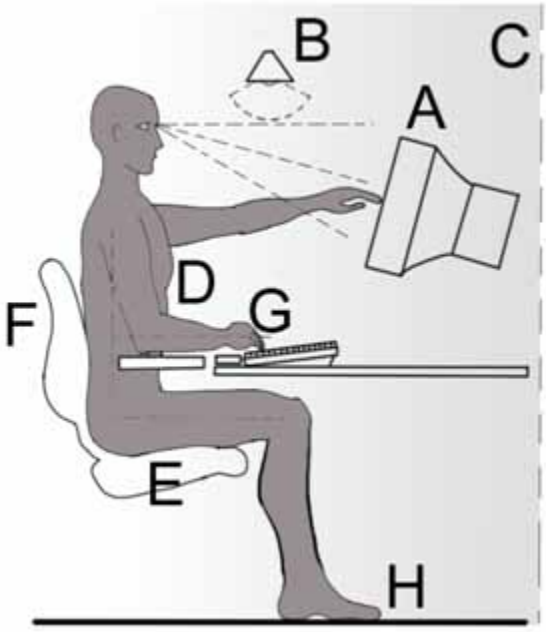
Ergonomics

ERGONOMICS IN THE WORKPLACE & AT HOME

Ergonomics is fitting the work station to the individual and not fitting of the individual to the work station. If you suffer undo fatigue or pain during a work task you may be doing it ergonomically incorrect. Please consult the following if you have a question about repetitive work stress.

12 PRINCIPLES OF ERGONOMICS

1. Keep Everything in Easy Reach
2. Work at Proper Heights
3. Reduce Excessive Forces
4. Work in Good Postures
5. Reduce Excessive Repetition
6. Minimize Fatigue
7. Minimize Direct Pressure
8. Provide Adjustability and Change of Posture
9. Provide Clearance and Access
10. Maintain a Comfortable Environment
11. Enhance Clarity and Understanding
12. Improve Work Organization



A- Position monitor18" to 24" away (approximately arm's lenght) and about 15º to 30º below your line of sight.
B- Don't let light shine in your eyes or on your screen.
C- Square screen to your line of vision.
D- Forearms 90º from your spine.
E- Thighs 90º from your spine.
F- Use a well- made, adjustable office chair, preferably with padded, adjustable arms.
G- Use a wrist pad to support your hands when not typing.
H- Feet flat on the floor.

PROPER HAND POSITIONS

Holding your hands and wrists in as "neutral" a position as possible when working at a desk is one way you can prevent or help lower your risk of developing a chronic trauma disorder, or CTS (like carpal tunnel syndrome). When keyboarding, keep wrists in line with forearms with little bending up and down, or to the sides; keep shoulders back and relaxed; maintain an approximate 90-degree bend in the elbows; and hold forearms horizontal, parallel with the floor.

KNEES
Knees can be injured when they've been "quiet" too long. Use this move before you get up after sitting for a long time, or if you've been standing for extended periods. This exercise is also beneficial anytime your knees feel stiff.

1. Slide forward on a chair, and extend your legs straight out so that only your heels rest on the floor.
2. Tighten the muscles on the front of your thighs (quadriceps). Hold for 5 seconds, then release.
3. Repeat three times, and then do another set. By contracting your thigh, you strengthen that part of your quadriceps muscle that supports and stabilizes your kneecap.

THE BEST WAY TO LIFT ANYTHING
You've probably heard, "Lift with your legs, not your back; but there's more to it than that. Here are the best ways to lift so you don't injure your back (assuming, of course, that the weight of the item is within reasonable limits).

- **Boxes:** When picking one up from the floor, squat with your feet shoulder-width apart," surround" the box with your arms, keep your stomach muscles tight, and stand with your back straight. This gives your back an assist from your legs and gluteal muscles. Keep the box close to you. When you turn, point your feet in the direction you're turning first, so you don't twist your back. Set the box down on something that's about as high as you're holding it.

Tickle Your Keyboard
Ease work-related* pain with *a lighter touch
Long hours at a keyboard puts you at risk for carpal tunnel syndrome, tendinitis, and other Work Related Upper Extremity Disorders (WRUEDs). But there's a key (no pun intended) to lowering your risk, say experts, and here it is:

- **Lighten up!** Often four or five times more force is used on the keys, on average, than was needed for the keystrokes to register. Learn to tap the keyboard instead of pounding it. Practice typing with a light touch. Post reminders where you can see them as you work.
- **Check your posture.** Keep your wrists relaxed but not bent upward or downward. Be sure that your monitor is at eye level. Correct any problems that put you in an awkward posture.
- **Listen to your body.** Pain, aches, stiffness, burning, tingling, or numbing in your hands, wrists, arms, or shoulders are signals that

something may not be right. See your doctor or an occupational physician, and you may avoid more serious injury later.

COMPUTER MICE

Computer mice require repeated arm movement and place more work on a couple of fingers instead of spreading it around. Mice also present a similar problem with the wrist by not keeping it straight. Don't hyper-extend your arms to reach the mouse, you may develop upper back pain in a few weeks.. Please don't think that mice will cure your CTS, they only present different hazards that must be dealt with.

MICROPIPETTERS

Micropipettes are thumb operated and in a single day a lab technician may make hundreds of transfers. It is from this type of operation that some technicians have developed tendinitis of the thumb and hand. If large numbers of pipette transfers are a regular part of the research, then consider acquiring one of a number of different automated pipetting devices available.

If you are responsible for a procedure that requires multiple repeated tasks, please allow for rest breaks to give the tendons a chance to recuperate, or spread the pipetting task out over the day by doing other jobs in between. The human body was not designed for continued repetitive stress to one joint, and the swelling and misuse will result in discomfort and possible damage to the joint. If you have continuing pain from a work related duty, please notify your supervisor.

For more information and/or suggestions contact the Environmental Safety Compliance Officer (ESCO) mailto:umces-safety@umces.edu