

COST-BENEFIT CALCULATOR AND CRE-MSD RESOURCES

2/22/2024

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Ergonomics Research Coordinator, Centre of Research Expertise for
the Prevention of Musculoskeletal Disorders (CRE-MSD)

EDUCATIONAL BACKGROUND



Bachelor of Science (B.Sc.) in Kinesiology from
University of Waterloo, Ergonomics and Injury
Prevention Minor (Co-op)



Master of Science Candidate (M.Sc) in
Kinesiology from University of Waterloo,
specializing in Biomechanics

WORK EXPERIENCE

- Started as an **Ergonomics Student**
 - Automotive Industry
- Worked in Ergonomics Consulting
 - Various workplace settings
 - Assist in training new students
- **Masters project in Passive Upper Extremity exoskeletons**
 - Automotive overhead work
- **Acting Ergonomics Research Coordinator at CRE-MSD**

Focus on MSD Prevention

Session Topics

1. Introduction to CRE-MSD
2. Ontario Ergonomics Intervention Cost-Benefit Calculator
3. CRE-MSD Quick Start Guides
4. Other CRE-MSD resources

CENTRE OF RESEARCH EXPERTISE FOR THE PREVENTION OF MUSCULOSKELETAL DISORDERS (CRE-MSD)



For more info visit:
cre-msd.uwaterloo.ca



Centre of Research Expertise
for the Prevention of
Musculoskeletal Disorders

CRE-MSD Resources

Events

FILTER

RSS

Dates

Type

Audience

APPLY

WEDNESDAY, MARCH 8, 2023 — 12:00 PM TO 1:00 PM EST

Webinar - The Space Between Sitting and Standing: Hybrid Seating - Is the Juice Worth the Squeeze?

WEDNESDAY, FEBRUARY 22, 2023 — 12:00 PM TO 1:00 PM EST

Webinar - MSD Prevention and Ultrawide Computer Displays for Office Work

TUESDAY, FEBRUARY 7, 2023 — 10:00 AM TO TUESDAY, FEBRUARY 28, 2023 — 12:00 PM EST

OHCOW Weekly Webinar Series - Repetitive Strain Injury (RSI) Day



Prevention of Musculoskeletal Disorders in the Transportation Sector:

Things to Consider when Purchasing a Truck

Cab Design

Occupational drivers have also been shown to increase risk for developing musculoskeletal disorders, particularly, for low back pain (LBP). Research has shown that prolonged driving leads to higher cumulative spine loading and higher LBP occurrence. The design of the vehicle is important to reduce risk of injury. Vehicles with adjustable driving packages (seats, pedals, tilt and telescoping steering wheels) have been reported to result in fewer musculoskeletal problems. Consider the following cab interior items when purchasing or designing trucks:

- Steering wheel tilt and telescoping adjustments so it's at a comfortable height and reach.
- Ensure seats have adjustment for seat cushion vertical adjustment range, lumbar support, seat cushion front & back will tilt, back recline, armrest height and angle. Suspension in seats to minimize effects of vibration.
- Seatbelt shoulder strap height adjustable to enhance comfort for small and larger drivers.
- Pedal adjustability.
- Ensure the pedals and the steering wheel are aligned with centerline of the seat.
- Accessibility of cup holders, gear shifter, air horn, and main controls so drivers do not have extended reach.
- Angle dashboards so controls closer to driver.
- Visibility of main displays on dashboard.
- Easy adjustment of mirrors to ensure visibility.

■ MSD Prevention Guideline for Ontario

■ Events:

- Webinars, Workshops & Conferences

■ Position Papers

■ Fact Sheets and Handouts

■ Communities of Practice

WorkSmart

About MSD

Prevent MSD

Deal with an MSD

Stakeholders

MSD Hazards & Controls

Resource Library

MSD Prevention Guideline for Ontario

Workplace solutions for back pain, tennis elbow and other musculoskeletal disorders (MSD), because work shouldn't hurt

Watch Video

Position Paper

Musculoskeletal Disorders (MSD) and Mental Health: The Role of Psychosocial Factors in Optimizing Prevention

Heather Johnston

Nearing the end of your work shift, your boss tells you to hurry up, work quicker, meet the day's deadlines. You feel overwhelmed, tense, unsupported, and physically exhausted from the stress you're under. Consumed by your workload and work pace, your risk of an MSD or mental health injury may have just increased. This scenario is common across many workplaces and sectors. Traditional physical risk factors for MSD like force, repetition, or posture are combined with psychosocial factors. Such psychosocial factors, recently, have gained greater attention due to the focus on workplace mental health and wellness. In the scenario above, a pathway of psychological considerations (time demands, pressure, stress), may influence physiological changes in the body (increased heart rate, muscle tension), in turn resulting in increased biomechanical demands to complete the task. This pathway suggests an overlap in MSD and mental health outcomes reflected in current trends of work-related injury including continued high rates of MSD and rising rates of mental stress injuries. This raises the question of how are psychosocial factors related to common workplace injuries like MSD and mental health injuries and what can we do about them to optimize prevention?

