Computer Ergonomics Safety Talk

WHAT'S AT STAKE?

Many people spend hours a day in front of a computer without thinking about the impact on their bodies. They physically stress their bodies daily without realizing it by extending their wrists, slouching, sitting without foot support and straining to look at poorly placed monitors.

These practices can lead to cumulative trauma disorders or repetitive stress injuries, which create a life-long impact on health. Symptoms may include pain, muscle fatigue, loss of sensation, tingling and reduced performance.

WHAT'S THE DANGER?

Work-related musculoskeletal disorders (WMSDs) are commonly referred to as repetitive strain injuries (RSIs), cumulative trauma disorders (CTDs) or repetitive motion injuries (RMIs). These injuries can be prevented. Ergonomics is the science of applying designed equipment to the workplace or task to maximize the productivity of the worker, or **fitting the work environment to the worker**.

WORK/RISK FACTORS

Workplace design plays a crucial role in the development of an MSD. **There are three primary ergonomic risk factors.**

High task repetition. Many work tasks and cycles are repetitive in nature, and are frequently controlled by hourly or daily production targets and work processes. High task repetition, when combined with other risks factors such high force and/or awkward postures, can contribute to the formation of MSD. A job is considered highly repetitive if the cycle time is 30 seconds or less.

Many work tasks require high force loads on the human body. Muscle effort increases in response to high force requirements, increasing associated fatigue which can lead to MSD.

Repetitive or sustained awkward postures. Awkward postures place excessive force on joints and overload the muscles and tendons around the effected joint. Joints of the body are most efficient when they operate closest to the mid-range motion of the joint. Risk of MSD is increased when joints are worked outside of this mid-range repetitively or for sustained periods of time without adequate recovery time.

Exposure to these workplace risk factors puts workers at a higher level of MSD risk. It's common sense: high task repetition, forceful exertions and repetitive/sustained awkward postures fatigue the worker's body beyond their ability to recover, leading to a musculoskeletal imbalance and eventually an MSD.

HOW TO PROTECT YOURSELF

COMPUTER ERGONOMICS

Extended periods of time spent working at computer workstations may contribute to muscular and visual fatigue and discomfort. Maintaining any posture over time is fatiguing, no matter how well the workstation is set up. Also, the work actions in tasks such as continual data entry or word processing are highly repetitive, further contributing to discomfort and, possibly, to risk of injury.

Breaks from computer work are most effective in reducing discomfort when short breaks are taken frequently. They are more effective than working for long periods of time and taking longer breaks. Scheduling five minutes of non-computer work per hour provides relief from many of the postural and visual demands. In addition, for computer intensive tasks, attempts should be made to design jobs to include other duties.

DECIDE HOW THE COMPUTER WILL BE USED

Who will be using the computer?

If the computer will only be used by one person then the arrangement can be optimized for that person's size and shape, and features such as an adjustable height chair may be unnecessary. If it's going to be used by several people, you will need to create an arrangement that most closely satisfies the needs of the majority, and accommodate the extremes on a 1-1 basis.

How long will people be using the computer?

If it's a few minutes a day then ergonomic issues may not be a high priority. If it's more than 1 hour per day you should create an ergonomic arrangement. If it's more than 4 hours then you should consider implementing an ergonomic arrangement.

CHAIR

Studies show that the best seated posture is a reclined posture of 100-110 degrees not the upright 90 degree posture that is often portrayed. There are significant decreases in postural muscle activity and in intervertebral disc pressure in the lumbar spine. Erect sitting is NOT relaxed, sustainable sitting, reclined sitting is.

POSTURE, POSTURE, POSTURE!

Good posture is the best way to avoid a computer-related injury. To ensure good user posture:

- Make sure that the user can reach the keyboard keys with their wrists as flat as possible (not bent up or down) and straight (not bent left or right).
- Make sure that the user's elbow angle (the angle between the inner surface of the upper arm and the forearm) is at or greater than 90 degrees to avoid nerve compression at the elbow.
- Make sure that the upper arm and elbow are as close to the body and as relaxed as possible for mouse use – avoid overreaching. Also make sure that the wrist is as straight as possible when the mouse is being used.

- Make sure the user sits back in the chair and has good back support. Also check that the feet can be placed flat on the floor or on a footrest.
- Make sure the head and neck are as straight as possible.

DOS & DON'TS

DO keep moving. Set an alarm to remind you if you need it! Sitting for long periods wreaks havoc on your spine and circulation. Get up, stretch, MOVE!

DON'T use a desk or chair that's not the proper height for your size. Everyone is different; find what works for you.

DO try to keep your body in a neutral posture, which creates the least strain on your body.

DON'T cradle your phone between your shoulder and ear.

DO keep your desk clear so you're not forcing your body to work awkwardly around clutter.

DON'T keep your monitor too close or too far away, or hunch over a laptop. This can cause eye strain and headaches in addition to neck and back pain.

DO wear a headset if a good portion of your day is spent on the phone.

DO invest in workstation essentials that are ergonomic, and make sure they are adjusted to where you need them to be.

- Look for an office chair with proper lumbar support that adjusts to your body.
- A laptop raiser positions your laptop for optimum ergonomics while relieving eye and neck strain.
- A monitor arm makes it easy to adjust the height and position of your monitor to reduce upper back and neck pain.
- Use a footrest to reduce lower back pressure and increase blood flow.
- A bright, adjustable light can reduce headaches, eye fatigue and neck strain.

- Or try a standing desk to keep you moving! Less time spent sitting means less stress on your spine while increasing circulation and mental alertness.

FINAL WORD

Computer based “white collar work” is viewed as sedentary and does not have a relationship with movement. But bodies require movement to stay healthy and productive. It is now widely accepted that exercises be done in the computer work zone and that frequent breaks be taken for the over-all health of workers.