

# **ERGONOMIC REFERENCE PACKAGE**

Workplace Musculoskeletal Disorder (MSD)



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## Introduction

The most common injury in Ontario's forest industry is no different from what happens in other industrial sectors – gradual damage to muscles, ligaments tendons and nerves as a result of repetitive, forceful or awkward movements. Strain and sprain injuries – also known as musculoskeletal disorders (MSDs) – have accounted for than one-third of all forestry lost-time injuries in recent years.

MSDs are injuries and disorders of the musculoskeletal system. They may be caused or aggravated by various hazards or risk factors in the workplace. The musculoskeletal system includes:

- Muscles, tendons, and tendon sheathes
- Nerves
- Bursa
- Blood vessels
- Joint/spinal discs , and
- Ligaments

MSDs do not include musculoskeletal injuries or disorders that are the direct result of a fall, struck by or against, caught in or on, vehicle collision, violence etc.

MSD is an umbrella term for a number of injuries and disorders of the muscles, tendons, nerves, etc. Other terms that mean the same include:

- Repetitive strain injury (RSI)
- Cumulative trauma disorder (CTD)
- Work-related musculoskeletal disorder (WMSD)
- Occupational overuse syndrome (OOS)
- Sprain and strain

These types of injuries cost. They cost workers – pain and suffering, disruption to home and work life and impact on families, friends and the community. They cost workplaces – loss of productivity and revenue, Ministry of Labour orders, loss of rebates and accumulation of surcharges from Workplace Safety and Insurance Board. Under Ontario's Occupational Health and Safety Act, employers are required to take every reasonable precaution to protect workers from hazards resulting in strain & sprain injuries. One important way to do this is to recognize, assess, control and monitor workplace hazards that could lead to strain and sprain injuries.

The Ontario Ministry of Labour states that employers, in consultation with workers, are responsible for:

- Ensuring that hazards related to poor design of tools, equipment, workstations or work practices are identified and the risks controlled
- Ensuring that all workers have been provided with adequate equipment required for tasks
- Ensuring that workers have the information, instructions or training in the use of equipment and work practices
- Encouraging and reinforcing proper working techniques
- Encouraging early reporting of an injury or symptoms.

MSDs affect the muscles, tendons, nerves, ligaments and joints in various parts of the body. The key hazards for work-related MSDs are the force, posture, repetition and duration involved in performing a particular job or task. Other risk factors, such as stress and workload, may also play an important role.

## OFSWA Consultant Trainers Focus Firm Action Plan Criteria and Associated Protocols

- ✓ Discuss and review injury investigation reports on MSD related injuries to address potential weaknesses in the firm's incident investigation procedure including ensure report address current policies and procedures, worker training, monitoring, coaching and reinforcement of policies and procedures as well as ongoing enforcement by supervision
- ✓ Review, comment and provide recommendations as necessary on the status of the firms MSD Program: policies, procedures, training, on-going monitoring and enforcement for identified risk factors
- ✓ Reference the MSD chart for specific firm information or injury trends. Develop an action plan with the firm to help address these injury trends
- ✓ Recommend sector-specific Safe Workplace Ontario (SWO) program as an excellent resource tool in developing and advancing the firms' health and safety program

### OFSWA Consultant Trainers Action Plan Follow-up Criteria:

- ✓ Review recent lost time or medical aid injuries occurring since last consultation and where necessary provide recommendations regarding additional action required in policy/procedure development, worker training, monitoring or enforcement by supervision or provide positive reinforcement to the firm for experiencing no injuries. Consider how MSD issues may have impacted on any injuries which occurred and recommend means of addressing these concerns
- ✓ Review the firms' progress towards the action plan recommendations
- ✓ Confirm that health and safety training requirements for new workers or workers transferring to another job have occurred
- ✓ Confirm the ongoing monitoring, reinforcement and enforcement of policies and procedures by supervision

## Legislation

The Ontario Occupational Health and Safety Act and Regulations for Industrial Establishments states in Section 45 (a) of the Regs.:

- Material, articles or things required to be lifted, carried or moved, shall be lifted, carried or moved in such as way and with such precautions and safeguards, including protective clothing, guards or other precautions as will ensure that the lifting, carrying or moving of the material, articles or things does not endanger the safety of any worker;

The Ontario Occupational Health and Safety Act and Regulations states is section 25(2)(h):

- An employer shall take every precaution reasonable in the circumstances for the protection of the worker:

The Ontario Occupational Health and Safety Act and Regulations states in section 27(2)(c):

- A supervisor shall ensure that a worker, take every precaution reasonable in the circumstances for the protection of the worker.

The Ontario Occupational Health and Safety Act and Regulations states in section 28(1)

- A worker shall,
  - (a) work in compliance with the provision of this Act and the regulations;
  - (b) use or wear the equipment, protective devices or clothing that the workers' employer requires to be used or worn;
  - (c) report to his or her employer or supervisor the absence of or defect in any equipment or protective device of which the worker is aware and which may endanger himself, herself or another worker; and
  - (d) report to his or her employer or supervisor any contravention of this Act or the regulations or the existence of any hazard of which he or she knows.

## Cost Benefits of MSD Prevention

- Musculoskeletal disorders (MSDs) are the most commonly reported type of work-related lost-time injury in Ontario. Lost-time MSD claims cost Ontario workplaces hundreds of millions of dollars in direct costs and consequently, billions of dollars in indirect costs. Implementing MSD prevention
- Strategies can help to reduce the number of reported MSDs, which may help save Ontario workplaces tens, if not hundreds of thousands of dollars each year.

### **What are the costs of MSD claims?**

- In order to realize the benefits of an MSD strategy in your workplace, you must quantify the previous known costs of these injuries. When determining this information you should decide whether you are going to address the impact MSDs have on the organization as a whole or just with respect to WSIB claims. It is recommended you broaden your perspective to include the negative impact MSDs can have on such human resources issues such as absenteeism, disability, staff turnover, recruitment, and morale.
- There are many factors that should be considered beyond the direct costs paid out to injured employees who lose time from work due to an MSD. The following are examples of all the direct and indirect costs you should consider when tallying up the impact these injuries have on your bottom line:

### **WSIB/MOL costs**

- WSIB premium (fixed cost based on the experience of the rate group)
- WSIB surcharge
- Loss of potential NEER rebate
- Workwell Audit
- Ministry of Labour fines and appeals

### **Staff costs**

- Wages paid to the employee on the day of the injury
- Wage supplements/continuation of benefits
- Wages of replacement employees
- Overtime attributed to loss of injured employees
- Absenteeism

### **Modified work**

- Wages paid to staff on modified work
- Costs associated with modifying job
- Management time to follow up with an employee on modified work

### **Administrative**

- WSIB claims management
- Rescheduling of employees
- Training/orienting employees
- Time to investigate root cause of injury
- Time to follow up with an employee off work

### **Production or service delivery**

- Disruption in production/service delivery (number of people involved, length of interruption)
- Decrease in quality
- Work stoppages
- Ministry of Labour orders, complying with orders
- Modifications to work systems to accommodate workers with MSDs

### **Other insurance systems**

- Sick time
- Short-term disability
- Long-term disability
- Liability – if others are impacted
- Legal
- Consultant

### **Other costs to the company**

- Damage to reputation
- Compromised quality of service/product
- Management's time spent on managing MSD problems rather than on other productive tasks
- Negative impact on staff morale, trust in management

**Note:** Indirect costs, which are all costs other than those directly resulting from an MSD, can conservatively be estimated to be four times the direct costs.

