

exercise



EXERCISE #2

Target Audience: All employees

Exercise Objective: Understand what type of health problems may be ergonomic related and when to seek a medical evaluation.

Instructions: Either individually or in groups, answer the items below:

1. List workplace risk factors for ergonomics and musculoskeletal disorders (MSDs). Identify general methods for controlling them.

2. Identify the signs and symptoms of MSDs that may result from exposure to such risk factors. List your workplace's healthcare procedures for each.

3. List the process your workplace is using to address and control risk factors and the employee's role in the process.

4. What is the procedure for reporting risk factors and MSDs, including the names of designated persons who should receive the reports?



GUIDANCE

The following are important risk factors for musculoskeletal disorders (MSDs), especially when they occur at high levels and in combination.

Awkward postures

Body postures determine which joints and muscles are used in an activity and the amount of force or stresses that are generated or tolerated. For example, more stress is placed on the spinal disks when lifting, lowering, or handling objects with the back bent or twisted, compared with when the back is straight. Manipulative or other tasks requiring repeated or sustained bending or twisting of the wrists, knees, hips, or shoulders also impose increased stresses on these joints. Activities requiring frequent or prolonged work over shoulder height can be particularly stressful.

Forceful exertions (including lifting, pushing, and pulling)

Tasks that require forceful exertions place higher loads on the muscles, tendons, ligaments, and joints. Increasing force means increasing body demands, such as greater muscle exertion, along with other physiological changes necessary to sustain an increased effort. Prolonged or recurrent experiences of this type can give rise not only to feelings of fatigue, but may also lead to musculoskeletal problems when there is inadequate time for rest or recovery.

Force requirements may increase with:

- Increased weight of a load handled or lifted,
- Increased bulkiness of the load handled or lifted,
- Holding an awkward posture,
- The speeding up of movements, increased slipperiness of the objects handled (requiring increased grip force),
- The presence of vibration (e.g., localized vibration from power hand tools leads to use of an increased grip force),
- Use of the index finger and thumb to forcefully grip an object (i.e., a pinch grip compared with gripping the object with your whole hand), *and*
- Use of small or narrow tool handles that lessen grip capacity.

Repetitive motions

If motions are repeated frequently (e.g., every few seconds) and for prolonged periods, such as on an 8-hour shift, fatigue and muscle-tendon strain can accumulate. Tendons and muscles can often recover from the effects of stretching or forceful exertions if sufficient time is allotted between exertions. Effects of repetitive motions from performing the same work activities are increased when awkward postures and forceful exertions are involved. Repetitive actions as a risk factor can also depend on the body area and specific act being performed.

GUIDANCE *(continued)***Duration**

Duration refers to the amount of time a person is continually exposed to a risk factor. Job tasks that require use of the same muscles or motions for long durations increase the likelihood of both localized and general fatigue. In general, the longer the period of continuous work (e.g., tasks requiring sustained muscle contraction), the longer the recovery or rest time required.

Contact stresses

Repeated or continuous contact with hard or sharp objects such as nonrounded desk edges or unpadded, narrow tool handles may create pressure over one area of the body (e.g., the forearm or sides of the fingers) that can inhibit nerve function and blood flow.

Vibration

Exposure to local vibration occurs when a specific part of the body comes in contact with a vibrating object, such as a power hand tool. Exposure to whole-body vibration can occur while standing or sitting in vibrating environments or objects, such as when operating heavy-duty vehicles or large machinery.

Other conditions

Workplace conditions that can influence the presence and magnitude of the risk factors for MSDs can include:

- Cold temperatures,
- Insufficient pauses and rest breaks for recovery,
- Machine-paced work, *and*
- Unfamiliar or new work.

Reporting

Early reporting allows corrective measures to be implemented before the effects of a job problem worsen. As mentioned earlier, individual worker complaints that certain jobs cause undue physical fatigue, stress, or discomfort may be signs of ergonomic problems. Following up on these reports, particularly reports of MSDs, is essential. Such reports indicate a need to evaluate the jobs to identify any ergonomic risk factors that may contribute to the cause of the symptoms or disorders.