Winnipeg Regional Health Authority
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# SAFE MANUAL MATERIAL HANDLING AND MOVEMENT

## August 2010

**Acknowledgements**

The information contained in this manual is the result of a collaborative effort between a number of Winnipeg Regional Health Authority Occupational and Environmental Safety & Health professionals who were tasked with developing standardized, evidence-based, best practice approaches to safe manual material handling and movement within the WRHA. The overall goal is to prevent work-related injuries and near misses related to manual material handling and movement tasks.

The WRHA acknowledges the contribution of the following members of the Safe Manual Material Handling and Movement Committee in the development of this manual and would like to give a special thank-you to Mavis Puchlik for her administrative assistant skills.

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**PROGRAM MANUAL**

# 1.0 INTRODUCTION AND BACKGROUND

## 1.1 What is Manual Material Handling

Manual material handling and movement is a component of many jobs in health care. Typically it involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Some examples of how manual material handling and movement permeates all aspects of our work life in health care includes loading and unloading trucks, carts, boxes or crates; lifting laundry bags, instrument trays or over-bed monkey bars; moving parts, food or assemblies from one place to another; loading paper in the copier or picking binders from an overhead shelf; and handling a mop, polisher or vacuum. Even with technology available today, manual material handling and movement will always be with us. The one thing all these tasks have in common is the potential to result in some adverse effect such as personal injury or property damage.

## 1.2 Hazards Related to Manual Material Handling

Manual material handling and movement may expose workers to physical conditions such as force, awkward postures/repetitive motions that can lead to injuries, wasted energy and wasted time. Injuries from manual material handling and movement include cuts, bruises and sore muscles to more serious conditions related to low back pain; shoulder disorders; or hip and knee deterioration. Based on available statistics, almost half of all low back injuries are related to lifting, about another 10% are associated with pushing and pulling activities and another 6% occur while holding, wielding, throwing or carrying material.

Ability to perform work tasks may vary because of differences in an individual's age, physical condition, strength, gender, stature, and other factors. Very often the specific cause of an individual's chronic musculoskeletal issue is unknown. More often than not it is a result of wear and tear on the body structures that occurs over time, as opposed to an acute or one-time strenuous activity. There are recognized risk factors that can contribute to, or exacerbate chronic injuries or pain; likewise there are ways and means of reducing exposure to those risk factors to avoid their accumulated toll. About one third of the workforce is required to exert significant strength on the job and over exertion is listed as the cause of injury by 60% of the people filing claims. (Source: *Feb 2010 WCB Rate Setting Costs and Injury Demographics*)

## 1.3 Manual Material Handling and Your Workplace

Health care facilities can directly benefit from implementing a Manual Materials Handling Program. Benefits will include:

- Reducing or preventing injuries thereby lowering costs by eliminating Workers Compensation Board claims

- Reducing the use of medical services
- Reducing employee turnover, absenteeism, retraining and low productivity levels resulting from working with discomfort
- Increasing productivity, employee morale, as well as product and service quality
- Ensuring compliance with legislation.

## 1.4 Guiding Documents and Principles

The Manitoba Workplace Safety and Health Act, W210 and Part 8 of Manitoba Workplace Safety and Health Regulation, MR217/2006, requires specific actions to prevent musculoskeletal injuries in the workplace. Part 8 of the Regulation, the summary, and bulletins related to manual material handling are found in the **Resources Section 4.1.**

WRHA Policy 20.20.080 entitled Workplace Safety and Health is a Level 2A policy. This policy defines rights and responsibilities for workplace safety and health throughout facilities/sites/ programs within the WRHA. It specifically states *"WRHA Facilities are committed to: Establishing and maintaining Workplace Safety and Health Programs that meet the requirements of this policy and the Workplace Safety and Health Act."*

WRHA Occupational and Environmental Safety & Health Operational (OESH) Procedures outline specific workplace safety and health programs and include definitions, procedures, responsibilities and training required to ensure compliance with the WRHA Policy and the Provincial Legislation. The WRHA OESH Operational Procedure – Safe Manual Material Handling and Movement is also found in the **Resources Section 4.1.**

The standards presented are derived from a large international body, based primarily on the research and recommendations of the National Institute of Occupational Safety and Health (NIOSH). The application to health care environments comes from an accumulation of best practices that are evidence based. It is recommended that these standards be revisited every 3 years.

## 1.5 Purpose of the Guidelines and Resource Manual

The WRHA would like to present this manual as a resource for manual material handling and movement tasks throughout the region, wherever healthcare services are delivered and supported. The purpose of this guide is to provide employers and employees in our region with useful information to help them reduce the frequency and severity of musculoskeletal injury and disorders while ensuring compliance with legislation. It is written for the healthcare workers (HCW) who work in support services such as:

- Dietary
- Housekeeping
- Facilities Management/ Physical Plant/ Maintenance
- Materials Handling
- Laundry
- Stores, Shipping and Receiving
- Medical Device Reprocessing

The applications are for the Acute Care, Long Term Care and Community Care environments. These three environments present great differences in available services, equipment, resources, in space and workplace design. Nonetheless, the commitment to the safety of health care workers remains equal in all three environments.

## 2.0 PROGRAM COMPONENTS

### 2.1 Management Commitment

As in any type of program, management support relevant to required resources are the foundations of the program's success. As outlined in the WRHA Operational Procedure – Safe Manual Material Handling and Movement, the following management commitment should be provided:

- Assign responsibilities to staff within the facility/program to ensure the implementation of the operational procedure.
- Ensure resources (information, training, tools, equipment and time) are available to provide / maintain the operational procedure.
- Support the operational procedure throughout the facility/program.
- Ensure that sufficient lifting equipment/aids and devices are available for HCWs to use when needed for safe manual material handling and movement, as far as is reasonably practicable.
- Ensure that there is a procurement process for purchasing equipment that is ergonomically 'friendly'.
- Ensure that acceptable storage locations are available for the lifting equipment/aids.
- Ensure preventive and routine maintenance of equipment is assigned.
- Ensure education and training opportunities are available.

### 2.2 Facility Based Multi-Disciplinary Team

As outlined in the WRHA OESH Operational Procedure entitled Occupational and Environmental Safety & Health Program Appendix 1 – Site Strategic Plan, the following gives direction as to how safety and health is made operational. *"In order to ensure that each site's Occupational and Environmental Safety & Health Program is implemented, communicated and monitored, each site's Human Resources, OESH teams and Senior Leaders must develop site specific strategic management health and safety plans with delegation of responsibility/accountability……."*

Team members should view themselves as champions for the program. They will help deliver and sell the message as the program is rolled out. They will serve a vital role in maintaining the program's effectiveness and support the culture change. Involvement of front-line workers in each support services area is necessary in order to achieve buy-in as the program moves ahead. The reporting structure of this committee or working group should include reporting through the Joint Workplace Safety and Health Committee. The initial mandate of the committee/team is to ensure the implementation of all aspects of the OESH Operational Procedure Safe Manual Material Handling and

Movement Program. The ongoing mandate of the committee or work group is to:

- Review injuries/incidents relevant to ergonomic issues
- Report statistics to Joint WS&H Committee
- Make recommendations to Senior Management relevant to corrective action
- Review employee training requirements
- Review ergonomic solutions and promote awareness of ergonomic issues
- Participate in the procurement processes

## 2.3 Hazard Classification, Identification and Assessment

Hazards are usually **classified into five categories** as listed below. The following are common hazards which may be present in your workplace in each hazard category:

**Physical Hazards**

Slips, trips and falls when carrying or moving objects

Cuts when opening boxes

Splinters from wooden pallets

Hands caught between carts, walls, doors

Objects dropped on feet

Feet caught under wheels of pallet jacks

Property damage when carts etc. come into contact with walls, doors, and other objects.

**Biological Hazards**

May apply depending upon what is being handled

**Chemical Hazards**

Spills of products being handled or transported

Chemical exposure

**Ergonomic Hazards**

Force exertions when lifting, lowering, pushing, and pulling

Repetition

Postures – awkward and static

Gripping

Contact stress

Reaching

**Psychosocial**

May apply dependent upon workplace

Exposure to emotional situations

Control issues

Time/deadline pressures

Performance of multiple tasking

Degree of cooperation required

Exposure to confrontational situations

Level of responsibility / accountability required

**Identification of Hazards** related to manual material handling may be found during all stages related to planning and procurement to ensure proper performance of manual material handling and movement tasks. Steps to ensure issues are not overlooked are outlined as below.

**Planning**, including design is necessary as it relates to new construction and renovations as it entails dealing with the hazard before any exposure occurs. This step is crucial in the elimination of hazards and is cost-efficient as opposed to making changes after construction. During new construction and/or renovations, consider the following:

- Consultation from members of the OESH department/Facility based Multi-Disciplinary Team during both the planning of construction projects and design phases.
- Ensure that sufficient room, space, width and height is allocated for efficient and safe handling and maneuvering of specialized lift equipment such as forklifts, mechanical lifts, drum lifts, etc.
- Consider the space requirements necessary for the workers performing their job tasks. Plan outwards, rather than from outside to in.
- Consider storage requirements and type of materials to be stored. Ensure that storage is at suitable height to prevent awkward postures such as overreaching.
- Determine acquisition methods and if space and height is sufficient for tasks.
- Determine the physical job requirements to assist in the planning/design process, such as weights and volumes of materials and equipment.
- The environment in which the job or task is being performed (including lighting requirements, noise, vibration and temperature,

air quality/ventilation), can significantly affect the performance of the employee.

- Obtain user feedback through employee surveys, questionnaires, and interview consultations.

**Procurement** relates to the purchase or replacement of equipment and tools related to manual material handling and movement. During procurement, consider the following:

- Consultation with OESH prior to purchase/ replacement of equipment.
- Consultation with OESH during the contracting and group purchasing processes.
- Standardization of equipment and tools through consultation with Logistics/ Purchasing. This is crucial for the equipment training component.
- Review of all tasks to evaluate the need for ergonomically friendly equipment i.e. lift equipment, drum/container lift equipment, and carts/bins. Consideration should be given to the carts and bins as being:
    - manufactured/constructed in light-weight material
    - accessible without overreaching (i.e. constructed with door opening for easy access)
    - constructed with handles for easy maneuver
    - constructed with wheels that can be easily maneuvered
    - spring load mechanisms to alleviate bending forward and overreaching
- Adjustable workstations with tilt and/or adjustable chairs, computer workstations, telephone accessories, and/or footstools.
- Using manipulators, tongs and clamps.
- Preventative maintenance requirements.
- An inventory review of equipment to ensure it is accessible and available in sufficient numbers to all required using it.

**Performance** of manual material handling tasks and hazard identification during exposure can be accomplished through:

- Completion of a Job Hazard Analysis that will assist with the determination of hazards/risks relevant to material handling and movement.
- Workplace Inspections.
- Observation of staff while performing their work/tasks.
- Work Flow Analysis.

- Signs and Symptoms Surveys.
- Injury and Incident Reporting and Investigation.

Checklists to assist with Hazard Identification can be found in **Resource Section 4.3**

## 2.4 Hazard/Risk Control

**The Hierarchy of Controls** Risk of injury brought about by manual material handling must be controlled if risk to the worker is to be reduced or eliminated. In a general sense hazard control is considered in three distinct segments:

- **Engineering Controls**
- **Administrative Controls**
- **Work Practice Control/Personal Protective Equipment (PPE)**

When evaluating potential controls of risk, it is generally accepted that the closer the control is placed to the source of the hazard the greater the degree of risk reduction for the worker.

**Engineering controls** are generally considered to be the closest control to the risk and should be considered first. Engineering controls involve a change in the physical nature of the work or workplace. The concept is to either eliminate the hazard or modify the task to the point the hazard becomes a non–hazard. Examples of engineering controls start with elimination of the hazard (don't perform the hazardous task) and ranges to modification of the task through changes to the design of the work or workplace. Most, if not all hazards can be eliminated or reduced through engineering controls although there are instances where cost or required change to the process make the control unattainable.

**Administrative Controls** are considered less effective than engineering controls in that they do not usually eliminate the hazard. They lessen the duration and frequency of exposure to the risk condition. Administrative controls are applied when the cost or practicalities of engineering controls are prohibitive. They include workplace policy, procedures, and safe work practices that reduce the risk of injury to workers. For example: rest breaks, additional employees performing a lifting task, or housekeeping and/or service schedules for tools and work areas.

**Work practice controls and personal protective equipment (PPE)** are commonly used in conjunction with administrative and some engineering controls. Work practice controls refer to safe lifting

/ handling training. Such training does not eliminate or reduce the physical hazard of manual material handling but rather helps the worker cope with the physical rigors of the task by teaching work methods that help to reduce body strain and sprain potential. Personal protective equipment simply offers some form of physical protection from injury (example work gloves, safety shoes, protective clothing) while making no change to the physical hazard of the task therefore the risk of injury remains unchanged.

**Determining Controls** for the hazards identified begins with a clear understanding of the work process and work flow through:

- Documentation in the form of a detailed list of the steps required to complete the task (completed by the worker who performs it).
- Observation of the task being performed from start to finish. A flow chart or photos of the process is suggested.
- Assessment of the flow of the task.
    - Steps that can be eliminated—are there unnecessary movements of materials? Can steps be combined to reduce movement of products?
- Assessment of the physical demands of the work tasks.
    - Can sizes handled be reduced? Examples might include breaking down boxes into smaller bundles, having the supplier ship smaller quantities, or through substitution of lighter materials etc.
- Assessment of the method by which the task is performed.
    - If physical demands cannot be reduced through reduction/substitution, can mechanized lifting/ movement of equipment be introduced to reduce physical demands?

Examples of **engineering** controls include but are not limited to:

- Eliminating the task by using mechanical aids.
- Rearranging, modifying, redesigning processes or work flow.
- Changing load size.
- Changing the weight of objects handled by opening a heavy box and moving contents separately rather than carrying the entire box.
- Modifying or creating adjustable work surface heights thereby reducing bending or stretching.
- Using mechanical lifting/moving equipment or devices that reduce the force required to move materials.

Examples of **administrative** controls include but are not limited to:

- Job rotation.
- Job enlargement such as added task variety/sharing tasks among groups.
- Alternating heavy tasks with light tasks.
- Variety in jobs to eliminate or reduce repetition and overuse of same muscle group.

Examples of **work practice** controls include but are not limited to:

- Safe handling and movement training
- Personal protective equipment (gloves, etc.)

Once the controls are proposed, test the modifications, if possible. Ensure that worker input and support is obtained before proceeding. Ensure that the modifications will 'fit the process' and do not introduce other hazards.

Once changes have been implemented, follow-up to ensure the modifications meet the intended goal. It is common for workers to find further improvements once a change has been made. Always consider any engineering change to be evolutionary, that is, subject to change and improvement as better methods are developed and equipment continues to evolve through design improvements.

Control comparisons and examples of controls by task and by department can be found in the **Resources Section 4.4**

## 2.5 Safe Work Procedures

Safe Work Procedures may be required based on the hazard/risk identified for the specific task. Consult the **WRHA OESH Operational Procedure – Safe Work Procedures** for responsibilities and a template to use.

Examples of Safe Work Procedures (SWP) can be found in the **Resources Section 4.5**

## 2.6 Training Plan

Purpose: As per the WRHA Operational Procedure, training and education is an essential component for a Safe Material Handling program. It must be provided to workers involved in material handling prior to using equipment or participation in material handling activities. This education program is meant to provide the outline and tools each facility needs to consider for their program.

The basic elements are:

- Basic education about safe work including signs and common symptoms of musculoskeletal injury, risk factors, ergonomics and body mechanics and general injury prevention strategies.
- Worker training and assessment in core competencies such as body mechanics.
- Worker training on job specific tasks, equipment and safe work procedures.

Facilities that have tools and educational resources in place will need to review the elements of their existing program and determine what needs to be added to meet the core requirements.

For facilities that do not have a current program, an outline of the theory in a Power Point Presentation format can be found in the **Resources Section 4.7**

**Part 1: Theory Education**

The theory portion can be presented as an interactive lecture, possibly in a classroom setting with one trainer or a computerized training module. One option is to have a self study module assigned to be reviewed prior to the session. The time allocated for the theory portion of the training should be 60-90 minutes depending on the facility's specific needs. The theory portion of the training should be completed before the worker attends Part 2 –Practical Hands-on Training.

**Presentation**

Facilities should include slides on the pertinent information they would like their material handling employees to know.

Core components of safe material handling to include:

- Body mechanics
- Appropriate working heights
- Power position, stabilization and weight shifting
- Proper lifting, pushing/pulling, carrying and grip
- Review of the WRHA OP and responsibilities
- Equipment provision
- Resources for materials handling solutions
- Facility specific information
- Lists of available equipment and access to equipment
- Responsibilities for care, repair, lock/tag out procedures
- Where to access the material handling and movement reference tools/ guidelines/ protocols/ safe work procedures

/practices (SWP) and if they are on-line, in binders in department, on posters etc.

- Facility method for competency training and the necessary competency checklists, if appropriate

Included in this guideline is a sample of a PowerPoint Presentation called **Guidelines for Safe Manual Material Handling** in a format that your facility can adapt by:

- Filling in with information specific to your facility
- Adding slides to show equipment specific to your site and other site-specific information

**Part 2: Practical Hands-on Training Sessions**

This session is designed to educate the workers with a hands-on approach to manual material handling and movement, use of the equipment, and safe work procedures or practices.

- Sufficient time should be allowed when introducing new equipment or techniques to allow for practice and return demonstration.
- Hands-on training should take place in an appropriate setting with relevant equipment available.
- Workers should have a visual demonstration of the techniques.
- Demonstrations can be presented via video clips or by trained instructors.
- Workers should deliver a hands-on return demonstration using proper body mechanics for material handling and movement tasks.
- Focus should be on problem solving to decide on the number of workers needed and how to choose appropriate equipment.

A minimum of one hour should be allocated for the presentation and hands on section depending on the number of trainers and number of participants.

## 2.7 Monitoring and Enforcement Mechanisms

Early and continued success when implementing a Manual Material Handling and Movement Program depends on the ability of supervisors to ensure workers are using appropriate equipment and techniques during assigned tasks. Resistance to change, especially in an environment with limited supervision, will delay implementation and compromise the safety of workers.

As with any workplace initiative, management commitment at all levels is integral to its success. The importance of this commitment is reflected in both government legislation and WRHA Policies.