### **Benefits of MSD prevention**

A comprehensive benefit assessment will include measures beyond those purely associated with financial gains. It will include money potentially saved due to the reduction in financial losses. In addition to the financial gains that may be recognized through WSIB rebates or enhanced productivity and service delivery, there may be other benefits impacting on production, service and quality, that will affect profitability/funding. Softer measures of benefits may include enhanced reputation, staff morale and quality of work/life. In order to objectively quantify the financial benefits of any health and safety strategy, you need to have and use retrospective data for comparison purposes. An effective MSD intervention will mean that few or no work-related MSDs are reported. This may or may not be associated with a financial gain from the WSIB. Hence, a retrospective look at previous years' injury trends will help you to forecast costs which can now be realized as benefits.

**Reference:** Business Results Through Health & Safety, WSIB: product code 5031A.

## Sample MSD Company Policy

Ergonomics is a field of science that studies the physical and mental demands of work on individual workers. Ergonomics is often defined as fitting the work to the worker. A good ergonomic program design reduces the number and severity of musculoskeletal disorders (MSDs) by minimizing the hazardous physical demands of the work. The ergonomics program will identify and assess the risk factors in priority jobs or tasks and will provide adequate controls to protect the health and safety of the employees. Review all injury and first aid reports for an MSD and address as necessary. Susceptible tasks are to be identified and assessed for risk and effective controls are to be implemented and then evaluated.

### PROCEDURE, RESPONSIBILITIES AND CONFIRMATION

<i>Program Requirements</i>	<i>Workplace Procedures (as documented elsewhere or stated below)</i>	<i>Person(s) Responsible (name or position)</i>
<b>Program standard is set: MSD-susceptible tasks are to be identified and assessed for risks, and effective controls are to be implemented and then evaluated.</b>		
This program is communicated to employees by:		
MSD-susceptible tasks in the workplace are identified:		
Identified tasks are to be assessed using a document such as a Physical Demands Analysis (PDA) form:		
Potential MSD prevention controls are to be identified for identified tasks (as documented on the MSD Controls form):		
MSD prevention controls are to be implemented where practical:		
Training for MSD prevention consists of:		
MSD prevention controls are evaluated by (person(s)):		
Participants in the MSD prevention program are recognized by:		

Document created: \_\_\_\_\_  
(Date)

Document reviewed: \_\_\_\_\_  
(Date)

## Understanding the Hazards

Many jobs have MSD hazards – things about the job or the way the job is done that increase the risk of a worker developing an MSD. While a number of things can increase MSD risk, **the primary MSD hazards are force, fixed or awkward postures, and repetition.**



### FORCE

Force refers to the amount of effort made by the muscles, and the amount of pressure on body parts as a result of different job demands. All work tasks require workers to use their muscles to exert some level of force. However, when a task requires them to exert a level of force that is too high for any particular muscle, it can damage the muscle or the related tendons, joints and other soft tissue. This damage can occur from a single movement or action that requires the muscles to generate a very high level of force. However, more commonly, the damage results when muscles generate moderate to high levels of force repeatedly, for a long duration, and/or while the body is in an awkward posture.

Some job tasks result in high force loads on different parts of the body. For example, lifting a heavy load that is far from the body increases the load on the lower back. This can potentially damage both the spinal discs and the vertebrae. Working with hand tools that have hard or sharp edges, i.e. resting the forearms on the hard edge of a desk, can also potentially cause damage to tendons, muscles, blood vessels and nerves under the skin. This is often referred to as contact stress (see below).



### FIXED OR AWKWARD POSTURES

Posture is another name for the position of various parts of the body during any activity. For most joints, a good or “neutral” posture means that the joints are being used near the middle of their full range of motion. The farther a joint moves towards either end of its range of motion, or the farther away from the neutral posture, the more awkward or poor the posture becomes and the more strain is put on the muscles, tendons and ligaments around the joint. For example, when arms are fully stretched out, the elbow and shoulder joints are at the end of their range of motion. If the worker pulls or lifts repeatedly in this position, there is a higher risk of injury.



## REPETITION

The risk of developing an MSD increases when the same parts of the body are used repeatedly, with few breaks or chances to rest. Highly repetitive tasks can lead to fatigue, tissue damage, and, eventually, pain and discomfort. This can occur even if the level of force is low and the work postures are not very awkward.

## OTHER MSD HAZARDS AND WORKPLACE FACTORS

- Other MSD hazards and workplace factors that should be considered include:
- Contact stress,
- Local or hand/arm vibration,
- Whole body vibration,
- Cold temperatures,
- Hot work environments,
- Repeated impacts,
- Work organization, and work methods.

## Common Areas to Monitor in the Forestry Sector

Below are some common areas that have been identified as ergonomic hazards in the forestry sector. These should also be considered when addressing MSD risks.

- Not wearing proper-sized gloves to protect hands when working outside in the cold weather
- Not wearing proper anti-vibration gloves to reduce the effects of hand/arm vibration
- Not enough lighting when working in the dark, which can hinder vision and clearance
- Compressed or poorly maintained seats which may increase whole body vibration and lower back and hip pain and discomfort
- Improper use of arm rests which do not allow the operator to reduce some of the strain on the shoulder and elbow joints
- Improper set-up of seat for the individual body type and size

## MSD Hazard Identification Tools

### OPTION 1

This MSD Hazard Identification Tool is provided to help you identify jobs or tasks that have MSD hazards, where workers **may** be at an increased risk of developing an MSD. This tool only identifies whether MSD hazards exist. It does **not** assess the level of risk, and this tool alone should not be used to determine if MSD hazard controls should be implemented.

#### **IMPORTANT - READ THIS BEFORE USING THIS TOOL**

- This tool is to be used to identify job/task related MSD hazards in a workplace.
- This tool needs to be used with the full participation and input of workers who perform the job/task in question. Observations alone are not enough, and it is not appropriate for the person(s) using the tool to base decisions only on what they see or think about a job.
- Other hazard identification methods such as analysis of injury, incident and first aid reports, worker concerns, and discomfort/pain reports should also be considered.
- This tool IS NOT intended to be used for:
  - Return to work assessment/evaluations
  - Job placement/worker selection
  - Assessing the work relatedness of an injury or disorder

### INSTRUCTIONS

1. **Document** the job title or task, date and name of person(s) completing the worksheet.
2. **Observe** a number of different workers performing regular work activities.
3. **Ask the workers** who perform the job/task whether they think the objects are heavy, or the task is difficult/tiring.
4. **Ask the workers** if they do a task/adopt an awkward posture repeatedly or for a long period of time.
5. **Check** the appropriate box(es) that apply to the job/task
  - a. **Only make a check mark** when the specific hazard exists and when workers report that it is difficult, tiring, heavy, done repeatedly, or done for a long time.
6. **Write** notes for any identified hazard to clarify the task or activity where it occurs.
7. **Review** the contents of the MSD Hazard Identification Tool with the workers who perform the job. Ask them if there are additional task that were not captured.
8. **Prioritize the jobs/tasks for risk assessment (see page 25).**

*Also see Section 5 of the MSD Prevention Guideline for Ontario and the Resource Manual for the guideline for more information about MSD risk assessment.*



**Notes:**

If the physical demands related to the activity vary from day to day, due to different products/ services being produced or provided, ask workers if the activity being observed is more or less demanding than on a typical day.

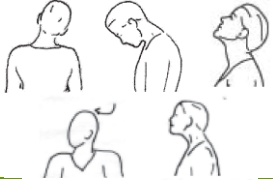



- i) If less demanding, plan to come back when the demands are more typical and, if appropriate, higher.
- ii) If more demanding, complete the hazard identification tool. It may be that MSD hazards are only a concern for certain products/services. You should also reuse the tool when the demands are more typical.
- iii) If typical, but there are times when the demands are higher, reuse the tool when the demands are higher, especially if there are no MSD hazards identified when observing typical demands.