Key Messages

- Relationships between psychosocial factors, MSD, and mental health outcomes are multi-directional.
- Psychosocial factors can act to both increase or decrease risk of injury.
- Few of the widely used MSD risk assessment tools incorporate psychosocial factors, highlighting an area for improvement in assessment.

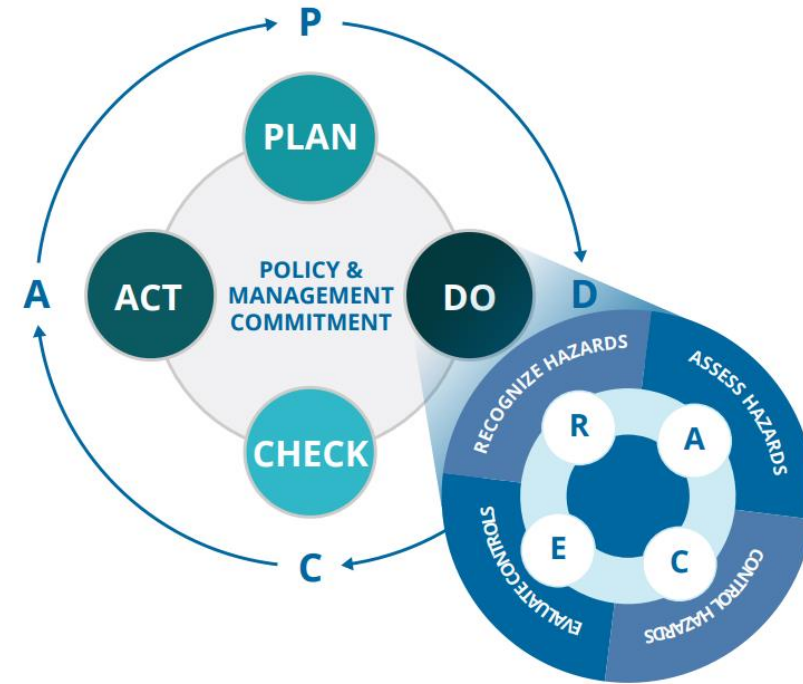


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Musculoskeletal Disorders

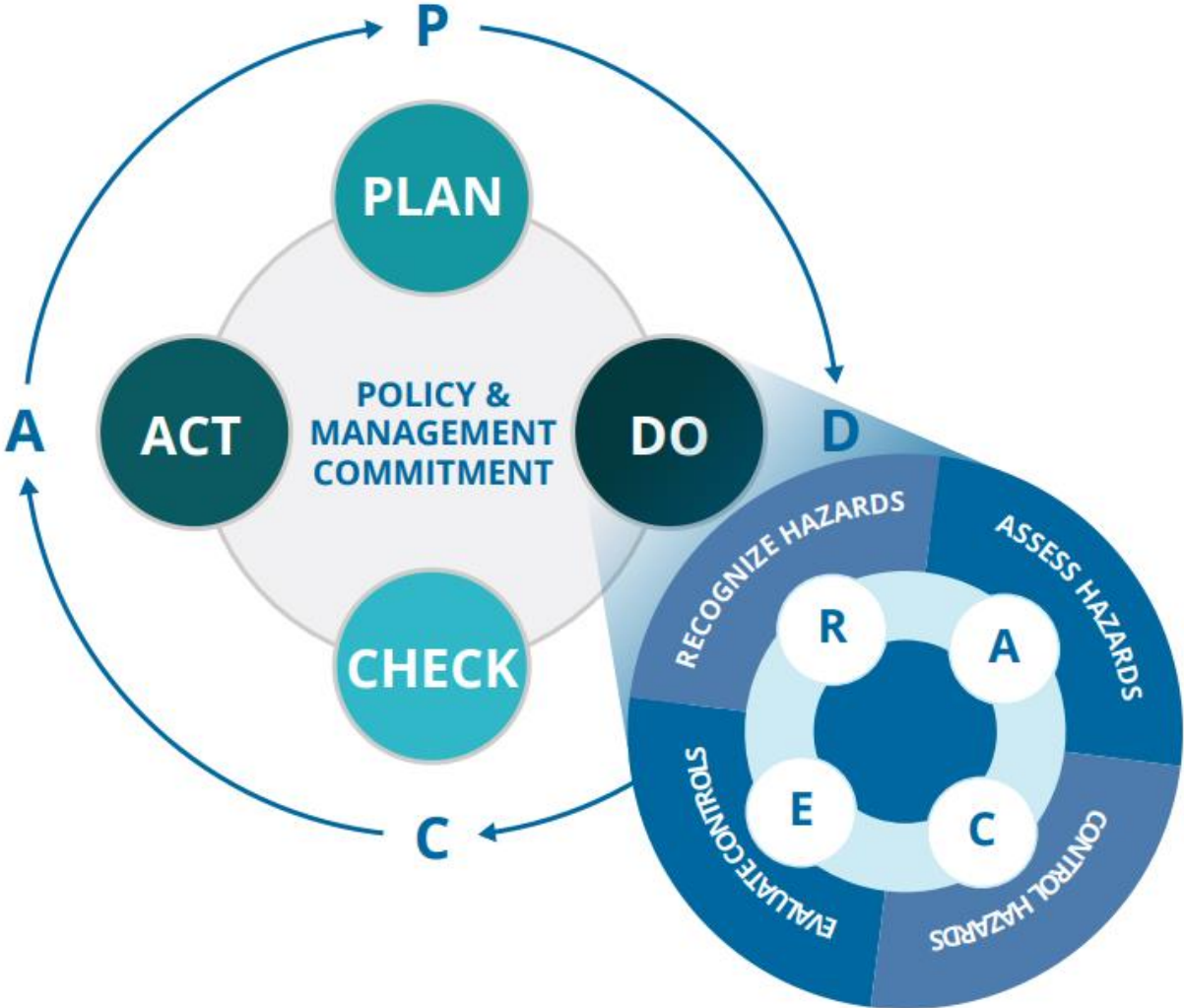
MSD Prevention Guideline for Ontario: 10 Step Process



