MECA
MICHIGAN ELECTRIC COOPERATIVE ASSOCIATION

Controlling Ergonomics Risk Factors

Ergonomic controls are used in almost all workplaces to prevent musculoskeletal disorders (MSDs), often called cumulative trauma disorders or repetitive stress injuries. Workers often ignore the signs and symptoms of these disorders until a chronic condition has developed and they often don't know the measures they can take to prevent them.

MUSCULOSKELETAL DISORDERS

- Ergonomic controls are used in almost all workplaces to prevent musculoskeletal disorders.
- Here are some signs and symptoms that you should be aware of: abnormal formation of the extremities, such as curled fingers or toes, restricted movement in the joints of your knees, elbows, wrists, neck or shoulders, difficulty in holding and lifting objects due to decreased grip strength, fingers or toes turning white, pain, numbness, tingling, burning or other sensations in various body parts and loss of muscle function or control, which can cause the affected area to feel heavy or clumsy.
- Ergonomic risk factors that can lead to musculoskeletal disorders include excessive repetition of body movements, awkward or unchanging postures, exerting too much force, vibration, contact stress and cold temperatures.

THE ERGONOMICS PROGRAM

- Organizations that have job tasks and work areas where these factors could adversely affect the health of employees have a plan for reducing, eliminating, or controlling them. Most companies call this their Ergonomics Program.
- Controlling ergonomic hazards begins with identifying the jobs that have risk factors associated with them. As part of the ergonomics program, the company has conducted a series of job hazard analyses on all jobs, operations and work activities where ergonomic risk factors are present in order to pinpoint specific problems.

METHODS TO CONTROL ERGONOMIC RISK FACTORS

Engineering Controls

- Engineering controls are the most preferred and reliable approach for reducing the risk of ergonomic-related illnesses and injuries. These controls focus on modifying job tasks,

workstations, tools, and processes. Considering the physical capabilities and limitations of workers.

- An example of engineering controls is improving employee workstations by adding height-adjustable workbenches or providing ergonomic-friendly office equipment that a worker can adjust to maintain a neutral posture and avoid awkward positions.
- Another example is supplying workers with mechanical lifting devices for transporting heaving objects to avoid strain and force exertion from manual lifting.

Administrative Controls

- Administrative controls are policies and practices introduced by management to reduce ergonomic risk factors, such as exertion, repetitive motion and awkward postures. While administrative controls do not eliminate workplace hazards, they can be effective when engineering controls aren't feasible.
- Examples include scheduling more breaks for strenuous jobs, rotating job tasks to reduce exertion and repetition and establishing more efficient job procedures.
- Another administrative control is training to help workers recognize ergonomic risk factors and learn the safe work practices that they can follow to prevent the development of MSDs.

Personal Protective Equipment

- Personal protective equipment, PPE, is another control that is provided to workers by the employer in an effort to reduce the risk of ergonomic problems. It is not designed to take the place of engineering or administrative controls, but rather serve as a barrier between the worker and hazard source.
- Examples of ergonomic PPE are gloves that reduce vibration from tools and equipment, thermal gloves that allow materials to be handled easily in cold conditions and kneepads or padding that reduces direct contact with hard, sharp or vibrating surfaces.

WORK PRACTICE CONTROLS

Hands, Wrists & Fingers

- Whether you work in an office environment or in an industrial setting, the essential elements in preventing MSDs are posture and body positioning.

- Maintaining neutral posture while working is crucial in reducing stress on body parts, especially when performing job tasks that are done repeatedly throughout your shift.
- To prevent carpal tunnel syndrome and other disorders of hands, wrists, and fingers, it is important to keep your wrists in the neutral position whenever possible. Neutral posture for the wrist is 10 to 15 percent extension in any direction with the thumb to the side while typing or with the thumb up while using tools.
- Working with your wrist in any other position other than neutral puts stress on the tendons and ligaments and can lead to chronic problems. So never work with your wrist flexed up or down or shifted to the left or right.

Arms & Shoulders

- Awkward positions of your arms can also lead to MSDs.
- To maintain a neutral position for your arms, keep your upper arms to the side and your wrists and forearms out at 90-degree angles. Avoid having to raise your arms directly forward or reaching backwards.
- One common mistake workers make is to overreach by extending an arm out fully with the elbow locked. This puts tremendous stress on the wrist, arm, elbow, and shoulder and should be avoided at all costs.
- A common solution to this problem is to tailor your workstation to your physical dimensions so that tools and supplies are easily within reach.
- Of course, many work surfaces are stationary and cannot be lowered or raised. When this is the case, you may have to raise or lower your chair to the proper height to maintain a neutral position.

The Neck & Back

- Adjusting the workstation to fit your body will also help keep your back and neck in neutral positions.
- To maintain neutral posture for your back, sit up straight so that your spine's natural shape and lumbar curve are supported by the backrest of the chair. Lumbar support pillows are available for chairs that don't offer enough support for the lumbar region.
- Adjust the height of your chair so that your feet rest flat on the floor and your knees are slightly more elevated than your hips. This alleviates the strain on your lower back.
- If your feet don't reach the floor, choose a footrest to support them that allows you to maintain neutral posture while sitting.

- Neutral posture for your head and neck is having them centered over your shoulders so you can look forward. To achieve this, you may have to adjust your workstation so that you can hold your head straight while the primary focus of your work is in front of you close to eye level.
- Awkward positions such as bending your neck forward or backward for long periods of time to see the work can strain both your neck and back.
- Standing for long periods of time is both stressful and fatiguing to your back and the rest of your body. If you must stand for extended periods, use anti-fatigue mats to absorb the stress of standing on a hard surface.
- Using a footrest and switching your feet periodically will make standing work much more comfortable while relieving the stress on the discs of your back.