

It's a fact...

Your computer workstation should include the right keyboard for you.



Choose a keyboard that is detached from the display screen (laptops are not recommended for long-term use) and has:

- ◆ Independent angle adjustment and positioning.
- ◆ A thin profile to minimize wrist extension.
- ◆ A matte-finished surface to reduce reflections and ease eye strain.

All keyboards come with a tilt adjustment toward you. If you feel more comfortable with the keyboard tilting away from you, prop the front end of the keyboard up to create a negative tilt.

The height of your keyboard depends on the height of your work surface and chair. To reduce tension in your shoulder muscles, the keyboard should be low enough so your arms are relaxed at your sides. Place your keyboard so the angle between your upper arm and forearm is in the range of 75° to 135°, and your wrists are bent no more than 5° to the right or left and no more than 10° up or down.

- ◆ If your keyboard is not adjustable or is too low, use a pad of paper or some books to raise it up as a quick, temporary fix.
- ◆ If it is too high, raise your chair or place some padding under your wrists to keep them from drooping. Your hands should be able to move easily and be in a reasonable straight line with your forearms.



Keep your wrists floating while you type, but support your forearms (e.g., on your armrest). Lack of forearm support creates constant shoulder and neck tension and may produce frequent headaches.

Wrist and Palm Rests

A wrist or palm rest should be at least as wide as the usable portions of the keyboard and should match the shape and the height of the keyboard.

- ◆ A keyboard fitted with a palm rest supports the heel of your hand and minimizes hand contact with sharp table edges.
- ◆ A padded wrist rest provides either a rest for your wrist during breaks from typing, or a reminder to keep your wrist straight or only slightly bent.
- ◆ Avoid digging the heels of your palm or wrist into a wrist rest, the sharp edge of the desk or blotter, a watch or a bracelet.
- ◆ Use the wrist rest pad to give your wrist a comfortable resting place between typing and to support the weight of your arms.
- ◆ Remember: The wrist rest is a *rest*, not a parking lot. Don't keep your wrists on the wrist rest while you are typing.

Alternative Keyboards

Conventional rectangular keyboards place your hands much closer together than your elbows, causing wrist deviation (turning out of the hands at the wrists). Alternative keyboards reduce ulnar deviation (bending the wrist sideways toward the little finger).

- ◆ Some of these keyboards are split horizontally to reduce the wrist deviation.
- ◆ Others are split with two halves of the keyboard in a "tower" arrangement to allow wrists to be in a completely neutral posture.
- ◆ The vertical split keyboard eliminates the ulnar deviation but may cause some shoulder discomfort. Scooped key arrangements bring the keys slightly closer together requiring less reaching and reducing fatigue.

Keyboards are not "one size fits all." Although split keyboards improve posture, problems may still exist because of keyboard location, repetition, forceful typing, etc.



This fact sheet is a product of the DoD Ergonomics Working Group and was adapted from their June 2000 publication, *Creating the Ideal Computer Workstation: A Step-by-Step Guide*.

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>.

Keyboard Evaluation Checklist

If you answer **NO** to any of the following questions, you have a potential problem.

Yes **No**

- 1. Is your keyboard detached from your display screen?

 - 2. Does your keyboard have independent angle adjustment and positioning?

 - 3. Does your keyboard have a matte finished surface?

 - 4. Is the height of your keyboard low enough so your arms are relaxed at your sides?

 - 5. Are your wrists no more than 10° up and down and no more than 5° to either side?

 - 6. Are your wrists floating above the keyboard while you type, with your forearms supported?

 - 7. Do you use a palm or wrist rest?
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