**Some MSD hazards, (e.g. lighting, aspects of work organization) are not addressed in this tool. If these or other MSD hazards exist, make note of them and ask the workers who perform the job to see if they think that these hazards are contributing to their pain/ discomfort or causing them other concerns.**

## MSD Hazard Identification Tool: Option 1

Job/Task Information		
Job title or task:		
Date completed:		
General observations:		
MSD HAZARDS - GRIPPING		Check <input checked="" type="checkbox"/> if required
<b>Pinch Gripping</b> 	▪ unsupported object(s)	<input type="checkbox"/>
	▪ difficult/tiring holding or manipulating	<input type="checkbox"/>
	▪ difficult/tiring squeezing to open/close	<input type="checkbox"/>
<b>Power Gripping</b> 	▪ unsupported heavy object(s)	<input type="checkbox"/>
	▪ difficult/tiring holding and manipulating	<input type="checkbox"/>
	▪ difficult/tiring squeezing to open/close	<input type="checkbox"/>
<b>Notes:</b>		
MSD HAZARDS - FORCE		Check <input checked="" type="checkbox"/> if required
<b>Lifting/Lowering</b> (consider both one and two handed lifting/lowering)	▪ object is heavy/difficult to lift/lower	<input type="checkbox"/>
	▪ object is lifted/lowered repeatedly	<input type="checkbox"/>
	▪ object is above the shoulders	<input type="checkbox"/>
	▪ object is below the knees	<input type="checkbox"/>
	▪ object is far away from the belly button	<input type="checkbox"/>
	▪ loads are unstable, unbalanced, uncooperative, or unpredictable	<input type="checkbox"/>
	▪ lifting/lowering postures are awkward (bend, twist, kneel, reach, sit)	<input type="checkbox"/>
<b>Notes:</b>		
<b>Pushing/Pulling</b> (consider one and two handed pushing/pulling. Also, consider whole body & arms/upper body only pushing/pulling)	▪ object is hard/difficult to push/pull	<input type="checkbox"/>
	▪ object is pushed/pulled repeatedly	<input type="checkbox"/>
	▪ object is pushed with hands above the shoulders	<input type="checkbox"/>
	▪ object is pushed with hands below the waist	<input type="checkbox"/>
	▪ pushing/pulling postures are awkward (bend, twist, kneel, reach, sit)	<input type="checkbox"/>
<b>Notes:</b>		

## MSD Hazard Identification Tool: Option 1 (Continued)

MSD HAZARDS - AWKWARD/FIXED POSTURE		Check [✓] if required
(Do workers frequently assume these postures and/or hold them for a long time?)		
 <p><b>Awkward Posture</b></p>	<ul style="list-style-type: none"> <li>neck visibly bent forward (chin close to chest)</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>neck visibly bent to one side (ear close to shoulder)</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>neck twisted to either side/chin close to the shoulder</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>neck noticeably bent back</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>neck bent forward and chin out (head forward)</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>hand(s) at or above the head</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>elbow(s) at/or above the shoulder</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>elbows/hands behind the body</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>sitting or standing with the back noticeably bent forward, sideways, or twisted</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>back noticeably bent backward with no support for the back</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>squatting/kneeling while working</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>wrist noticeably bent down or up</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>wrist noticeably bent to the side (toward thumb/little finger)</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>hand turned so palm faces fully up or down</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>sitting for long periods without standing (office work, driving, etc.)</li> </ul>	<input type="checkbox"/>
<p><b>Fixed Posture</b></p>	<ul style="list-style-type: none"> <li>standing still on a hard surface for a long period of time</li> </ul>	<input type="checkbox"/>
MSD HAZARDS - REPETITION		Check [✓] if required
(Do workers repetitively move the same body part – with little opportunity for recovery?)		
<p><b>Repetition</b></p>	<ul style="list-style-type: none"> <li>performing the same neck motions repeatedly</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing the same shoulder motions repeatedly</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing the same elbow motions repeatedly</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing the same wrist motions repeatedly</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing the same hand/finger motions repeatedly</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing intensive keyboarding</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>performing intensive mousing</li> </ul>	<input type="checkbox"/>
MSD HAZARDS - OTHER		Check [✓] if required
<p><b>Repetition</b></p>	<ul style="list-style-type: none"> <li>using the hand or knee as a hammer</li> </ul>	<input type="checkbox"/>
<p><b>Contact Stress</b></p>	<ul style="list-style-type: none"> <li>tool handles dig into hand/palm</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>workstation/equipment edges/products dig into body (hands, forearms, trunk, thighs)</li> </ul>	
<p><b>Hand-Arm Vibration</b></p>	<ul style="list-style-type: none"> <li>using vibrating tools (impact wrenches, carpet strippers, chainsaws, jackhammers, scalers, riveting hammers, grinders, sanders, jig saws, jack-leg drills.)</li> </ul>	<input type="checkbox"/>
<p><b>Whole-Body Vibration</b></p>	<ul style="list-style-type: none"> <li>operating mobile equipment/vehicles on rough, uneven surfaces</li> </ul>	<input type="checkbox"/>
<p><b>Cold/Hot Temperatures</b></p>	<ul style="list-style-type: none"> <li>work environment is cold, hand/arms are exposed to cold air</li> </ul>	<input type="checkbox"/>
	<ul style="list-style-type: none"> <li>work environment is hot/humid</li> </ul>	

## MSD Hazard Identification Tool: Option 2

This MSD Hazard Identification Tool is provided to help you identify jobs or tasks that have MSD hazards, where workers **may** be at an increased risk of developing an MSD. This tool only identifies whether MSD hazards exist. It does **not** assess the level of risk, and this tool alone should not be used to determine if MSD hazard controls should be implemented.

### INSTRUCTIONS

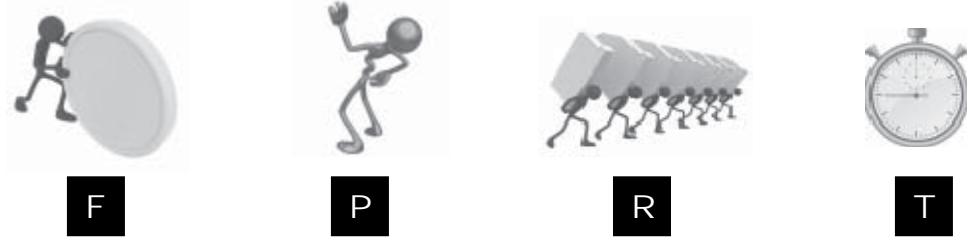
1. **Document** the job title or task, date and name of person(s) completing the worksheet.
2. **Observe** a number of different workers performing regular work activities.
3. **Look** at the pictures on the hazard identification tool. Do any of the postures, tasks, or other hazards illustrated by the pictures exist for the job/task being observed?
4. **Ask** the workers who do the job/task if they think that any of the identified hazards also have force, repetition, posture, and/or time concerns.
5. **Mark that a hazard exists only if it is clear**, by observation and/or from worker comments that:
  - a. **For awkward/static postures:**
    1. Workers must exert a force (difficult, tiring, heavy) with the body part that is in an awkward posture (check the F box).
    2. Workers adopt this posture repeatedly (check the R box).
    3. Workers adopt this posture and hold it for a long time (check the T box).
  - b. **For manual material handling:**
    1. The task is difficult or tiring, the object lifted or carried is heavy, and/or the pushing/pulling force is of concern (check the F box).
    2. The task is done repeatedly (check the R box).
    3. The task requires the worker to adopt an awkward posture (check the P box).
    4. The task is done for a long time without a break/change of activity (check the T box).
  - c. **For gripping:**
    1. The task is difficult or tiring, and/or the amount of grip force required is of concern (check the F box).
    2. The task is done repeatedly (check the R box).
    3. The task requires the worker to adopt an awkward posture (check the P box).
    4. The task is done for a long time without a break/change of activity (check the T box).
  - d. **For contact stress:**
    1. The force level of the contact stress is noted as a concern (check the F box).
    2. Workers are exposed to contact stress repeatedly (check the R box).
    3. The contact stress lasts for a long time (check the T box).
  - e. **For sitting/standing:**
    1. Sitting/standing postures are poor (check the P box).
    2. Workers sit/stand for a long time without a change in posture (check the T box).
  - f. **For keyboarding/mousing:**
    1. Workers visibly 'pound' the keys or grip the mouse (check the F box).
    2. The mouse is used repeatedly (check the R box).
    3. Wrist, arm, and/or shoulder postures are poor when keyboarding or using the mouse (check the P box).
    4. Workers use the keyboard and/or mouse for a long time without a change in activity (check the T box).
  - g. **For using the knee or hand as a hammer:**
    1. Force levels on the knee or hand are noted as a concern (check the F box).
    2. The knee and/or hand is used as a hammer repeatedly (check the R box).
    3. The knee and/or hand is used as a hammer for a long time (check the T box).
  - h. **For hot or cold:**
    1. The worker or parts of the worker's body are exposed to temperatures of concern (too hot, too cold) (check the F box – to represent exposure to hot or cold temperature levels).
    2. Workers are exposed to hot/cold temperatures repeatedly (check the R box).