How to include MSD Prevention into a Health and Safety Program

<https://www.msdpreservation.com/resource-library/view/how-to-include-msd-prevention-into-the-health-and-safety-program.htm>

MSD Prevention Guideline for Ontario: 10 Step Process



Quick Start Guide

1

Store it off the floor

• Store objects between knee and shoulder level. Waist level is best.

• Store items off the floor to minimize bending.

• Use tables, benches or stands to get work off the floor.

• Store infrequently used objects on the floor, and use carts or equipment to move heavy items.

Cost-benefit Calculator

Select Your Time Period for Injury Cost:		During Pandemic (2020-2022)		
Select Your Industry Sectors:		E4 Metal transportation equipment and furniture manufacturing		
Number of employees in this job/dept./org.:		10		
Average hourly salary for these employees:		\$20.00		
Number of MSD claims for this job/dept./org. per year:				
Year	Type of Injury:	Number of Injuries:	Typical costs:	Total costs for year:
This past year:	Back (including spine, spinal cord, neck)	5	\$ 22,636	\$ 200,463
	Lower extremities	5	\$ 35,961	
	Trunk (excluding back)	5	\$ 49,278	
	Upper extremities	5	\$ 46,355	
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Ontario WSIB

Input Solutions

Benefits

Payback

Drop Downs

Table 2020-2022

Table 2018 & 2019

Centre of Research Expertise
for the Prevention of
Musculoskeletal Disorders

MSD PREVENTION RESOURCES

ONTARIO ERGONOMICS COST-BENEFIT CALCULATOR

Background

- Various stakeholder groups provided feedback to CRE-MSD and WSPS
 - Need for Ontario-specific cost-benefit information
 - Organizational buy-in to MSD prevention
- CRE-MSD collaborated with WSPS to create the Ontario-based calculator
 - Based on the existing Washington State Ergonomics Calculator
 - Rick Goggins presentation talks about this calculator in detail
 - This webinar will highlight the differences between the Ontario and Washington State tools



Select Your Time Period for Injury Cost:

Select Your Industry Sectors:

Number of employees in this job/dept./org.:

Average hourly salary for these employees:

During Pandemic (2020-2022)

E4 Metal transportation equipment and furniture manufacturing

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\$20.00

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- Washington State Calculator
 - Substituted the injury data
 - Workplace Safety and Insurance Board (WSIB)

Select Your Time Period for Injury Cost

During Pandemic (2020-2022)

Select Your Industry Sectors:

E-1 Metal transportation equipment and furniture manufacturing

Number of employees in this job/dept./org.:

10

Average hourly salary for these employees:

\$20.00

Number of MSD claims for this job/ dept./ org. per year:

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1. Choose a time frame

Pre pandemic (2018-2019)

OR

During pandemic (2020-2022)

Select Your Time Period for Injury Cost

Select Your Industry Sectors:

Number of employees in this job/dept./org.:

Average hourly salary for these employees:

Number of MSD claims for this job/ dept./ org. per year:

During Pandemic (2020-2022)

E-1 Metal transportation equipment and furniture manufacturing

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\$20.00

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Ontario WSIB

Input Solutions

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Table 2020-2022

Table 2018 & 2019

+



UNIVERSITY OF
WATERLOO

FACULTY
OF HEALTH

1. Choose a time frame

Pre pandemic (2018-2019)

OR

During pandemic (2020-2022)

