strain by giving your eyes something different to focus on. Look out a window or at an object far away. This helps to rest the eye muscles that help you focus at various distances.



The light levels are too high (bright) or too low (dim).

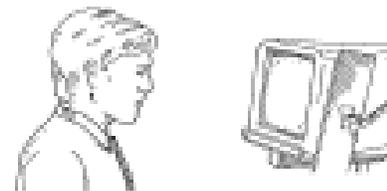


The light levels are too low (dim) around my monitor.

- ◆ Turn on lighting in the room or open blinds.
- ◆ Turn on task lighting (e.g., a desk lamp).
- ◆ Request additional lighting.

The light levels are too high (bright) around my monitor.

- ◆ Lower the light levels. Turn off or shade the task lighting to reduce the light level.
- ◆ Remove pairs of fluorescent light fixtures from overhead lighting (make a request through the appropriate department, e.g., Facilities Maintenance). This should only be done if everyone in the office area agrees.
- ◆ Use an anti-glare screen or glare shield. Shields offer a simple and inexpensive solution to screen glare. Although available from manufacturers, they can be easily constructed out of cardboard and tape—black cardboard with a matte finish is best.



The text/computer screen is difficult to see or read.

There is not enough work surface to place my monitor far enough away from me.

- ◆ Install a keyboard tray to allow proper placement of your keyboard, monitor, and mouse. Place the CPU on the floor in a vertical stand to free up desktop space. Have only items that are frequently used in your immediate work area.

My monitor is too close to my eyes.

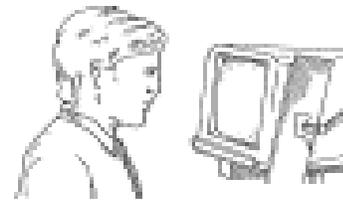
- ◆ Place the monitor 18-30 inches from your eyes. Most people find that 22-24 inches is a good distance.

My monitor is too far from my eyes or the font/character size is too small to read on the computer screen.

- ◆ Place the monitor 18-30 inches from your eyes. Most people find that 22-24 inches is a good distance. If possible, enlarge the character size or change the font to make documents easy to read.

I have uncorrected vision problems.

- ◆ Schedule an eye appointment to assess and correct vision problems. Sometimes mono-focal or tri-focal computer glasses help. Make sure that any prescription lenses are suitable for computer work.

There is glare on my computer screen or work surface from overhead lights or windows.**There is glare directly from a light source on my computer screen or work surface (e.g., my monitor is right in front of an uncovered window).**

- ◆ Place the monitor perpendicular to the window.
- ◆ Close blinds or curtains.
- ◆ Use an anti-glare screen or glare shield. Shields offer a simple and inexpensive solution to screen glare. Although available from manufacturers, they can be easily constructed out of cardboard and tape—black cardboard with a matte finish is best.
- ◆ Reduce the amount of overhead lighting and use low wattage task lighting.

There is glare from an uncovered window reflected off my computer screen or other shiny surface.

- ◆ Use an anti-glare screen or glare shield. Shields offer a simple and inexpensive solution to screen glare. Although available from manufacturers, they can be easily constructed out of cardboard and tape—black cardboard with a matte finish is best.
- ◆ Avoid placing paper and other white objects where they cause reflections on the screen.
- ◆ If possible, wear dark clothing to avoid seeing your own reflection.
- ◆ Install filters on overhead lights.
- ◆ Have Facilities Maintenance paint the walls and select furniture and equipment with a matte finish to reduce reflections.

My task light shines into my eyes.

- ◆ Cover or turn off under-cabinet lighting. Shade the task light to keep it from shining directly into your eyes.
- ◆ Direct the task light away from the screen and your eyes. Adjust the task lighting so it is not shining right in your eyes.



This fact sheet is a product of the DoD Ergonomics Working Group and was adapted from their April 2002 publication, *Does Your Computer Workstation Work for You?*

Written for both supervisors and workers, the fact sheet provides basic information on ergonomics. For more information, visit the working group's Web site at <http://chppm-www.apgea.army.mil/ergowg/product.htm>.