3. Workers are exposed to hot/cold temperatures for a long time (check the T box).
- i. For hand-arm or whole-body vibration:**
  1. The levels of vibration are noted as a concern (check the F box).
  2. Workers are exposed to vibration repeatedly (check the R box).
  3. The postures adopted are awkward while being exposed to vibration
  4. Workers are exposed to vibration for a long time (check the T box).
6. **Write** notes for any identified hazard to clarify the task or activity where it occurs.
7. **Review** the contents of the MSD Hazard Identification Tool with the workers who perform the job. Ask them if there are additional tasks that were not captured.
8. **Prioritize** the jobs/tasks for risk assessment.
  - a. Also see Section 5 of the MSD Prevention Guideline for Ontario and the Resource Manual for the Guideline for more information about MSD risk assessment.

**See notes on bottom of the second page of the tool for guidance on how to use this tool when the task demands vary from day to day, due to different products/services being produced or provided.**


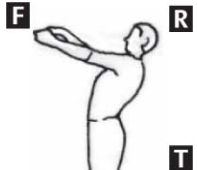



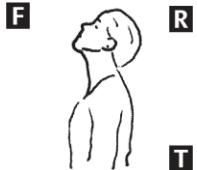


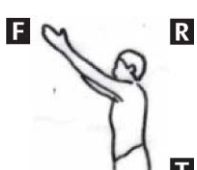

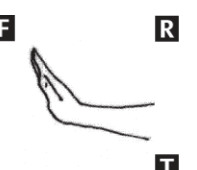
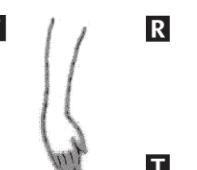


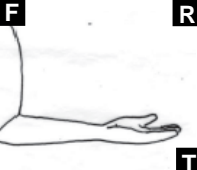
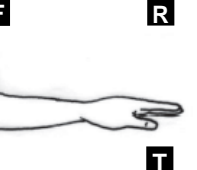
**Some MSD hazards, (e.g. lighting, aspects of work organization) are not addressed in this tool. If these or other MSD hazards exist, make note of them and plan to assess whether they contribute to the MSD risk for workers.**

## MSD Hazard Identification Tool: Option 2 (Continued)







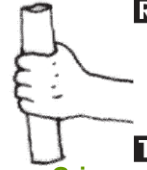


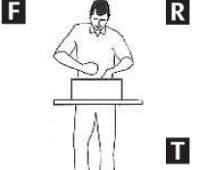





### Tips for completing this section

- Observe work and talk to workers to determine if any of the awkward/static postures are present
- If an awkward posture is identified, check the appropriate box beside its picture:
  - "F" if force is applied while in the awkward posture and the level of force is noted as a concern
  - "R" if same awkward posture must be performed repeatedly by the workers
  - "T" if the task must be performed for a long period of time without a change in posture/activity

Job/Task Information				
Job title or task:				
Date completed:				
Awkward/Static Postures				Notes
 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Back bent</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Bent backward</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Bent to the side</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Twisting</p>	
 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Neck bent forward</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Neck bent backwards</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Neck bent to the side</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Neck rotated</p>	
 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Hand or elbows above shoulders</p>	 <p><b>F</b> <b>R</b> <b>F</b> <b>T</b></p> <p>Arms out to the side</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Wrist bent up or down</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Wrist bent to either side</p>	
Awkward/Static Postures				Notes
 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Kneeling</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Squatting</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Palm up</p>	 <p><b>F</b> <b>R</b> <b>T</b></p> <p>Palm out</p>	

**Tips for Completing this Page**

- Observe work and talk to workers to determine if any of the activities/issues are present.
- If present, check the appropriate box beside its picture (as applicable):
  - “F” if forces being exerted/weights handled are noted as a concern
  - “R” if the activity is performed repeatedly by the workers or workers are repeatedly exposed
  - “P” if the workers adopt awkward postures during the activity or exposure
  - “T” if the activity is performed for a long time or workers are exposed for a long time

Manual Material Handling			Notes
 <p><b>Lifting</b></p>	 <p><b>Pushing/Pulling</b></p>	 <p><b>Carrying</b></p>	
Gripping			
 <p><b>Pinch Grip</b></p>	 <p><b>Grip</b></p>	 <p><b>Contact Stress</b></p>	
Other			
 <p><b>Sitting</b></p>	 <p><b>Standing</b></p>	 <p><b>Keyboarding /Mousing</b></p>	 <p><b>Using knee or hand as a hammer</b></p>
 <p><b>Hand-arm vibration</b></p>	 <p><b>Whole-body vibration</b></p>	 <p><b>Hot/Cold temperatures</b></p>	

**Notes:**

If the activity-related physical demands required vary from day to day, due to different products/services being produced or provided, ask workers if the activity being observed is more or less demanding than on a typical day.

- If less demanding, plan to come back when the demands are both more typical and, if appropriate, higher.
- If more demanding, complete the hazard identification tool. It may be that MSD hazards are only a concern for certain products/services. You should also reuse the tool when the demands are more typical.
- If typical, but there are times when the demands are higher, reuse the tool when the demands are higher, especially if there are no MSD hazards identified when observing typical demands.

## Sample MSD Hazard Identification Checklist

This checklist is designed to help you identify task and equipment factors that can increase a worker's risk of developing a MSD. Place a √ in either the “yes”, “no” or “n/a” (not applicable) box.

Job Name:	Date:		
<b>Do the workers on this job:</b>	<b>N/A</b>	<b>Yes:</b>	<b>No:</b>
Lift, lower or carry objects that are, in their opinion, heavy?			
Have difficulties pushing or pulling items/objects?			
Perform tasks that require difficult and forceful gripping with the hands?			
Use tools that require a great deal of effort to hold, control or use?			
Use their hands to pound or hammer things when doing their job?			
Perform any other high force tasks? If yes please indicate:			
Perform tasks with one or both arms behind their body?			
Bend or twist the back/trunk?			
Twist or bend (backward/forward/to the side) the neck?			
Need to bend or twist the wrist?			
Pick up or hold things using difficult grips?			
Perform any other awkward postures that are not covered above? If yes please indicate:			
Have to lift, lower or carry objects repeatedly when doing their job?			
Repeatedly push or pull things when doing their jobs?			
Repeatedly grip or manipulate things with their hands/wrists?			
Repeatedly use awkward arm, hand or wrist postures?			
Repeatedly use poorly designed hand tools when doing their job?			
Repeatedly do tasks or use awkward postures that are not covered above? If yes please indicate:			
Use hand tools that vibrate?			
Are exposed to whole body vibration?			
Have too little space/clearance at their work station or work area?			
Have to stay in awkward postures for a long period of time without change?			
Sit or stand for long periods of time without change in posture?			
Work in cold weather			
Work in hot and or humid weather?			
Find the job very demanding?			

