1 PURPOSE

- As part of the Occupational Health Ergonomics Strategy the purpose of this procedure is to provide guidelines to identify the risk of injury associated with manual handling and to move toward reducing or eliminating these risks.

2 SCOPE

- To develop an understanding of the basic elements of manual handling.
- Evaluate and analyze specific tasks that can potentially cause manual handling injuries.
- Develop and implement solutions to decrease the risk of injury.

3 DEFINITIONS

- Manual handling (MH) can be defined as moving or handling things by lifting, lowering, pushing, pulling, carrying, holding, or restraining.
- Common injuries associated with MH include intervertebral disc protrusion, intervertebral disc herniation, prolapsed intervertebral disc, vertebrae fracture, facet stress fractures, ligament tear, and back muscle sprain or strain, to name a few.
- Below, are the specific work factors of manual handling which contribute to back injury:
  - Weight of the load being handled. A maximum allowable weight limit varies from individual to individual, however, if the load is heavier than what is subjectively comfortable, the higher the chance of injury.
  - Vertical range of the lift. Lifting a load from floor to shoulder height is more stressful on the back than lifting from knee to waist height.
  - Horizontal location of load in relation to the body. A load lifted far from the body is more stressful to the low back than if the load was lifted close to the body.
  - Size and shape of the load. A bulky object is harder to lift than a compact one of the same weight. Bulky objects are generally unstable with the centre of gravity being far from the body. The instability of the load thereby decreases the stability of the person making the lift.
Frequency of lifts. Lifting a heavy load often or a light load repetitively, can lead to fatigue and poor lifting techniques, which can increase the likelihood of injury.

o Twisting and awkward postures. Twisting while handling heavy or even light loads puts significant stress on the low back, which can lead to injury. Awkward postures such as unnecessary bending, leaning, or even excessive reaches to obtain a load put undue stress on the low back as well.

Environmental factors that contribute to back injury include:

o Temperature. Hot temperatures lead to both physical and mental fatigue, thereby increasing susceptibility of injury. Cold temperatures decrease flexibility of muscles and joints, increasing the risk of injury.

o Inadequate lighting. In compensating for poor visibility an individual may handle objects in an awkward position for an extended period of time. Poor lighting on stairs, steps, ramps, and loading docks increases the chance of an accident.

4 PROCESS

If an ergonomics related concern is identified the ergonomics request form (Appendix A) is completed and forward to the ergonomics advisor.

Upon receipt of the ergonomics request form, the concern will be assigned to the appropriate personnel.

An inquiry into the concern will be conducted and relevant actions will be recommended which may include, but are not limited to:

- Formal ergonomics assessment
- Safety talk or general awareness session
- Discussion with those concerned

As well the following provides some general information that should be considered to minimize back injuries.

Avoid Back Injury

- Before handling a load you should:
  - Always check to see if mechanical aids are available.
  - Assess the weight of the load.
Identify the weight of the load.

- Be sure that you can lift the load without over-exertion.
- Be sure the load is free to move.
- Get help with heavy or awkward loads.
- Do not lift if you are not sure you can handle the load safely.
- Check that the planned location of the load is free of obstacles and debris.
- If you need to carry the load, be sure the path to the planned location of the load is clear of grease, oil, water, and debris.
- If pain or discomfort is felt, notify your team leader and report to occupational health immediately.

- NOTE: If employees do not use the ergonomic assists provided (i.e. lift assists, hoists, tools, carts, gloves, etc.) disciplinary action will be initiated.

Safe Lifting

- Warm up the muscles before lifting by stretching.
- Stand close to the load and face the way you intend to move. Then take a balanced stance with feet shoulder-width apart. If lifting from the floor, squat close to the load.
- Tighten the abdomen and back muscles and tuck chin into chest. This will keep the back in a strong and neutral posture.
- Grip the object with your whole hand, rather than only with your fingers. Keep the object close to you, holding your elbows close to your body to keep the load and your body weight centred.
- Lift by straightening your legs. Let your leg muscles, not your back muscles, do the work. This will maintain your neutral back position as you lift.
- Lift smoothly without jerking.
- Never twist when lifting. When you must turn with a load, turn your whole body, feet first.
- Never carry a load that blocks your vision.
- To set something down, use the same body mechanics designed for lifting.

Ergonomic Solutions for Difficult Tasks

- If you are doing a lot of twisting while lifting, try to rearrange the space to avoid this. People who have to twist under a load are more likely to suffer back injury.
- Rotate through tasks so that periods of standing alternate with moving or sitting. Ask for stools or footrests for stationary jobs.
• Store materials at waist level whenever possible and try to avoid storing items on the floor; instead the minimum should be at knee level. Make shelves shallow (12-18") so one does not have to reach forward to lift the object. Break up loads so each weighs less.
• If you must carry a heavy object some distance, consider storing it closer, request a table to rest it on, or try to use a hand truck or cart to transport it.

Responsibilities

Employee

• Assess your job. Are you following the prescribed process? Are there lifting assists, such as hoists or carts for you to use? Are you lifting with proper body mechanics?
• Are you carrying and lifting acceptable loads a comfortable distance?
• Have you participated in back injury prevention awareness sessions?
• Notify your team leader as soon as pain or discomfort is felt from a particular job or task.
• Fill out and submit an “Ergonomic Request Form” if you feel you are handling heavy material too often. The IOC Ergonomist will assess your situation.
• Attend back injury awareness sessions

Leaders (Supervisor’s, Superintendents, General Managers)

• Ensure employees suffering from pain and discomfort report to the Occupational Health immediately.
• Brainstorm with employee and Ergonomist, as needed, on how to eliminate present risk factors.
• Ensure employees are able to attend back injury prevention awareness sessions.
• Ensure ergonomic solutions (i.e. lift assists, stretches, and scheduled breaks) are implemented.
• Liaise with ergonomics advisor during risk assessments and/or development of new processes/equipment or the design or renovation of any new buildings/equipment/processes.
Procurement

- Ensure ergonomics is involved when purchasing new equipment or machines so manual handling risks are minimized.
- Ensure that the Ergonomist has been consulted and approved the purchase of the most appropriate products before issuing a Purchase Order.

Engineering

- Ensure that ergonomics issues are taken into consideration during risk assessments and/or development of new processes/equipment./designs.
- Liaise with ergonomics advisor if required.

5 ACCOUNTABILITIES

5.1 Accountability
- Occupational Health (OH) Services
- Worker
- Supervisors/Superintendent/General Managers
- Procurement
- Engineering

5.2 Responsibility

<table>
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<tr>
<th>Role</th>
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| Occupational Health Services | • OH Superintendent  
                        |   • Ergonomics Advisor           |
| Operations      | • Workers  
                        |   • Supervisors  
                        |   • Superintendents  
                        |   • General Managers   |
| Procurement     |                                        |
| Engineering     |                                        |

6 REFERENCES

7 SUPPORTING DOCUMENTATION

Appendix A – Ergonomics Request Form