A Publication of
Staff Resources, Inc.
JUNE 2009

Employer Concepts

SAFETY EDITION

INSIDE resources

Risk Management

With Staff Resources, Inc. as your partner in Risk Management, we can provide resources to assist in implementing an effective safety program. If you have questions or concerns, please refer to our SRI website at www.staffresources.com or contact Kevin Ahlswede, our Loss Control Manager, at the Chico office at 530-345-2486.

What is ergonomics?

Ergonomics is the science of fitting the job to the worker. In the workplace, ergonomic principles are used to make alterations to a job so that it conforms to the person doing that job, rather than to force the person to fit the job. Redesigning various job functions to match a person's stature will reduce stress on the body and eliminate many potential injuries associated with the overuse of muscles, unnatural postures, and repetitive motions.

Ergonomic solutions may involve the redesign of tasks, workstations, tools, lighting, and equipment to fit a worker's physical capabilities and limitations. This may mean adjusting the height of a workstation or a computer screen, or rearranging the steps in a process so the worker will not have to lift and twist in the same motion.

Technological advances, which result in more specialized tasks, higher assembly line speeds, and increased repetition, are often major causes of ergonomic problems. Consequently, workers' hands, wrists, arms, shoulders, backs, and legs may be subjected to thousands of repetitive twisting, forceful, or flexing motions during a typical workday. When this occurs on the job, the stress on those body parts builds up over time and results in musculoskeletal disorders (MSDs).

The goal of a workplace ergonomics program is to reduce or eliminate the risk factors that lead to MSDs. Jobs that expose workers to excessive vibration, repetitive motions, heavy lifting, awkward postures, and continual contact pressure will be assessed and ways found to reduce exposure to those factors that cause MSDs. Identifying ergonomic risk factors in your workplace is the first step toward making changes that will improve the safety and health of all workers.

Why is ergonomics a concern?

Workers who perform repetitive procedures or work in positions that put a great deal of stress on the musculoskeletal system can suffer ergonomic stress. This stress can be caused by any number of factors including repetitive motion, excessive force, mechanical stresses caused by tools or machines, poor posture, awkward positioning, lifting, vibrations, temperature extremes, and unaccustomed activity.

The cost of worker injuries and illnesses caused by these ergonomic stressors is staggering. Over one third of all Workers' Compensation costs are associated with musculoskeletal disorders (MSDs), injuries caused by trauma to the body occurring over a period of time. A conservative estimate of the medical costs of treating one industrial case of Carpal Tunnel Syndrome, a type of disorder affecting the wrists and hands, is about $20,000 per case.

This cost estimate does not take into consideration the costs involved with lost work time, replacement workers, and reduced productivity. Lower back pain, for example, which is often associated with improper or repeated lifting or sitting for an extended period of time, is responsible for about 1,400 lost work days per 1,000 workers every year. Only the common cold and the flu cause workers to miss more work annually.

Back disorders

Pulled or strained muscles, ligaments, tendons, and disks are perhaps the most common back problems and may occur in almost half of the work force at least once during their lifetime. The majority of workplace back disorders result from chronic or long-term injury to the back rather than from one specific incident. Only about four percent of back injuries are associated with a single traumatic incident.

Back disorders are frequently caused by the cumulative effects of faulty body mechanics such as:

- Excessive or repetitive twisting, bending, and reaching;
- Carrying, moving, or lifting loads that are too heavy or too large;
- Staying in one position for too long;
- Poor physical condition; or
- Awkward posture.

When back muscles or ligaments are injured from these repetitive pulling and straining activities, the back muscles, disks, and ligaments can become scarred and weakened and lose their ability to support the back, making additional injuries more likely.

Prolonged sitting stresses the body, particularly the lower back and the thighs, and may cause the lower back (lumbar) region to bow outward if there is inadequate support. This abnormal curvature (called kyphosis) can lead to painful lower back problems, a common complaint among office workers.

Other factors which are contributors to back injuries include the natural degeneration of the back due to aging, inactivity both at work and at home, seasonal activity undertaken without prior physical conditioning, stress, and vibration.

Risk factors that cause MSDs

The physical stresses that can contribute to or cause MSDs are called "risk factors." The initial symptoms of MSDs may include fatigue, discomfort, and pain. As tissue damage worsens, other symptoms, such as weakness, numbness, or restricted movement, may also appear. Work-related MSDs occur when the risk factors that cause or contribute to musculoskeletal system pathology are associated with a person's job duties. Workplace musculoskeletal disorders are caused by exposure to the following risk factors:

Actually, I'm worried the new office furniture is *too ergonomic.*

REPETITION

Doing the same motions over and over again places stress on the muscles and tendons. The severity of risk depends on how often the action is repeated, the speed of movement, the number of muscles involved, and the required force.

FORCEFUL EXERTIONS

Force is the amount of physical effort required to perform a task, such as heavy lifting or pushing/pulling, or to maintain control of equipment or tools. The amount of force depends on the type of grip, the weight of an object, body posture, the type of activity, and the duration of the task.

AWKWARD POSTURES

Posture is the position your body is in and affects muscle groups that are involved in physical activity. Awkward postures include repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your hands or arms, or holding fixed positions.

CONTACT STRESS

Pressing the body against a hard or sharp edge can result in placing too much pressure on nerves, tendons, and blood vessels. For example, using the palm of your hand as a hammer can increase your risk of suffering an MSD.

VIBRATION

Operating vibrating tools or equipment that typically have high or moderate vibration levels such as sanders, grinders, chippers, routers, drills, and other saws can lead to nerve damage.

California Heat Stress

Prevention Measures for Heat Illness

WHAT ARE HEAT DISORDERS?

There are several heat-related illnesses that you should be aware of:

Fatigue – Occurs more quickly during exertion in hot conditions because of the body's natural cooling methods.

Heat rash – Occurs when sweat ducts become plugged.

Fainting – Occurs when the brain doesn't get an adequate blood supply.

Heat cramps – Occur in tired muscles when the worker sweats profusely and drinks large quantities of water.

Heat exhaustion – Can result when a person has lost large amounts of fluid by sweating.

Heat stroke – Occurs when the body's temperature regulatory system fails and sweating has become inadequate to remove excess body heat.

YOU ARE AT INCREASED RISK WHEN YOU:

- Take certain medications. Check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in hot environments.
- Have had a heat-induced illness in the past.
- Wear some personal protective equipment such as respirators or protective suits.

THINGS YOU CAN DO TO PREVENT DIFFICULTIES FROM HEAT-RELATED ILLNESSES:

- Learn the signs and symptoms of heat-induced illnesses and what you can do to help yourself or a fellow employee.
- Rest in cool or shaded area for no less than five minutes at a time to recover.
- Drink small quantities of water frequently — up to four cups per hour.
- Gradually adjust to working in heat.
- Use the buddy system (work in pairs) when working in hot conditions.
- Wear light, loose-fitting, breathable (like cotton) clothing.
- Avoid caffeine and alcoholic beverages (these beverages make your body lose water and increase the risk for heat illnesses).