The Manitoba Government Workplace Safety and Health Act assigns the responsibility to ensure that workers adhere to these policies and procedures to the Supervisor. **Section 4.1 of the Workplace Safety and Health Act** states that:

*Every supervisor shall:*

*(a) so far as is reasonably practicable,*

*(i) take all precautions necessary to protect the safety and health of a worker under his or her supervision,*

*(ii) ensure that a worker under his or her supervision works in the manner and in accordance with the procedures and measures required by this Act and the regulations, and*

*(iii) ensure that a worker under his or her supervision uses all devices and wears all clothing and personal protective equipment designated or provided by the employer or required to be used or worn by this Act or the regulations.*

**The WRHA Occupational Health and Safety Policy 20:10:080** states:

*Managers and Supervisors shall be responsible for applying the Workplace Safety and Health Program. Specifically, Managers and Supervisors shall identify hazards, enforce safe work practices, implement effective controls, communicate safety and health hazards, investigate hazardous conditions/incidents, and ensure that all equipment is properly maintained. Where safety and health training and/or safety equipment is required, Managers and Supervisors shall request approval for these items from Senior Management if current funding is not sufficient.*

*Senior Management, Managers, Supervisors and Workers must abide by this policy, the Workplace Safety and Health Program and the Act.*

Supervisory enforcement and its documentation are key to demonstrating due diligence for safety. The implementation of the **Manual Material Handling and Movement Program** through training, provision of resources and the creation of Safe Work Procedures/Practices (SWP) acknowledges recognition of the legislation and the risks in workplaces.

Enforcement of the **Manual Material Handling and Movement Program** must be proactive, not reactive. Enforcement is not meant to punish those who have been injured or to stop injuries from being reported. The purpose of enforcement is to ensure that all HCWs

follow procedures to prevent injuries. This is part of the "culture of safety" where safe work procedures/practices become part of everyday routine and are followed as closely as clinical procedures. As per the **WRHA Occupational Health and Safety Policy 20:10:080**

> *Violation of safety and health rules or responsibilities by a member of Senior Management, a Manager, a Supervisor or a Worker may result in remedial action including education and/or disciplinary action, up to and including dismissal from employment.*

All monitoring and enforcement activities must be documented as per your facility's Human Resources procedures.

## 2.8 Injury Reporting/Corrective Action

Prevention is the purpose of a work related injury/ near miss investigation. It is the supervisor/manager's job to determine corrective actions that will prevent reoccurrence of the injury /near miss. The purpose is not to find fault or blame, but rather to identify the basic causes so controls can be put in place to prevent further occurrences. Information from the investigation should be documented on the **Work-Related Injury/Near Miss Form**. Statistics received from the Injury /Near Miss forms are also useful in identifying higher risk tasks and problem areas and can aid in the prioritization and development of annual prevention plans and further training initiatives. Responsibilities of managers/supervisors include:

- reporting and investigating all incidents relevant to material handling and determining corrective action to be implemented
- ensuring that the employee is consulted relevant to the discussions pertaining to the corrective action
- providing the OESH Team with details of the corrective action

Responsibilities of the OESH Team include:

- monitoring the number of incidents relevant to material handling and reporting to Senior Management Team
- assisting Managers in determining the corrective action (some equipment/processes may require major costs and/or modifications)

Areas demonstrating high numbers of work-related injuries shall be deemed "high risk" and must be evaluated proactively in an effort to reduce the number of work-related injuries in these areas. The OESH team can be contacted to assist with this evaluation. Additionally, Logistics and/or Purchasing must be consulted prior to purchasing new or replacement equipment due to procurement standards and trials and evaluation considerations.

## 2.9 Medical Management – Graduated Return to Work

Employees with musculoskeletal disorders must be promptly evaluated by a health care provider and appropriate treatment and follow-up provided.

Worker accommodation will be available to assist the employee in returning to work safely and as soon as possible. OESH will be involved in case management /disability management during the work accommodation / return to work programs. OESH may utilize tools such as push/pull force gauges (Chatillon) and a Physical Demands Analyses to assess restrictions and tasks.

## 2.10 Program Evaluation

As with any safety program, a Manual Material Handling Program must be reviewed at least once every three years or if there is a change in legislation or change in the workplace such as equipment or processes. However, it is suggested the program is reviewed annually for its accomplishments, goals set for the upcoming year, and the program modified, as necessary, to include new legislation, the introduction of new technologies and equipment, as well as manual material handling methods. Full or partial reviews and revision are also required when there are changes in the workplace that may affect the health or safety of HCWs and when defects or new risks are discovered. These may be identified through HCW feedback, systematic audits, and investigations related to Work-Related Injury/Near Miss reporting. The objective of this review procedure is to ensure that your program is current and addresses the issues identified.

## 3.0 IMPLEMENTING YOUR PROGRAM

**3.1 Responsibilities** for the implementation of the Manual material Handling Program are included in the WRHA OESH Operational Procedure – Safe Manual Material Handling and are as follows:

**Employer**

- Act in accordance with the objects and purposes of the Act by ensuring, so far as is reasonably practicable, the safety, health and welfare at work of all his workers, and complying with the Act and regulations.
- Ensure that all his workers, and particularly his supervisors, foremen, charge hands or similar persons, are acquainted with any safety or health hazards which may be encountered by the workers in the course of their service, and that workers are familiar with the use of all devices or equipment provided for their protection.

**Facility Executive Team**

- Assign responsibilities to staff within the facility/program to ensure the implementation of this operational procedure.
- Ensure resources (information, training, tools, equipment and time) are available to provide / maintain this operational procedure.
- Support the Operational Procedure throughout the facility/program.
- Ensure that sufficient lifting equipment/aids and devices are available for HCWs to use when needed for safe manual material handling and movement as far as is reasonably practicable.
- Ensure that acceptable storage locations are available for the lifting equipment/aids.
- Ensure preventive and routine maintenance of equipment is assigned.
- Ensure education and training opportunities are available.

**Directors/Managers/Supervisors**

- Support a culture of safety, shared responsibility and safe manual material handling and movement within their area.
- Identify situations where workers perform tasks involving manual material handling and movement using the facility/site/program identification/documentation system (Job Hazard Analysis).
- Assess and document the risks identified.
- Implement control measure following the hierarchy of controls to reduce or eliminate the risks identified and assessed.

- Establish written safe work procedures based on the above. See Operational Procedure – Safe Work Procedure.
- Ensure HCWs successfully complete the basic initial Safe Manual Material Handling and Movement training.
- Ensure that injured HCWs receive retraining when returning to work following injury.
- Ensure that all tasks are completed safely using manual material handling equipment/devices or other approved manual material handling aids and appropriate techniques as per the safe work procedures.
- Purchase equipment within available financial resources.
- Ensure mechanical lifting devices and other equipment/aids are available, maintained regularly, in proper working order, and stored conveniently and safely.
- Monitor HCW compliance on safe manual material handling/movement.
- Assess need for further in-services and request refresher in-service when required.
- Involve educators, OESH or other resources as necessary to implement this procedure.
- Provide plans to forward recommendations to Capital Planning and Construction Committees as necessary to facilitate manual material handling equipment use and storage.
- Ensure that all facility policies are followed if new equipment is being trialed and/or installed.

**Safe Manual Material Handling Educators/Designate**

- Ensure that all elements of the basic program are implemented and evaluated.
- Provide all new HCWs with the basic Safe Manual Material Handling and Movement Training at orientation. Basic proficiency must be demonstrated at time of orientation. A written record of proficiency must be retained.
- Prioritize continuing education based on current industry standards.
- Provide retraining when necessary or upon request.

**Workers**

- Report any occupational health and safety concerns to their supervisor.
- Participate in the identification of risks related to safe manual material handling and in the development of safe work practices.

- Follow safe work practices and procedures.
- Participate in and successfully complete the Safe Manual Material Handling and Movement Program basic orientation.
- Demonstrate learned principles and skills related to performing safe manual material handling and movement through competency checks.
- Perform pre-use inspections and routine safety assessments of equipment and ensure documentation and records are kept of inspections.
- Assess the environment, material being moved/handled and available resources before starting a lift or movement.
- Perform all safe manual material handling and movement as outlined in the safe work procedures using appropriate equipment and procedures.
- Communicate specific needs and potential risks to the manager/supervisor.

**OESH or Designate**

- Provide Directors/Managers with a list of work related injuries and analysis of trends for review.
- Consult with the facility/site/program on all aspects of this operational procedure.
- Ensure that training records are kept.

**Joint Workplace Safety and Health Committee**

- Consult with the facility/site/program on the development and implementation of this operational procedure.
- Review and monitor the effectiveness of this operational procedure.

**Facility Based Multi-Disciplinary Team**

- Review injuries/incidents relevant to ergonomic issues.
- Report statistics to Joint WS&H Committee.
- Make recommendations to Senior Management relevant to corrective action.
- Review employee training requirements.
- Review ergonomic solutions.
- Participate in the procurement processes.
- Promote awareness of ergonomic issues.

## 3.2 Implementation of a Program Checklist

| Step | Description | Action | |
|---|---|---|---|
| 1. Develop Operational Procedures | Review WRHA Operational Procedures and revise to make specific to your facility. | Revised Operational Procedures to be reviewed by your Workplace Safety and Health Committee prior to forwarding to Executive Group for approval and implementation. | ☐ |
| 2. Implement Planning and Design Component | Review forms and protocols and revise accordingly for your facility. | Forward forms and protocols to Facilities Management, Capital Planning, Logistics for their consideration during planning, design and purchasing / contracting. | ☐ |
| 3. Develop Risk Assessment Process | Review Job hazard analysis and determine tasks/jobs that are high risk. | Develop controls for the hazards using the hierarchy of controls. | ☐ |
| 4. Develop Incident Reporting Process | Review process and forms for MSI related incidents and hazards. | Implement process and forms. | ☐ |
| 5. Develop Training Plan | Review existing training and expand where necessary. | Implement training plan<br>- Ergonomics overview<br>- Specific training dependent on the department and equipment. | ☐ |
| 6. Develop Medical Management Process | Review existing processes and expand where necessary. | Implement processes for Return to Work and accommodation through training and meetings. | ☐ |
| 7. Develop an evaluation process to determine if your program is effective | Review existing process and expand where necessary. | Implement processes through training and meetings with management. | ☐ |

## 4.0 RESOURCES

| Documents |
| --- |
| **4.1 Resources: Legislating and Guiding Documents**<br>▪ **Workplace Safety and Health Regulation Part 8 Musculoskeletal Injuries**<br>▪ **Workplace Safety and Health Regulation Part 8 Musculoskeletal Injuries – Regulation Summary**<br>▪ **Workplace Safety and Health Bulletins**<br>▪ **WRHA Policy 20.10.080 Workplace Safety & Health**<br>▪ **WRHA Operational Procedure – Safe Manual Material Handling** |
| **NOTE: All WRHA Operational Procedures can be found at www.wrha.mb.ca/professionals/safety** |

**Workplace Safety and Health Regulation**, Province of Manitoba, Department of Labour and Immigration, Workplace Safety & Health Division www.safemanitoba.com

PART 8

MUSCULOSKELETAL INJURIES

**Risk assessment**

**8.1(1)** When an employer is aware, or ought reasonably to have been aware, or has been advised, that a work activity creates a risk of musculoskeletal injury, the employer must

(a) ensure that the risk is assessed; and

(b) on the basis of the assessment, implement control measures to eliminate or reduce, so far as is reasonably practicable, the risk of musculoskeletal injury to the worker.

**8.1(2)** The control measures may include one or more of the following:

(a) providing, positioning and maintaining equipment that is designed and constructed to reduce or eliminate the risk of musculoskeletal injury;

(b) developing and implementing safe work procedures to eliminate or reduce the risk of musculoskeletal injuries;

(c) implementing work schedules that incorporate rest and recovery periods, changes to workload or other arrangements for alternating work;

(d) providing personal protective equipment in accordance with Part 6 (Personal Protective Equipment).

**8.1(3)** An employer must

(a) monitor the effectiveness of any control measure implemented to eliminate or reduce the risk of musculoskeletal injury; and

(b) where the monitoring identifies that a risk of musculoskeletal injury is not being or has not been eliminated or reduced, implement further control measures, where it is reasonably practicable to do so.

**Duty to inform workers**

**8.2** An employer must ensure that every worker who may be exposed to a risk of musculoskeletal injury

(a) is informed of the risk and of the signs and common symptoms of any musculoskeletal injury associated with the worker's work; and

(b) receives instruction and training respecting any control measure implemented by the employer.

SAFE WORK

S SPOT THE HAZARD
A ASSESS THE RISK
F FIND A SAFER WAY
E EVERYDAY

**No. 246**
**October 2007**

# SAFE LIFTING

Back injuries are one of the most common workplace injuries in Manitoba, and may be long and painful to recover from. Unfortunately, suffering one back injury puts you at a greater risk of suffering another.

The most important thing you can do to prevent a back injury is to use proper lifting and material handling techniques. (If you are suffering back pain, contact your physician for more information.)

This bulletin discusses why back injuries occur, and how to prevent them.

**Lifting Hazards:**

- **Awkward / Sustained posture** - Improper lifting technique is the largest cause of lower back injuries. For example, bending at the waist, or twisting while holding anything greatly increases the stress on the muscles and joints of the back.

- **Forceful exertions** - There is a limit to the amount of weight the back can lift; this limit is different for each person. Know and respect your limits. Use mechanical aids wherever possible, i.e. cranes, carts, dollies, etc.
- **Repetitive movements** - Repeated actions cause fatigue; fatigue reduces the amount of weight the body can safely lift. Be sure to give the back adequate rest between lifts.

**Preventing Back Injuries:**

***S****pot the hazard*
- What conditions prevent you from using safe lifting techniques?
- Is the load heavy, awkward or hard to hold?
- Is your back tired before the end of your shift?

***A****ssess the risk*
- Test the weight of the load before lifting
- Is your back sore or tired before the lift?
- Did you clear your path of obstacles and debris?

***F****ind a safer way*
- Always use good lift techniques
- Never twist your back with weight in your hands
- Use or ask for a mechanical lift
- Ask for help with the lift

***E****veryday*
- It is your right to be safe at work
- Taking short cuts increases the chance you will be hurt
- Think about lifting safely

**BACK BELTS – CAUTION!**
A back belt is a medical device and should be used under the direction of a health care provider. *In other words, the decision to wear a back belt is a personal choice not to be influenced by workplace parties.* (See more information on page 2)

**Lift Training:**

Employers have a duty under the Act to provide workers with information, instruction, training and supervision to ensure their safety and health on the job.

| Step 1: Ready the worker for training | Step 2: Exhibit and explain |
|---|---|
| • Obtain the focus of the worker<br>• Determine the worker's current level of knowledge regarding lifting<br>• Position the worker so they share your physical point of view as you are teaching the skill or procedure | • Show the worker each movement and procedure you expect them to know, step-by-step<br>• Emphasize the important points, i.e. no twisting & lifting with the legs<br>• Explain clearly and entirely |
| **Step 3: Observe and examine** | **Step 4: Monitor the worker** |
| • Require the worker to demonstrate each skill back to you along with a verbal explanation of the demonstration<br>• Watch the worker's demonstration; comment on all effective and ineffective movements and/or procedures<br>• Demonstrate for the worker again, if needed<br>• Have the worker demonstrate again; continue this practice until the worker understands how, and is able to, carry out the task effectively | • Explain where to receive further instruction<br>• Allow the worker to perform the work unassisted<br>• Review the worker's understanding after a few days or a week<br>• Monitor the worker daily until you are confident the proper lifting techniques have become standard practice |

**Proper Lifting technique:**

*The following is for informational purposes only. No warranties or guarantees are made on the usage of this information.*

1) Test the weight of the load
   - If it feels too heavy ask for help, or use a mechanical lifting device
   - It is your legal right to refuse to lift anything you feel may be a danger to you
2) Position your body close to the load
3) Take a wide stance, with the load between the knees if possible
4) BEND YOUR KNEES
5) Bending at the waist should never be permitted
   - Never try to catch a falling load
6) Keep the lower back straight
   The risk of injury increases when the lower back is rounded
7) Keep your head up, the more vertical your posture, the lower your risk of injury
8) Breathe out as you begin to lift
   - This increases tension in your abdominal muscles
   - Do not hold your breath during a lift; this increases pressure in the abdomen
9) Always keep your shoulders in line with your feet
   - Twisting significantly increases the risk of injury
   - Never twist while lifting or carrying anything, even light objects
   - NO TWISTING!
10) Proper lowering is as important as proper lifting
   - Dropping or throwing loads is hazardous
   - Bend the knees, keep the back straight, and breathe out as you begin to lower.

**BACK BELTS – CAUTION!**

1. Back belts are not considered personal protective equipment.
2. The use of back belts has not been proven to reduce the risk of lower-back injury from repetitive lifting, bending, twisting, pushing or pulling.
3. Back belts do not significantly improve lifting capacity.
4. Back belts have not been shown to remind workers to use proper lifting technique.

Sample of one type of back belt

5. Back belts have not been shown to cause workers to avoid heavy lifting.
   Manually handling heavy loads is known to increase the risk of injury to the lower-back.
6. Back belts were not originally designed for workplace injury prevention, but rather for medical rehabilitation purposes, and later adapted to specific weight-training applications.

"Cette information existe également en français au www.gov.mb.ca/labour/safety/index.fr.html"

## Workplace Safety and Health Regulation Bulletin 248

SAFE WORK

SAFE: SPOT THE HAZARD · ASSESS THE RISK · FIND A SAFER WAY · EVERYDAY

No. 248
July 2009

# Manual Materials Handling Injuries

### Potential Hazard:

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.

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.

### How to Control the Hazard:

To help prevent MMH injuries, employers and workers need to:

***S**pot the hazard*
- Identify conditions that prevent you from using proper MMH techniques

***A**ssess 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?

***F**ind 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

***E**veryday*
- 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

(see over)

**Workplace Safety and Health Division Contact Information:**

Winnipeg: (204) 945-3446
Toll-Free: 1-866-888-8186 (Manitoba only)
24-Hour Emergency Line: (204) 945-0581

Publications/resources available at: www.safemanitoba.com

Manitoba

Below are a few techniques to keep in mind when performing MMH tasks. Mechanical assists that may help 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

If you are suffering from a MSI contact your physician or other specialized healthcare professional such as a sports medicine doctor, physiotherapist, and athletic therapist.

**Reference to legal requirements under workplace safety and health legislation:**
- Safe Work Procedures: Manitoba Regulation 217/2006 Part 2.1
- Musculoskeletal Injuries: Manitoba Regulation 217/2006 Part 8

**Additional workplace safety and health information available at:** www.safemanitoba.com

## WRHA Policy 20.20.80 Workplace Safety and Health

| Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg — Caring for Health / À l'écoute de notre santé | WRHA GOVERNED SITES<br>Applicable to programs, departments and services of the WRHA governed and integrated sites | | Level:<br>2A |
|---|---|---|---|
| POLICY | Policy Name:<br>Workplace Safety and Health | Policy Number:<br>20.20.080 | Page:<br>1 of 3 |
| | Approval Signature:<br>*Original signed by B. Postl* | Section:<br>HUMAN RESOURCES | |
| | Date:<br>April 2009 | Supercedes:<br>June 2008 - #20.10.080 | |

**1.0 PURPOSE:**

WRHA Board of Directors, Senior Management and Facilities are committed to:

1.1 Safe and healthy workplaces for all Staff, patients and visitors.

1.2 A belief that safety is the responsibility of all Staff including Senior Management, Managers, Supervisors and employees.

1.3 Securing Staff and other persons from risks to their safety, health and welfare arising out of or in connection with activities in their workplace.

1.4 Promoting and maintaining the highest degree of physical, mental and social well being of Staff.

1.5 Ensuring that Staff in Senior Management, Management and Supervising positions recognize and understand their role to ensure a safe and healthy workplace.

