

Musculoskeletal Disorders (MSDs): Associated Risk Factors.

Musculoskeletal disorders involve injuries to muscles, nerves, tendons, ligaments, joints, cartilage, or spinal discs, not directly resulting from falls, collisions, or violence.

Workplace conditions, such as workstation layout, speed, and object weight, can influence workplace conditions and contribute to work-related stress disorders (WMSDs). Psychosocial factors may also play a role. Addressing both physical and psychosocial factors is recommended.

Some of the risk factors associated with MSDs:

1. Forceful movements. –

Force refers to the muscular effort required to lift objects, use tools, or move. In repetitive work, more forceful movements result in faster fatigue, especially in certain hand positions. Factors such as object weight, tool shape, and worn tools can also impact force requirements. Tools that do not allow the best wrist, elbow, and shoulder position significantly increase force.

Workers performing forceful movements are at risk of developing WMSDs, as there is no time for full recovery between movements. As the work activity continues despite fatigue, injuries may occur.

2. Awkward Body postures. –

Posture refers to the position of body parts, and awkward postures involve

holding or moving joints away from their natural position. These postures cause more stress on soft tissues like muscles, nerves, and tendons, such as stooping, kneeling, and reaching overhead.

Body position can cause discomfort and fatigue when maintained for extended periods. Standing, a natural posture, does not pose health hazards but can cause sore feet, muscular fatigue, and low back pain. Improper work area layouts can lead to unnatural standing positions. Extreme movement and long, awkward body positions increase the risk of wrist and shoulder joint dysfunction (WMSDs). Maintaining proper body posture and avoiding excessive bending or twisting can prevent these issues.

3. Repetition of movements. –

Repetitive movements involve repeated stress on one body part without adequate muscle recovery time. Examples include nailing a deck, screwing drywall, and tying rebar. These tasks can cause awkward postures and prolonged stress on the affected body part.

Repetitive movements are hazardous when they involve the same joints and muscle groups repeatedly, often, quickly, and for too long. Tasks requiring repetitive movements involve fixed body position and force, making workers at risk for WMSD. Work activities involving repetitive movements are tiring, requiring more effort and fatigue. Work pace

determines recovery time, and workers with no control over work pace increase stress levels, causing muscle tension and increased risk of WMSD.

4. Some of the secondary factors. –

- **Contact Pressure:** Any external pressure placed on the body's soft tissues is referred to as contact pressure. Contact pressure is seen while using instruments with handles that press into the hand.
- **Vibration:** Vibration impacts tendons, muscles, joints, and nerves, affecting workers in the whole body and localized situations. Exposure can cause numbness, loss of touch, and pain, leading to fatigue.
- **Temperature:** Cold environments cause hand numbness, increased force usage, and reduced flexibility, leading to WMSDs and increased injury risk. Workers fatigue more easily in extreme heat and humidity, which increases their risk of injury.

Some of the control measures:

Engineering controls - Engineering controls are actions done to physically alter a job's levels of force, repetition, discomfort, or vibration.

Examples include altering the design of the workstation as well as choosing and using tools, materials, and working procedures that will lower the risk of MSDs.

Administrative controls - Administrative controls are work procedures and regulations that are directed by

management to lessen or eliminate exposure to risk factors.

Changes in work regulations and practises, such as additional breaks, job rotation, and training, are examples of administrative control tactics.

Utilizing engineering controls and designing the project to the talents and limits of the crew is the preferable strategy. Administrative controls, on the other hand, can be useful as stopgap measures until engineering controls can be put into place or when engineering controls are not practical.

MSD Risk Factors/Hazards

Fixed or Awkward Postures

