

Development of a New Prevention Guideline for Musculoskeletal Disorders (MSD)

Project Update – Introductory Guideline Content

December 6th 2017

In conjunction with the Prevention Office of the Ontario Ministry of Labour (MOL) and the Ergonomics Integrated Planning Advisory Committee (EIPAC), the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) is leading a multi-stakeholder initiative to develop a new MSD Prevention Guideline for Ontario.

Background to the Development of the “Introductory” level MSD Prevention Guideline Content

First the title. Based upon our discussions with many people we chose:

“Workplace solutions to back pain, shoulder tendinitis, tennis elbow and other musculoskeletal disorders (MSD)”.

It talks about solutions, not problems; it defines MSD and is applicable to primary and secondary prevention. The follow-on line supports these points and talks about health not injury:

Six Workplace Fixes to Keep Workers’ Backs, Shoulders, Necks, & Hands Happy & Healthy

Selection of Key Musculoskeletal Disorder (MSD) Hazards

Very small and micro sized businesses were identified through consultations and literature reviews as being a very important target group for the Ontario MSD Prevention Guideline. The resources, capacity and knowledge of these sized businesses for undertaking health and safety activities is modest. These businesses employ the majority of workers in Ontario and elsewhere. MSD due to working loads are extremely abundant with approximately one third of lost time claims associated with development of musculoskeletal disorders (MSD).

One approach used in the Guideline for preventing MSD was to select a subset of MSD hazards that had the potential, if reduced or eliminated, to create a substantial reduction in MSD hazards in Ontario. The small range of the activities chosen here was thought to enable these sized businesses to start on MSD prevention activities, rather than being overwhelmed by more comprehensive approaches and not do anything. There will be three sections in the Guideline as a whole: ***Introductory, Basic and Comprehensive***. This document mainly refers to the ***Introductory*** part.

Selection of high impact risk factors for targeted workplace musculoskeletal prevention

The following sections describe the context and justification for the identification of key workplace musculoskeletal disorder hazards.

The key hazards were chosen based upon selecting:

- A small number of hazards ***AND***
- hazards that affected the major body regions suffering MSD ***AND***
- hazards having strong and influential relationships with MSD ***AND***
- hazards being common across many sectors and workplaces.

Selected Hazards and body regions most affected¹:

Store it off the Floor (Lifting Height)	Back
Keep it Close (Twisting and far from body)	Back & Shoulders
Hands Below Head (Overhead work)	Shoulders and Neck
“Look Straight Ahead”	Neck
“Get a (Good) Grip”	Upper limb
“Change it up” (Work organization)	All

It might be argued that the approach is “simplistic” and “dumbs down” our extensive knowledge of the multifactorial nature of MSD risk factors. Rather, it is our intention to extract a small number of key hazards from the peer reviewed literature and suggest general controls that could, if widely applied, have a substantial impact. Based upon our study of approximately 4000 small businesses, we determined that this is the scale and type of information that they need.

These key hazards are common to workplaces, but certainly do not account for all MSD hazards. They should be interpreted as a starting point for workplace hazard identification. Other hazards include, but are not limited to, prolonged or repetitive kneeling and squatting, cold work conditions, unstable working loads, floor hazards for slips trips and falls, manual materials handling such as pushing, pulling, and carrying, work organization factors and workplace psychosocial factors. We have tried to address as many of these as possible within the six hazards. For example, work organization is incorporate into “Change it up”, as is “control” (as in the Job Demand - Control model of Karasek).

MSD Hazard Identification, Assessment and Control

Once hazards are identified, the next step is to help the workplace control them. In health and safety in general, the cycle of prevention includes anticipate hazards (during purchase or design), recognize hazards, assess hazards, control hazards, evaluate the effectiveness of the controls (also known as **Recognize, Assess; Control; Evaluate (RACE)**). The specifics of each step were combined, where possible, to match the target groups’ resources, knowledge and skills.

