**MANUFACTURING** > **EMPLOYER GUIDE**

# ERGONOMICS

Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of workers. That means considering the work and the worker when selecting, designing, or modifying equipment, tools, work tasks and the work environment.

Poor ergonomics has been linked to work-related injuries caused by repetitive motion, twisting and improper lifting. These cumulative trauma disorders (CTDs), also known as musculoskeletal disorders (MSDs), injure workers in a variety of industries.

**What are the Risk Factors?**

Repetitive, forceful, or prolonged exertions 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 that combine risk factors will increase the risk for musculoskeletal problems. The level 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 itself to ensure a proper fit between job and worker. Employees' abilities to perform physical tasks may vary because of differences in age, physical condition, strength, gender, stature and other factors.

Often, simple steps can successfully address ergonomic problems. Solutions include engineering and administrative controls, training, job redesign, new tools and replacement or adjustment of work stations.

Proper body mechanics and physical fitness also help reduce MSD problems. For claims already filed, it is useful to perform a trend analysis looking for injury patterns. Then look at the physical operation.

▶ Learn more at **nysif.com/safetyresources**

## How to Prevent Cumulative Trauma Disorders

A safety inspection at your facility 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 points mentioned above, you can dramatically reduce the risk of MSDs and CTDs in the workplace.

## Working with Computers

To set up a computer workstation properly, it is helpful to understand the concept of neutral body positioning. This is a comfortable working posture in which your joints are naturally aligned. Working with the body in a neutral position reduces stress and strain on the muscles, tendons and skeletal system, and reduces your 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. You should change your working position throughout the day in the following ways:

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

▸ Learn more at **nysif.com/safetyresources**