	A	B	C	D	E	F	G	H
1	Class Subclass	Claim Count	2020 Total Costs Paid Amount	Claim Count	2021 Total Costs Paid Amount	Claim Count	2022 Total Costs Paid Amount	Average
3	A Agriculture		\$ 1,890,205.29		\$ 1,776,621.54		\$ 1,219,008.92	
4	Back (including spine, spinal cord, neck)	101	\$ 741,589.95	120	\$ 559,788.51	119	\$ 426,430.25	\$ 5,196.94
5	Lower extremities	28	\$ 107,274.37	23	\$ 235,213.08	45	\$ 129,893.43	\$ 5,648.13
6	Trunk (excluding back)	40	\$ 456,533.28	51	\$ 424,952.96	45	\$ 175,996.33	\$ 7,885.59
7	Upper extremities	26	\$ 354,021.24	30	\$ 468,470.98	53	\$ 378,315.47	\$ 12,123.31
8	Other	20	\$ 230,786.45	19	\$ 88,196.01	21	\$ 108,373.44	\$ 7,113.95
9	B Mining, quarrying and oil and gas extraction		\$ 1,208,983.72		\$ 681,411.93		\$ 1,118,828.33	
10	Back (including spine, spinal cord, neck)	21	\$ 364,958.29	21	\$ 277,711.95	26	\$ 233,199.69	\$ 13,190.85
11	Lower extremities	16	\$ 203,876.66	12	\$ 93,105.68	15	\$ 267,990.76	\$ 12,789.05
12	Trunk (excluding back)	13	\$ 212,927.12	10	\$ 160,202.53	27	\$ 403,291.89	\$ 15,778.67
13	Upper extremities	16	\$ 401,398.17	10	\$ 97,146.31	7	\$ 76,132.42	\$ 15,226.03
14	Other	2	\$ 25,823.48	1	\$ 53,245.46	7	\$ 138,213.57	\$ 28,634.00
15	C Utilities		\$ 521,654.91		\$ 836,384.44		\$ 246,209.42	
16	Back (including spine, spinal cord, neck)	17	\$ 53,127.97	34	\$ 362,436.17	27	\$ 73,067.89	\$ 5,497.09
17	Lower extremities	11	\$ 72,554.32	11	\$ 97,118.11	11	\$ 48,030.76	\$ 6,597.07
18	Trunk (excluding back)	14	\$ 230,921.30	12	\$ 253,834.86	8	\$ 77,056.56	\$ 15,759.78
19	Upper extremities	9	\$ 72,976.65	6	\$ 112,194.58	9	\$ 30,893.53	\$ 10,080.08
20	Other	1	\$ 92,074.67	5	\$ 10,800.72	1	\$ 17,160.68	\$ 37,131.83
21	D1 Educational services		\$ 734,997.60		\$ 552,854.04		\$ 451,745.84	
22	Back (including spine, spinal cord, neck)	42	\$ 62,100.96	38	\$ 106,742.38	73	\$ 196,871.55	\$ 2,328.16
23	Lower extremities	18	\$ 168,452.00	21	\$ 65,902.05	24	\$ 36,192.58	\$ 4,668.22
24	Trunk (excluding back)	13	\$ 227,775.84	18	\$ 233,757.14	24	\$ 86,933.12	\$ 11,376.65

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15	C Utilities		\$ 521,654.91		\$ 836,384.44		\$ 246,209.42	
16	Back (including spine, spinal cord, neck)	17	\$ 53,127.97	34	\$ 362,436.17	27	\$ 73,067.89	\$ 5,497.09
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Select Your Time Period for Injury Cost

Select Your Industry Sectors

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Average hourly salary for these employees:

During Pandemic (2020-2022)

E4 Metal transportation equipment and furniture manufacturing

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\$20.00

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2. Enter your workplace-specific information

Cost-Benefit Calculator Summary

- Calculate the cost-benefit analysis of 3 interventions at a time
- Ontario sector and body region specific data
- Input information specific to your workplace
- Tool helps demonstrate the value of ergonomic interventions
 - Organizational buy-in

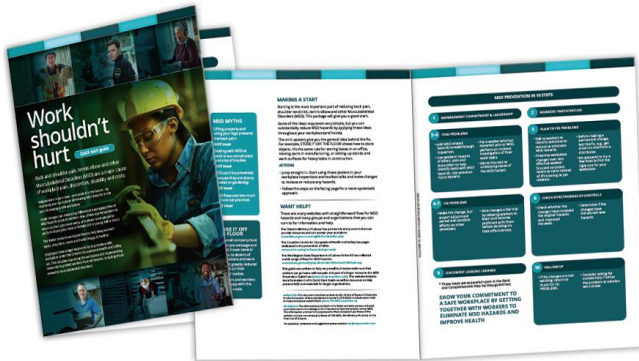
MSD PREVENTION RESOURCES

QUICK START GUIDE POSTERS

MSD Prevention Guideline for Ontario: 3 Versions

Quick Start Guideline

- **Small or micro businesses**
- May have a Health and Safety Representative
- May not have much knowledge and few resources in Health and Safety and/or MSD
- General & Office



Basic Guideline

- **Medium to large companies**
- Have a Joint Health and Safety Committee (JHSC)
- Have a person or multiple people with knowledge, experience, and responsibility for Health and Safety
- Existing Health and Safety policy and program

STEP 1: Demonstrate Management Commitment and Leadership ▶

STEP 2: Facilitate and Encourage Workers' Participation ▶

STEP 3: Plan Hazard Identification and Risk Assessment ▶

STEP 4: Conduct Hazard Identification and Risk Assessments ▶

STEP 5: Develop a set of Targets and Goals to Eliminate Hazards & Control Risks ▶

STEP 6: Control Hazards and Implement Necessary Changes to Achieve Targets and Goals ▶

STEP 7: Provide Education and Training ▶

STEP 8: Evaluate Controls, the Program and the Organization's Performance ▶

STEP 9: Document Lessons Learned and Stakeholders' Feedback ▶

STEP 10: Review Processes, Achievements, and Identify Areas for Improvement ▶

Comprehensive Guideline

- **Large companies**
- Have multiple people and/or a Department with knowledge, experience, and responsibility for Health and Safety
- Have a formal management framework that is used to oversee activities
- Have a Health and Safety management system
- Have comprehensive policies and procedures for health and safety



Centre of Research Expertise
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Musculoskeletal Disorders

Quick Start Guideline

General



Office



Quick Start Guideline: General (6 posters)

BACK. SHOULDERS. NECK. HANDS.

