



Prevention of Musculoskeletal Disorders

- Proper use of equipment, tools, and machine controls
- Best work practices, including proper lifting techniques
- Awareness of work tasks that may lead to pain or injury
- Recognition of MSDs and their early indications
- Addressing early indications of MSDs before serious injury develops
- Appropriate procedures for reporting job-related injuries and illnesses

Employees will benefit from orientation and hands-on training received prior to starting tasks with potential ergonomic risk factors. Employees should also be notified of workplace changes, instructed on using new equipment, and notified of new work procedures.

Identifying Problems. It is important to periodically review the job/task work areas and the activities of employees to identify possible ergonomic issues. Information about existing problems can be obtained from a variety of sources including analysis of injury/illness/near miss records.

In addition, observations of workplace conditions and work processes, job analyses, workplace surveys, and employee interviews are important in identifying ergonomics-related risk factors. The ergonomics-related risk factors that may lead to the development of MSDs include:

- Force - the amount of physical effort required to perform a task (such as heavy lifting, pushing, pulling) or to maintain control of the equipment or tools.
- Repetition - performing the same motion or series of motions frequently for an extended period of time.
- Awkward and prolonged static postures - assuming positions that place stress on the body, such as repeated or prolonged reaching above the shoulder height, bending forward or to the side, twisting, kneeling, or squatting.
- Contact stress - pressing the body or part of the body (such as the hand) against hard or sharp edges, or using the hand as a hammer.
- Vibration - using vibrating tools such as sanders, chippers, drills, grinders, or reciprocating saws may result in fatigue, pain, numbness, increased sensitivity to cold, and decreased sensitivity to touch in fingers, hands, and arms. Exposure to whole body vibration may damage the joints of the skeletal system.

Cold temperatures combined with the risk factors above may increase the risk of musculoskeletal disorders.

When there are several risk factors in a job, as is often found on board ships and offshore installations, there can be a greater risk of injury. Whether certain work activities put an employee at risk of injury can depend on the duration (how long), frequency (how often), and magnitude (how intense) of the employee's exposure to the risk factors in the activity, as well as other factors (including employee factors). These characteristics are particularly important when considering work activities and conditions. For example:



- Grinding in a small compartment can involve a combination of vibration, force, and awkward postures.
- Pulling cable through an overhead channel can involve awkward postures and repetition.
- Using vibratory tools outdoors can involve awkward postures and vibration in a cold environment.

Additionally, the following types of employee behavior may indicate the presence of ergonomics related problems:

- Employees shaking arms and hands or rolling shoulders due to discomfort
- Employees voluntarily modifying workstations and equipment to increase comfort
- Employees bringing in medically related products to the worksite (such as wrist braces).