1.6 Involving Staff in the management of their own occupational health and safety.

1.7 Working collaboratively with all Occupational Safety and Health Committees regarding the health and safety of WRHA Facilities.

1.8 Establishing and maintaining Occupational Safety and Health Programs that meet the requirements of this Policy and The Workplace Safety and Health Act. This Program will incorporate Safe Work Practices.

1.9 Complying with all Government Health and Safety Legislation.

**2.0 DEFINITIONS:**

2.1 Act: The Workplace Safety and Health Act, Chapter W-210 of Manitoba

2.2 Senior Management: members of the Executive of WRHA Facilities

2.3 Staff: All persons employed or contracted by WRHA Facilities as well as members of the medical staff and board members.

2.4 WRHA Facilities: Facilities or sites within the WRHA that are owned or operated by the WRHA or that are integrated Hospitals (Seven Oaks General Hospital, Grace Hospital, Victoria General Hospital, Concordia Hospital, Deer Lodge

Centre, Health Sciences Centre, Misericordia Health Centre, Pan Am Clinic and River Park Gardens).

2.5 Safe Work Practices: A step-by-step procedure that states how to perform a job safely and how to respond to a safety risk in an appropriate manner.

## 3.0 POLICY:

3.1 Senior Management shall ensure:

3.1.1 The establishment and maintenance, including adequate funding, of an Occupational Workplace Safety and Health Program through:

3.1.1.1 The organization of resources to establish and maintain appropriate policies, procedures and training programs;

3.1.1.2 The regular review of incident reports and collaboration with stakeholders relating to reduction in the number of incidents and/or near misses;

3.1.1.3 The participation in and promotion of an organizational culture that ensures the highest possible occupational safety and health standards for all Staff;

3.1.1.4 The involvement of Staff in the management of their own occupational health and safety;

3.1.1.5 Collaboration with all WRHA safety and Health Professionals, Occupational health Nurses, and Workplace (Occupational) Safety and Health Committees; and,

3.1.1.6 Compliance with all Federal and Provincial legislation governing safety and health.

3.1.2 Workplace Safety and Health Committees are established and operating in accordance with the Act. Senior Management shall consider all recommendations made to them by the Workplace Safety and Health Committee(s) and respond to such recommendations in writing.

3.1.3 Appropriate processes are implemented that contractors (including prime contractors), self-employed persons, suppliers and agency staff are held accountable to meet their obligations under the Act while performing services for WRHA Facilities.

3.2 Managers and Supervisors shall be responsible for applying the Occupational Safety and Health Program. Specifically, and without limitation, managers and supervisors shall identify hazards and enforce safe work practices and implementing effective controls, communicate safety and health hazards, investigate hazardous conditions and incidents and ensure that all equipment is properly maintained and meets currently legislated safety and health standards. Where safety and health training and/or safety equipment is required, managers

and supervisors shall request approval for these items from Senior Management if current funding is not sufficient.

3.3 Every Staff person shares responsibility for safety and health in the workplace and shall integrate good workplace safety and health practices into their daily work activities. All Staff shall be responsible for following the Occupational Safety and Health Program, obeying all safety and health rules, following recommended Safe Work Practices, wearing and using personal protective equipment when required, participating in safety and health training programs and informing supervisors of any unsafe work conditions.

3.4 Senior Management, managers, supervisors and Staff must abide by this Policy, the Occupational Safety and Health Program and the Act.

3.5 All new Staff shall be advised of this Policy and of the Occupational Safety and Health Program as part of their orientation.

3.6 Occupational Safety and Health Committees shall be responsible for providing recommendations on safety matters to Senior Management to assist in monitoring the effectiveness of the Occupational Safety and Health Program.

3.7 Violation of safety and health rules or responsibilities by a member of Senior Management, a manager, a supervisor or a Staff person may result in remedial action including education and/or disciplinary action, up to and including dismissal from employment.

3.10 All Staff persons shall have the right to refuse to perform work where that Staff person has reasonable grounds to believe and does believe that the work is dangerous to the Staff person's safety or health or the safety and health of another Staff person or any other person.

3.11 A copy of this Policy shall be posted on bulletin boards within worksites that have been designated to provide Staff person with information relating to workplace safety and health.

## 4.0 PROCEDURE:

A notice shall be posted on those bulletin boards as to the physical and/or electronic locations of the Occupational Safety and Health Program available in manual format that contain operational procedures.

## 5.0 REFERENCES:

5.1 WRHA Corporate Safety & Health Statement of Principle

5.2 Workplace Safety and Health Act Implementation Guidelines

5.3 Workplace Safety and Health "A Guide to Setting Up a Workplace Safety and Health Program"

5.4 WRHA Workplace Safety and Health Operational Procedures

5.5 The Workplace Safety and Health Act, Chapter W-210

***Policy Contact:*** *John Van Massenhoven, Regional Director HR Services, Community Hospitals & HR Legal Counsel*

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / À l'écoute de notre santé

**OCCUPATIONAL AND ENVIRONMENTAL SAFETY AND HEALTH OPERATIONAL PROCEDURES**

**Subject:** Safe Manual Material Handling and Movement

**Effective Date:** August 2010 (Version 1) **Supersedes:** New

**Review Date:** 3 years or legislation or job changes

**Original Signed by:** Diane Gantzel, Director, WRHA Occupational and Environmental Safety & Health

## 1.0 GUIDING PRINCIPLE

1.1. In keeping with the Winnipeg Regional Health Authority (WRHA) commitment to providing a safe and healthy workplace as noted in the WRHA 'Workplace Safety and Health' policy (20.20.080), the following Operational Procedure has been developed to ensure that no WRHA staff or other person present on WRHA property is put at undue risk when performing manual handling and movement.

1.2. This operational procedure is also designed to ensure that when followed, the minimum requirements of Manitoba Workplace Safety and Health legislation is complied with and where possible exceeded.

1.3. As with all matters relating to the Safety and Health of workers the Workplace Safety and Health Committee should be consulted for their input.

## 2.0 DEFINITIONS

2.1. **The Act:** The Workplace Safety and Health Act W210 of Manitoba.

2.2. **Committee:** Means a workplace (occupational) safety and health committee established under section 40 of the Workplace Safety and Health Act.

2.3. **Employer:**

2.3.1. Every person who, by himself or through his agent or representative, employs or engages one or more workers,

2.3.2. The Crown and every agency of the government.

2.4. **Supervisor**: Means a person who has charge of a workplace or authority over a worker.

2.5. **Worker**:

2.5.1. Any person who is employed by an employer to perform a service whether for gain or reward, or hope of gain or reward or not.

2.5.2. Any person engaged by another person to perform services, whether under a contract of employment or not.

2.5.3. Any person undergoing training or serving an apprenticeship at an education institution or at any other place.

2.6. **Director:** means the person administratively responsible for the department or unit. Director includes heads of departments.

2.7. **OESH:** means the Occupational and Environmental Safety and Health Unit.

2.8. **Accessible** – Easily located, being in proper working condition and of sufficient quantity.

2.9. **Healthcare Workers (HCWs)** – Includes all contracted individuals, volunteers, students, researchers, WRHA medical staff, teachers and educators, members of the Board of Directors of the facility, information managers, and employees of the WRHA or agents of any of the above or of other health agencies.

2.10. **Manual Handling** - means any activity requiring the use of force exerted by a person to lift, lower, push, pull carry or otherwise move or restrain any object.

2.11. **Hazardous manual handling** is defined as manual handling which has any of the following characteristics

- Repetitive or sustained application of force.
- Repetitive application of force means using force repeatedly over a period of time to move or support an object.
- Repetitive or sustained awkward posture; an awkward posture is one in which any part of the body is in an uncomfortable or unnatural position e.g. leaning over a low bath to bathe a patient.
- Repetitive or sustained movement; means using the same parts of the body to repeat similar movements over a period of time.
- Application of high force being an activity involving a single or repetitive use of force that would be reasonable to expect that person in the workforce may have difficulty undertaking; the force required to lift or otherwise handle heavy weights, to push or pull objects that are hard to move.
- Manual handling of unstable or unbalanced loads or loads that are difficult to grasp or hold.

2.12. **Musculoskeletal Injury (MSI)** – means an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue, including a sprain, strain or inflammation that may occur to a worker in a workplace and that is caused or aggravated by any of the following:

- a repetitive motion;
- a forceful exertion;
- vibration;
- mechanical compression;
- a sustained or awkward posture;
- a limitation on motion or action;
- any other factor that creates a risk of musculoskeletal injury.

2.13. **Manual Material Handling and Movement Program –** An educational program that outlines injury prevention techniques for identifying and recommending the appropriate method of manual material handling and movement. The components of the program are included in the training and resource manual.

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## 3.0 OPERATIONAL PROCEDURE

3.1. All facilities/sites/programs shall promote a safe manual material handling environment by implementing a program which shall include but is not limited to the following:

3.1.1. Performance and documentation of an assessment of the site/program/facility to determine which, if any employees are exposed to musculoskeletal injury while performing manual material handling tasks.

3.1.2. Identification and documentation of the risks arising from the conditions and circumstances of the worker's work.

3.1.3. Assessment of the risks as identified in 3.1.1 and documentation of this assessment.

3.1.4. Implementation of the control measure to eliminate or reduce, so far as is reasonably practicable, the risk of musculoskeletal injury on the basis of the risk assessment.

3.1.5. Access for staff to manual material handling equipment and devices.

3.1.6. Safe Work Procedures relevant to a facility/site/program specific needs, written and available to staff.

3.1.7. Provision of training as outlined in this operational procedure.

3.1.8. Monitoring of the effectiveness of any control measure implemented.

3.1.8.1. Where monitoring identifies that a control measure has not eliminated or reduced the risk, implement further control measures where it is reasonably practicable to do so.

3.1.9. Supervisory enforcement concerning worker compliance with safe manual material handling and movement components.

3.1.10. Completion and documentation of the initial basic, annual and ongoing training, as required to correct improper use/understanding of safe patient handling and movement. Competency shall be demonstrated. Non-compliance with training methods will indicate a need for retraining.

3.1.11. Ongoing evaluation of the Program to review current evidence and best practices.

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## 4.0 RESPONSIBILITIES

### 4.1. **Employer**

4.1.1. Act in accordance with the objects and purposes of the Act by ensuring, so far as is reasonably practicable, the safety, health and welfare at work of all his workers, and complying with the Act and regulations.

4.1.2. Ensure that all his workers, and particularly his supervisors, foremen, charge hands or similar persons, are acquainted with any safety or health hazards which may be encountered by the workers in the course of their service, and that workers are familiar with the use of all devices or equipment provided for their protection

### 4.2. **Facility Executive Team**

4.2.1. Assign responsibilities to staff within the facility/program to ensure the implementation of this operational procedure.

4.2.2. Ensure resources (information, training, tools, equipment and time) are available to provide / maintain 4.2.1.

4.2.3. Support the Operational Procedure throughout the facility/program.

4.2.4. Ensure that sufficient lifting equipment/aids and devices are available for HCWs to use when needed for safe manual material handling and movement as far as is reasonably practicable.

4.2.5. Ensure that acceptable storage locations are available for the lifting equipment/aids.

4.2.6. Ensure preventive and routine maintenance of equipment is assigned.

4.2.7. Ensure education and training opportunities are available.

4.3. **Directors/Managers/Supervisors**

4.3.1. Support a culture of safety, shared responsibility and safe manual material handling and movement within their area.

4.3.2. Identify situations where workers perform tasks involving manual material handling and movement using the facility/site/program identification/documentation system referred to in 3.1.1.

4.3.3. Assess and document the risks identified in 4.3.2.

4.3.4. Implement control measure following the hierarchy of controls to reduce or eliminate the risks identified and assessed.

4.3.5. Establish written safe work procedures based on the above. See Operational Procedure – Safe Work Procedure.

4.3.6. Ensure HCWs successfully complete the basic initial Safe Manual Material Handling and Movement training.

4.3.7. Ensure that injured HCWs receive retraining when returning to work following injury.

4.3.8. Ensure that all tasks are completed safely using manual material handling equipment/devices or other approved manual material handling aids and appropriate techniques as per the safe work procedures.

4.3.9. Purchase equipment within available financial resources.

4.3.10. Ensure mechanical lifting devices and other equipment/aids are available, maintained regularly, in proper working order, and stored conveniently and safely.

4.3.11. Monitor HCW compliance on safe manual material handling/movement.

4.3.12. Assess need for further in-services and request refresher in-service when required.

4.3.13. Involve educators, OESH or other resources as necessary to implement this procedure.

4.3.14. Provide plans to forward recommendations to Capital Planning and Construction Committees as necessary to facilitate manual material handling equipment use and storage.

4.3.15. Ensure that all facility policies are followed if new equipment is being trialed and/or installed.

**4.4. Safe Manual Material Handling Educators/Designate**

4.4.1. Ensure that all elements of the basic program are implemented and evaluated.

4.4.2. Provide all new HCWs with the basic Safe Manual Material Handling and Movement Training at orientation. Basic proficiency must be demonstrated at time of orientation. A written record of proficiency must be retained.

4.4.3. Prioritize continuing education based on current industry standards.

4.4.4. Provide retraining when necessary or upon request.

### 4.5. Workers

4.5.1. Report any occupational health and safety concerns to their supervisor.

4.5.2. Participate in the identification of risks related to safe manual material handling and in the development of safe work practices.

4.5.3. Follow safe work practices and procedures.

4.5.4. Participate in and successfully complete the Safe Manual Material Handling and Movement Program basic orientation.

4.5.5. Demonstrate learned principles and skills related to performing safe manual material handling and movement through competency checks.

4.5.6. Perform pre-use inspections and routine safety assessments of equipment and ensure documentation and records are kept of inspections.

4.5.7. Assess the environment, material being moved/handled and available resources before starting a lift or movement.

4.5.8. Perform all safe manual material handling and movement as outlined in the safe work procedures using appropriate equipment and procedures.

4.5.9. Communicate specific needs and potential risks to the manager/supervisor.

### 4.6. OESH or Designate

4.6.1. Provide Directors/Managers with a list of work related injuries and analysis of trends for review.

4.6.2. Consult with the facility/sit/program on all aspects of this operational procedure.

4.6.3. Ensure that training records are kept.

### 4.7. Joint Workplace Safety and Health Committee

4.7.1. Consult with the facility/site/program on the development and implementation of this operational procedure.

4.7.2. Review and monitor the effectiveness of this operational procedure.

## 5.0 TRAINING REQUIREMENTS

5.1. The training program must be workplace specific, effective and reviewed every three years or when changes which may affect the procedure are introduced in the workplace.

5.2. Training must involve understanding of:

5.2.1. Body Mechanics (safe postures, lifting techniques, manual handling techniques)

5.2.2. Fitness

5.2.3. Identification of risks

5.2.4. General Precautions (test load, grip properly, protect hands, team lifting, help, mechanical devices)

5.2.5. Selection and Use of Equipment

5.2.6. Operational Procedure and applicable Safe Work Procedures

5.3. All training must be documented. Records must be kept as required by the Workplace Safety and Health Act and Regulations.

5.4. Retraining will be offered if necessary or upon request.

## REFERENCES:

Government of Manitoba. (2002). The *Workplace Safety and Health Act – W210*. Winnipeg: Queen's Printer. www.safemanitoba.com

Government of Manitoba. (2006). The *Workplace Safety and Health Regulation – 217/2006*. Winnipeg: Queen's Printer. www.safemanitoba.com

Winnipeg Regional Health Authority – Operational Procedure – Job Hazard Analysis

Winnipeg Regional Health Authority – Operational Procedure – Safe Work Procedures

## 4.2 Resources: Musculoskeletal/Physical Risk Hazards in Manual Material Handling and Movement

| Documents |
| --- |
| **Musculoskeletal/Physical Risk Hazards in Manual Material Handling**<br>▪ **Forceful Exertions**<br>▪ **Repetition**<br>▪ **Awkward or sustained Fixed Postures**<br>▪ **Gripping**<br>▪ **Contact Stresses or Pressures and Repeated Impacts** |

## 4.2 Resources - Musculoskeletal/Physical Hazards in Manual Material Handling

### Forceful Exertions

Force is related to the weight of the object (mass) and how quickly one attempts to move the object (acceleration). The heavier the weight, the more force required to move the object. The faster or harder one tries to accelerate the object, whether it's lifting pushing or pulling, the higher the forces involved.

While there are specific exertion limits that the body can safely manage, the manner and position in which weight is handled will have more of an effect on the risk of injury. For example, holding a 14kg box close to the body at waist height is a safe position for most workers. Holding that same box away from the body with the arms outstretched requires the muscles of the upper body to work harder to hold the position. The forward bending and the resultant compression forces in the low back make the position unsafe.

### Body Mechanics and Forceful Exertions

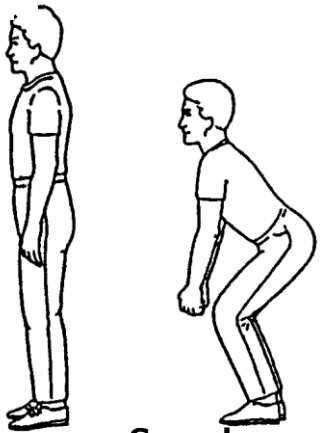
### Power Position

When assuming sustained positions, or when handling weight, it is best to keep the back in neutral, and the body in a power position.

The power position takes advantage of the leverage of the legs while maintaining a neutral spine. The basic principles can be summarized as follows:

- Hips and knees flexed
- Buttocks rotated slightly externally
- Head up

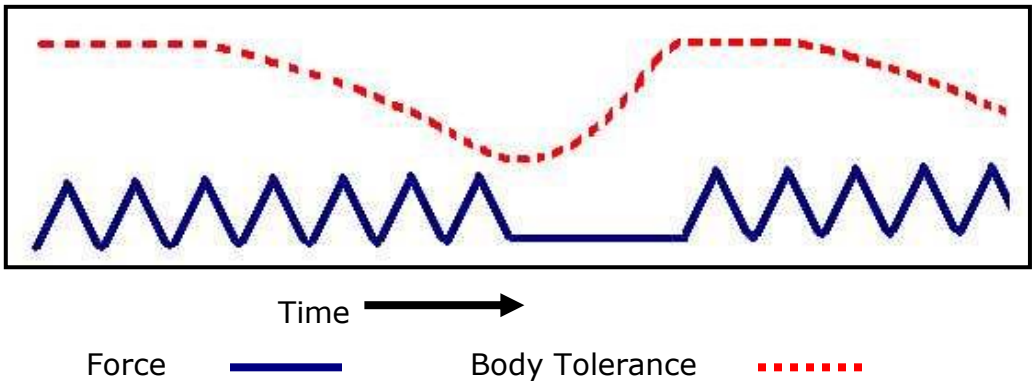
The flexed knees and hips keep the work in the large muscles of the legs, instead of the back. By rotating the buttocks slightly outwards, the low back curve is maintained. By keeping the head up, the neck curve is maintained. The other points to remember are to keep the shoulders relaxed, and breathe naturally and fully.