Happy and Healthy at Work



Store it off the floor

- Store heavy objects between knee and shoulder level. Waist level is best.
- Store items off the floor to minimize bending.
- Use tables, benches or stands to get work off the floor.
- Use carts or equipment to move heavy items.



Keep it close

- Perform tasks close to your body.
- Avoid leaning and stretching forward to reduce stress on your lower back.
- Avoid side reaches that twist the spine.
- Your smart workstation: keep common tasks close; less common tasks out of the way.



Hands below head

- Use a stool, platform, ladder or hoist so work is below head/shoulder height.
- Choose lighter tools and materials for overhead work.
- Use a bit extender for drills/screw guns.
- Find other tools/assists to limit overhead work.



Look straight ahead

- Position your work and equipment to keep your gaze straight ahead.
- Position your work below eye level to align your vision with the task.
- Arrange your workspace so common items are centred to your body.
- Remember to give your neck a break.



Get a (good) grip

- High force work: power grip (full hand). Low force, precision work: pinch grip.
- Choose a tool and grip that puts your wrist in a strong, natural posture.
- Choosing tools: good shape for the task, fits your hand, edges don't dig in.
- Power tools with low vibration and no kickback are best.



Change it up

- Include micro breaks in your tasks for body recovery and fatigue prevention.
- Fatigue can occur during long duration efforts and repetitive tasks.
- Rotate different tasks to provide working rests.
- Tasks that have MSD hazards and little recovery time have a high priority for change.

- Each poster:
 - Describes a common workplace MSD hazard
 - Provides ideas on how to fix it
- MSD hazards can be found in all workplaces and across different sectors.
- Recognize some or all six hazards in your workplace?
 - This tells you that your workplace needs an action plan for MSD prevention

How to use the Posters

1. Workplace walkthroughs and inspections
 - Use as a guide to find MSD hazards
 - Write observations and ideas about possible fixes for hazards
2. Safety Talks
 - Use as a script for talking points
 - Engage workers in the discussion to brainstorm possible fixes
3. Post in lunchroom or Health & Safety board
 - Alert workers to potential MSD hazards in their work and their relationship to pain and discomfort

Orange, Yellow, Green – What Does it mean?

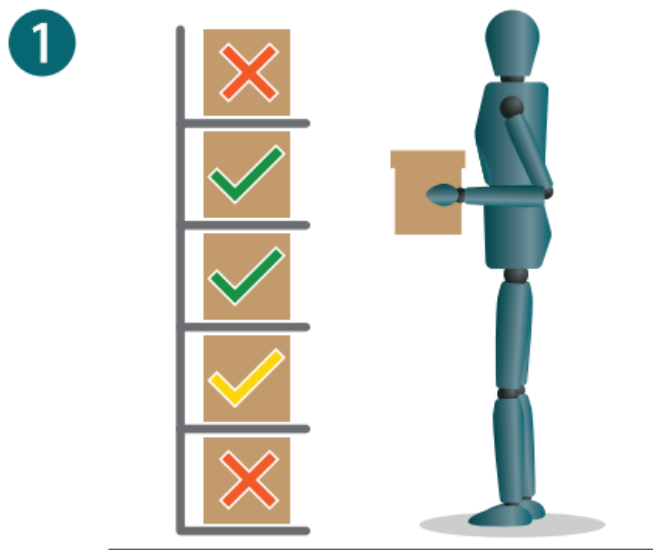
GREEN – No action required if tasks are not held or repeated for long periods and no MSD symptoms are reported. Continue to monitor for MSD symptoms and check after workplace or process changes.

YELLOW – Investigations and improvement needed in the longer term. Investigation and improvement needed immediately if MSD symptoms are present.

ORANGE – Further assessment or improvement needed immediately.

[Link: Orange, Yellow, Green:
What Does it all Mean? Video](#)

Poster 1: Store it off the Floor



Store it off the floor

- Store objects between knee and shoulder level. Waist level is best.
- Store items off the floor to minimize bending.
- Use tables, benches or stands to get work off the floor.
- Store infrequently used objects on the floor, and use carts or equipment to move heavy items.

Store it off the floor

Ideas for a healthy back

Use these ideas to improve every task at work and at home.