## Assessing MSD Hazards – Determining the Root Cause

Once all workers have agreed on the MSD hazards, use this tool to help guide brainstorming sessions with workers on determining the root causes of the identified MSD hazards. The tool helps workers consider how different aspects of the job can cause an MSD hazard. Remember, MSD hazards can be caused by a number of different factors, so it is important to consider different possible causes AND not jump to conclusions or take what seems to be, at first, the most obvious reason.

To provide some structure to the discussion, use the five categories of possible causes for any health and safety hazard – process, equipment, materials, environment and human (PEMEH). Follow the steps below to identify the root cause of the hazard:

- Step 1:** Write down the specific MSD hazard you are concerned about to help focus the group. Write it on the top of the worksheet.
- Step 2:** Ask why the MSD hazard exists – write the answer in a box on the worksheet for the appropriate category.
- Step 3:** For each answer, ask why again, and continue to do this until the group reaches agreement that the root cause has been identified (it usually takes less than ‘the five whys’ to get to this point).

**The following are examples of the kind of points to consider for each category:**

### **PROCESS:**

- length of time allotted to tasks
- machine-paced tasks
- duration of task
- variety of tasks
- production/quality standards
- communication between staff within the department and outside the department

### **MATERIALS:**

- packaging
- weight and dimensions
- storage location
- quality

### **ENVIRONMENT:**

- working space
- overcrowding
- temperature
- flooring
- housekeeping

### **EQUIPMENT:**

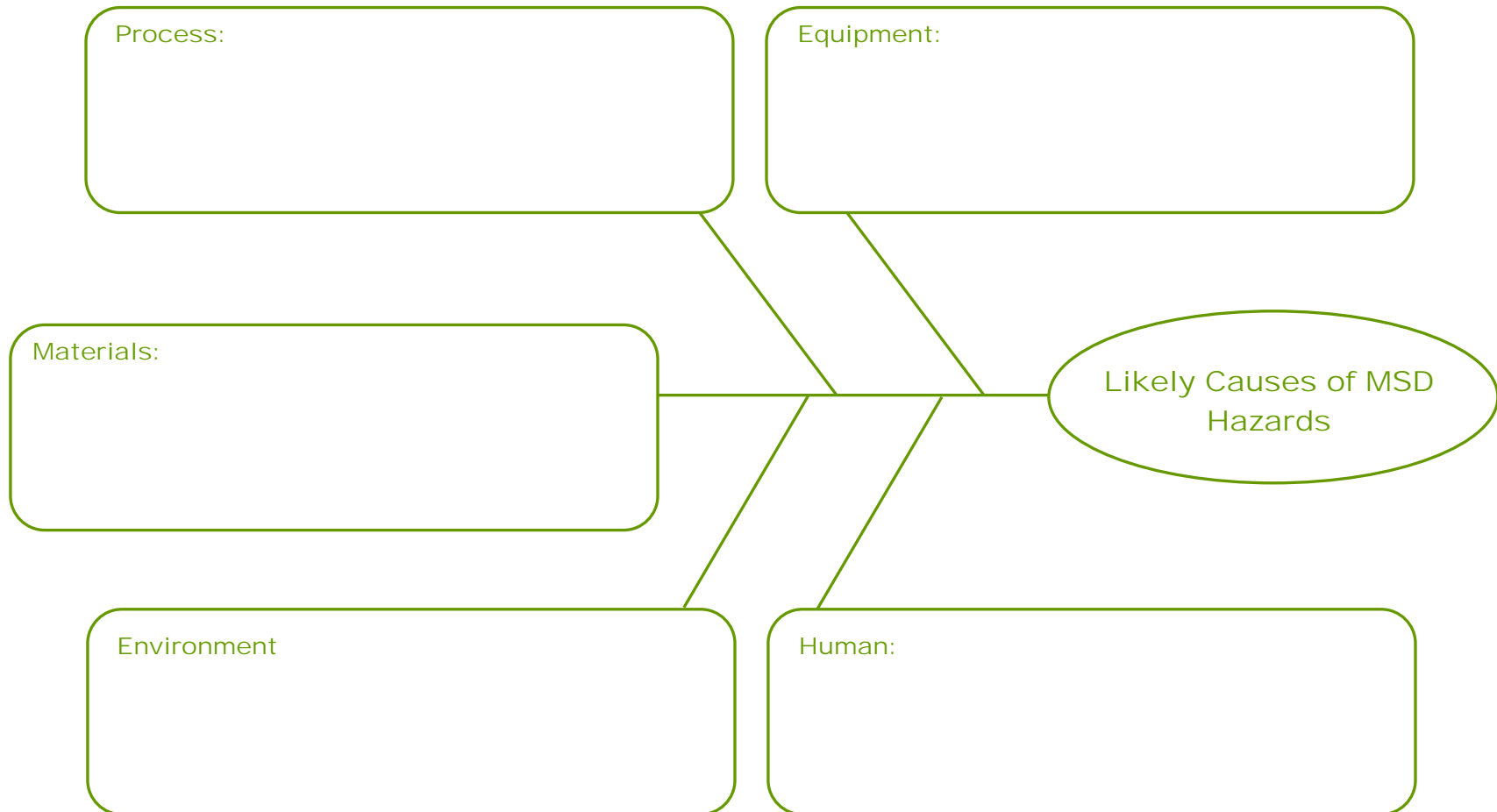
- working height
- location of controls and/or displays
- operation of the controls
- mobility
- location
- association with other equipment
- insufficient adjustability
- maintenance

### **HUMAN:**

- insufficient training on techniques /processes
- insufficient supervision /coaching
- production pressures and demands
- inappropriate response to reports of MSD related concerns
- differences in work methods /techniques
- inconsistent use of equipment /controls that help reduce MSD risk

## Assessing MSD Hazards: Determining Root Cause Worksheet

If agreement on the root cause(s) is not reached, an in-depth risk assessment may be required. See *Part 3B: MSD Prevention Toolbox – Beyond the Basics*



## Eliminating/Controlling MSD Risks

### Developing Solutions Worksheet

This worksheet is designed to be used when brainstorming control options and ideas. The worksheet encourages workplaces to consider potential MSD controls from all aspects of the job – work processes, equipment, materials, environment, and human elements (PEMEH). All the individuals involved in the MSD prevention project, and especially the workers, should be part of the brainstorming session to identify controls that they think will help to solve the problem.

