Ergonomic Safety

Ergonomics is the science devoted to optimizing human performance by matching the machine to the man; the goal is to maximize work output and product quality while minimizing the health hazards to the worker.

Back Pain

The most common injuries associated to ergonomics are back pain/strains. Back pain/strains are easily preventable. Lifting, carrying and moving heavy objects can lead to injuries that may affect you for the rest of your life. Several simple steps can reduce the risk of developing such an injury.

1. Always bend at the knees when lifting. Bending over and lifting with your lower back is the easiest way to develop an injury.
2. Never lift or move an item that is above your abilities. Seek help if necessary.
3. Always lift with the object close to your body. Over extending can result in injuries.
4. Do not lift or move heavy objects above your head.
5. Face the object you will be lifting or moving. Attempting such a move from an awkward angle should be avoided.

Repetitive Strain

The act of doing the same movements or series of movements over and over again can cause injury. Carpal tunnel, an injury that generally occurs from continual use of computers is a common problem that is associated with repetitive motion (See below in Personnel Computer). Many other examples of repetitive strain are found in different work environments. A carpenter using a hammer for many hours and a kitchen service employee performing food prep work such as cutting vegetables for long periods are both examples of tasks that can result in repetitive strain injuries. Often reducing the risk of these injuries can be as simple as taking more frequent breaks or perform a different task that allow use of different muscles.

The Personal Computer

A personal computer (pc) is a productivity tool and a tremendous "labor-saving device". Chances are that you remember hearing such optimistic pronouncements during the late 1980s. Those were the impressive growth years for personal computer use. If you work in an office environment, chances are also good that you now feel almost chained to this "labor-saving device" as you perform your job. Since we spend so much time using our PCs, it is important to know that a computer work station which is not correctly set up can increase the amount of fatigue, aches and pains that an office worker will feel at the end of a work day. The good news is that this problem can be easily corrected if your work station is customized to fit your own needs. The news gets even better because customizing your work station is as simple as adjusting furniture. By adjusting furniture to the needs of the user, a reduction in fatigue and body aches should result.
Eye Strain

There are two basic issues in work station safety: eye strain and posture stress. The rules for reducing eye strain are as follows.

- Get routine eye exams. Be sure to tell your eye doctor how much computer work you do. If you need a corrective prescription, get it filled and use it.
- Eliminate glare on your computer screen.
- Take a short "vision break" every half hour to relax the eyes. During such breaks, use techniques of palming, focus change and deep winking. The names sound a bit exotic, but the techniques are easy to learn.

Posture Stress

The rules for reducing posture stress are easy to remember if you keep in mind the primary goal of computer work station adjustment. This includes setting up the job, tools and furniture to accommodate the limitations of the user. Above all, we want to avoid trying to contort the human being to fit the existing tools and furniture.

The following are general guidelines for computer workstation.

- Position the top of the computer screen at eye level.
- Locate the screen about 18 to 30 inches from your eyes.
- Adjust the keyboard height so that your elbows are comfortably close to your body and so that your arms hang freely.
- Avoid keyboard or mouse positions that put your wrists at unnatural angles.
- Sit so as to maintain the four natural curves of your spine.
- Take short physical breaks every couple of hours if you are doing continuous computer work.
- Get up now and then to do some filing. Stand up to answer the telephone.
- Find any creative way you can to change postures from time to time while you work.
- Use common stress reducing techniques such as slow, deep breathing, stretching and gentle shoulder rotation. These take some of the tension out of your muscles and guarantee that you change posture and position.

Tufts Environmental Health and Safety (TEHS) has additional information on all of the points listed above. We are also available to assist departments with ergonomic evaluations of their work stations. Contact x.6-3615 for more information.