- Use lift assist devices, hand trucks, or handling devices to avoid actually lifting items by hand.
- Minimize floor level work: use tables, benches, and stands to keep items off the floor.
- Place commonly handled and heavy items at waist height.
- Even under ideal conditions (load is waist high, close to your belly button and only lifted occasionally), control lifting more than 23kg (50lbs) by hand.
- Team lift: use a partner, ideally close to your size and strength.
- Bend at your hips: butt out, "proud" chest, don't round your back.
- Keep the object close to your body or between your legs.
- Changing activities and rests built into the job allow the body to recover: See MSD Tip #6.

Did you know?

- The closer your hands are to the ground while lifting, the more likely you are to hurt your back.
- Lifting from the ground puts extra load on your spine and puts it in a weakened position...a bad combination!
- Even bending to lift a pencil from the ground can overload your back. Your upper body is heavy!
- Risk of injury is higher when lifting from the floor than from waist level, even if you bend your knees and lift with your legs.

Improve your workplace

- Ask yourself and others, "Why does the job require lifting from the floor?" until you get to the bottom of the problem.

What are we going to do today to keep our backs healthy while working?

- 1 _____
- 2 _____
- 3 _____

Whatever changes you make, check that you are not creating any new problems.

Poster 2: Keep it Close



Keep it close

- Perform tasks close to your body.
- Avoid side reaches that twist the spine.
- Avoid leaning and stretching forward to reduce stress on your lower back.
- Keep common tasks close; less common tasks out of the way.

Keep it close

Ideas for a healthy body

Use these ideas to improve every task at work and at home.

- Arrange your workspace so commonly used or heavier items are directly in front and close to your body.
- Perform the most frequent tasks closest to your body.
- Even under ideal conditions (load is waist high, close to your belly button and only lifted occasionally), control lifting more than 23kg (50lbs) by hand.
- Move unused items away to create a clutter-free and easy-to-use workspace.
- Take a minute when you start work to move things where you want them. Everybody uses things differently.
- Move your feet so your spine doesn't have to twist.
- Changing activities and rests built into the job allow the body to recover: See MSD Tip #6.

Did you know?

- Long or frequent forward reaches can overload your back and shoulder muscles, increasing your risk of injury.
- Sideways reaches, or picking up a load to the side, can cause your back to twist.
- Twisting puts your spine in a weak position, increasing the risk of overloading your back.
- Working with your arms stretched out in front of your body fatigues your shoulders quickly.

Improve your workplace

- Ask yourself and others, "Why does the job require reaching and twisting?" until you get to the bottom of the problem.

What are we going to do today to keep our backs and shoulders healthy while reaching?

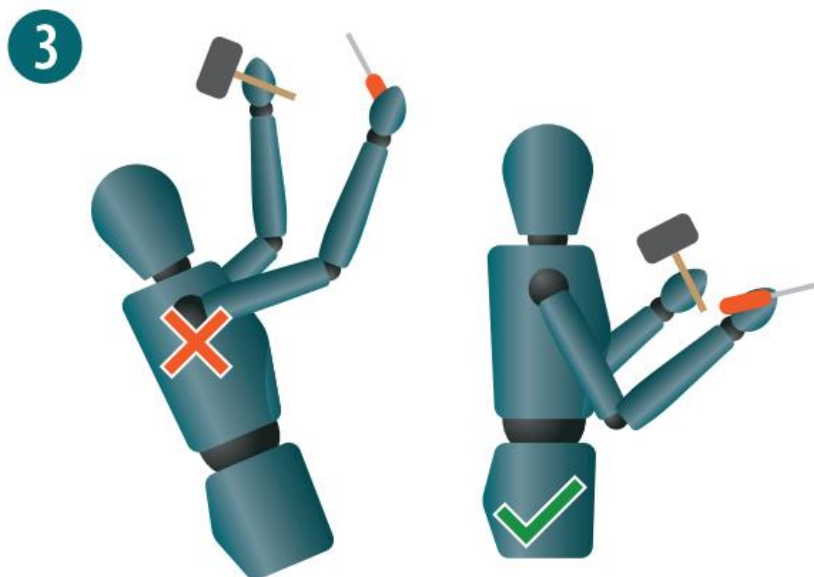
1 _____

2 _____

3 _____

Whatever changes you make, check that you are not creating any new problems.

Poster 3: Hands Below Head



Hands below head

- Use a stool, platform, ladder or hoist so work is below head/shoulder height.
- Choose lighter tools and materials for overhead work.
- Use a bit extender for drills/screw guns.
- Find other tools/assists to limit overhead work.

Hands below head

Ideas for healthy shoulders

Use these ideas to improve every task at work and at home.

- Stand on a raised surface or platform to reduce the actual working height. This will help your shoulders and neck.
- Some tools can use extensions to do the reaching for you.
- Use temporary clamps or fasteners to hold objects in place and allow you to use both arms for your work.
- Light-weight tools will reduce the overall load on your shoulders if you must work overhead.
- Changing activities and rests built into the job allow the body to recover: See MSD Tip #6.

Did you know?

- Working with hands above shoulder height (overhead) can quickly fatigue your shoulder muscles and lead to fatigue, discomfort and injury.
- Holding a tool or object when working overhead makes them fatigue even faster.
- Your arms have shorter endurance, less accuracy and decreased productivity when working overhead.
- If you have to look up when working overhead, it can quickly fatigue your neck area too.

