

Worksheet A: MSI Risk Factor Identification

Musculoskeletal injury (MSI) is an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels, or related soft tissues that may be caused or aggravated by work. Examples of MSIs include sprains, strains, and inflammation.

Section 4.47 of the Occupational Health and Safety Regulation requires employers to identify factors in the workplace that may expose workers to a risk of MSI. This worksheet can assist you in identifying

those factors. If a risk is identified, a moderate or high risk of MSI exists and requires assessment and control. In that case, employers can then use this document's companion publication, [Worksheet B: MSI Risk Factor Assessment](#), to help assess the degree of risk. For a complete guide to MSI, refer to the WorkSafeBC publication [Preventing Musculoskeletal Injury \(MSI\): A Guide for Employers and Joint Committees](#).

Instructions

1. **Document** the job title or task, the date, and the name of the person completing the worksheet.
2. **Observe** a representative sample of workers performing regular work activities. A representative sample would include workers showing signs and symptoms of MSI, as well as workers of different ages, heights, weights, genders, shift schedules, and work locations.
3. In the pages that follow, **read** the descriptions of work activities that meet the minimum criteria for MSI risk.
 - Duration (e.g., two hours total per day) refers to the total time per day the worker is exposed to the risk factor, not the duration of the work activity that includes the risk factor. However, when duration is associated with repetition (i.e., performing the same motion every few seconds), duration refers to the total time spent on that task over the course of the day.
 - If exposure to a risk factor (e.g., two hours total per day) is continuous, the MSI risk will be significantly greater than in cases of intermittent exposure distributed over a shift.
4. **Check** the assessment box for that risk factor if the task meets or exceeds the criteria listed.
5. **Write** notes for any identified risk factor to clarify the task and where it occurs. Any risk factors identified pose at least moderate risk to workers and require further assessment and control.
6. **Go** to [Worksheet B: MSI Risk Factor Assessment](#) if any risk factors are identified. Fill out the Risk Factor Summary Table to summarize the risk factors identified on Worksheet A.

Note: Worksheets A and B do not address all MSI risk factors; however, any other risks must still be assessed if present in the workplace. For example:

- **Contact stress** that includes kneeling and tools digging into the skin is addressed in the WorkSafeBC publication [MSI Prevention Guidance Sheet: Risk Factor – Contact Stress](#).
- The force required to **push, pull, or carry** loads is addressed in the [MSI Prevention Guidance Sheet: Risk Factor – Pushing and Pulling](#) and WorkSafeBC's online [Push/Pull/Carry Calculator](#).
- **Cold temperatures** are addressed in the [MSI Prevention Guidance Sheet: Risk Factor – Cold Temperatures](#).

Job title or task: _____ Date: _____

Completed by: _____

Notes:

Employer representative

Worker representative

Contact stress

If any of the following criteria are present, mark the assessment box → Perform contact stress risk assessment

Description of work task that poses MSI risk	Notes
Using one of the following as a hammer more than 10 times per hour and for more than 2 hours total per day: <ul style="list-style-type: none">• Hand (heel/base of palm)• Knee	

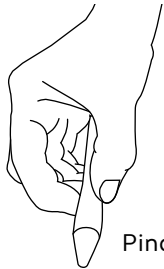
Repetition

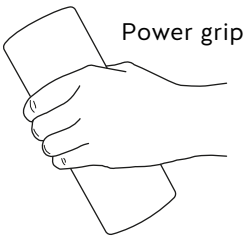
If any of the following criteria are present, mark the assessment box → Perform repetition risk assessment

Description of work task that poses MSI risk	Notes
Repeating the same motion with the neck, shoulders, elbows, wrists, or hands every few seconds with little or no variation for more than 2 hours total per day (excluding typing)	
Intensive typing for more than 4 hours total per day	

Grip force

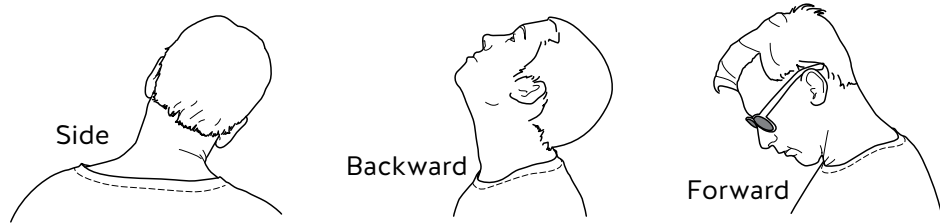
If any of the following criteria are present, mark the assessment box → Perform grip force risk assessment