The "Power" Position

**Repetition (frequency of movements)**

Repetition is one of the hazards related to manual material handling.

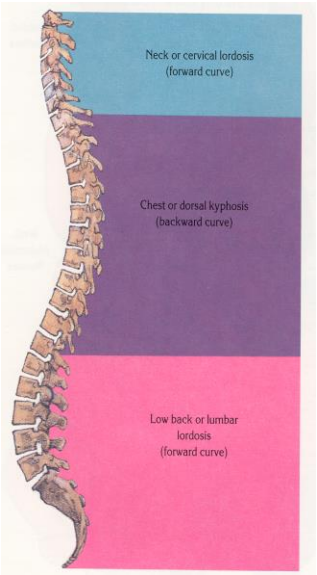


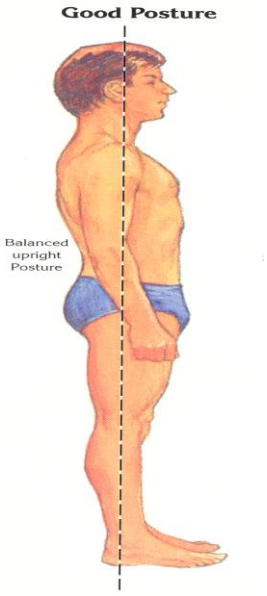

With repeated efforts the muscles begin to fatigue and the capacity to do work begins to decline. The task needs to be stopped for a period in order for the body to recover. The length of time needed for recovery depends on the task as well as the individual's physical conditioning. If the break is too short, the body will not have recovered fully and the capacity to do work decreases more quickly.

The frequency of the task may have an impact on the safe working limits. As the frequency of the task increases in a period of time the amount of force a person can exert will decrease.

**Awkward or Sustained/Fixed Postures**

Neutral posture achieves the best muscle power and joint stability with the least amount of stress on the body. Maintaining spinal curves (neutral posture) when sitting, standing or moving helps the vertebrae absorb shock, promotes even pressure through the discs and places the muscles in the strongest position.



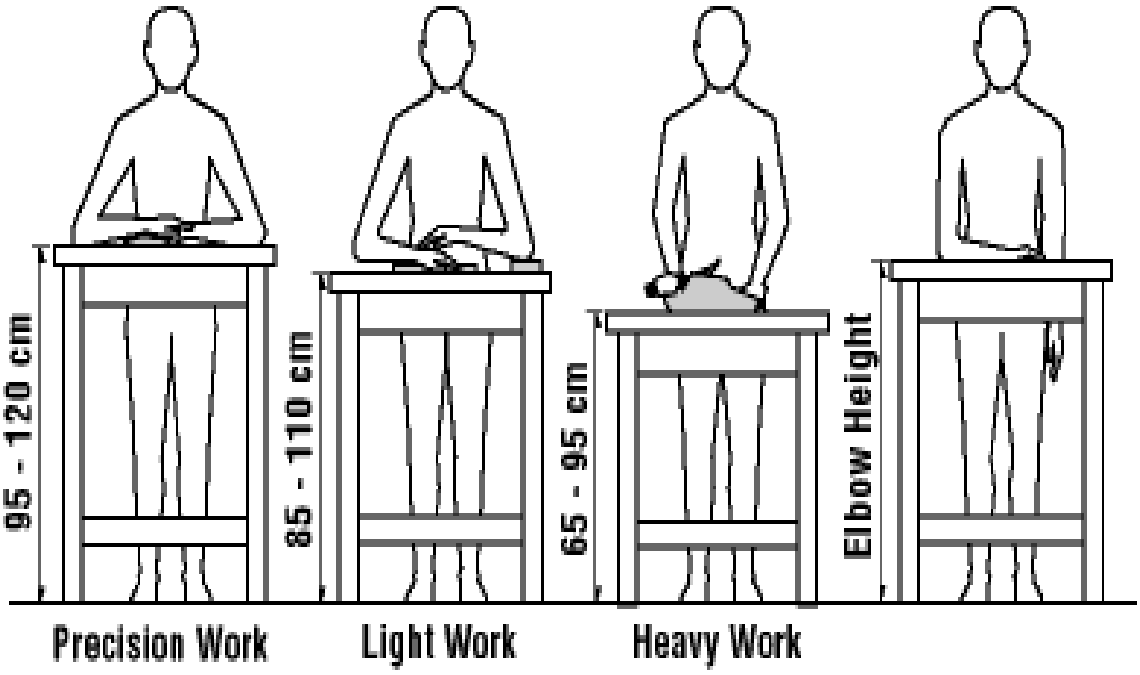

*WCB – British Columbia*

**Sustained/Fixed Postures**

Any body position can cause discomfort and fatigue if it is maintained for long periods of time. Standing, for example, is a natural body posture, and by itself poses no particular health hazards. However, working for long periods in a standing position can cause sore feet, general muscular fatigue, and low back pain. In a well-designed workplace, the worker has the opportunity to choose a variety of well-balanced working positions and alter the positions frequently.

Tables and benches should be adjustable for height. Adjusting the work height is particularly important to match the workstation to the worker's individual body size and to the worker's particular task. If the workstation cannot be adjusted, platforms to raise the table or pedestals on top of workstations should be considered. Adjust the height of the work according to body dimensions, using elbow height as a guide. Different tasks require different work surface heights:

- Precision work, such as writing or electronic assembly - 5 cm above elbow height; elbow support is needed.
- Light work, such as assembly-line or mechanical jobs - about 5-10 cm below elbow height.
- Heavy work, demanding downward forces - from 20-40 cm below elbow height.

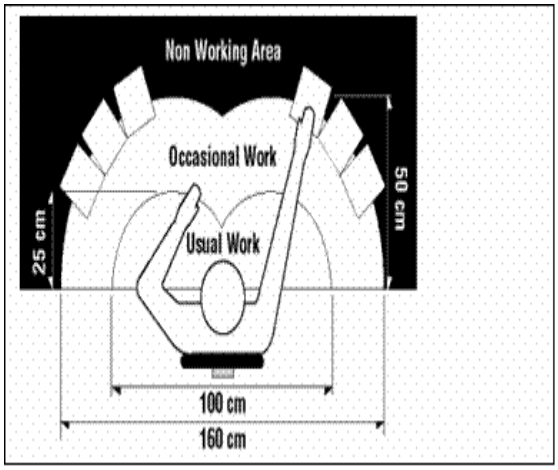


Organization of the work space is another important aspect. There should be enough room to move around and change positions. Providing built-in foot rails or portable footrests allows the worker to shift body weight from one leg to the other. Elbow supports for precision work helps reduce tension.

Changing body positions means less strain on the individual muscles and joints, improves blood supply to the working muscles which contributes to the reduction of overall fatigue.

Organize the work so that the usual operations are within easy reach.

- Always face the object of work.
- Keep body close to the work.
- Use a foot rail or portable footrest to shift body weight from both to one or the other leg.
- Use a seat whenever possible while working, or at least when the work process allows for rest.
- Change working positions frequently so that working in one position is of a reasonably short duration.




**Awkward Postures**

Improper layout of work areas, and certain tasks can make workers use unnatural postures. When parts of the body are near the end range of movement, stretching and compression of tendons and nerves occur. Routinely using fixed or awkward body positions can result in Work Related Musculoskeletal Disorders.

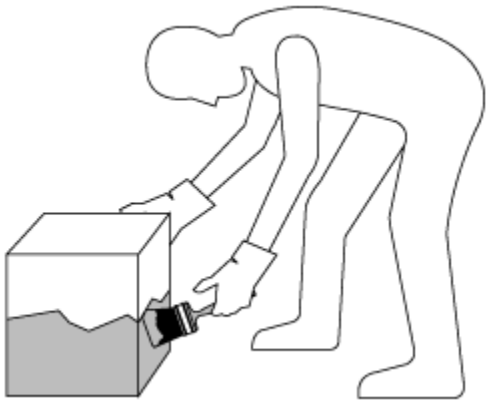


Figure 1 - Bending forward

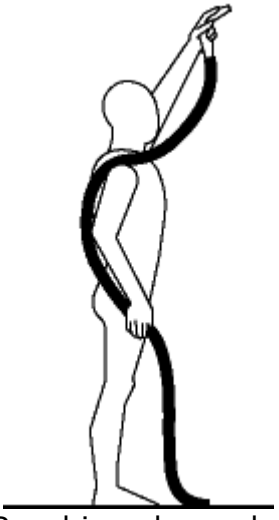


Figure 2 - Reaching above shoulder level

Two aspects of body position can contribute to injuries. For example, working with the torso bent forward backward or twisted can place too much stress on the low back (Figure 1). Other examples of stressful body positions include reaching above shoulder level (Figure 2) and reaching behind the body (Figure 3).

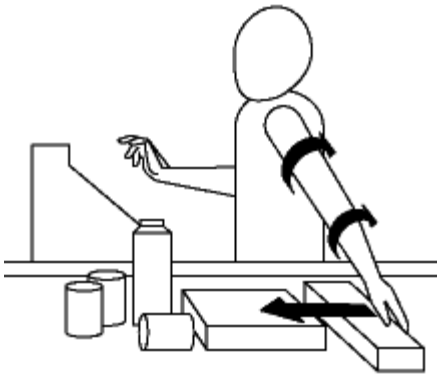


Figure 3 - Reaching behind the body

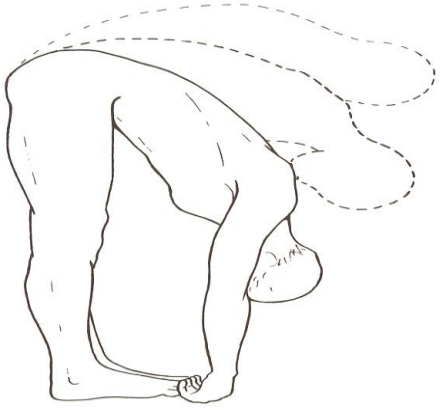
To perform any controlled movement with the arm, muscles in the shoulder and the neck tighten and stay tightened for as long as the task requires. The tightened muscles squeeze the blood vessels, which restricts the flow of blood all the way down to the working muscles of the hand. However, this is where the blood is needed the most because of the intense muscular effort. Two things happen as a result. The neck/shoulder muscles become overtired even though there is little or no movement. At the same time, the reduced blood supply to the rest of the arm accelerates fatigue in the muscles that are moving, making them more prone to injury.

**Body Mechanics and Posture**

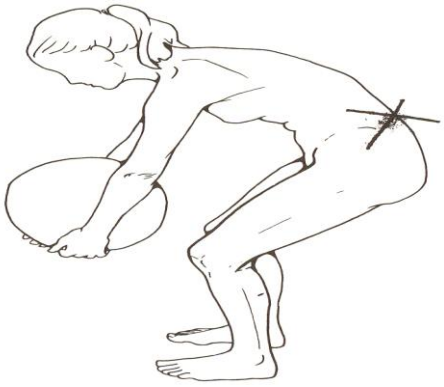
The risk of developing a WMSD can be reduced by incorporating proper body mechanics and posture.

***Standing***

- Keep shoulders low and relaxed and elbows tucked in.
- Tuck chin in and do not bend forward when looking down.
- Avoid extreme bending, stretching and twisting.
- Avoid reaching behind the body.
- Avoid reaching above shoulder level.



*Avoid Lumbar Flexion*

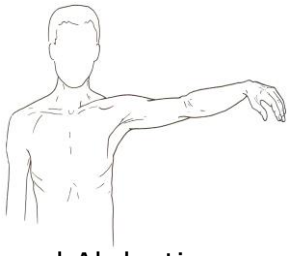


*Avoid Loaded Vertebral Flexion*

***Neutral Shoulder Position***

When the arm is kept close to the body the forces placed upon it are reduced, especially when the elbow is flexed at about 90º. As soon as the arms are brought forward and away from the chest wall, just the weight of the arms alone places additional load onto the low back and shoulder structures.

Forward Flexion



Forward Abduction

Posterior Extension

*Anatomy of Movement (Calais & Germain)*

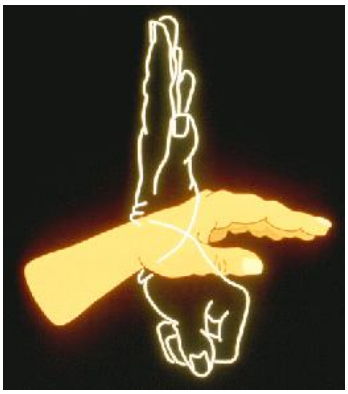
When lifting, it is best to keep the upper arms parallel to the chest wall to about shoulder height (90º). The risk of injury increases as the arm moves beyond shoulder height.

***Reduce reaching.***

Keep frequently used items within a 24" range.

***Wrists in Neutral***

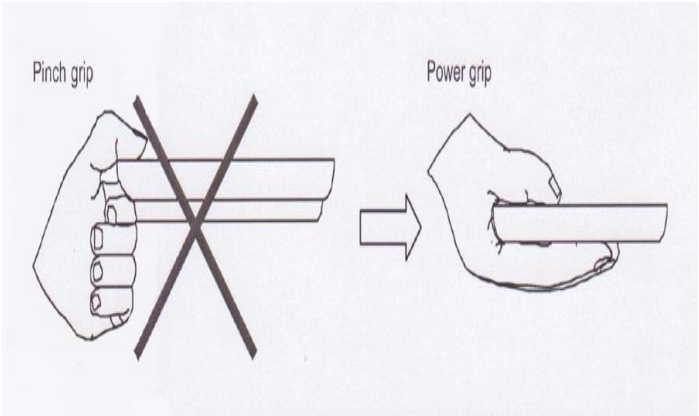
During sustained activity or when engaging in tasks which require wrist movement and manipulation, it is best to keep the wrists in neutral to avoid straining the soft tissue structures into end range of flexion, extension, ulnar or radial deviation.

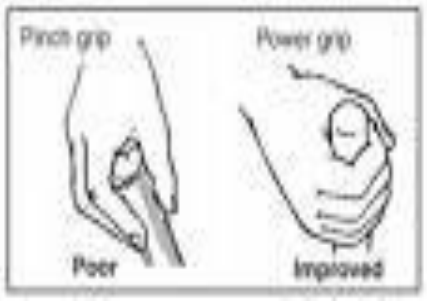


## Gripping

There are two basic kinds of grips: power grip and pinch grip. Each type has specific applications and associated safe working limits.

A power grip involves the entire hand while a pinch grip only uses the fingertips. A power grip provides more force but requires less effort.


Tasks and tools should be designed to promote use of a power grip. Maintain a neutral wrist position and avoid twisting the forearm when using hand tools. If gloves are required ensure a selection of sizes/types are available as large, thick or ill fitting gloves can increase grip strength required to hold or manipulate objects/tools.

## Contact Stresses or Pressures and Repeated Impacts

Contact stress can compress tissues and restrict the normal blood flow in that area. Leaning against a surface, resting forearms on the edge of a desk or using the hand or knee as a hammer are all examples of contact stress. Micro damage from repeated contact can have an additive effect and result in injury similar to a large single blow. To reduce or eliminate contact stress use tools or devices to strike or press objects into place, relocate a knee switch to press with the thigh or foot, choose trigger devices that require less force and apply edge protectors to a counter or desk.

## 4.3 Resources: Hazard Assessment Checklists

| Documents |
| --- |
| **Hazard Assessment Checklists**<br>**General Material Handling and Movement**<br>**Dietary and Foodservice**<br>**Facility Management/Maintenance/Physical Plant**<br>**Housekeeping**<br>**Laundry**<br>**Stores, Shipping, and Receiving**<br>**Forklift** |

## General Material Handling/Movement Hazard Assessment Checklist

### Materials Handling Checklist

"No" responses indicate potential problem areas which should receive further investigation.

| | | |
|---|---|---|
| 1. Are the weights of loads to be lifted judged acceptable by the workforce? | [ ]yes | [ ]no |
| 2. Are materials moved over minimum distances? | [ ]yes | [ ]no |
| 3. Is the distance between the object load and the body minimized? | [ ]yes | [ ]no |
| 4. Are walking surfaces | | |
| level? | [ ]yes | [ ]no |
| wide enough? | [ ]yes | [ ]no |
| clean and dry? | [ ]yes | [ ]no |
| 5. Are objects | | |
| easy to grasp? | [ ]yes | [ ]no |
| stable? | [ ]yes | [ ]no |
| able to be held without slipping? | [ ]yes | [ ]no |
| 6. Are there handholds on these objects? | [ ]yes | [ ]no |
| 7. When required, do gloves fit properly? | [ ]yes | [ ]no |
| 8. Is the proper footwear worn? | [ ]yes | [ ]no |
| 9. Is there enough room to manoeuvre? | [ ]yes | [ ]no |
| 10. Are mechanical aids used whenever possible? | [ ]yes | [ ]no |
| 11. Are working surfaces adjustable to the best handling heights? | [ ]yes | [ ]no |
| 12. Does material handling avoid | | |
| movements below knuckle height and above shoulder height? | [ ]yes | [ ]no |
| static muscle loading? | [ ]yes | [ ]no |
| sudden movements during handling? | [ ]yes | [ ]no |
| twisting at the waist? | [ ]yes | [ ]no |
| extended reaching? | [ ]yes | [ ]no |
| 13. Is help available for heavy or awkward lifts? | [ ]yes | [ ]no |
| 14. Are high rates of repetition avoided by | | |
| job rotation? | [ ]yes | [ ]no |
| self-pacing? | [ ]yes | [ ]no |
| sufficient pauses? | [ ]yes | [ ]no |
| 15. Are pushing or pulling forces reduced or eliminated? | [ ]yes | [ ]no |
| 16. Does the employee have an unobstructed view of handling the task? | [ ]yes | [ ]no |
| 17. Is there a preventive maintenance program for equipment? | [ ]yes | [ ]no |
| 18. Are workers trained in correct handling and lifting procedures? | [ ]yes | [ ]no |

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## Dietary and Foodservice Hazard Assessment Checklist

Manual material handling involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Risks factors include forceful exertions, awkward postures, repetitive motions, pressure points and static postures.