Improve your workplace

- Ask yourself and others, "Why does the job require working overhead?" until you get to the bottom of the problem.

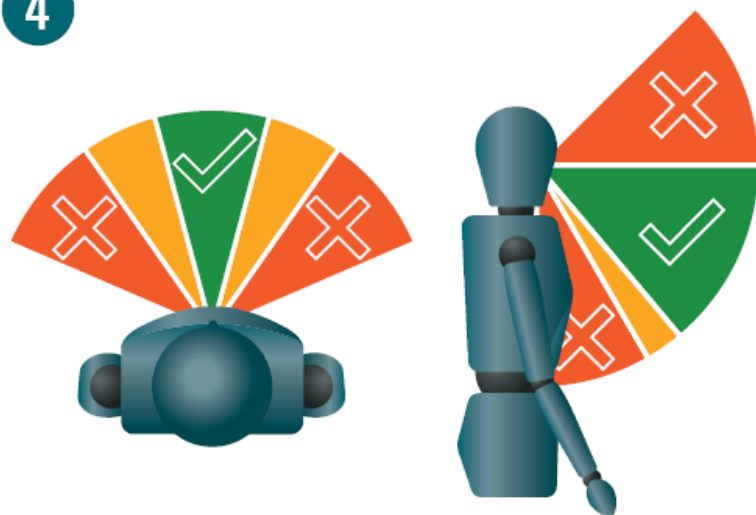
What are we going to do today to keep our shoulders and necks healthy if the work is overhead?

- 1 _____
- 2 _____
- 3 _____

Whatever changes you make, check that you are not creating any new problems.

Poster 4: Look Straight Ahead

4



Look straight ahead

- Position your work and equipment to keep your gaze straight ahead.
- Position your work below eye level to align your vision with the task.
- Arrange your workspace so common items are centred to your body.
- Pause & stretch often to give your neck a break. Minimize continuous bending or twisting.

Look straight ahead

Ideas for a healthy neck and shoulders

Use these ideas to improve every task at work and at home.

- Set up your workspace to look straight ahead.
- Characters or graphics on a screen can be enlarged, or the work can be better lit so you can easily see.
- Reducing glare lets you see better and helps prevent sore eyes.
- Get corrective lenses matched to your work if your vision is making you lean forward, twist or bend your neck to see.
- Position computer screens and objects requiring visual attention at or below eye level to match your vision and the task.
- Adjust the distance of your work or screen to about an arm's length from your eyes, then fine tune the distance and height for your vision and task.
- Changing activities and rests built into the job allow the body to recover: See MSD Tip #6.

Did you know?

- Bending your neck forward or backward on a regular basis and without pauses can overload its muscles, leading to fatigue and MSD.
- Looking to one side and twisting your neck on a regular basis without pauses triples your risk of neck pain compared to looking straight ahead.
- If workers can't see their work on a computer screen clearly, they tend to lean forward, bending and twisting their neck. It's called "pigeon neck" and can lead to fatigue and pain in the neck and shoulders.

Improve your workplace

- Ask yourself and others, "Why does the job require bending and twisting of the neck?" until you get to the bottom of the problem.

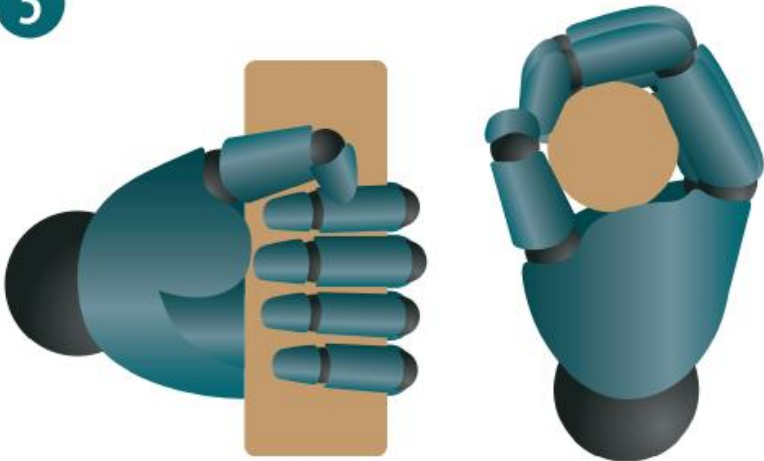
What are we going to do today to keep our necks healthy while working?

- 1 _____
- 2 _____
- 3 _____

Whatever changes you make, check that you are not creating any new problems.

Poster 5: Get a Good Grip

5



Get a (good) grip

- High force work: power grip (full hand). Low force, precision work: pinch grip.
- Choose a tool and grip that puts your wrist in a strong, natural position.
- Choosing tools: good shape for the task, fits your hand, edges don't dig in.
- Power tools with low vibration and no kickback are best.

Get a (good) grip

Ideas for healthy hands

Use these ideas to improve every task at work and at home.