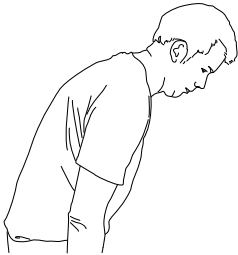
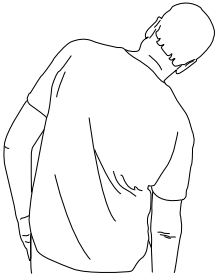
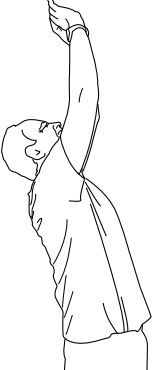
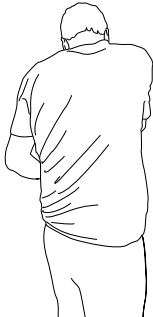

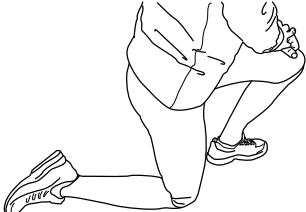
Description of work task that poses MSI risk	Notes
<p>Pinch grip</p> <ul style="list-style-type: none">• Pinch gripping unsupported objects weighing 1 kg (2 lb.) or greater per hand for more than 2 hours total per day <p>OR</p> <ul style="list-style-type: none">• Pinch gripping with a force of 2 kg (4 lb.) or greater per hand for more than 2 hours total per day	 <p>Pinch grip</p>

Description of work task that poses MSI risk	Notes
<p>Power grip</p> <ul style="list-style-type: none"> Power gripping unsupported objects weighing 5 kg (10 lb.) or greater per hand for more than 2 hours total per day <p>OR</p> <ul style="list-style-type: none"> Power gripping with a force of 5 kg (10 lb.) or greater for more than 2 hours total per day 	

Note: A pinch grip occurs when force is applied primarily between the fingers and thumb. A power grip occurs when force is applied primarily between the fingers and the palm.

Lift/lower force	
If any of the following criteria are present, mark the assessment box <input type="checkbox"/>	Perform lift/lower force risk assessment
Description of work task that poses MSI risk	Notes
Lifting or lowering objects over the shoulders, below the knees, or at arm's length	
Lifting or lowering objects twice or more per minute for more than 1 hour per shift	
Lifting or lowering objects weighing 2.3 kg (5 lb.) or greater twice or more per minute	
Lifting or lowering objects weighing more than 8.2 kg (18 lb.) once per shift	

Awkward posture	
If any of the following criteria are present, mark the assessment box <input type="checkbox"/>	Perform awkward posture risk assessment
Description of work task that poses MSI risk	Notes
<p>Neck</p> <p>Working with the neck bent more than 30° in any direction for more than 2 hours total per day</p> 	

Description of work task that poses MSI risk	Notes
<p>Shoulder</p> <ul style="list-style-type: none"> Working with the hand(s) above the head more than 2 hours total per day Working with the elbow(s) above shoulder level more than 2 hours total per day <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Above head</p> </div> <div style="text-align: center;">  <p>Above shoulder</p> </div> </div>	
<p>Back</p> <p>Working with the back bent more than 30° in any direction for more than 2 hours total per day</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Forward</p> </div> <div style="text-align: center;">  <p>Side</p> </div> <div style="text-align: center;">  <p>Backward</p> </div> <div style="text-align: center;">  <p>Twist</p> </div> </div>	
<p>Knees</p> <p>Squatting/kneeling more than 2 hours total per day</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Squatting</p> </div> <div style="text-align: center;">  <p>Kneeling</p> </div> </div>	

Vibration

If any of the following criteria are present, mark the assessment box → Perform vibration risk assessment

Description of work task that poses MSI risk	Notes
Using high-vibration tools (impact wrenches, chainsaws, jackhammers, riveting hammers) for more than 30 minutes total per day	
Using moderate-vibration hand tools (grinders, sanders, jig saws) for more than 2 hours total per day	