

What is ERGONOMICS?

Ergonomics is the study of how workers interact with all aspects of their work environment, including the tasks, tools and equipment used, the work organization the workspace and the general environment.

What is the PURPOSE of ergonomics?

The purpose of ergonomics is to fit and structure the work and workplace to suit the needs of the worker. Not the other way around. Work should be designed to reduce stress, to be conducted efficiently, to ensure proper body positioning and to suit all physical human requirements.

Acute Injury vs Chronic Injury

ACUTE injuries happen suddenly during an activity (lifting, playing a sport, brisk movement, bending...)

CHRONIC injuries result from overusing one area of the body over a long period of time (computer, repetitive movement...)

ACUTE Injuries

- sudden, severe pain
- swelling
- inability to place weight on lower limb
- extreme tenderness in an upper limb
- inability to move a joint through full range of motion
- extreme limb weakness
- visible dislocation/break of a bone

CHRONIC Injury

- pain when performing activities
- dull ache when at rest
- hurting even when not moving
- restriction in the movement

Signs and Symptoms of some common musculoskeletal injuries

Back Strains: pain, muscle spasms

Tendonitis/ Epicondylitis: pain, weakness, swelling, burning sensation or dull ache over the affected area.

Carpal Tunnel Syndrome: pain, numbness, tingling, burning sensation or dull ache over affected area.

Tenosynovitis (DeQuervain's disease): pain at the base of the thumb.

Tension Neck Syndrome: pain.

Risk Factors

PHYSICAL ASPECTS OF JOBS & WORKSTATIONS	EXAMPLES of specific factor
Organization of work tasks	Doing the same motion over & over again. Constant motion without breaks. Maintaining same position while performing tasks. Sitting for a long time.
Layout & condition of the workplace or workstation	Long reaches. Working surfaces too high or too low. Vibrating working surfaces or machinery. Reach is below knees or above the shoulders. Floor surfaces are uneven, slippery or sloped.
Characteristics of objects handled	Objects or people moved are heavy. Object is slippery or has no handles.
Environmental conditions	Cold temperatures. Extreme heat. Drafts
Static posture	Positions held for more than 60 seconds
Grip forces	Depressing trigger on lawn equipment. Inflating a manual Blood pressure cuff.



7 steps to decrease musculoskeletal injuries

Step 1: Consultation- seek information or advices from your Union or Joint Health & Safety Committee Representative. File an incident report if you have symptoms.

Step 2: Education-know the signs & symptoms of injury. Know how to use your equipment properly. Know what steps to take if you think there is a hazard or injury.

Step 3: Risk Identification-priority for risk identification

- A worker has already had a work-related MSI claim.
- A worker has been injured and reports to first aid with a MSI.
- -A worker has reported signs or symptoms of MS.
- Newly created jobs

*if the risk identification step reveals an obvious & effective risk control that will eliminate or minimize the risk move straight to Step 5.

Step 4: Risk Assessment- will help you decide which risk factors pose a risk of injury and will help to decide which factors pose the greatest risk and are therefore important to control.

Basic Principles-

Magnitude (how much)

Duration (how long)

Frequency (how often)

Rate (how fast)

What is the combined effect of all the identified hazard factors?

What body part is most likely to be affected?

Step 5: Risk Control-Apply the hierarchy of control:

- Elimination or substitution
- Engineering
- Administrative controls
- Personal protective equipment (the last resort)

The controls are trying to:

- 1) Reduce the magnitude of exposure by; improving work posture, use better-designed and lighter tools, ergonomic workstation design and modify the work practice. (use two people to lift heavy objects)
- 2) Reduce the duration of exposure- rotate through repetitive tasks, get up and stretch.
- 3) Reduce the frequency of exposure- use power tools in place of a hand screw driver or add non-keyboarding tasks to a manly keyboarding job.
- 4) Improve pattern of exposure- organize the work so that highly physically demanding tasks are interspersed with less physically demanding tasks.

Step 6: Training- train workers on the control measures.

Step 7: Evaluation- after a short time evaluate the control measures to determine their effectiveness.

If the risk has not been effectively controlled or if a new risk has been reacted, re-examine the task and consider which controls may be needed.

If you are experiencing signs and symptoms of a musculoskeletal injury fill out an incident report and tell your Health & Safety representative in the Union. If you end up needing time away from work because of the injury, be sure to file for WSIB and include your incident report.

You may want to try using one or both of the following helpful tools to identify where you hurt and if your job is causing the pain:

Body Pain Mapping Diagram

Rodgers Muscle Fatigue Analysis

Both can be found on the CUPE Web pages.