This checklist is designed to assist in the identification of hazards/risks related to manual material handling. This checklist must be made specific to your workplace. It can be used in conjunction with a job hazard analysis. Control measures must then be determined to eliminate or reduce the hazard/risk.

| Completed By: | Date Completed: |
|---|---|

| **Hazard or Risk Factor Identification - Dietary** | **SAFE** | **UNSAFE** | **N/A** |
|---|---|---|---|
| Lifting, Lowering and Carrying - General | | | |
| Do workers feel that the weight of the loads is acceptable? | | | |
| Do workers feel that the shape/size of the loads is acceptable? | | | |
| Do any of the loads handled exceed 50 pounds? | | | |
| Are any of the objects difficult to bring close to the body due to size or shape? | | | |
| Are the loads easy to grasp? | | | |
| Are the loads stable? | | | |
| Are workers able to hold the loads without losing their grip? (i.e. slipping) | | | |
| Are there handholds on these objects? | | | |
| Is most of the load handled by only one arm, hand or shoulder? | | | |
| Does the frequency of lifting exceed 5 lifts per minute? | | | |
| Do any of the vertical lifts exceed 3 feet? | | | |
| Do carries last longer than 1 minute? | | | |
| Do tasks require large sustained pushing or pulling forces? | | | |
| Are materials moved over minimum distances? | | | |
| Are walking surfaces level? | | | |
| Are walkways/doorways wide enough? | | | |
| Are walkways clean, dry and in good condition? | | | |
| Is there enough room to turn? | | | |
| Are mechanical aids available? | | | |
| Are mechanical aids in good conditions? | | | |
| Are mechanical aids part of a preventative maintenance program? | | | |
| Is help available for heavy or awkward lifts? | | | |

| | | | |
|---|---|---|---|
| Is the proper footwear worn? | | | |
| Hazard or Risk Factor Identification - Dietary | **SAFE** | **UNSAFE** | **N/A** |
| Do any of the tasks require fast movement such as throwing or swinging? | | | |
| Do any of the tasks require awkward body postures such as picking up off the floor, twisting, reaching or excessive bending? | | | |
| **Bowls/Containers of Foods** | | | |
| Are the bowls/containers of food heavy when carrying? | | | |
| Are the bowls/containers heavy or awkward to pour? | | | |
| Do workers hold or carry the bowls/containers with one hand? | | | |
| **Using mixers and mixing bowls** | | | |
| Is the height of the mixer appropriate for the workers? | | | |
| Do workers have to reach below knee height to insert or remove the mixing bowls? | | | |
| Are the mixing bowls or attachments carried by the workers? | | | |
| **Using ovens and steamers** | | | |
| Do workers have to reach excessively into ovens or steamers because of their depth? | | | |
| Do workers have to reach above shoulder height to access ovens or steamers? | | | |
| Do workers have to reach below knee height to access ovens or steamers? | | | |
| Do the oven/steamer doors open downwards or sideways? *Sideways is better as it doesn't cause the worker to reach over it* | | | |
| Do workers have to exert themselves to place or remove food in or out of the ovens or steamers? | | | |
| **Preparing soup** | | | |
| Do workers have to lift heavy pots of soup or other food? | | | |
| Does the height of the stove make workers reach above shoulder height to stir pots? | | | |
| Do workers have to pour soup into large pots or containers which are heavy to move? | | | |
| Do workers stir soup kettles with spoons or paddles? | | | |
| **Tray lines** | | | |
| Do workers have to manually push trays along the tray line surface? | | | |
| Do workers have to reach excessively for trays? | | | |
| Do workers use an awkward posture to place food on trays? | | | |
| Do workers use an awkward posture to place trays on carts? | | | |
| Is the tray line too fast? | | | |

| | | | |
|---|---|---|---|
| **Cart Use** | | | |
| Are the carts hard to push? | | | |
| Are the carts hard to turn or back up? | | | |
| Are the carts difficult to see over or around? | | | |
| Are the carts wide and difficult to fit through doorways? | | | |
| Do the carts have handles? | | | |
| Are the handles adequate? | | | |
| Do they get stuck on uneven surfaces or elevator openings? | | | |
| **Busing Tables and Scraping Dishes** | | | |
| Do workers lift full dish bins and cutlery buckets? | | | |
| Do workers hold bins close to their bodies when carrying? (safe) | | | |
| Do workers lift or carry more than one dish rack at a time? | | | |
| **Soaking, Pre-Rinsing and Washing Dishes and Pots (sink)** | | | |
| Do workers have to bend excessively to place/remove/wash items in the sink? | | | |
| Do workers lift items out of the sink that have water in them? | | | |
| Do workers lift from below knee height? | | | |
| Do workers use forceful exertion to scrub pots? | | | |
| **Sorting and loading dishes** | | | |
| Do workers lift and carry full dish racks to the area they are washed? | | | |
| Do workers have to push full dish racks down the dish line? | | | |
| When sorting dishes, do workers use awkward posture? | | | |
| **Storing dishes, pots, and food** | | | |
| Are carts available in storage areas for transporting heavier items? | | | |
| Do workers feel that the weight of items they are required to lift is acceptable? | | | |
| Does the depth of the storage shelves cause workers to reach excessively? | | | |
| Does the height of the storage shelves cause workers to reach excessively? | | | |
| Does the height of the storage shelves cause workers to bend excessively? | | | |
| Are storage areas congested limiting access to areas? | | | |
| Are storage areas congested so that carts cannot be used in the areas? | | | |
| **General cleanup and waste removal** | | | |
| Do workers have to lift and carry heavy garbage bags? | | | |
| Are excess amounts of liquid waste put into garbage bags? | | | |
| **Dish Chemicals** | | | |
| Are chemical containers heavy? | | | |
| Do chemical containers have to be lifted into spill containment? | | | |
| Are chemical containers awkward to move or lift? | | | |
| Do chemical containers have handles? | | | |
| Are chemical containers placed in an area with limited space for workers to move? | | | |
| Are chemical containers stored far away from where they are used or | | | |

| | | | |
|---|---|---|---|
| placed when in use? | | | |
| **Additional Questions (specific to your facility/department)** | | | |
| | | | |
| | | | |
| | | | |
| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place? Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

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## Facility Management – Maintenance – Physical Plant Checklist

Manual material handling involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Risks factors include forceful exertions, awkward postures, repetitive motions, pressure points and static postures.

This checklist is designed to assist in the identification of hazards/risks related to manual material handling. This checklist must be made specific to your workplace. It can be used in conjunction with a job hazard analysis. Control measures must then be determined to eliminate or reduce the hazard/risk.

| Completed By: | Date Completed: | | |
|---|---|---|---|
| **Potential Hazard or Risk Factor – Facility Management** | **SAFE** | **UNSAFE** | **N/A** |
| **Lifting, Lowering and Carrying - General** | | | |
| Do workers feel that the weight of the loads is acceptable? | | | |
| Do workers feel that the shape/size of the loads is acceptable? | | | |
| Do any of the loads handled exceed 50 pounds? | | | |
| Are any of the objects difficult to bring close to the body because of size or shape? | | | |
| Are the loads easy to grasp? | | | |
| Are the loads stable? | | | |
| Are workers able to hold the loads without losing their grip? (i.e. slipping) | | | |
| Are there handholds on these objects? | | | |
| Is most of the load handled by only one arm, hand or shoulder? | | | |
| Does the frequency of lifting exceed 5 lifts per minute? | | | |
| Do any of the vertical lifts exceed 3 feet? | | | |
| Do carries last longer than 1 minute? | | | |
| Do tasks require large sustained pushing or pulling forces? | | | |
| Are materials moved over minimum distances? | | | |
| Are walking surfaces level? | | | |
| Are walkways/doorways wide enough? | | | |
| Are walkways clean, dry and in good condition? | | | |
| Is there enough room to turn? | | | |
| Are mechanical aids available? | | | |
| Are mechanical aids in good conditions? | | | |
| Are mechanical aids part of a preventative maintenance program? | | | |
| Is help available for heavy or awkward lifts? | | | |

| | SAFE | UNSAFE | N/A |
|---|---|---|---|
| Is the proper footwear worn? | | | |
| Do any of the tasks require fast movement such as throwing, swinging or rapid walking? | | | |
| Do any of the tasks require awkward body postures such as picking up off the floor, twisting, reaching or excessive bending? | | | |
| **Carts** | | | |
| Are the carts hard to push? | | | |
| Are the carts hard to turn or back up? | | | |
| Are the carts difficult to see over or around? | | | |
| Are the carts wide and difficult to fit through doorways? | | | |
| Do the carts have handles? | | | |
| Are the handles adequate? | | | |
| Do they get stuck on uneven surfaces or elevator openings? | | | |
| Are the shelves too high? | | | |
| Are the shelves too low? | | | |
| **Hand Tools** | | | |
| Are hand tools properly designed and fit to the user? | | | |
| Do hand tools have padded, non slip handles? | | | |
| Do hand tools allow the wrist to remain straight? | | | |
| Are hand tools light? | | | |
| Do hand tools have trigger bars rather than single finger triggers? | | | |
| **Cranes and Hoists** | | | |
| Is the rating plate containing the maximum lifting capacity attached? | | | |
| Is the equipment part of a preventive maintenance program? | | | |
| Is the equipment inspected pre-use on a daily basis? | | | |
| Are traffic areas kept clear? | | | |
| Can the equipment be operated by remote control? | | | |
| Do the control buttons require little effort to activate? | | | |
| **Additional Questions (specific to your facility/department)** | | | |
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| Potential Hazard or Risk Factor – Facility Management | SAFE | UNSAFE | N/A |
|---|---|---|---|
| **Workplace Specific** | | | |
| Checklist should be made specific to your workplace based on the tasks that are performed by your staff. The following are some general hazards/risks that may be present. | | | |
| | | | |
| By Job Title: | | | |
| Painters: Review weight of paint cans/trays, ladders; Is paint dispensed to a smaller container; Rollers and extensions should be lightweight (aluminum or plastic) | | | |
| Plumbers: Review weight of tools and materials being used; lifting below knee height | | | |
| Carpenters: Review machine use (placing product into machine); weight of tools and materials; transport of materials (e.g. drywall) | | | |
| Electrician: Review weight of tools and equipment; transport of materials lifting above shoulder height | | | |
| Groundskeeper: Review push mowers (ease of movement); emptying lawn mower bags; picking up lawn clippings/branches; snow removal techniques (shovel, snow blower) | | | |
| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place? Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

# Housekeeping Hazard Assessment Checklist

Manual material handling involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Risks factors include forceful exertions, awkward postures, repetitive motions, pressure points and static postures.

This checklist is designed to assist in the identification of hazards/risks related to manual material handling. This checklist must be made specific to your workplace. It can be used in conjunction with a job hazard analysis. Control measures must then be determined to eliminate or reduce the hazard/risk.

| Completed By: | Date Completed: | | |
|---|---|---|---|
| **Potential Hazard or Risk Factor - Housekeeping** | **SAFE** | **UNSAFE** | **N/A** |
| **Lifting, Lowering and Carrying - General** | | | |
| Do workers feel that the weight of the loads is acceptable? | | | |
| Do workers feel that the shape/size of the loads is acceptable? | | | |
| Do any of the loads handled exceed 50 pounds? | | | |
| Are any of the objects difficult to bring close to the body because of size or shape? | | | |
| Are the loads easy to grasp? | | | |
| Are the loads stable? | | | |
| Are workers able to hold the loads without losing their grip? (i.e. slipping) | | | |
| Are there handholds on these objects? | | | |
| Is most of the load handled by only one arm, hand or shoulder? | | | |
| Does the frequency of lifting exceed 5 lifts per minute? | | | |
| Do any of the vertical lifts exceed 3 feet? | | | |
| Do carries last longer than 1 minute? | | | |
| Do tasks require large sustained pushing or pulling forces? | | | |
| Are materials moved over minimum distances? | | | |
| Are walking surfaces level? | | | |
| Are walkways/doorways wide enough? | | | |
| Are walkways clean, dry and in good condition? | | | |
| Is there enough room to turn? | | | |
| Are mechanical aids available? | | | |
| Are mechanical aids in good conditions? | | | |
| Are mechanical aids part of a preventative maintenance program? | | | |
| Is help available for heavy or awkward lifts? | | | |
| Is the proper footwear worn? | | | |

| Potential Hazard or Risk Factor - Housekeeping | SAFE | UNSAFE | N/A |
|---|---|---|---|
| Do any of the tasks require fast movement such as throwing, swinging or rapid walking? | | | |
| Do any of the tasks require awkward body postures such as picking up off the floor, twisting, reaching or excessive bending? | | | |
| **Carts** | | | |
| Are the carts hard to push? | | | |
| Are the carts hard to turn or back up? | | | |
| Are the carts difficult to see over or around? | | | |
| Are the carts wide and difficult to fit through doorways? | | | |
| Do the carts have handles? | | | |
| Are the handles adequate? | | | |
| Do they get stuck on uneven surfaces or elevator openings? | | | |
| Are the shelves too high? | | | |
| Are the shelves too low? | | | |
| **Moving Furniture** | | | |
| Do workers have to move furniture or set up for events? | | | |
| Is furniture on casters? | | | |
| Is mechanical lift assist equipment available? | | | |
| Is mechanical lift assist equipment part of a preventive maintenance program? | | | |
| **Mopping Floors** | | | |
| Do workers lift and move heavy or awkward furniture in order to mop floors? | | | |
| Do workers consider the weight of the pail of water to be acceptable? | | | |
| Do workers have to lift the full pail of water into/out of a sink? | | | |
| Do workers have to lift the pail of water to dump it? | | | |
| Do workers use awkward postures when mopping? | | | |
| **Sweeping Floors** | | | |
| Are handle heights no higher than workers' eye level? | | | |
| Are statically charged brooms used? | | | |
| Do dust pans have long handles so workers don't have to bend over? | | | |
| **Vacuuming** | | | |
| Do workers lift and move furniture in order to vacuum? | | | |
| Are vacuums heavy? | | | |
| Do vacuums move easily? | | | |
| **Buffers and Floor Machines** | | | |
| Are buffers or floor machines difficult to manoeuvre? | | | |
| Do buffers or floor machines leave the floor wet? | | | |
| **Bed Making** | | | |
| Are beds against walls forcing the worker to move it to make/change the bed? | | | |

| Do workers reach across beds instead of walking around the bed? | | | |
|---|---|---|---|
| Potential Hazard or Risk Factor - Housekeeping | **SAFE** | **UNSAFE** | **N/A** |
| Do workers raise beds before making/changing the bed? | | | |
| **Space Limitations** | | | |
| Is there enough room for workers to bring carts to the area of use? | | | |
| Does furniture have to be moved for workers to clean? | | | |
| **Waste Pickup and Disposal** | | | |
| Are waste bags heavy or overfilled? | | | |
| Do waste bags contain liquid? | | | |
| Are outside bins easy to access? | | | |
| Do workers throw bags over the top of outside bins? | | | |
| | | | |
| **Additional Questions (specific to your facility/department)** | | | |
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| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place? Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

# Laundry Hazard Assessment Checklist

Manual material handling involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Risks factors include forceful exertions, awkward postures, repetitive motions, pressure points and static postures. This checklist is designed to assist in the identification of hazards/risks related to manual material handling. This checklist must be made specific to your workplace. It can be used in conjunction with a job hazard analysis. Control measures must then be determined to eliminate or reduce the hazard/risk.

| Completed By: | Date Completed: |
|---|---|

| **Hazard or Risk Factor Identification - Laundry** | SAFE | UNSAFE | N/A |
|---|---|---|---|
| Lifting, Lowering and Carrying - General | | | |
| Do workers feel that the weight of the loads is acceptable? | | | |
| Do workers feel that the shape/size of the loads is acceptable? | | | |
| Do any of the loads handled exceed 50 pounds? | | | |
| Are any of the objects difficult to bring close to the body due to size/shape? | | | |
| Are the loads easy to grasp? | | | |
| Are the loads stable? | | | |
| Are workers able to hold the loads without losing their grip? (i.e. slipping) | | | |
| Are there handholds on these objects? | | | |
| Is most of the load handled by only one arm, hand or shoulder? | | | |
| Does the frequency of lifting exceed 5 lifts per minute? | | | |
| Do any of the vertical lifts exceed 3 feet? | | | |
| Do carries last longer than 1 minute? | | | |
| Do tasks require large sustained pushing or pulling forces? | | | |
| Are materials moved over minimum distances? | | | |
| Are walking surfaces level? | | | |
| Are walkways/doorways wide enough? | | | |
| Are walkways clean, dry and in good condition? | | | |
| Is there enough room to turn? | | | |
| Are mechanical aids available? | | | |
| Are mechanical aids in good condition? | | | |
| Are mechanical aids part of a preventative maintenance program? | | | |
| Is help available for heavy or awkward lifts? | | | |
| Is the proper footwear worn? | | | |
| Do any of the tasks require fast movement such as throwing or swinging? | | | |
| Do any of the tasks require awkward body postures such as picking up off the floor, twisting, reaching or excessive bending? | | | |

| Hazard or Risk Factor Identification - Laundry | SAFE | UNSAFE | N/A |
|---|---|---|---|
| **Laundry bins** | | | |
| Are the bins hard to push? | | | |
| Are the bins hard to turn or back up? | | | |
| Do the bins have handles? | | | |
| Are the handles on the bins adequate? | | | |
| Are the bins deep, causing workers to bend excessively to reach laundry? | | | |
| Are the bins low, causing workers to bend excessively to push them? | | | |
| Are the bins pushed for long distances? | | | |
| **Laundry bags** | | | |
| Are laundry bags overfilled (more than ½ way) regularly? | | | |
| Are laundry bags filled with wet laundry regularly? | | | |
| Is it difficult to remove the laundry from the bags? | | | |
| **Sorting dirty laundry** | | | |
| Is the laundry sorted on the floor causing workers to bend excessively? | | | |
| Is the sorting table at an appropriate height for all workers? | | | |
| Do workers use pinch grips (fingers only) or power grip (entire hand) to grasp laundry? | | | |
| Is laundry sorted into categories more than once? (e.g. many categories and then combined) | | | |
| **Washing and drying** | | | |
| Is the height of the equipment appropriate for loading and unloading? | | | |
| Do workers place bins directly in front of the door and reach over to load/unload? | | | |
| Do workers forcefully push laundry into the machines? | | | |
| Do workers forcefully pull laundry out of machines? | | | |
| Are the machines very deep causing workers to reach far inside? | | | |
| **Folding laundry** | | | |
| Is a folding table used? | | | |
| Is the height of the table appropriate? | | | |
| Is this task performed by the same worker for more than three hours per shift? | | | |
| Do workers use pinch grips (fingers only) or power grip (entire hand) to grasp laundry? | | | |
| **Laundry carts** | | | |
| Are the carts heavy to push? | | | |
| Are the carts to high to see over? | | | |
| Are the carts easy to turn or back up? | | | |
| Does the width of the cart cause it to strike doorways or catch workers hands in doorways? | | | |
| Are some shelves too high? | | | |
| Are some shelves too low? | | | |

| Hazard or Risk Factor Identification - Laundry | SAFE | UNSAFE | N/A |
|---|---|---|---|
| **Laundry Chemicals** | | | |
| Are laundry chemical containers heavy? | | | |
| Do laundry chemical containers have to be lifted into spill containment? | | | |
| Are laundry chemical containers awkward to move or lift? | | | |
| Do laundry chemical containers have handles? | | | |
| Are laundry chemical containers placed in an area with limited space for workers to move? | | | |
| Are laundry chemical containers stored far away from where they are used or placed when in use? | | | |
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| **Additional Questions (specific to your facility/department)** | | | |
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| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place? Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

# Stores, Shipping and Receiving Hazard Assessment Checklist

Manual material handling involves lifting, lowering, pushing, pulling, gripping, pinching, carrying and holding objects by hand. Risks factors include forceful exertions, awkward postures, repetitive motions, pressure points and static postures.