The approach: message, hazard identification, and control information and the graphics choices were guided by the following ideas:


- Workers’ postures and forces exerted are, in large part, dictated by the workspace design and work organization. For example, the layout of the workspace is a major driver of awkward postures. The hazard therefore is the layout of the workplace; for example having to reach one-handed for a part across a table (leading to shoulder flexion and back flexion and twist). This has been called looking for the “determinants of exposure” and mirrors a “5 Why” approach.
- Focus on the workplace rather than the worker: For example, lifting from the ground has been shown to be a strong risk factor for low back pain and loading on the body. Focusing workplaces’ attention on

¹ The background to this selection will be available on the CRE-MSD website

lifting would likely lead the conversation to proper lifting or similar control approaches. The actual issue is where the object was stored or located. The control action is to think ahead and not have the object placed on the floor in the first instance: “Store it off the floor”.

- Focus on the workplace. This was done to guide workplace (engineering) controls rather than have workplaces opt for better known and generally less effective worker focused changes, e.g., “Use the legs not the back”.
- Combine hazard identification with controls where possible. The difference between the observed situation (object to be lifted is on the floor) and the ideal (object at waist level), provides an implicit hazard identification. A continuous improvement philosophy is advocated then to see how well a control reduces the difference.
- Does not identify the person who can help reduce the hazard: The person concerned was not identified as a worker, supervisor, manager, engineer or owner. Although employers have ultimate responsibility for the health and safety of their workers, a worker may request a cart or table to place an object on; a pipe fitter may use a table or stand to work on the piping at a better height; a manager may elect to have appropriate shelving, racking, conveyors purchased to keep objects off the floor; an owner or engineer may choose to have a supplier provide parts at suitable heights or otherwise deliver product in a better format.

Store it off the Floor



MSD TIP 1

There are more ways to do this job than you think. Try some of the ideas below. If you have any ideas, please let us know. We will be happy to help you find a better way to do your job.

- ✓ Store heavy objects between knee and shoulder level; waist level is best
- ✓ Store rarely used objects on the floor or at shoulder level
- ✓ Do your work on tables, benches, or even piled pallets
- ✓ Store things on shelves to decrease the number of times you need to bend forward in a day

Store it off the Floor

Did you know...

- The closer your hands are to the ground while lifting, the more likely you are to hurt your back.
- Even bending to lift a pencil from the ground can overload your back.
- Lifting from the ground puts extra loads on your spine and also puts the spine in a weak position... a bad combination.
- There is no safe way for your back to lift from the ground... even if "you bend your knees" or "use your legs not your back".

Improve your workplace

- Ask yourself and others, "why do I have to lift that object from near the floor to do my job?" and keep asking "why" until you get a good answer!
- Use these ideas for every lifting task at work (and home).

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.

Ideas for a healthy back

- Don't work at floor level: use tables, benches or even piled pallets to keep items off the floor.
- Place commonly used and heavy items at waist height.
- Even under ideal conditions (load is waist high, close to your belly button and only lifted occasionally), loads should not be more than 23kg (50lb).
- Use lift assist devices, hand trucks, or handling devices to avoid actually lifting items yourself!

Lifting strategies

- Team lift: use a partner.
- Bend at your hips: butt out, "proud" chest, don't round your back.
- Keep the object close to your body or between your legs.
- Keep the work area clear of trip hazards.

