

Ergonomics

TALKING POINTS

Using Ergonomics to Prevent Worker Injuries

An effective ergonomics program attempts to fit workplace conditions and job demands to the capabilities of the individual worker. This involves considering the work *and* the worker when selecting, designing, or modifying equipment, tools, work tasks and the work environment.

Poor ergonomic conditions have been linked to many work-related injuries. Conditions include heavy exposure to repetitive motions, twisting and improper lifting. These injuries, known as cumulative trauma disorders (CTDs) or as musculoskeletal disorders (MSDs), injure workers in a variety of industries. These disorders typically affect workers who perform manual labor, and those with desk jobs.

What are the Risk Factors?

Repetitive, forceful, or prolonged use of the hands, frequent or heavy lifting, pushing, pulling, or carrying of heavy objects, prolonged awkward postures, and vibration contribute to MSDs and CTDs. Jobs or working conditions with more than one of these risk factors pose a higher risk for musculoskeletal problems. The amount of risk depends on how long a worker is exposed to these conditions, how often they are exposed, and the level of exposure.

Preventing Musculoskeletal and Cumulative Trauma Disorders

Preventing CTDs requires an examination of the tasks performed and the workplace or work station to ensure a proper fit between job and worker. Employees' abilities to perform certain tasks varies based on differences in age, physical condition, strength, gender, body shape and other factors.

Often, simple steps can successfully address ergonomic problems. The right solution must take into account the kind of work done, and how it is done. Solutions include engineering and administrative changes, training, job redesign, new tools and replacement or adjustment of work stations. Proper body mechanics and physical fitness also help reduce MSD problems.

If workers have experienced MSD and CTD problems, it is useful to look for trends to look for injury patterns. Then survey the physical operation.

How to Prevent Cumulative Trauma Disorders

A safety inspection is a good time to observe injury-causing conditions and acts that can lead to CTDs. Some key points:

- How do workers stand, hold a tool, reach over, lift or bend?
- Do they perform the same motion repeatedly?
- Are workers observed in awkward positions or postures?
- Are desks or workstations the proper height?

- Are employees reporting any MSD-related symptoms?
- If these injuries are common in your industry, what is done to address them?

By eliminating or mitigating each of the relevant points mentioned above, you can dramatically reduce the risk of MSDs and CTDs in the workplace.

Working with Computers

Many jobs involve computer work. To prevent MSDs and CTDs, the computer workstation must be set up properly. It is helpful to understand the concept of neutral body positioning – a comfortable working posture in which the joints are naturally aligned. Working on the computer with the body in a neutral position reduces stress and strain on the muscles, tendons and skeletal system, and reduces the risk of developing a musculoskeletal disorder.

The following are important considerations when attempting to maintain neutral body postures while working at the computer workstation:

- Hands, wrists and forearms are straight, in-line and roughly parallel to the floor.
- Head is level, or bent slightly forward, forward facing and balanced. Generally, it is in-line with the torso.
- Shoulders are relaxed and upper arms hang normally at the side of the body.
- Elbows are close to the body and are bent between 90 and 120 degrees.
- Feet are fully supported by floor or footrest.
- Back is fully supported with appropriate lumbar support when sitting vertical or leaning back slightly.
- Thighs and hips are supported by a well-padded seat and generally parallel to the floor.
- Knees are about the same height as the hips with the feet slightly forward.

Many computer workstation tasks are highly repetitive. Workers may perform the same motions repeatedly at a fast pace and with little variation. Working in the same posture or sitting still for prolonged periods is not healthy. Workers should change their position throughout the day in the following ways:

- Make small adjustments to the chair or backrest, as needed.
- Stretch fingers, hands, arms and torso.
- Stand up and walk around for a few minutes periodically.