

Repetitive Strain Injury (RSI)

Repetitive strain injury is also known as Cumulative Trauma Disorder (CTD) and Musculoskeletal Disorder (MSD). Workers in many jobs are at risk for repetitive strain injuries (RSI). An RSI 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 RSI and take steps to lower those risks, workers and employers can expect

- more comfort
- more safety
- more productivity
- less workplace injuries
- less workers compensation claims

Where does RSI occur?

RSI usually occurs at the

- Wrist
- Hand
- Shoulder
- Elbow
- Back
- Knee
- Ankle

What are some symptoms of an RSI?

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

How does an RSI develop?

They often develop over time as a result of
Repetition - Repeated motions of a body part
High Force Exertion - Lifting heavy loads
Contact Stress - Repeated contact with the sharp edges of tools or work stations
Awkward Posture - Maintaining awkward body positions for a long time
Static Posture - Holding parts of the body in one position for a long time

What are the results of an RSI?

An RSI 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 RSIs?

The wear and tear of different body parts over time can lead to different kinds of RSIs. One RSI 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 Disease
- Bursitis
- Epicondylitis
- Trigger Finger
- Chronic Back Pain
- Ganglion Cysts
- Herniated Disc
- Degenerative Disc Disease
- Hand-Arm Vibration Syndrome

Can RSI be prevented?

The risk of developing an RSI can be lowered by reducing the risk factors present on the job, such as repetition, high force, awkward posture, contact stress and static posture. Using ergonomics can help reduce the risk of RSIs. 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

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

What other factors may contribute to the development of an RSI?

Conditions such as diabetes, hypertension and pregnancy have also been shown to contribute to the development of RSI.

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

If you have a health and safety committee ask them to review this fact sheet. They may be able to identify risks and make recommendations on how to reduce the risk of developing an RSI at work.

Report any pain or injury to your supervisor or employer. If you have symptoms of an RSI you should see a doctor. Tell them you think it may be work related.

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

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

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

For more information contact the
MFL Occupational Health Centre
102-275 Broadway
Winnipeg, Manitoba R3C 4M6
Phone: 204-949-0811
Fax: 204-956-0848
Toll Free: 1-888-843-1229 (Manitoba Only)
Email: mflohc@mflohc.mb.ca
Website: www.mflohc.mb.ca

Supported by a grant from the Workers Compensation Board



Revised September 2003

Healthy Workplaces Healthy Workers Healthy Communities