Ergonomics 101: Tips, Tricks, and Useful Facts

- "Ergonomics" means the study of workplace design, specifically how a workplace and the equipment used there can best be designed for comfort, efficiency, safety and productivity.
- Poor ergonomics may lead to musculoskeletal disorders (MSD's).
- MSD's are also referred to as overuse injuries, repetitive strain/motion injuries and cumulative trauma disorders.
- The main causes of MSD's at work are poor posture or improper positioning, repetitive motions, overuse, vibrations, excessive force and strain, forceful or awkward movements and duration of pressure.
- Work-related MSD's account for up to 60% of all workplace illnesses at a cost of $15-20 billion in workers' compensation benefits.
- You can reduce your risk of injury by taking a five minute break away from the computer every hour. Try setting a timer on your computer to remind you.
- Some employers offer a free ergonomics assessment to help further reduce your risk of injury and help set up an optimal office work station.
- There are various pieces of equipment that can improve the ergonomics in your work space, including an adjustable keyboard tray, a rolling mouse, lumbar support for your chair, a foot stool and many others.

Useful websites for further information:
- osha.gov/SLTC/etools/computerworkstations
- ergo.human.cornell.edu
- nlm.nih.gov/medlineplus/ergonomics.html

Creating a Sustainable Health System: Improving the Lives of the People and Communities We Serve for Generations to Come

Rehabilitation Medicine: (603) 650-3600 / physical.therapy@hitchcock.org
Dartmouth-Hitchcock Medical Center, One Medical Center Drive, Lebanon, NH

Dartmouth-Hitchcock Medical Center, 18 Old Etna Road, Lebanon, NH
Neck tucks
While sitting at your desk, push your chin backward until you feel a stretch in the back of the neck. Do not move your chin up or down.

Neck stretch
Reach behind your back as shown in the picture. Tilt your head to the opposite side. You should feel a stretch at the upper shoulder and the side of the neck.

Wrist stretch: downward
Straighten your elbow while making a fist. Bend your wrist and use the opposite hand to apply pressure downward. You should feel a stretch on the back side of the hand, top of the forearm and into the elbow.

Wrist stretch: upward
Straighten your elbow. Hold your fingers out and bend your wrist backward, using your opposite hand to apply pressure upward. You should feel a stretch over the front side of the wrist, forearm and elbow.

General Desk Stretches
These exercises are designed to address the most common repetitive stress injuries for people who work in an office setting. Please note that these exercises are general recommendations. None of these exercises should make your symptoms worse. If an exercise is painful, it may not be appropriate for you. If you have questions regarding the exercises, consult a physical or occupational therapist or your primary care provider.

Complete each exercise 1-3 times, 3-5 times per day.
Hold each exercise for 10-15 seconds.

Chest stretch
Raise your arms so that your hands are near your ears and your elbows are bent (as shown in the picture). Pull your elbows down so they are pointing at the back pockets of your pants and squeeze your shoulder blades together.

Shoulder blade squeeze
Sit with your elbows at your side and squeeze your shoulder blades together. Do not shrug your shoulders.

Hamstring stretch
Place one of your heels on floor in front of you, keeping your knee straight. Keep your back straight and bend forward at the hips. You should feel a stretch in the back of the leg.

Lower back stretch
Place your hands on your lower back. Gently lean backward.

Posture correction
Make sure you are sitting with upright posture. Check your posture frequently throughout the day to make “good” posture a habit.
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The Optimal Office Work Station
- Use an adjustable chair with good lumbar support.
- Keep your feet flat on a supportive surface (floor or foot rest). Your knees should be at or below hip level.
- The top of the monitor casing should be 2-3” above eye level. Keeping your head level and neck relaxed, your eyes should align with the icon row at the top of the monitor screen.
- Consider using an anti-glare filter on the computer screen.
- Be an arm’s length away from the monitor (24 to 26 inches). Try to prevent leaning forward towards the screen.
- If you’re referring to a document, it is best for it to be on a stand or clip device that is in line with the computer screen.
- Your wrists should be flat and in line with your forearms when using a keyboard and a mouse.
- Use an adjustable keyboard tray that supports adjustment up or down with a tilting feature to ensure your hands and arms are aligned.
- The monitor and keyboard need to be centered and aligned in front of you. You should not have to twist your head or neck when sitting in front of your workstation.
- Take frequent, short breaks during the work day to rest your body and eyes. Get up, walk around and consider trying the stretching exercises outlined in this brochure.
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