**Some examples of points to consider for each category include:**

#### **PROCESS:**

- self-paced tasks, cycle time allows for micro-breaks
- job enlargement and/or task rotation
- improve work/material flow
- improve communication between workers performing task
- improve communication between workers on adjacent tasks
- improve communication between workers and production, quality, planning, engineering, etc. departments
- timely response to reports of defects, equipment breakdown, product/tool/equipment damage
- adequate staffing levels for workloads

#### **MATERIALS:**

- organize stock on shelves taking weights into consideration
- reduce frequency of substandard/poor quality materials
- purchase in manageable weights/sizes
- purchase materials in bulk containers
- redesign packaging to include handles
- store materials in areas that are easy to access

#### **ENVIRONMENT:**

- organize workstations to enhance interactions
- redesign workstation layout to provide space for movement and required job tasks
- improve housekeeping
- ensure comfortable working temperature
- provide anti-fatigue matting

#### **EQUIPMENT:**

- mechanize a process
- provide mechanical lifts, hoists, conveyors, motorized carts
- improve workstation design/layout
- workstation adjustability (sit/stand, height adjustable)
- preventative maintenance
- pre-shift checklist/inspections
- move control, displays, tools for easier use, visibility, access
- make sure controls are properly labeled/color coded
- provide space for workers to move, allow unconstrained postures
- provide material handling equipment for moving materials

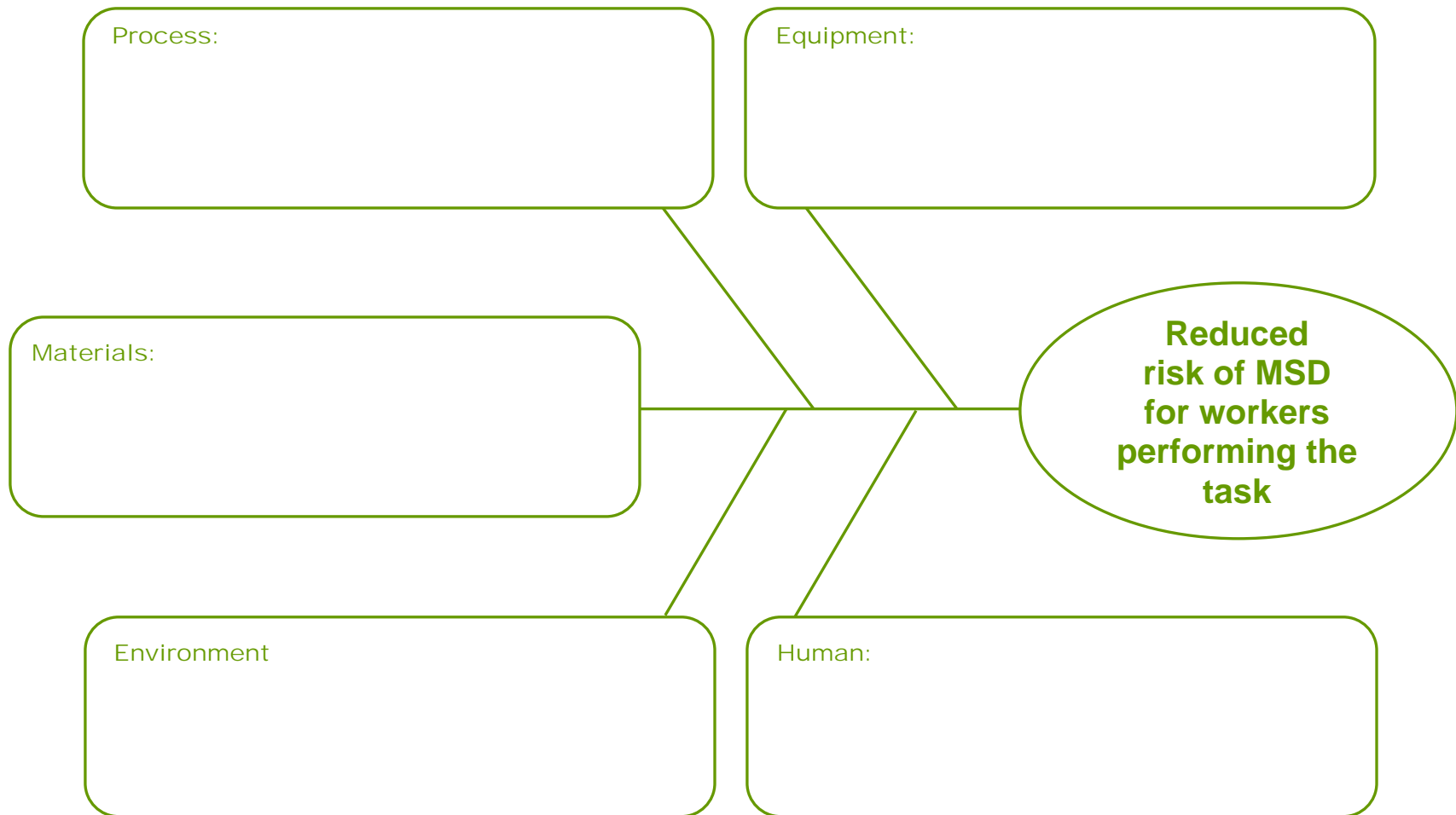
#### **HUMAN:**

- training including:
  - signs & symptoms of MSD
  - MSD hazard awareness
  - how to report MSDs/MSD hazards
  - work techniques and processes
  - team-based solutions/participatory problem solving
- reinforce need for use of equipment/controls that help reduce MSD risk
- improve communication/support from supervisors
- support for early reporting of concerns
- personal protective equipment (insoles, knee pads, anti-vibration gloves)
- production pressures and demands

## Eliminating/Controlling MSD Risks: Developing Solutions Worksheet

If agreement on the root cause(s) is not reached, an in-depth risk assessment may be required. See *Part 3B: MSD Prevention Toolbox – Beyond the Basics*

What is the MSD Hazard we are trying to control \_\_\_\_\_



## Tips for Controlling and Eliminating MSD Hazards

### FORCE

#### Gripping tools/equipment

- Provide tools that allow workers to grip the tool using a power grip.
- Eliminate the use of pinch or key grips as much as possible.
- Choose tools that have triggers that allow for the use of multiple fingers rather than one finger or a thumb.
  - Extensions to triggers may allow multiple fingers to be used
- Choose tools that can be used with the wrist straight.
- Choose tools with vibration-reducing features.
  - Anti-vibration gloves may also reduce the effects of vibration
- Choose tools that are lighter and designed to reduce hand torque and kickback.
- Ensure the tool is balanced and does not require extra muscular effort to hold it in position.
  - When possible have tools hanging from overhead to reduce the muscular effort
- Ensure the handle of a tool does not create pressure points in the palm of the hand.
  - Ensure that tools are the correct size for the worker
  - Padding on the ends of the tools may reduce some of the pressure points
- Use tools with handles that fit the hand. For example, use a smooth, cushioned hand grip rather than one with hard ridges that space the fingers.
- Provide rubber or sponge-type grips on tool handles.
- Provide tools that can be safely used by either left-handed or right-handed workers.
- Maintain tools regularly.
  - Ensure that there is a regular maintenance program (inspection, documentation, follow-up) in place for tools
- Inspect tools regularly. Ensure worn or damaged tools are fixed or replaced.

#### Forestry applications for Pushing and Pulling (pike poles, cables used with logging equipment, chainsaw use, etc.)

- Use a power grip when pushing or pulling any type of equipment
- When pushing or pulling ensure the wrists are straight
- Use the stronger muscles (leg muscles) in your body to help with the push, rather than the smaller ones (back muscles)
- Use a tool (pike pole) when possible to decrease the amount of forceful pushing or pulling on the body

#### General Pushing and pulling

- Provide carts that have vertical or height-adjustable handles to enable different-sized workers to position their hands between waist and shoulder height.
- Use larger wheels on carts and bins as this reduces push and pull forces and they are easier to roll over cracks or holes.
- Ensure that wheels/casters that are suitable for the load being transported and are compatible with the type of flooring.
- Determine the most suitable swivel arrangement of casters – two or four, front or back.
- Ensure there is enough space so the worker does not have to use awkward postures to move the cart.
- If necessary ensure that there is a program in place to use more than one worker when the load is heavy
- Design/change the layout of the work area to eliminate the need to push wheeled objects up slopes or over uneven surfaces.
- Ensure the flooring is level, smooth and in good condition.
- Ensure workers can see over the top of the cart.
- Push rather than pull carts.