This checklist is designed to assist in the identification of hazards/risks related to manual material handling. This checklist must be made specific to your workplace. It can be used in conjunction with a job hazard analysis. Control measures must then be determined to eliminate or reduce the hazard/risk.

| Completed By: | Date Completed: | | |
|---|---|---|---|
| **Potential Hazard or Risk Factor – Stores, Shipping, Receiving** | **SAFE** | **UNSAFE** | **N/A** |
| **Lifting, Lowering and Carrying – General** | | | |
| Do workers feel that the weight of the loads is acceptable? | | | |
| Do workers feel that the shape/size of the loads is acceptable? | | | |
| Do any of the loads handled exceed 50 pounds? | | | |
| Are any of the objects difficult to bring close to the body because of size or shape? | | | |
| Are the loads easy to grasp? | | | |
| Are the loads stable? | | | |
| Are workers able to hold the loads without losing their grip? (i.e. slipping) | | | |
| Are there handholds on these objects? | | | |
| Is most of the load handled by only one arm, hand or shoulder? | | | |
| Does the frequency of lifting exceed 5 lifts per minute? | | | |
| Do any of the vertical lifts exceed 3 feet? | | | |
| Do carries last longer than 1 minute? | | | |
| Do tasks require large sustained pushing or pulling forces? | | | |
| Are materials moved over minimum distances? | | | |
| Are walking surfaces level? | | | |
| Are walkways/doorways wide enough? | | | |
| Are walkways clean, dry and in good condition? | | | |
| Is there enough room to turn? | | | |
| Are mechanical aids available? | | | |
| Are mechanical aids in good conditions? | | | |
| Are mechanical aids part of a preventative maintenance program? | | | |
| Is help available for heavy or awkward lifts? | | | |
| Is the proper footwear worn? | | | |

| Potential Hazard or Risk Factor – Stores, Shipping, Receiving | SAFE | UNSAFE | N/A |
|---|---|---|---|
| Do any of the tasks require fast movement such as throwing, swinging or rapid walking? | | | |
| Do any of the tasks require awkward body postures such as picking up off the floor, twisting, reaching or excessive bending? | | | |
| Storage – Shelving | | | |
| Carts | | | |
| **Equipment – Hand Truck** | | | |
| Are hand trucks available for use? | | | |
| Is the height of the hand truck appropriate for workers? | | | |
| Do workers move hand trucks up/down inclined surfaces? | | | |
| Do workers move hand trucks over uneven surfaces? | | | |
| Are tires in good condition? | | | |
| Are hand trucks part of the preventative maintenance program? | | | |
| **Equipment – Pallet Jack** | | | |
| Are pallet jacks available for use? | | | |
| Do workers move pallet jacks up/down inclined surfaces? | | | |
| Do workers move pallet jacks over uneven surfaces? | | | |
| Are tires in good repair? | | | |
| Are pallet jacks part of the preventative maintenance program? | | | |
| Equipment - Forklift | | | |
| **Plastic Wrapping** | | | |
| Are cases wrapped in plastic? | | | |
| **Wooden Pallets** | | | |
| Are wooden pallets used at your location? | | | |
| Are pallets inspected on a regular basis? | | | |
| Are gloves used when handling wooden pallets by hand? | | | |
| **Storage** | | | |
| Is storage height too high? | | | |
| Is storage height too low? | | | |
| Are heaviest items stored at waist height? | | | |
| Are most frequently used items stored at waist height? | | | |
| **Aisle Width** | | | |
| Are aisle widths adequate to allow for equipment movement? | | | |
| Are aisle widths adequate to allow workers to load and unload product? | | | |
| **Work Practices and Work Flow** | | | |
| Is product handled repetitively throughout the workplace? I.e. how many times is the same box moved | | | |
| Are slots tagged with weights of cases? | | | |
| Are workers required to wear appropriate footwear? | | | |

| Potential Hazard or Risk Factor – Stores, Shipping, Receiving | | | |
|---|---|---|---|
| **Additional Questions (specific to your facility/department)** | | | |
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| | | | |
| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place? Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

# Forklift Hazard Assessment Checklist

This checklist can be used to assist you in the evaluation of the ergonomic properties of forklifts. It must be made specific to the type of equipment that you are using.

| Completed By: | Date Completed: | | |
|---|---|---|---|
| Equipment: Forklift | | | |
| **Potential Hazard or Risk Factor - Forklift** | **SAFE** | **UNSAFE** | **N/A** |
| **Forklift – Operator Seated** | | | |
| Does the operator consider the seat to be comfortable? | | | |
| Does the seat fit the operator? I.e. can the operator sit without pressure on thighs and calves? | | | |
| Is the seat height adjustable? | | | |
| Are there armrests on the seat? | | | |
| Are the armrests adjustable? | | | |
| Can the operator see the path of travel without assuming an awkward posture? | | | |
| Is the seat padded? | | | |
| Does the seat provide lumbar support? | | | |
| Forklift – Operator Standing | | | |
| Is the surface the operator stands on padded? | | | |
| Can the operator stand in a normal position when travelling? | | | |
| Can the operator change feet position when fatigued? | | | |
| Does the operator have to assume awkward posture when reversing? | | | |
| Can the operator rest the body against a padded surface? | | | |
| Forklift Controls | | | |
| Does the operator have to assume awkward posture to reach controls? | | | |
| Are the controls within easy reach of the operator? | | | |
| Can the controls be operated without excessive force? | | | |
| Can different hand positions be used to operate the controls? | | | |
| Can the controls be operated with either hand? | | | |
| Are the displays located at a level which is easy to read? | | | |
| Are the displays large enough that the operator can read them? | | | |
| Can the displays be read in low light areas? | | | |
| **Additional Questions (specific to your facility/department)** | | | |
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| | | | |
| **Comments** | | | |
| | | | |
| What training do workers currently receive? | | | |
| What controls are already in place?  Do the controls work? | | | |
| What safe work procedures have already been implemented? | | | |

## 4.4 Resources: Hazard Control Options

| Documents |
| --- |
| **By Task:**<br><br>**Lifting, Lowering and Carrying**<br>**Pushing and Pulling**<br>**Repetition**<br>**Posture**<br>**Gripping**<br>**Local Contact Stress** |
| **By Department**<br><br>**Dietary**<br>**Facility Management/Physical Plant/Maintenance**<br>**Housekeeping**<br>**Laundry**<br>**Stores, Shipping and Receiving** |

## Controls By Task

| Hazard Control Options | | | | |
|---|---|---|---|---|
| **Manual material handling hazard** | **Engineering control** | **Administrative control** | **Work Practice control** | **PPE** |
| **Lifting / Lowering** | Reduce weight by repacking to smaller size; change to lighter materials; and organize the work area to avoid lifting above shoulder or below knee level; and introduction of mechanical assist equipment. | Reduce frequency of lifting, rotate work tasks; change from one person to two person lift. | Use of proper lifting/material handling techniques such as proper body mechanics and posture. Training in proper use of equipment, introduce rest breaks. | Work gloves, non-slip safety footwear, coveralls. |
| **Carrying and Holding** | Reduce weight by repacking to smaller size, change to lighter materials. Introduction of carts, mechanical lift and/or conveyor system. | Reduce frequency of carrying, rotate work tasks, reduce distance, design task to promote two handed front carry, assign extra help to carry or hold, introduce rest breaks. | Proper carrying/material handling techniques. | Work gloves, non-slip safety footwear coveralls. |
| **Pushing and Pulling** | Use of carts with appropriate handles, design, and weight capacity, powered moving equipment; tuggers, slides, chutes, conveyor systems. | Reduce the frequency and/or distance. Rotate work tasks, introduce rest breaks, and assign extra help. | Use of proper body mechanics for pushing/pulling. | Non-slip safety footwear, work gloves. |
| **Gripping and Pinching** | Use light weight tools/objects with ergonomic handles, to promote relaxed grip and neutral wrist position. Design work to promote use of a power grip. Build work assist tools to ease the task. | Reduce frequency, rotate work tasks or add tasks to reduce repetitive gripping / pinching. Introduce rest breaks. | Train workers to recognize symptoms of musculoskeletal injury Teach stretching and hand strengthening exercises. | Gloves with vibration dampening properties, padding or special grip surfaces. |
| **Reaching** | Place work between hip and chest level of worker,<br>OR | Reduce frequency rotate tasks. | Use of proper body mechanics and organization of the work area. | Work gloves |

| Hazard Control Options | | | | |
|---|---|---|---|---|
| **Manual material handling hazard** | **Engineering control** | **Administrative control** | **Work Practice control** | **PPE** |
| | Support height of worker to access task between hip and chest height | | | |
| **Task Design** | Reduce size, weight of items, introduce mechanized equipment. | Reduce frequency, rotate work tasks, and designate lift teams. | Manual materials handling training. | Work gloves, non-slip safety footwear coveralls. |
| **Work Station Design** | Re-organize or design the work space to place work between shoulders and knees. | Reduce frequency/loads, rotate work tasks, and introduce rest breaks. | Education regarding ergonomic work station design. | Safety gloves, non-slip safety footwear. |
| **Environmental Factors** | Design work area with appropriate ventilation, heating / cooling, lighting. | Rotate workers through work areas; take breaks from heat or cold. Pace the work to take into account work inefficiencies due to environmental factors. | Heat /cold stress recognition training, work hardening to acclimatize workers. | Protective clothing designed for use in the particular environmental conditions. |
| **Personal factors** | Specify appropriate clothing/dress codes for the work tasks. Wear non-slip safety footwear. Encourage workers to stay physically fit. | Introduce clothing requirements for manual materials handling. Offer physical fitness programs. Preventative maintenance programs for equipment. | Training/education in safe manual materials handling. | Properly fitted PPE for the task at hand. |

| Hazard and Control Options by Task | |
|---|---|
| **Hazard or Risk Factor** | **Control Options** |
| **Forceful Exertion (Lifting, Lowering and Carrying)** | |
| • Weight, shape or size (awkward)<br>• Grip (unable to use power grip)<br>• Location of object (above shoulder or below knee)<br>• Surface slippery or no handles<br>• Performed<br>  ○ repetitively<br>  ○ quickly<br>  ○ for extended periods of time<br>  ○ while seated or kneeling<br>  ○ immediately after prolonged flexion or sitting<br>• Moving over long distances<br>• Fragile loads<br>• Chemical or Biological Hazards<br>• Slips, trips, and falls | • Provide training in proper body mechanics and lift techniques<br>• Identify the weight on all loads<br>• Plan routes and test loads before lifting<br>• Instead of carrying one heavy load, separate into smaller, lighter loads, make multiple trips, use a cart or ask a co-worker for help.<br>• Minimize distance of the load from the worker<br>• Minimize the vertical distance when lifting and avoid tasks above shoulder height or below knee height<br>• Minimize carrying distance<br>• Improve the grip on the load with handles or cut outs<br>• Move to smaller/lighter packaging |
| **Forceful Exertion (Pushing and Pulling)** | |
| • Over-exertion when pushing or pulling<br>• Size and/or shape of load<br>• No handles or incorrect handle height<br>• Sudden starts/stops<br>• Poor cart design<br>• Casters/wheels not maintained | • Provide training in proper body mechanics and push/pull techniques<br>• Push whenever possible.<br>• Use two hands when pushing or pulling<br>• Do not pull with arm(s) extended behind the body.<br>• If vision is blocked when pushing a load from behind, push it from the front corner or side<br>• Use carts with the right weight capacity, size, number and type of wheels for the surface and weight.<br>• Ensure horizontal or vertical handles are available<br>• Secure loads to carts<br>• Reduce the load (make two trips) |
| **Repetition** | |
| • Over-exertion from repeating manual material handling tasks | • Job/Task Rotation<br>• Alternate working positions<br>• Combine or eliminate tasks<br>• Stretching |

| | |
|---|---|
| | • Frequent, shorter rest breaks<br>• Ergonomic design of work station, tools and equipment |
| **Posture** | |
| • Bending, twisting, over reaching | • Ergonomic work station design<br>• Appropriate storage (at waist height)<br>• Minimize reaching distances<br>• Remove obstacles |
| **Gripping** | |
| • Use of improper gloves<br>• Poor tool/equipment design<br>• Use of air/power tools | • Keep wrist in neutral (straight) when gripping<br>  ○ Handle type/size/design<br>  ○ Workstation design<br>• Use a power grip rather than a pinch grip<br>• If gloves are required, ensure a proper fit and type is available |
| **Local Contact Stress** | |
| • Handling objects with sharp or uneven edges<br>• Handles with sharp grooves or edges<br>• Movement that require contact with hard surfaces<br>• Palm/knee type control buttons<br>• Power tool trigger with sharp edges<br>• Tool handles that are too short and press on the base of the hand<br>• Handles made of hard material which press on the base of the hand<br>• Kneeling, resting or leaning on sharp of hard surfaces | • Round or pad edges of objects<br>• Avoid tools that rub the wrist<br>• Choose a tool with a spring design to open<br>• Distribute pressure over as wide an area as possible<br>• Use personal protective equipment (knee pads, padded gloves)<br>• Use tools with padded handles |

## Controls By Department

| Hazard and Control Options by Department<br>Kitchen - Dietary | |
|---|---|
| **Hazard or Risk Factor** | **Control Options** |
| **Moving and Emptying Bowls of Prepared Food** | |
| • Bowls may be heavy or awkward to move | • Place less food in it to decrease the weight and amount of force required to lift it<br>• Use a support stand when pouring out the contents of the bowl<br>• Use bowls with handles |
| **Large mixers and mixing bowls** | |
| • Mixers positioned directly on the floor may require workers to use awkward postures to place or remove mixing bowls<br>• Mixing bowls may be heavy or awkward to handle | • Mixer should be placed at a height that allows access to the mixing bowl handles between knuckle and elbow height.<br>• Use dollies to transport heavy bowls<br>• Two workers should lift and lower the bowl, each holding the handle on the side |
| **Ovens and Steamers** | |
| • Height of the equipment or the shelves inside may cause workers to use awkward postures.<br>• Food items may be heavy<br>• Depth of oven/steamer may require over reaching | • Ensure equipment is at appropriate height<br>• Use ovens with side hinged doors as opposed to bottom hinged to reduce reaching<br>• Use oven racks between waist and elbow height.<br>• Decrease cooking quantities (i.e. use smaller pans, cut larger roasts in half and cook in two pans)<br>• Use proper oven mitts/apron |
| **Preparing Soup** | |
| Stovetop<br>• Pots are heavy when full<br>• The height of the pot on top of the stove makes it necessary for workers to over reach when stirring. | • Use smaller pots |
| Soup Kettles<br>• Awkward forward bending when stirring, reaching and tipping<br>• Soup is poured into large pots or containers which are heavy and hard to move.<br>• Stirring requires repetitive movements and force | • Extending handles on soup kettles make it easier to tip the kettle.<br>• Pour soup into smaller pots or containers.<br>• Use two person lift method<br>• Stir soups with large long handled whisks instead of spoons or paddles. Two hands should be used. |
| **Tray Lines** | |
| Manual Tray Lines | |

| | |
|---|---|
| • Workers have to manually push trays along the tray line surface | • Install rollers (non powered) to decrease push/pull force |
| All Tray Lines<br>• Awkward posture to reach and place food on the tray<br>• Awkward posture to place trays onto carts<br>• Lifting or pulling trays from one station to the next<br>• Gripping of heavy trays. | • Do not position carts behind workers – may cause them to twist when placing the trays.<br>• Avoid using shelves above shoulder height or below knee height.<br>• Rotate workers to different stations on tray lines to alter movement/posture<br>• Push trays along the counter rather than lifting or pulling.<br>• Slow line speed by 1-2 seconds. This may not change overall task time significantly and may reduce worker stress. |
| **Carts** | |
| • Difficult to push or steer<br>• Difficult to see over or around<br>• May be wide and hard to fit through doorways<br>• May have high shelves<br>• May be heavy when filled | • Use an appropriate size/type of cart for the task<br>• Reduce the load height<br>• Attach a handle (vertical allows for different worker heights).<br>• Load according to weight capacity of the cart<br>• Ensure workers can see above the load<br>• Push rather than pulling.<br>• Add handles to metal food inserts on steam carts.<br>• Maintain wheels and casters through preventive maintenance. |
| **Bussing Tables and Scraping Dishes** | |
| Lifting dish bins and cutlery buckets. | • Avoid filling dish bins completely to limit their weight.<br>• Fill cutlery buckets halfway or use smaller bucket.<br>• When lifting or carrying dish bins keep them as close to the body as possible.<br>• Use entire hand (not just fingers) to grip dishes, trays and bins.<br>• Use two hands to carry trays and bins and grip them in the middle.<br>• Never stack full trays or dish racks on top of each other to carry. |
| **Soaking, Pre-Rinsing and Washing Dishes and Pots** | |
| • Forceful exertion and awkward bending when placing items into or removing them from deep sinks. | • Use false bottoms in deep sinks to reduce awkward bending.<br>• Do not place full dish racks into soak sinks as they are heavy to lift or lower.<br>• Do not remove items that have water in them as this adds to the weight.<br>• When washing large diameter pots, move them as close as possible to the front of |

