What is ergonomics?

- Ergonomics is the science and art of fitting the job to the worker.
- Without ergonomic considerations in the design of work, workstations and equipment, the demands of work may be excessive and result in worker injuries.

Musculoskeletal injuries

- Are a serious issue throughout Alberta workplaces and can impact rehabilitation professionals
- Can affect the soft tissue of various body parts including neck, back, shoulder, upper extremity and lower extremity
- Can be related to a specific event (acute) or long term exposure (chronic)
Legislation related to lifting and handling loads

Musculoskeletal Injuries

If a worker reports to the employer what they believe to be work-related symptoms of an MSI, the employer must review the activities of the worker to identify work-related causes of the symptoms, if any, and take corrective measures to avoid further work-related injuries.

Alberta OHS Code, Part 14

Legislation related to training to prevent MSIs

- Workers who may be exposed to the possibility of MSIs must be trained in the specific measures to eliminate or reduce the possibility. The training must include the factors that could lead to MSIs, the signs and symptoms of MSIs as well as potential health effects and preventative measures.

Alberta OHS Code, Part 14

Biomechanical risk factors

- Awkward or sustained postures
- Excessive force
- Repetition
- Compression / impact forces
Compression / impact forces

Decreasing effectiveness of controls

Key components of an effective ergonomics program

- Full commitment by management
- Worker involvement
- Training and education
- Identification of specific risk factors
- Control of hazards
- Reporting and documentation of MSI symptoms
- Prompt treatment of workers with work-related MSI symptoms
Categories of tasks that may cause ergonomic hazards

- Patient handling including the provision of treatment
- Computer use or workstation design
- Providing treatment to children
- Material handling of equipment, furniture, supplies including lifting, carrying, pushing/pulling
- Driving

Patient Handling and Treatment

- Handling, treatment and manipulations requiring awkward postures repetitive motions, and high forces
- Controls

<table>
<thead>
<tr>
<th>Engineering controls</th>
<th>Availability of adequate sizes and types of patient handling equipment, and ergonomic criteria built into facility design</th>
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<tr>
<td>Administrative controls</td>
<td>Comprehensive patient handling program, safe work procedures for patient handling, risk assessment of patient handling tasks, early reporting of signs and symptoms of MSIs, stretches and micro-breaks, purchasing standards for patient handling equipment, and maintenance of patient handling equipment</td>
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<tr>
<td>PPE</td>
<td>Appropriate footwear with gripping soles and good support</td>
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Comprehensive patient handling program

- No Unsafe Lift workbook
Controls for patient handling

Computer use or workstation design
- Exposure to biomechanical risk factors associated with computer use or workstation design including high repetition, awkward posture, and compression forces
- Controls
  - Engineering controls – Ergonomically designed workstations, chairs and equipment, adjustable workstations to accommodate shared use by employees of different sizes
  - Administrative controls – Adjustment of workstation and chair features to fit user, worker education regarding ergonomic hazards and controls, self assessment tools to assist workers in identifying and controlling risk factors, safe work procedures, early reporting of MSI signs and symptoms, varied tasks, stretches and micro-breaks, purchasing standards for ergonomically designed workstations, chairs and equipment, ergonomic assessments, and maintenance of workstations, chairs and equipment
Providing rehabilitation services to children

- Exposure to biomechanical hazards associated with awkward or sustained postures, excessive forces and compression forces (e.g. kneeling)

- Controls

  **Engineering controls** – Ergonomically designed work areas including tables that allow for adult-sized chairs with child-sized legs (e.g. half-moon or kidney shaped tables that allow for the worker’s knees), and chairs with back support

  **Administrative controls** – Worker education regarding risk factors and preventative measures, early reporting of signs and symptoms of MSIs, and stretches and micro-breaks

  **PPE** – Comfortable shoes with good shock absorption qualities and support, low or no heels, and the use of knee pads when kneeling

Controls for providing rehabilitation services to children
Material handling of equipment, furniture and supplies

- Exposure to biomechanical hazards associated with lifting, carrying, pushing, pulling equipment, furniture and supplies
- Controls

**Engineering controls** – Ergonomically designed storage areas with adequate space, ergonomically designed equipment and furniture with appropriate casters and handles, provision of appropriate materials handling equipment such as carts, trolleys, adjustable treatment tables

**Administrative controls** – Safe work procedures including proper lifting procedures, worker education, early reporting of signs and symptoms of MSIs, and stretches and micro-breaks, purchasing standards for material handling equipment, and maintenance program for equipment and furniture

Controls for material handling of equipment, furniture and supplies

Driving

- Exposure to biomechanical hazards such as sustained and potentially awkward postures
- Controls

**Engineering** – Selection of appropriately designed vehicles which incorporate ergonomic and adjustable features, retrofit back supports if the lumbar support in the vehicle seat is inadequate

**Administrative** – Adjustable seat and other features of the vehicle to fit the worker; early reporting of signs and symptoms of MSIs, stretches and micro-breaks, varied driving position and tasks (when possible), and vehicle maintenance
Material handling from a motor vehicle

- Use safe postures when handling a load.
- Organize the trunk so that items can be moved with minimal reaching.
- Get as close as possible to decrease forces.
- Use wheeled carts or suitcases to minimize the forces required to move the load.
- Consider making two or more trips to decrease the weight of each load.
- Ask for assistance if another person is available to help.
- Check the carrying path to ensure there are no tripping hazards.

What can you do to prevent exposures to ergonomic hazards?

- Participate in the hazard identification and assessment process.
- Become educated and aware of ergonomic hazards and controls, including all patient handling equipment and procedures.
- Use all controls to minimize your exposure to ergonomic hazards.
- Report the signs and symptoms of MSIs early and seek appropriate treatment.