- Control repeated pinching tasks that can cause muscle fatigue and wrist disorders, especially if the pinch grip must be forceful.
- Arrange your work so your wrists are in a strong, natural position when performing gripping tasks or using tools.
- Choose a tool that matches the task. Bend the handle, not the wrist.
- Replace or modify tools that don't fit your hand, are slippery, vibrate, or dig into your hand.
- If the task requires one hand to hold an object for the other to work on it, use a tool or clamp to secure it, freeing your other hand.
- Repair or replace tools that have strong vibration or kickback.
- Changing activities and rests built into the job allow the body to recover: See MSD Tip #6.

Did you know?

- Power grips using the whole hand are five times stronger than pinch grips which use only the fingers.
- Pinch grips work well for precision work, but fatigue very quickly during forceful tasks. Regular forceful pinch grips are the strongest predictor of hand and arm disorders.
- Working with your wrists in a strong, natural position reduces loading and fatigue in both the hands and wrists.
- A grip size that is too big or small for your hands increases the effort required to the task and increases fatigue.

Improve your workplace

- Ask yourself and others, "Why are the workspace and tools not right for the job?" until you get to the bottom of the problem.

What are we going to do today to keep our hands healthy while gripping?

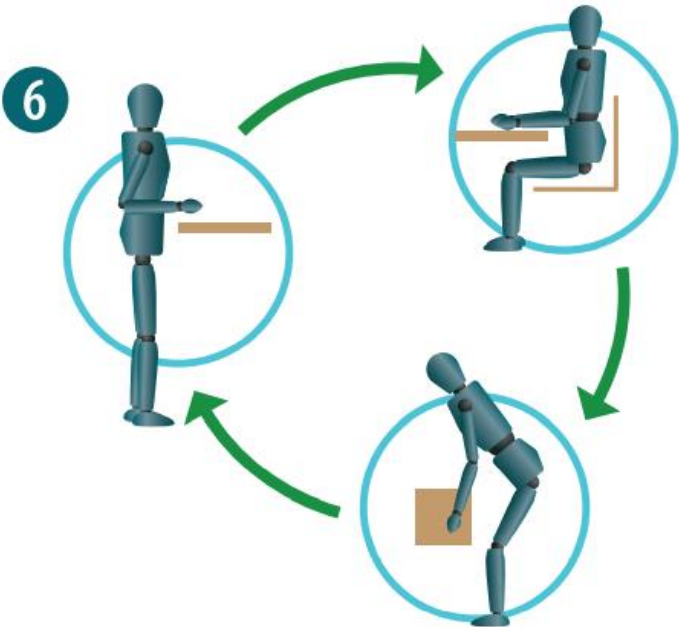
1

2

3

Whatever changes you make, check that you are not creating any new problems.

Poster 6: Change it Up



Change it up

- Include micro breaks in your tasks for body recovery and fatigue prevention.
- Rotate different tasks to provide working rests.
- Fatigue can occur during long duration efforts and repetitive tasks.
- Tasks that have MSD hazards and little recovery time have a high priority for change.

Change it up

Ideas for a healthy body

Use these ideas to improve every task at work and at home.

- Design work so that there are working rests, micro breaks and different activities built in that allow the body to recover.
- Even a seemingly light task, like using a computer mouse, needs recovery time built in.
- Organize your day to include a range of different tasks. Switch between tasks that load different parts of the body.
- Organize work so that workers have the flexibility to vary their activities, allowing for recovery when they need it.
- Rotate your workers between tasks on a regular basis without exposing them to tasks with high MSD hazards.
- Job rotation should not be the only fix for MSD hazards. Work to eliminate or reduce the hazards themselves.

Did you know?

- Repeated or sustained work with little chance for the body to recover can lead to fatigue and muscle, tendon, or ligament disorders.
- Repetitive work or holding one position can reduce recovery. Well-organized work can let one part of your body recover while another performs a different task.
- To help assess a task, look at whether there are recovery times or pauses built in, not only the production rate or repetitiveness.
- Changing activities and rests built into the job allow the body to recover.

Improve your workplace

- Ask yourself and others, "Why does the job not have recovery time built in?" until you get to the bottom of the problem.

What are we going to do today to improve recovery time for our body?

- 1 _____
- 2 _____
- 3 _____

Whatever changes you make, check that you are not creating any new problems.

MSD Prevention Reflection

- Can you think of any examples of MSD hazard controls in your workplace?
- What has worked, what has not worked?
 - Share lessons you have learned
- Have these posters prompted any ideas?

MSD Prevention Guideline Website

- Looking for more information?
- Search the website for:
 - Guidelines
 - Hazard Identification Tools
 - Examples of Hazard Controls
 - Posters, fact sheets, videos and other resources



For more information and resources, please visit: www.msdpreservation.com

MSD Prevention Guideline Website

- New CRE-MSD posters:
 - [Psychosocial Factors, MSD, and Mental Health](#)
 - [Manual Materials Handling Solutions and Controls](#)
 - [Job rotation](#)
- New CRE-MSD videos:
 - [What is an MSD?](#)
 - [Quick Start Guide Introduction Video](#)
 - [Manual Materials Handling Solutions and Controls Video](#)

For more information and resources, please visit: www.msdpreservation.com



THANKS FOR LISTENING!