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| | the sink and rotate them are you are washing.<br>• When moving pots from carts to sinks, slide the pot until it is as close as possible to your body, before lifting. |
| **Sorting and Loading Dishes** | |
| • Lifting or pushing heavy racks of dirty dishes. | • Use rollers or conveyor belts to reduce push/pull forces<br>• Rotate workers<br>• Limit the amount of dishes in each rack.<br>• Purchase smaller dish racks.<br>• Rack heavier items such as dishes closest to your body.<br>• Use a power grip instead of a pinch grip<br>• Grasp full dish racks at the midpoint. |
| **Storage of Dishes, Pots and Food** | |
| • Forceful lifting of heavy items<br>• Repetitive, awkward reaching<br>• Awkward postures to reach lower or higher shelves. | • Ensure the weight and size of the product is manageable. Ask suppliers if bulk items come in smaller packages with handles<br>• Use carts for storing and retrieving items to decrease lifting and number of trips required.<br>• Store items strategically: frequently used, heavier items between knuckle and elbow height; Lighter items between elbow and shoulder height; infrequently used items on lower or higher shelves.<br>• Keep floor space clear to allow cart access.<br>• Use rotating or pullout racks.<br>• Use gravity feed racks. |
| **Cafeterias** | |
| • Re-stocking of self serve refrigerators with cans or bottles<br>• Re-stocking of food warmers with heavy trays of prepared food<br>• Carrying bins loaded with dishes<br>• Concentrate or syrup for drink dispensers are often heavy | • Use wheeled carts to move boxes of supplies/food.<br>• Use smaller trays for prepared food. Asked suppliers to provide half size boxes of drink concentrate. |

| Hazard and Control Options by Department<br>Facility Management/Physical Plant/Maintenance | |
|---|---|
| **Hazard or Risk Factor** | **Control Options** |
| **Heavy Containers** | |
| Loads over 50 lbs<br>Awkward size/shape of load<br>• Repetitive lifting | • Ensure employees can access them without bending, twisting or pulling elbows away from body while reaching. Storage racks may need to be changed<br>• Use handhold cut outs or handles<br>• Work with supplier to have product in smaller, lighter containers.<br>• Work with suppliers to ensure that containers are strong enough that they don't break or pull apart<br>• Use assistive devices |
| **Inadequate Handhold** | |
| • Many packages do not have handles or handle cut outs making them difficult to grasp. | • Encourage suppliers to provide product in stable boxes with handles or handhold cut-outs |
| **Carts** | |
| • Difficult to push or steer<br>• Difficult to see over or around<br>• Wide and hard to fit through doorways<br>• May be heavy when filled<br>• May contain chemicals<br>• Wheels may not be appropriate or properly maintained<br>• Poor cart design | • Select the proper type of cart. Consider weight capacity, height, handles, size of casters/wheels<br>• Reduce the cart or load height to ensure workers can see above the load<br>• Attach a handle<br>• Load according to weight capacity of the cart<br>• Push carts rather than pulling.<br>• Maintain wheels and casters through preventive maintenance.<br>• Provide training in proper body mechanics and push/pull techniques<br>• |
| **Cranes and Hoists** | |
| • Overloading<br>• Objects falling from lifting devices<br>• Load swaying and snapping<br>• Wear and tear on equipment | • Rating plate in clear view<br>• Operate by remote control<br>• Preventive maintenance program |
| **Hand Tools and Equipment** | |
| • Handles are too large or hard to grip<br>• Tools or equipment are heavy | • Ergonomically designed tools, padded handles<br>• Lighter tools/equipment |

| Painters | |
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| • Weight of paint cans/trays<br>• Weight of ladders | • Dispense to smaller container<br>• Use extensions on roller (lightweight) |
| **Plumbers** | |
| • Weight of tools and materials being used<br>• Lifting below knee height<br>• Awkward postures<br>• Contact stress when kneeling | • Lightweight tools<br>• Knee pads<br>• Rest breaks from awkward postures |
| **Carpenters** | |
| • Machine use (placing product into machine)<br>• Weight of tools and materials<br>• Manually transporting material (e.g. drywall) | • Machines and product at appropriate height<br>• Lightweight tools<br>• Lifting aids to move materials |
| **Electrician** | |
| • Weight of tools and equipment<br>• How are materials transported<br>• Awkward postures – working above shoulder height | • Lightweight tools<br>• Lifting aids to move materials<br>• Rest breaks from awkward postures |
| **Groundskeeper** | |
| • Force required to push/pull/steer mowers<br>• Weight of lawn mower bags<br>• Picking up lawn clippings/branches<br>• Snow removal techniques (shovel, snow blower) | • Preventative maintenance for push movers<br>• Empty bags often – request help if needed<br>• Long handled tools for picking up off ground<br>• Snow blower and ergonomic shovel<br>• Training in proper body mechanics |

| Hazard and Control Options by Department<br>Housekeeping | |
|---|---|
| **Hazard or Risk Factor** | **Control Options** |
| **Carts** | |
| • Difficult to push or steer<br>• Difficult to see over or around<br>• Wide and hard to fit through doorways<br>• May be heavy when filled<br>• Contain cleaning chemicals | • Select the proper type of cart. Consider weight capacity, height, handles, size of casters/wheels<br>• Reduce the cart or load height to ensure workers can see above the load. Load a reasonable amount of material on the cart and make a second trip.<br>• Attach a handle<br>• Push carts rather than pulling.<br>• Maintain wheels and casters through preventive maintenance.<br>• Provide training in proper body mechanics and push/pull techniques |
| **Moving Furniture to Clean Under/Around** | |
| • Moving furniture to sweep, mop, vacuum floors | • Use a mechanical lift assist<br>• Use portable casters<br>• Limit furniture in rooms<br>• Supply a cart/dolly<br>• Have a second person to assist |
| **Mopping or Sweeping Floors** | |
| • Pail of water/cleaner is heavy to move<br>• Pail of water/cleaner must be lifted to dump<br>• Handle heights cause extra force and awkward positions<br>• Excessive force during mopping<br>• Forceful grip on mop handle<br>• Worker bends forward or twists while mopping<br>• Wringer handle is hard to press down or awkward handle design<br>• Chemicals<br>• Slippery Floors | • Fill pails ½ full<br>• Pails with wheels<br>• Sink or drain low enough and accessible so that pails can be tipped to drain<br>• Ensure mop handle is not higher than workers eye level<br>• Provide smaller mop tops<br>• Provide lighter plastic or aluminum mop handles instead of wood<br>• Direct workers to wring excess water out of mops<br>• Enlarge mop handle with foam padding or tape<br>• Move with feet not whole body<br>• Provide longer handle on wringer<br>• Pad the wringer handles<br>• Training in proper techniques for sweeping/mopping |

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| • Dust pans | • Statically charged brooms (e.g. Swifter)<br>• Long handles dust pans |
| **Vacuuming** | |
| • Vacuum is heavy to lift<br>• Vacuum is difficult to push or pull across floor | • Light weight vacuums<br>• Casters/wheels are appropriate and in good condition<br>• Ensure equipment is part of preventative maintenance program |
| **Buffers and Floor Machines** | |
| • Buffers or floor machines are heavy or hard to steer<br>• Buffers or floor machines leave water or cleaner on the floor | • Avoid lifting/use a dolly<br>• Ensure equipment is part of preventative maintenance program |
| **Bed Changing, Making and Cleaning** | |
| • Beds are against wall so workers have to move them to make or change beds<br>• Over reaching to clean or make opposite side of the bed<br>• Beds must be raised manually | • Ensure casters are appropriate and in good condition.<br>• Ensure workers walk around the bed to avoid over reaching and bending.<br>• Adjust the bed height to reduce bending<br>• Avoid cranking the bed directly in front of the body. Crank close to the side of the body using the dominant hand.<br>• Clean one side of mattress, turn over and clean other<br>• Provide long handled brush/tool for cleaning lower parts of the bed frame |
| **Space Limitations** | |
| • Not enough room to bring carts to area of use so workers carry supplies from cart | • Ensure clearance for carts<br>• Limit amount of furniture in rooms |
| **Waste Pickup and Disposal** | |
| • Forceful exertion to lift garbage bags<br>• Overloaded bags<br>• Bags containing liquids<br>• Disposal of garbage into large outdoor bins requiring lifting/throwing above shoulder level | • Separate liquid waste<br>• Limit bag weight<br>• Put false bottoms in bins.<br>• Use garbage carts for transport<br>• Put wheels on garbage bins.<br>• Dump garbage from platforms or docking bays. |

| Hazard and Control Options by Department<br>Laundry | |
|---|---|
| **Hazard or Risk Factor** | **Control Options** |
| **Laundry Bins** | |
| • Awkward trunk posture to push bins<br>• Forceful pushing, pulling and twisting<br>• Bending and twisting when lifting laundry out of bins<br>• Forceful gripping and pulling to lift laundry out of bins | • Lighter bins require less force to push/pull them<br>• Lower one side of the bin to reduce bending when pulling out laundry<br>• Attach handles to the laundry bins<br>• Large casters and wheels raise the bin height and stop them from becoming stuck on uneven surfaces (i.e. elevator gaps)<br>• Spring loaded bottoms reduce bending to remove the laundry<br>• Preventative maintenance of wheels and casters will reduce them from sticking<br>• |
| **Laundry Bags** | |
| • Bags may be heavy due to overfilling or wet contents.<br>• Forceful lifting and gripping of laundry bags<br>• Awkward postures to carry and transfer bags. | • Smaller laundry bags<br>• Ensure laundry bags are not over filled by adding false bottoms in laundry baskets, placing reminder signs on laundry baskets and changing laundry bags frequently.<br>• For cloth laundry bags: Modify laundry bags by sewing part shut, sew handles onto bags to improve grip (don't add handles to bags that are used in laundry chutes as they may get caught).<br>• |
| **Sorting Laundry** | |
| • Repetitive motions<br>• Forceful gripping<br>• Bending/twisting<br>• Awkward trunk, shoulder, elbow and wrist positions<br>• Prolonged standing | • Avoid sorting laundry on the floor<br>• Sorting tables may be adjustable (or platforms for shorter workers)<br>• Sorting tables may be tilted toward the worker<br>• Sorting belts may be installed<br>• Laundry rakes may be used<br>• Laundry may be pre-sorted<br>• The number of washing categories may be reduced<br>• Anti-fatigue matting may be installed |
| **Washing and Drying** | |
| • Machine height may cause bending and reaching<br>• Loading and unloading may involve reaching, bending, twisting and pushing/pulling the laundry | • Machines should be raised off the floor. The bottom or machine doors should be at waist height.<br>• Laundry bins should be placed to the side of the machine door so that workers can |

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| • Height of bins different from washer or dryer height<br>• Forceful gripping to pull laundry out of machines. | stand directly in front of the machine.<br>• Ensure that machines are not too deep to prevent reaching inside.<br>• Limit load sizes. Use bins that hold one load. |
| **Folding Laundry** | |
| • Repetitive motions<br>• Awkward postures<br>• Forceful pinch grip<br>• Long periods of standing | • Job rotation for laundry folding (change size and type they are folding)<br>• Use entire hand to grip instead of just fingers.<br>• Use adjustable or tilted tables. Another option is a platform for shorter workers.<br>• Use folding arms for larger pieces<br>• Larger laundries may consider automating the system with automatic folders, roll up carts or turntables. |
| **Laundry Carts (linen, personal, clothing)** | |
| • Difficult to push or steer<br>• Difficult to see over or around<br>• May be wide and hard to fit through doorways<br>• May have high shelves<br>• May be heavy when filled | • Reduce the cart's height<br>• Attach a handle to the rear<br>• Use new casters or wheels<br>• Lower clothing racks<br>• Consider the use of a motorized push/puller<br>• If possible only fill middle shelves |
| **Laundry Chutes** | |
| • Access door may be difficult to open or hold open long enough to put the bags in<br>• Laundry bags may overflow the bin at the bottom<br>• Bags can get caught inside<br>• Lifting bags off floor | • Door should stay open for 1 to 3 seconds.<br>• Lock bins in place underneath chutes so that they don't move<br>• Check and empty bins to prevent overflow.<br>• Ensure that when a chute door on one floor is open that other chute doors cannot open at the same time. |
| **Laundry Chemicals** | |
| • Lift, hold, and reposition containers of laundry chemicals which may be heavy or awkward to handle<br>• Workers may handle containers of laundry chemicals in areas with little space.<br>• Hold chemical containers at a distance away from the body to keep containers from touching their clothing. | • Reduce the weight of the detergent containers.<br>• Place detergent products and other items in locations where they are easily accessible.<br>• Where the above are not practicable, use longer fluid feed hoses so that these items can be placed on mobile carts that can be pulled out into an open space for easier access.<br>• Use automatic dispensers.<br>• Supply workers with PPE to protect their clothing. |

| Hazard and Control Options by Department<br>Stores – Shipping – Receiving | |
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| **Hazard or Risk Factor** | **Control Options** |
| **Hand Trucks (dolly)** | |
| • Bending required to place heavy items on the hand truck<br>• Push/pull hand trucks on ramps causing them to lower the angle of the hand truck<br>• Push/pull hand trucks over uneven surfaces<br>• Tires on hands trucks that are in poor condition or not pressurized adequately require the worker to exert more force.<br>• Items fall off if not loaded properly or secured where applicable | • Use a platform cart<br>• Check tire condition/pressure regularly.<br>• Hand trucks should be part of a preventative maintenance program.<br>• Don't exceed load rated capacity<br>• Secure loads when required. |
| **Pallet Jacks** | |
| • Back into walls, catch hands between wall and equipment, run over their own feet or run into other employees<br>• Wheels may develop flat spots resulting in unstable loads or poor handling.<br>• Moving over uneven surfaces or ramps. | • Pallet jacks should be part of a preventative maintenance program.<br>• Operators should be trained to recognize early signs of breakdown.<br>• Ensure floors are maintained. |
| **Forklifts** | |
| • Visibility and sightlines can be limited leading to collisions with walls, equipment and people.<br>• Falling Loads – pallets may collapse or tip<br>• Wheels may develop flat spots<br>• May be moved over uneven surfaces.<br>• Falling Loads<br>• Battery charging (if applicable)<br>• Propane safety (if applicable) | • Forklift should be equipped with horn and backup alarm.<br>• Mirrors should be installed at blind corners/intersections.<br>• Forklifts should be part of a preventative maintenance program.<br>• Operators should be trained to recognize early signs of breakdown (part of pre-use inspection).<br>• Ensure floors are maintained. |
| **Inadequate Handhold** | |
| • Many packages do not have handles or handle cut outs making them difficult to grasp. | • Encourage suppliers to provide product in stable boxes with handles or handhold cut-outs. |
| **Plastic Wrapping** | |
| • Cases wrapped in plastic may stick together making it hard to lift. | • Work with suppliers to get a slip sheet between layers to avoid |

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| | sticking.<br>• Allow additional head room and space on the side of stacks for access. |
| **Wooden Pallets** | |
| • Wooden pallets weigh between 40 and 70 pounds. Empty pallets are moved quite often during a shift.<br>• Splinters or slivers from handling to wood<br>• Damaged pallets may cause loads to shift or fall | • Request that suppliers provide product on lighter, plastic pallets. (they also nest together when empty to save space and there are no splinters)<br>• Wear gloves when handling wooden pallets.<br>• Inspect pallets before use |
| **Opening Boxes** | |
| • Use of utility knives can result in cuts or using a pinch grip with the hands. | • Ergonomic knives with safety guards (retract when not pushed down on) |
| **Heavy Containers** | |
| • Boxes may be very heavy<br>• Repetitive lifting | • Ensure employees can access them without bending, twisting or pulling elbows away from body while reaching. Storage racks may need to be changed<br>• Provide handhold cut outs or handles<br>• Work with suppliers to have product in smaller, lighter containers.<br>• Work with suppliers to ensure that containers are strong enough that they don't break or pull apart |
| **Placing Product on Pallet** | |
| • Workers bend repeatedly to place product on the lowest level of the pallet. | • Raise the height of the bottom level (a pallet jack may be used or empty pallets may be stacked) |
| **Unloading /Removing product from pallet**<br>**May be done in a layer-by-layer or pyramid technique. The racking system and workflow should be evaluated to determine the safest manner in which to perform the tasks required. Areas can be tagged to communicate the technique to be used.** | |
| Layer-by Layer – requires workers to reach to the back of the load to pull an item forward<br>• Heavy items may be hard to pull<br>• Weak or small handles<br>• Stacks above shoulder height<br>• Product that doesn't slide easily | Consider for<br>• Boxed product with handles or cut outs<br>• Lighter boxes that slide easily<br>• Product stacked below shoulder height. |
| Pyramid – product is removed in a diagonal pattern from the top front forming a pyramid | Best for<br>• Light product<br>• Product that doesn't slide easily |

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| • Workers have to reach over empty portions of pallet<br>• Workers may step on pallet to reach the back<br>• Workers may hit their head on racking above | |
| **Wrapping Pallets** | |
| • Workers bend at the waist to wrap the bottom of pallets while supporting the dispenser<br>• Workers stick their fingers into the open ends of the tubes to roll the plastic resulting in cuts to fingers. | • Use rolls that weigh as little as possible.<br>• A handle can be attached to the roll. |
| **Storage – Low Locations** | |
| • Workers bend at the waist to reach the product when on pallets stacked only a few feet high<br>• Low racking can force workers to bend to access product<br>• Workers bump their head on racking<br>• Product is removed from the front of the pallets first. Remaining product is stacked high in the back where workers over reach | • Stack empty pallets underneath so that product is elevated<br>• Raise the bottom level of racking.<br>• Rotate pallets using pallet jack after majority of product has been removed from front<br>• Place pallets on turntables so the pallet can be turned<br>• Provide wider slots so the workers can walk between the pallets to reach the back |
| **Storage – High Locations** | |
| • Workers reach above shoulder height to access products<br>• Lifts above shoulder height may require awkward hand and wrist positions. | • Use high locations for overstock<br>• Provide workers with "pick stick" or hooks to pull the small, light weight product closer |
| **Aisle Width** | |
| • Aisle width may create congestion.<br>• Aisle width may make it difficult for workers to load or unload product. | • Ensure aisle width is adequate. |
| **Work Practices and Work Flow** | |
| • Workers do not follow safe work procedures/take shortcuts (i.e. lift product manually instead of using mechanical assist device)<br>• Product is handled repetitively throughout the workplace<br>• Unexpected exertions<br>  ○ Weights more than anticipated<br>  ○ Box breaks<br>  ○ Slip while moving load<br>• Holding object while lifting something else (may be holding order paper in | • Ensure enough time is allotted for workers to perform their task safely<br>• Evaluate the flow of the product throughout the workplace (i.e. How many times is the same box/package moved)<br>• Tag slots with weights of cases<br>• Ensure packaging is sturdy through supplier<br>• Ensure aisle ways are clean and in good repair.<br>• Workers must wear appropriate |

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| hand). May cause slippage, unexpected exertions, more force exerted on one side. | footwear.<br>• Provide clipboard on pallet jack to hold papers |
| **Improper Footwear** | |
| • Slips and falls<br>• Struck by falling objects<br>• Struck by moving object (forklifts/pallet jacks)<br>• Sore feet from standing or working on concrete in improper footwear. | • A footwear policy should be in place based on the hazards present |
| **Hazardous Chemicals** | |
| • Hazards are dependent upon materials stored, shipped or received.<br>• Chemical spill when storing, shipping or receiving. | • Perform a hazard evaluation of all materials stored, shipped or received.<br>• Ensure Chemical Hazard Control/WHMIS, Transportation of Dangerous Good and Code Brown (chemical spill) Programs are adequate.<br>• Ensure chemical spill kits are adequate, available and stocked.<br>• Ensure employees are trained<br>• If respirators are required, ensure they are available and workers have been fit tested. |
| **Biological Hazards** | |
| • Hazards are dependent upon materials stored, shipped or received.<br>• Histoplasmosis (from bird droppings)<br>• Hantavirus (from mouse droppings) | • Perform a hazard evaluation of all materials stored, shipped or received.<br>• Ensure Biological Hazard Control and Infection Prevention and Control Programs are adequate.<br>• Pest control program may be necessary. |

## 4.5 Resources: Safe Work Practice (SWP) Samples

| Documents |
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| **1. Manual Lifting SWP**<br>**2. Manual Pallet Jack Use SWP** |

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / À l'écoute de notre santé

# Safe Work Practice (SWP) Manual Material Handling and Movement

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|---|---|
| **Name of Task: Manual Material Lifting** | |
| **Performed by** | |
| **Position/Job :** | **Department/Unit:** |
| **Equipment and/or Tools required:** | **Personal Protective Equipment Required:** |
| **Hazards:** This task may expose workers to musculoskeletal injury (MSI) risks. Signs and symptoms include pain, burning, numbness, tingling, swelling, loss of movement or strength in a body part. | |
| **Education and training prerequisites: e.g. instructions or other SWPs→→** | |
| **Training and Proficiency**:<br>☐☐Read Procedure and Sign ☐☐Demonstrated Competency | |

**Steps to be taken to complete task safely:**
*(Clear description in order of steps to follow to safely perform the task. If required attach an additional form to list all steps)*
*Include do's and don'ts*

