

# Musculoskeletal Injuries (MSI)

Musculoskeletal injuries is also known as Repetitive Strain Injuries (RSI) or Cumulative Trauma Disorders (CTD). Workers in many jobs are at risk for musculoskeletal Injuries (MSI). An MSI is an injury or disorder that occurs over time as a result of repetitive, forceful or awkward body movements. If you are aware of the risks for developing an MSI and take steps to lower those risks, workers and employers can expect:

- less discomfort and injuries
- less time off work
- less workers compensation claims
- more efficiency and quality of work

## Where does MSI occur?

MSI usually occurs at body joints and includes the:

- Wrists and Hands
- Shoulders and Neck
- Low and Mid-back areas
- Hips and legs

## What are the symptoms of an MSI?

- Pain
- Swelling, inflammation
- Numbness or tingling sensation
- Decreased movement of a joint
- Stiffness in muscles
- Symptoms worsen with time

This can be acute (short term) or chronic (long term)

## How does an MSI develop?

They often develop over time as a result of:

**Repetition** - Repeated motions of the same body part over time

**Force Exertion** - Lifting heavy loads or squeezing objects or tools

**Contact Stress** - Repeated or constant contact with hard or sharp edges of tools or workstations

**Awkward Posture** - Body positions that are outside normal range of motion

**Static Posture** - Holding parts of the body in one position for a long time

## What are the results of an MSI?

An MSI can damage muscles, tendons, and nerves of the neck, shoulder, forearm, hands, legs and back. Damage can also occur in other parts of the body. An RSI can cause pain, weakness, numbness or difficulty in grasping objects.

## What are common types of MSI?

The wear and tear of different body parts over time can lead to different kinds of MSIs. One MSI may affect nerves, another may affect tendons or blood vessels. Here are the names of some common disorders associated with repetitive strain injuries:

- Tendonitis
- Tenosynovitis
- Carpal Tunnel Syndrome
- De Quervain's
- Sciatica
- Bursitis
- Epicondylitis
- Trigger Finger
- Tension Neck Syndrome
- Ganglion Cysts
- Herniated Disc
- Degenerative Disc Disease
- Hand-Arm Vibration Syndrome

For more information on 'ergonomics', please see our fact sheet on **Ergonomics**.

## Can MSI be prevented?

The risk of developing an MSI can be lowered by reducing the risk factors present in the job, such as repetition, high force, awkward posture, contact stress and static posture. Using ergonomics can help reduce the risk of MSIs. Ergonomics is the science that studies people and the work they do.

Ergonomics helps the work fit the worker, and helps increase safety, efficiency, and avoid problems such as back pain, sore wrists and hands or sore shoulders. Ergonomics looks at:

- Design of the workstation
- Design of tools used at work
- How the work is organized
- How the work is done

## How can you find out if your job might put you at risk for an MSI?

If you have a health and safety committee ask them to review this resource sheet. They may be able to identify risks and make recommendations on how to reduce the risk of developing an MSI at work. Report any pain or injury to your supervisor or employer. If you have symptoms of an MSI you should see a doctor. Tell them you think it may be work related.

### What are some risk factors and solutions to an MSI in the workplace?

The following are risk factors and examples from the workplace that are associated with developing an MSI. When more than one risk factor is present for a body part, there is a higher risk of developing an MSI.

Risk Factor	Specific Examples	Possible Solution
High Force	<ul style="list-style-type: none"><li>• Lifting/carrying a heavy load</li><li>• Pushing/pulling a heavy load</li></ul>	<ul style="list-style-type: none"><li>• Mechanical aids such as dollies or lifts</li><li>• Lifting with a co-worker</li><li>• Keep equipment well maintain</li></ul>
High Repetition	<ul style="list-style-type: none"><li>• Doing the same type of work for the duration of the day</li><li>• Continually using the same limbs or muscle groups</li></ul>	<ul style="list-style-type: none"><li>• Expand job duties</li><li>• Rotate to other jobs in the workplace</li><li>• Take frequent rest breaks</li></ul>
Awkward Postures	<ul style="list-style-type: none"><li>• Wrists are bent in order to use a tool</li><li>• Back is bent forward or twisted</li><li>• Neck is bent up, down or to the side</li></ul>	<ul style="list-style-type: none"><li>• Raise or lower the work</li><li>• Move the work so it is closer to you</li></ul>
Overhead Work	<ul style="list-style-type: none"><li>• Doing work that causes arms to be held above shoulder height</li><li>• Using equipment above shoulder height</li></ul>	<ul style="list-style-type: none"><li>• Work on a raised surface</li><li>• Lower object being worked on</li></ul>
Static Work	<ul style="list-style-type: none"><li>• Holding tools steady for long periods</li><li>• Sitting in mobile equipment for long periods</li></ul>	<ul style="list-style-type: none"><li>• Take frequent micro-breaks</li><li>• Move around and change posture</li></ul>
Vibration	<ul style="list-style-type: none"><li>• Operating vibrating machinery, such as a drill, grinder or impact wrench (Hand-Arm)</li><li>• Driving mobile equipment over rough terrain (whole body)</li></ul>	<ul style="list-style-type: none"><li>• Wear proper fitting gloves</li><li>• Reduce equipment vibration</li><li>• Take frequent rest breaks</li></ul>
Contact Stress	<ul style="list-style-type: none"><li>• When the sharp edge of a tool or workstation presses against a part of the body, e.g. when using screwdriver with a short handle</li></ul>	<ul style="list-style-type: none"><li>• Round edges of equipment or work station</li><li>• Pad tools or workstations</li></ul>
Cold	<ul style="list-style-type: none"><li>• Handling cold items, such as frozen foods</li><li>• Working in a cool environment, for example outdoors in the winter time</li></ul>	<ul style="list-style-type: none"><li>• Wear appropriate warm clothing (ensure gloves are well fitted)</li><li>• Heat the work environment</li></ul>

#### For more information:

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