



# SAFE WORK



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## Manual Materials Handling

Manual Materials Handling (MMH) is the act of manually loading, unloading and moving of objects. It may include lifting, carrying, pushing, and pulling. MMH is associated with a large number of injuries to the muscles and joints of the body. These injuries are referred to as musculoskeletal Injuries (MSI) and occur due to inappropriate design of the work area, awkward shaped or balanced objects, and improper work techniques.

If you are suffering from a MSI contact your physician or other specialized healthcare professionals such as sports medicine doctors, physiotherapists, and athletic therapists.

This bulletin discusses why manual materials handling injuries occur, and how to prevent them.

### Manual Material Handling Hazards:

- **Awkward / Sustained posture** – When performing MMH tasks the use of awkward postures place the individual at higher risk of injury. Examples of these postures include: bending through your back, overhead reaching, twisting through the back, etc. Extended exposure to these postures increases the risk further.
- **Forceful exertions** – There is a limit to the amount of weight a person can handle without increasing their risk of injury. This limit is different for each person. Know and respect your limits. Use mechanical aids wherever possible, i.e. mechanical lift, scissor lift, overhead crane, wheel carts, turn tables, etc.
- **Repetitive movements** – Repeated actions cause fatigue which reduces the amount of weight the body can safely lift, carry, push or pull. An inadequate amount of rest between exertions increases the risk of injury.

### Preventing Manual Material Handling Injuries:

- Spot the hazard** – Identify conditions that prevent you from using proper MMH techniques
- Assess the risk**
- Test the weight of the materials before handling
  - If the weight is too heavy do not handle without assistance
  - Does the material shape or surface make it hard to hold?
  - Is the load balanced?
  - Does the weight shift when handled?
  - Is the path clear of obstacles and debris?
- Find a safer way**
- Always use proper techniques to lift, carry, push, and pull
  - Design work area to allow proper posture and eliminate restricted or awkward postures
  - Use a mechanical lift, scissor lift, overhead crane, wheel carts, turn tables, etc.
  - Ask for assistance with the materials handling task
- Everyday**
- It is your right to be safe at work
  - Taking short cuts increases the chance you will be hurt
  - Ensure appropriate measures are taken to promote safe MMH

(Over)

Below are a few techniques to keep in mind when performing MMH tasks. Possible mechanical assists that may reduce the risk of injury are also listed.

**Lifting:***Technique:*

- See SAFE Work Bulletin No. 246 for detailed lifting technique information

*Assist:*

- Use scissor lift table to maintain lifting height between waist and chest
- Use overhead crane to lift and reposition materials
- Shelving units should be organized to reduce the need to lift objects stored deep on the shelf
- Shelving units should be organized for storage of heaviest objects between waist and chest height

**Carrying:***Technique:*

- Hold the object close to the body and at waist to chest height
- Never twist through the back when carrying a load

*Assist:*

- Use wheel carts and dollies to reduce the need to carry an object over a distance (ensure proper lifting technique is used when loading and unloading)
- Track mounted overhead cranes can be used to carry an object over a distance
- Design the work area to reduce the distance of the carry

**Pushing:***Technique:*

- Never twist through the back when pushing
- Ensure wrists are not compressed in an awkward posture when pushing the material

*Assist:*

- Motorized pallet jacks
- Sloping the floor when rolling cylindrical materials
- Use turn tables to reposition material
- Place handles or pushing area between waist and shoulder height

**Pulling:***Technique:*

- Pushing is better for the muscles and joints
- Object size/shape and work area should allow for pushing
- Never twist through the back when pulling

*Assist:*

- Use turn tables to reposition material
- Position handles or pulling area between waist and shoulder height
- Assist design (carts or dollies) should allow for pushing