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| 1 | Test the weight, weight distribution, size and stability of the load |
| 2 | Work with a partner or use a mechanical assist device whenever the load is heavy or awkward. (when lifting with a partner communication is very important to coordinate the task) |
| 3 | Plan the lift. Know the route, remove obstacles (floor, closed doorways,) and ensure that there is somewhere to put the load down at the destination. |
| 4 | Use proper body mechanics and lifting techniques; keep the load close to the body, use a wide base of support with feet at least shoulder width apart, use your legs to shift the weight and do not twist when handling a load.. |
| 5 | Grasp the object with your whole hold. Don't pinch with your fingertips. You should be able to use both hands on handles or handholds to pick up the load. |
| 6 | Avoid rapid, jerky or unbalanced lifts. Move in a smooth, balanced, continuous motion. |
| 7 | Minimize bending, or over reaching during the lift. |

**Responsibilities, Completion and Review**

*Performs all duties in accordance with established health and safety regulations/guidelines, policies and procedures (e.g. utilizing personal, protective equipment as per safe work procedures). Notifies their Manager or designates (i.e. supervisors) of all occurrences, injuries illnesses or safety and health concerns which are likely to harm themselves, their co-workers, or any others who enter the premises.*

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| Completed By: | Date Completed: |
| Last Reviewed by and date: | Note: This task will be monitored periodically to ensure compliance and effectiveness. |

## Safe Work Practice (SWP) Manual Pallet Jack Use

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| **Name of Task: Manual Pallet Jack Use** | |
| **Performed by** | |
| **Position/Job :** | **Department/Unit:** |
| **Personal Protective Equipment Required: Footwear and gloves may be required (based on your department hazard assessment). If moving chemicals, consult the MSDS** | |
| **Hazards:** Workers may back into walls, catch hands between wall and equipment, run over their own feet or run into other employees.<br><br>***Note: This task may expose workers to musculoskeletal injury (MSI) risks. Signs and symptoms include pain, burning, numbness, tingling, swelling, loss of movement or strength in a body part.*** | |
| **Education and training prerequisites: e.g. instructions or other SWPs→→** | |
| **Training and Proficiency**:<br>☐☐Read Procedure and Sign ☐☐Demonstrated Competency | |

**Steps to be taken to complete task safely:**

*(Clear description in order of steps to follow to safely perform the task. If required attach an additional form to list all steps)*
*Include do's and don'ts*

Do's

- Inspect the pallet jack before use
- Check to ensure that the pallet you are moving is in good condition and that the load is not shifted or too tall or wide to go through doorways.
- Make sure jack in is pallet straight and in the centre of the pallet.
- Use both hands when jacking up a manual pallet jack.
- Determine a path before starting on your way
- Check the floor for uneven surfaces, obstructions and tripping hazards.
- Use correct manual handling techniques (Lifting, Lowering and Carrying SWP)
- Consider using two people for larger or very heavy loads
- Apply the pushing/pulling force in a controlled manner. Start and stop the pallet jack gradually
- Use a stable stance when applying the pushing/pulling force
- Swing wide on corners to avoid hitting door frames, etc.
- Pull manual pallets jacks on flat surfaces. If going down an incline push the jack, don't pull. Always be uphill from the pallet jack on a ramp.
- Always let the jack down when leaving it unattended
- Make sure pallet jack is at a complete stop before lowering
- Keep all body parts away from the wheels when moving
- Keep all body parts from underneath a pallet which is raised
- Be aware of pinch point hazards to your hands

**Don'ts**

- Never attempt to lift a load with one fork
- Never exceed a pallet jack's load capacity
- Don't load the pallet jack so that your view is obstructed
- Never turn sharply on a grade
- Don't use the pallet jack to transport persons standing/sitting on the pallet
- Don't ride on the pallet jack

**Raising the Forks**

Push the actuating lever down and pump the handle up and down with both hands until the pallet has reached the desired height (an inch off the ground is usually sufficient to move a load)

**Moving a Load**

Engage the actuating lever in a neutral or middle position

**Lowering a Load**

Pull the actuating lever past the neutral position

**Storage**

- Out of traffic areas in a safe, level place
- Handle up, forks lowered
- Don't block exits or emergency equipment

**Responsibilities, Completion and Review**

*Performs all duties in accordance with established health and safety regulations/guidelines, policies and procedures (e.g. utilizing personal, protective equipment as per safe work procedures). Notifies their Manager or designates (i.e. supervisors) of all occurrences, injuries illnesses or safety and health concerns which are likely to harm themselves, their co-workers, or any others who enter the premises.*

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|---|---|
| Completed By: | Date Completed: |
| Last Reviewed by and date: | Note: This task will be monitored periodically to ensure compliance and effectiveness. |

## 4.6 Resources: Musculoskeletal Disorders

| Documents |
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| **What are Musculoskeletal Disorders**<br>**Stages of Musculoskeletal Disorders**<br>**Treatment of Musculoskeletal Disorders** |
| **Signs and Symptoms Survey** |

## What are Musculoskeletal Disorders

Musculoskeletal disorders involve injury to the muscles, bones, joints, tendons and nerves of the body. Some of the most common symptoms of musculoskeletal disorders include pain, inflammation, redness, muscle tightness, and stiffness in the joints. Other symptoms can include numbness or tingling and changes in skin colour.

It is important to note that there are many factors that can contribute to musculoskeletal disorders. Each body part does not work in isolation. The upper and lower limbs are frequently referred to as a "kinetic chain", which means that each body part is affected by the ones surrounding it. For example, improper positioning of the neck and/or shoulder can result in injury to the elbow or wrist. Similarly, problems in the foot can result in injury to the knee and/or hip.

## Stages of Musculoskeletal Disorders

There are three stages of musculoskeletal disorders. Early intervention will prevent progression of the disorder, further complications, and will reduce the chance of a chronic and/or permanent injury occurrence.

**Early Stage**: The affected limb may suffer from aching or tiredness while working. These symptoms will decrease with rest. The individual will not see a decrease in their work performance.

**Intermediate Stage**: As in the early stage, aching and tiredness are experienced during the work shift. However, symptoms may appear early in the shift, and last past the end of the work shift. The individual will begin to see a decrease in the amount of repetitive work that they are able to accomplish.

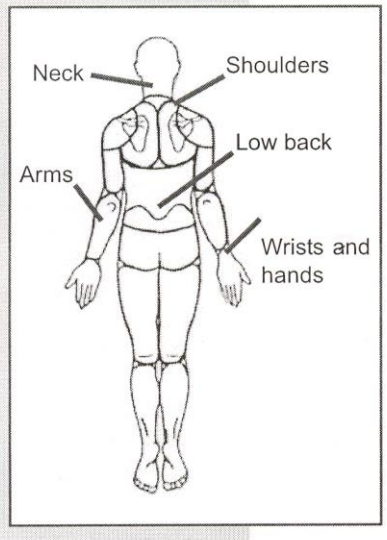
**Late Stage**: The individual will notice that the aching, tiredness and weakness will persist at all times. Rest does not improve the symptoms. This stage will result in an inability to perform job duties, and sleep disturbance will be noticeable.

## Treatment of Musculoskeletal Disorders

It is essential to attempt to treat a musculoskeletal disorder as early as possible to prevent further complications and injury. Learn to recognize the symptoms early. Many people ignore the problem, thinking that it will just go away. Unless the causes for the injury are corrected, the disorder will progress to the next stage.

**Signs and Symptoms Survey – Excerpt from OHSAH B.C.**

# Appendix I: Signs and symptoms survey




Date: _____

Department: _____

Job or task: _____

Comments: _____

_____

Thinking back over your last week of work, please rate your average level of discomfort while at work for each of the following body parts. Circle a number on the scale from 0 to 5 to represent your discomfort for each body part. The number 0 represents no discomfort, while 5 represents extreme discomfort.

| | No discomfort → | | | | | Extreme discomfort |
|---|---|---|---|---|---|---|
| 1. Neck | 0 | 1 | 2 | 3 | 4 | 5 |
| 2. Shoulders | 0 | 1 | 2 | 3 | 4 | 5 |
| 3. Low back | 0 | 1 | 2 | 3 | 4 | 5 |
| 4. Arms | 0 | 1 | 2 | 3 | 4 | 5 |
| 5. Wrists & hands | 0 | 1 | 2 | 3 | 4 | 5 |

## 4.7 Resources: PowerPoint Presentation Training Sample

**GUIDELINES FOR SAFE MANUAL MATERIAL HANDLING FOR HEALTHCARE**

**Winnipeg Regional Health Authority**

**August 2010**

### Purpose of Education & Training

- Musculoskeletal injuries (MSI) occur often in healthcare. According to injury statistics, 60% are related to manual material handling
- Recognizing the risks related to MSI's and learning strategies to eliminate the risk or reduce the exposure can improve your safety

### DEFINITION OF MSI

An injury or disorder of the muscles, tendons, ligaments, joints, nerves or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work.

*(Workers Compensation Board of British Columbia)*

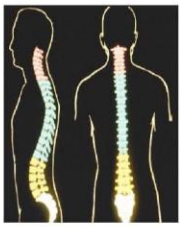
### SIGNS & SYMPTOMS

- Pain/Discomfort
- Numbness or Tingling
- Burning
- Swelling
- Change in color
- Tightness- Loss of Movement
- Loss of Strength

### Anatomy Review

**Vertebrae**

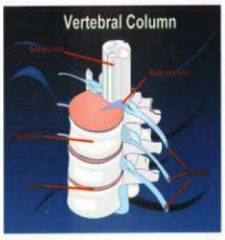
- 33 in total in the shape of a column
- Supports the head and encloses the spinal cord
- Attachment for muscles & ligaments
- Passageway for nerves



### Anatomy Review

**Discs**

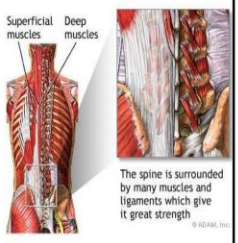
- Absorb shock so the vertebrae, nerves and brain are protected
- Tough fibrous outer layer with gel like middle



## Anatomy Review

**Muscles & Ligaments**

- Ligaments hold the vertebrae and discs in place and allow a safe amount of movement
- Muscles reduce the stress on the vertebrae, discs and ligaments during movement




## WHY REPORT?

- Continuing to work in the same manner can affect other body parts and lead to other injuries
- Chronic injuries can lead to disability
- Early treatment more successful
- Ergonomic changes benefit all workers

## ACUTE vs. CHRONIC INJURY

An acute injury usually has a sudden onset and may occur when handling heavy loads or with sudden movements

## ACUTE vs. CHRONIC

A chronic or overuse injury can be caused by the cumulative effect of:

- Poor posture
- Loss of flexibility and strength
- Lack of recovery time
- Faulty body mechanics and work techniques
- Stressful living and working habits
- General decline in physical fitness

## Adding to the Risks

- Lifting without planning
- Overestimating your capabilities
- Failure to consider obstacles
- Reluctance to impose on co-workers
- Inadequate training
- Rushing

## FIRST AID FOR AN ACUTE INJURY

**P. I. E. R.**

1. **P**ressure- apply to reduce swelling
2. **I**ce- apply for 15-20 minutes (until numb) 4 – 6 times/day until there is no longer heat at injury site
3. **E**levation
4. **R**est

## Risk Factors for MSI

Most common are:

- Heavy Force
- Awkward Posture
- Repetition

The degree of risk is affected by:

- Frequency
- Duration
- Magnitude

## WHY DO MSI'S OCCUR?

**Force -** Amount of effort required to lift, carry, push, pull, grip/pinch

- Use of excessive force results in soft tissue fatigue (muscles, ligaments, tendons)
- Excessive force can be created by awkward posture, pinch grips and handling heavy weights

## WHY DO MSI'S OCCUR?

**Repetition** - Same motion with same body parts and little chance of recovery time

- High frequency, performing movements too quickly
- Repetition with awkward posture, heavy forces and/or excessive speed can increase risk of injury

Examples of repetitive work:

- Task cycle < 30 seconds
- Repeating same task/activity > 50 % of the time
- Same or similar movement for 1 hour (uninterrupted)

## WHY DO MSI'S OCCUR?

**Awkward Posture** -Deviation from neutral posture such as stooping, twisting, bending wrists, reaching above shoulders

- Awkward posture places abnormal stress on the soft tissue and joints
- Static posture is holding a position for an extended period of time

## WHY DO MSI'S OCCUR?

**Contact Stress-** When a hard or sharp object comes in contact with the skin

## Reducing the Risk

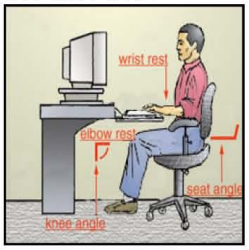
**Proper Posture**

- Awkward or static posture increases muscle/tendon/ligament activity which can lead to increased stress/ fatigue
- Negative effects of awkward posture increase when add a force (weight) or bend/twist over 25% of the day

## PROPER POSTURE

**Sitting**

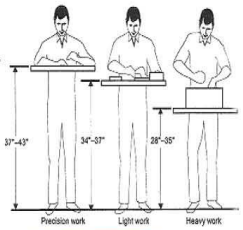
- **Support the low back**
- **Keep arms at your side with elbows at approximately 90 degrees when typing**
- **Keep feet firmly on the floor**




## PROPER POSTURE

**Standing**

- **Adjust the work height whenever possible**



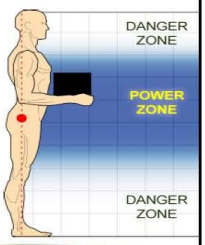

## Reducing the Risk

Body Mechanics Principles

- Use when you need to lift, carry, push, pull, reach
- Helps you position and move your body with the least amount of stress to the body
- Will not protect you from MSI if the weight/force is above your physical abilities

## Body Mechanic Principles

- **Load close to body**
- **Hands between hips and shoulders**
- **Hips and knees slightly bent with feet more than shoulder width apart**
- **Use legs to shift the load**
- **Move your body as a unit to avoid twisting the back**




## Body Mechanic Principles

- Low accelerations- Do not start a movement really quickly – set muscles first
- Arms close to body – keep elbows close in. If your arms wing out, you are offloading forces onto your neck and shoulders, if your arms come forward, you are offloading forces to your lower back
- Stand in front of the load (your nose and toes should be facing the same direction)
- Move your feet during the lift to maintain your alignment
- Weight shift

## Reduce the Risk - Lifting

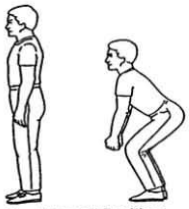
**The Load**

- Decrease the load by reducing the number of objects lifted at one time
- Assign more people to handle heavy items such as furniture/mattresses
- Drag or roll instead of lifting

## Reduce the Risk - Lifting

**Power Position**

The principle of the power position is to maintain the curves and provide power



The "Power" Position

## Reduce the Risk – Use the Right Lift Technique for Job

## Reduce the Risk - Carrying

- Eliminate the need
- Decrease distance
- Use a cart/dolly
- Slide rather than carry
- Balance the loads
- Carry with both hands close in front of body
- Use handles
- Minimize distance – use a cart

## Reduce the Risk – Push/Pull

Push/Pull

- Push with the arms and legs, not back (weight shift)
- Initiate move by weight shifting through the legs
- Avoid pulling with your arm positioned behind your body
- Position arms between waist and chest
- Position body in front of the cart/object whenever possible
- Push vs. pull
- Select appropriate cart for the task
- Know the load limit of the cart
- Slow down at intersections
- Push from the side if you cannot see from the back of the cart or lessen your load and add a second trip

## Reduce the Risk – Grip/Pinch

**Grip/Pinch**

Pinch forces are not as strong as grip force

## Reduce the Risk - Pacing

- Balance of activity and rest
- Heavy work requires **recovery time**
- Change work tasks whenever possible to decrease duration or repetition
- Do not rush

## Reduce the Risk - Posture

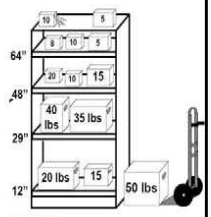
- Awkward or static posture increases muscle/tendon/ligament activity which can lead to increased stress and fatigue
- Negative effects of awkward posture increase when you add a force or bend/twist over 25% of the day

## Reduce the Risk - Posture

- Move your whole body to prevent twisting your back
- Avoid reaching overhead to lift or lower
- Bend your legs, not your back
- Keep your head and chest up as much as possible
- Minimize bending and awkward posture by re-organizing workspace /storage area
- Work in your '**power zone**'

## Reduce the Risk: Warehouse & Distribution

- Know the weight
- Organize the space- heavier loads at waist height–not too low or high
- NIOSH lifting equation: a load of 51 lbs/23 kg, under **ideal conditions** is safe for 75% of women and 90% of men
- Reduce the maximum load to 30-35 lbs
- Use equipment devices




## Reduce the Risk Food Services

- Use weight shift to move carts with elbows near sides and facing straight on
- Modify work stations to eliminate BENDING
- Move feet when lifting/carrying objects – Do not twist!
- Wear non-slip footwear
- Quickly clean up all spills
- Store items for easy access and limit heavier loads outside of waist to shoulder range
- Install false bottoms or ledges if sinks are too deep

## Reduce the Risk Pharmacy

- Use power grip instead of pinch.
- Create appropriate computer/ workstations
- Limit perching
- Use proper technique when lifting
- Alternate repetitive tasks with rest breaks and stretching
- Rotate tasks frequently

## Reduce the Risk Laundry

- Minimize reaching when lifting or carrying objects like laundry bags
- Do not twist!
- Use proper body mechanics for all loads
- Reduce over shoulder reaching and throwing

## Reduce the Risk
## Environmental Services

- Move furniture carefully – get help when needed
- Limit reaching and face straight on when lifting i.e. to clean mattresses
- Use proper body mechanics during awkward tasks such as cleaning under bed
- Use proper technique for lifting
- Limit garbage bag size/weight

## Reduce the Risk
## Environmental Services

- Do not do a full squat to get down low- go down on one knee to keep spine in neutral or do a half squat with chest as upright as possible
- Keep mop in front of body and use weight shifting to accomplish most of side to side movement to reduce twisting

## Reduce the Risk
## Property Management

- Use carts/dollies for heavier loads
- Respect the weight limit and use equipment when needed
- Create an environment where workers help each other to reduce the load
- Keep work within power range as much as possible
- Reduce over-reaching

## Fit for Work

- Working hard during the day is not the same as exercise
- Weak muscles tire more quickly than strong muscles
- Strong back and abdominal muscles provide support for the spine

## Aerobic Conditioning

Besides the obvious benefits for heart and lungs, there are several other benefits:

- Increased circulation in the body which promotes healing of all muscles
- The post exercise relaxation effect
- Decreased fatigue and increased ability to concentrate
- Increase in endurance

## Warm-up Exercises

- Warm-up exercises are recommended before starting any strenuous activity
- Check with your site **Occupational and Environmental Safety & Health** department for guidelines on exercises specific to the needs of your job tasks

## Practical Session

Demonstration/Return Demonstration

- Floor to waist lift- box and bag
- Pushing bed or cart

## Questions

## 5.0 REFERENCES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|---|---|---|
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