- Maintain carts, especially wheels and wheel bearings.
  - Ensure that wheels/casters are in proper working condition and that they are regularly inspected and replaced as necessary
- Provide brakes on carts where practical

**Heavy, frequent or awkward lifting.**

- Use mechanical assists to lift/lower loads - such as hoists, pallet trucks, pump trucks, ladder hoists, cranes, or chain falls.
- Use lifting devices designed for specific tasks, e.g. lifting/moving people.
- Use gravity as an assist whenever possible (lower rather than lift).
- Move objects as close to the body as possible before lifting them
- Use turntables or scissor lifts to bring loads close.
- Ensure there are no obstacles between the worker and the load being lifted.
- Provide tools/devices to help with carrying tasks - carrying handles, extension handles.
- Provide height-adjustable pallet trucks/scissor lifts to keep loads off the floor and so that loads can be handled with the hands above knee height.
- Organize the starting and ending location of the lifts to limit the overall vertical travel distance a load has to be lifted.
- Train workers to assess all material handling tasks and to ensure that the path is clear of obstructions/trip hazards when carrying items
- Avoid lifts below knuckle level and above shoulder level – limit use of high and low shelves.
- Avoid lifting loads that are heavier than four kg when seated – stand and use larger, stronger muscles.
- Improve grips/handles on objects being lifted.
  - If possible have the whole hand involved when lifting or lowering not just the fingers
- Split the overall weight of a load into smaller loads.
  - If this is not possible, have a program in place to have more than one worker lifting or lowering the item/object
- Avoid uneven, unbalanced loads.
- Use carts, motorized buggies, conveyors, gravity feed rollers to transport loads rather than carrying them.
  - Allow the rollers or chains to do the work
- Do not carry objects up and down stairs if two hands are needed to hold objects. Keep one hand free to hold hand rail.
- Improve housekeeping to prevent slips, trips and falls.
- Require suppliers to include the weight on all objects/packages that are manually handled.
- Use shoulder pads when carrying loads on shoulders.

**FIXED OR AWKWARD POSTURES**

- Provide height adjustability in a standing workstation.
- Have a process in place for workers who may be working in awkward postures (i.e. stairs, ramps, stools)
- Establish a suitable working height depending on the type of work being done (i.e. precision, light or heavy work).
- Provide sit/stand stools at standing workstations and for tasks with prolonged standing. Ensure workers are trained on how to properly set them up.
- Provide height adjustable chairs and ensure workers know how to use them
- Utilize lift tables to keep the position the objects close to the worker.
- Utilize tilt tables to angle objects close to workers.
- Utilize rotating platforms to minimize reaching for objects.
- Provide self-elevating platforms in deep bins to keep items easily accessible and near the top of the bin.
- Provide false bottoms in deep sinks or containers.
- Limit shelf heights to between knee and shoulder height.
- Provide foot rests at standing workstations.

- Ensure the type of flooring will minimize shock absorption to the worker's body.
  - Use anti-vibration matting or insoles if possible
- Provide anti-fatigue matting for standing work areas with hard floor surfaces.
- Use devices such as lifts, duct jacks, scissor lifts, and extension poles or stands for operating tools overhead.
- Use adjustable scaffolds, aerial and other work platforms to raise the whole body closer to work.
- Place materials used often at appropriate height and less frequently used materials in less desirable locations.
- Use tables, benches, or stands to bring work to waist height.

#### REPETITION

- Implement well-designed job rotation.
- Add different tasks to the job to increase the variety of activities.
  - Maintenance of machines, stretching/health breaks
- Include flexibility in the job so the worker can control pace of work.
- Use a work/rest schedule that allows for frequent changes of activity.
- Encourage employees to take micro-breaks.
- Mechanize the task where necessary.
- Encourage stretching as part of the routine and at breaks
- Avoid awkward body positions

#### REPEATED IMPACTS

- Look for tools/equipment that will eliminate the need for repeated impacts:
  - Use rubber mallets/other tools instead of the hand
- Provide workers with well-designed padded gloves/knee pads.
  - Anti-vibration gloves
- Change fittings/parts/equipment to minimize the forces used with repeated impacts.
- Limit the time duration required for repeated impacts.

#### CONTACT STRESS

- Change or modify equipment (e.g. use a long-handled screwdriver to prevent the butt from digging into the palm).
- Change or modify work area to prevent sharp edges from digging into skin (e.g. cover sharp or metal edges with padding).
- Use personal protective equipment (e.g. use knee pads while kneeling; use padded gloves when lifting heavy objects by narrow plastic strapping).
- Improve or change work practice to reduce resting or leaning against sharp edges.

#### LOCAL OR HAND-ARM VIBRATION

- Use vibration-absorbing padding on grips or handles.
- Provide employees with anti-vibration gloves.
- Keep tools well maintained/sharp to reduce vibration.
- Source various suppliers who can supply tools with lower levels of vibration.
- Reduce total exposure to vibration by alternating between tasks that use vibrating tools and tasks with non-powered tools or by incorporating job rotation between tasks.
- Use cutting or powerhead vibration dampening devices.
- Use equipment that includes vibration-dampening rubber grommets on controls and control box.
- Ensure that the hand-arm vibration guidelines are followed for proper rest/work ratio

## WHOLE-BODY VIBRATION

- Avoid sitting or standing for prolonged periods on vibrating surface if practicable (e.g. avoid working on catwalks attached to vibrating machinery).
  - Sitting for long period while operating heavy equipment.
  - Use anti-vibration matting where possible
- Isolate the source of vibration from the rest of the work space to prevent transmission of vibration to the sitting or standing area (e.g. isolation of truck cabs from diesel engine vibration).
  - Best means is to ensure seat is in good working condition and padding is well maintained as costs of isolating engine from cab is cost prohibited in older equipment.
- Train and instruct operators and drivers to:
  - Adjust the driver weight setting on suspension seats,
  - Adjust the seat position and controls correctly to provide good lines of sight and support,
  - Adjust the vehicle speed to suit the ground conditions to avoid excessive bumping and jolting,
  - Steer, brake, accelerate, shift gears and operate attached equipment smoothly, and
  - Follow worksite routes to avoid traveling over rough, uneven or poor surfaces.
  - Report any damage to seat to allow for quick response to repairs
- Choose machinery suitable for the job:
  - Select vehicles and machines with the appropriate size, power and capacity for the work and the ground conditions.
- Maintain machinery and roadways:
  - Make sure that paved surfaces or site roadways are well maintained (e.g. graded regularly, potholes filled in, ridges leveled, debris removed),
  - Maintain vehicle suspension systems correctly (e.g. cab, tire pressures, seat suspension),
  - Replace solid tires on machines such as forklift trucks, sweepers and floor scrubbers before they reach their wear limits, and
  - Obtain appropriate advice (from seat manufacturers, machine manufacturers and/or vibration specialists) when replacing a vehicle seat. Seats need to be carefully matched to the vehicle to avoid making vibration exposure worse.
- Other measures
  - Introduce work schedules to avoid long periods of exposure in a single day and allow for breaks where possible.
    - Supervision should encourage regular breaks to check equipment for damage and encourage maintenance activities.
  - Avoid high levels of vibration and/or prolonged exposure for older employees, people with back problems, young people and pregnant women.

## COLD TEMPERATURES

- Ensure workers wear high-friction, well-fitting gloves.
- Ensure that workers wear clothing that keeps them warm without adding a lot of bulk.
- Ensure hand tools are stored in a warm place prior to use.
- Provide alternating periods of cold and warm work (worker rotation) and allow workers to take rest breaks in warm areas (where possible).
- Avoid having workers use tools that discharge cold gases over the hand.
- Provide local source heating (portable heaters) for workers.
- Educate workers about the adverse effects of cold and its influence on MSDs.
- Encourage workers to stay well hydrated.

### HOT WORK ENVIRONMENTS

- Provide alternating periods of cool/shaded and warm work (worker rotation) and allow workers to take rest breaks in cool areas.
- Provide local source cooling (portable spot chillers) for workers.
- Educate workers about the adverse effects of heat and its influence on MSDs.
- Encourage workers to stay well hydrated.