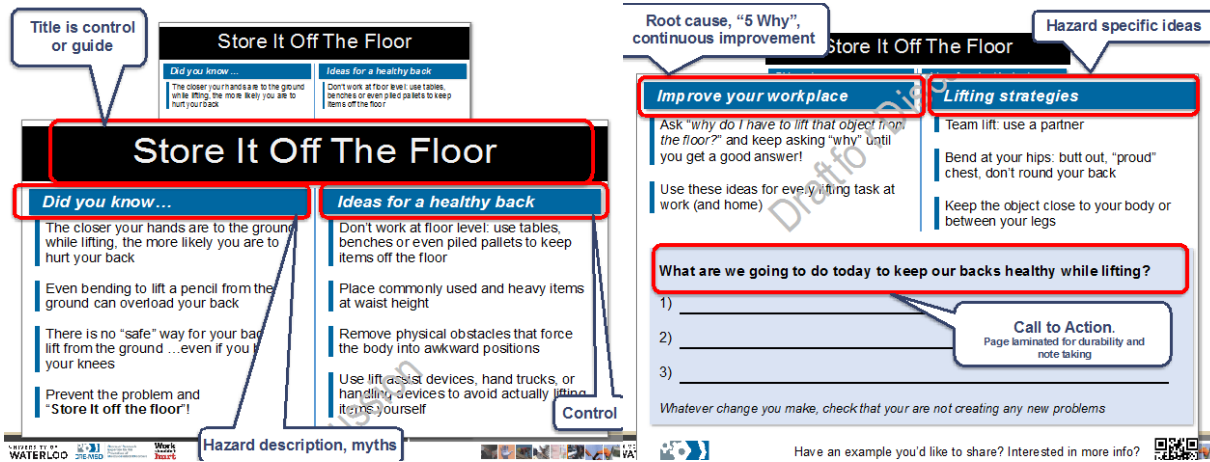
- Develop a short message for each hazard that focuses on the hazard and its control; not just the hazard. For example, the message “**Get a (good) grip**” was intended to be applicable to manual activity in general and describes issues of size, grip type etc. It would help a business choose a tool to match task requirements as well as help a worker select a tool to use from those available.

The Ontario MSD Guidelines for smaller and micro businesses are constructed with a modular design (without excluding larger scale businesses who could use them for supervisor toolbox talks, for example). The overall goal of the approach is provide workplaces with a small number of key fixes to keep workers’ back, shoulders, neck and hands happy and healthy. The vehicle for delivering the message is a toolbox talk handout, which could also function as a poster. It followed the example of CPWR’s Center for Construction Research and Training (<http://www.cpwr.com/publications/handouts-toolbox-talks>).

The posters provide a graphic and key points on the hazards and controls. A second page provides additional information on each hazard and some suggested controls and general principles to avoid these hazards. These

two pages are designed to be complementary and be distributed together as two sides of a single laminated page.

On the reverse we created six elements common to all posters:



1. “The message”. We tried to make it catchy, talk about the solution/control (not risk) and be workplace focused rather than worker focussed. You are likely more inventive that we are at devising good messages.
2. “Did you know”: Hazard description and myths
3. “Ideas for a healthy xxxx” Major controls focused on health, not risk.
4. “Improve your workplace”. Uses “5 Why” to get at root causes and emphasizes continuous improvement.
5. “Hazard specific ideas”. Depends on the hazard.
6. “What are we going to do today to keep our xxxx healthy while xxx-ing. The call to action.

In addition to the six hazards, we created a “Work Shouldn’t Hurt” Poster both to describe some common MSD myths, inform the conversation when a worker reports MSD to a supervisor as well as emphasizing that the report should be used as a trigger to investigate the job.

Each element has a small number of statements ranging from two in “Improve your workplace” and up to five in “Ideas for a healthy xxx”.

Our work with micro businesses indicated that posters and hard copy materials were valued by them. In that vein, we used colour 2 sided letter sized paper that was laminated. It could be used as a poster in the lunch room or H&S board, used as the basis of a “tail gate talk” or taken on workplace inspections and written on.

It is planned that the six key hazard “posters” will be available in a folder. The front of the folder describes what MSD are and why their hazards should be included in a businesses’ injury prevention activities. The second page describes how to use the six posters on key hazards. The third page of the folder presents a more formal five-step process for identifying, controlling and evaluating hazards: Note this is compatible and comparable to that used in the Basic and Comprehensive processes. The fourth and back page of the folder describes next steps and where to get additional information and help. The entire **Introductory** guideline is planned to be available as downloadable pdf and as webpages.