

LOSS CONTROL TOPIC

ERGONOMIC GUIDE

Ergonomics is the science that studies the relationship between people and their environment. The subject has become increasingly more important as office automation has dramatically increased our interaction with computers and created a more sedate work environment. This has caused a sharp increase in the incidence of repetitive stress injuries (RSI's). According to the U.S. Bureau of Labor Statistics, in 2007, over 27 million people visited a medical professional for treatment for repetitive stress injuries and another 40 million experienced symptoms, but did not seek professional help. Repetitive stress injuries accounted for over 60 % of all reported occupational injuries. The typical repetitive stress injury resulted in over 23 lost work days. Close behind repetitive stress injuries in frequency and cost were neck, back and shoulder strain claims.

There are some rather simple solutions and precautions that can be taken to minimize the occurrence of repetitive stress/strain injuries. These include:

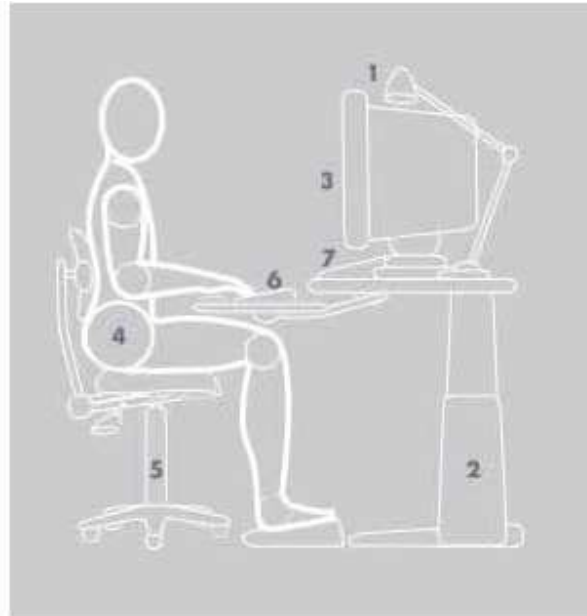
- workstation configuration
- posture correction
- stretching/work breaks/exercises
- task variation

Workstation Configuration and Posture

A typical survey of office workstations will often show many of them to be improperly configured. Often workers will occupy a new workspace and use it without giving a thought to adjusting the equipment for their individual needs. This is usually because of a lack of knowledge about how to adjust the workstations and what the general configuration guidelines are.

There are some basic guidelines that can assist in achieving a comfortable work environment.

Below is a general diagram of a proper workstation



1. Swivel lamps improve lighting options
2. Desk height should be adjustable. The desk/work surface should have no sharp angled edges that can come in contact with wrists or forearms. There should be adequate foot and leg clearance below to allow the user to get close enough to prevent neck, back and shoulder strain from leaning.
3. The top of the monitor should be even with the user's forehead and no more than 20 inches away. If bifocals are used, the monitor should be lowered to prevent backward tilting of the head. The monitor should be at right angles to any outside light source and free of glare. Window coverings, lighting diffusers and glare shields can assist in glare reduction or elimination
4. Hips, elbows and shoulders should be in-line vertically. Feet should be firmly on the floor or on a footrest. Knees should be directly above the feet and at a 90 degree angle with thighs
5. Chairs should have a minimum of 5 swivel type legs for stability. Chair seat height should be adjustable to between 16-21 inches. Seat width should be 17-20 inches with adjustable tilt. Seat depth should allow 2-4 inches of clearance behind the knee. The backrest should be between 12-

19 inches in height with an adjustable lower back support. Armrests should be adjustable up and down

6. Forearms should be at right angles to upper arms and parallel with work surface. Wrists and hands should not be tilted upward.
7. Documents should be close to the keyboard and monitor and held upright if possible

Keyboards

Standard keyboards can cause the user's hands to be bent to the sides. Alternative keyboards with curved key surfaces are available to correct this situation*. The keyboard should be able to tilt in a positive or negative fashion. There should be a wrist pad available



Stretching/Work Breaks/Exercises

- Take micro breaks of 30 seconds every 10 minutes by resting the upper and lower arms, neck, back and shoulders
- Take a work break at least every hour by leaving your workstation. It is better to try to take a break every half hour
- Look away from the monitor to a distant object. Close your eyes and roll them in one direction, then the other
- Lift and roll your shoulders in both directions and then pull your shoulder blades together. Tilt your neck to the right, left, forward and backward

- Clench your hands into a fist, then slowly release them and stretch your fingers. Extend your arms and flex your wrists upward and downward several times
- Stand and put your hands on your hips. Keep your feet about shoulder width apart. Slowly tilt your upper body backward, forward and from side to side

Task Variation

- Try to interject tasks in the middle of computer use that require different body movements, such as filing, copying, printing or any task that requires you to move away from the keyboard. Hints: Move the printer so you will have to get up to reach it and stand up when talking on the phone
- Schedule computer input at different times during the workday, not for long stretches of time

Source Materials

* National Institute for Occupational Safety and Health (NIOSH), alternative keyboards, www.cdc.gov/NIOSH/97-148

U.S. Bureau of Labor Statistics, www.bls.gov

OSHA – Computer Workstations, www.OSHA.gov/sutz/etools/computerworkstations

Cornell University Ergonomics Web, <http://ergo.human.cornell.edu>

East Carolina University, www.ecu.edu

Athabasca University, Human Resources, www.athabasca.ca/hr/ohs/ergonomics

These guidelines are intended to offer general suggestions for follow up and discussion and should not be considered a substitution for professional advice. You are strongly urged to seek the services of a professional ergonomist in these areas.

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