### WORK ORGANIZATION

- Ensure that repetitive or demanding tasks incorporate opportunities for rest or recovery (e.g. allow brief pauses to relax muscles, change work tasks, change postures or techniques).
- Incorporate task variability so that the worker does not have to perform similar repetitious tasks throughout the full shift. Provide the worker with the opportunity to vary work tasks by rotating jobs or increasing the scope of the job.
- Ensure that work demands and work pace are appropriate.

### WORK METHODS

- Evaluate jobs to determine whether work methods are compatible with worker capabilities.
- Analyze the differences in work methods between individuals to find the best work methods.
- Ensure that the official work method is the best work method and corresponds with what workers are actually doing.

## Ergonomic Intervention Review

Occupational Title: \_\_\_\_\_

(Attach necessary information, PDA, hazard checklist, symptom survey, work order)

Date of Accommodation/Modification (dd/mm/yyyy): \_\_\_\_\_

Type of modification (Check one):

- Work Practice       Administrative       Design       Upgrade/Device

**Risk factors to which body area:**

- |                                    |                                   |                                 |
|------------------------------------|-----------------------------------|---------------------------------|
| <input type="checkbox"/> Neck      | <input type="checkbox"/> Mid back | <input type="checkbox"/> Hips   |
| <input type="checkbox"/> Shoulders | <input type="checkbox"/> Low back | <input type="checkbox"/> Knees  |
| <input type="checkbox"/> Elbows    |                                   | <input type="checkbox"/> Ankles |
| <input type="checkbox"/> Wrist     |                                   | <input type="checkbox"/> Feet   |
| <input type="checkbox"/> Hands     |                                   |                                 |

Risk factors description (force, posture, time elements):

List the risk factors you have identified (for example, use of awkward working postures, repetitive motions, use of excessive force.)

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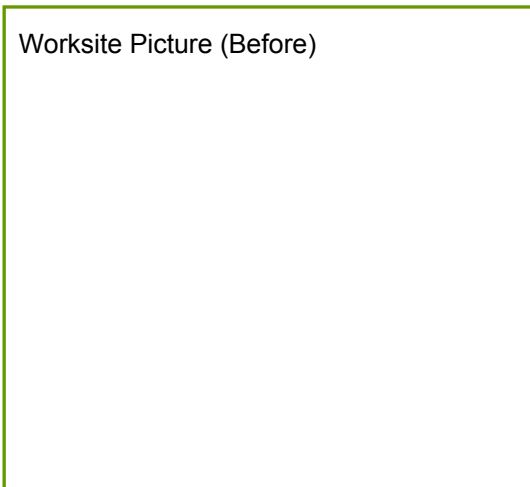
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Recommendations:

Worksite Picture (Before)



Worksite Picture (After)

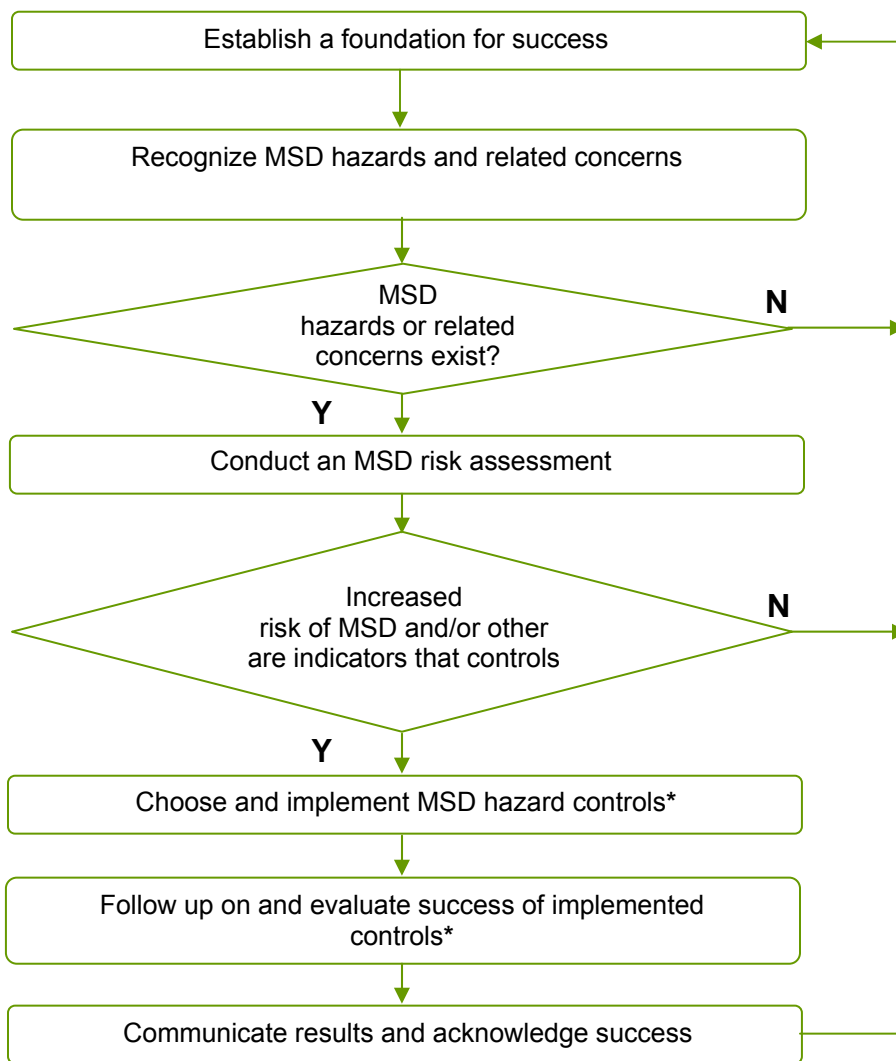


## Review MSD Flow Chart

This tool includes a checklist for each of the elements in the MSD Prevention Framework, as described in the MSD Prevention Guideline for Ontario. For each element in the flowchart, determine whether the activities or steps have been considered, whether they are being discussed or developed, or whether they have been partially or fully implemented.

Workplaces can use this tool to identify possible areas of improvement for their MSD prevention efforts and establish an action plan that will, over time, result in all of the activities or steps being fully in place and always done.

The process activities and steps listed in this tool are suggestions only. Some workplaces may find that the activities or steps listed are not appropriate for their workplace. Other workplaces may find they require additional or different activities/steps for success.



**Figure 1:** MSD Prevention Framework

\* - see Part 3A: MSD Prevention Toolbox – Getting Started for more information/tools

## Where to go now?

The information is not intended to solve all problems but to provide some insight into why injuries may be occurring and to help develop effective solutions. In some cases, a professional ergonomist may be needed to review the problem and help solve the issue. The Ontario Forestry Safe Workplace Association has district Consultant Trainers and a Consultant Trainer/Ergonomist who can help firms resolve ergonomic issues.

OFSWA encourages you to take the initial assessment steps outlined in this Reference Package, since you and your employees are in the best position to evaluate how the work is being done. Once these initial steps are completed using the tools in this package, OFSWA's Consultant Trainer / Ergonomist or your local OFSWA Consultant Trainer can be contacted for assistance on-site or via e-mail or telephone.

## Consultant Trainer Contact Information

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**The information in this Reference Package came from the following sources:**

- The OFSWA SWO program
- Part 1: Ontario MSD Prevention Guideline for Ontario
- Part 2: Ontario MSD Prevention Resource Manual for Ontario
- Part 3A: MSD Prevention Toolbox – Getting Started
- Part 3B: MSD Prevention Toolbox – Beyond the Basics

All of these resources can be found on the OFSWA website [www.ofswa.on.ca](http://www.ofswa.on.ca)