IMPLEMENTING MSI PREVENTION PROGRAMS: ADVICE FROM WORKPLACES FOR WORKPLACES

A resource informed by research and Newfoundland and Labrador practice evidence on implementing successful musculoskeletal injury prevention programs

Institute for Work & Health
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ABOUT THIS RESOURCE

Workers from all occupational sectors experience musculoskeletal injuries (MSIs). MSIs include low-back pain and upper extremity musculoskeletal disorders, such as carpal tunnel syndrome, ulnar tunnel syndrome, shoulder tendinitis, lateral epicondylitis, hand-wrist tendinitis, and many other non-specific musculoskeletal pain disorders. MSIs are a substantial burden to society and to workplaces worldwide.

The known occupational risk factors for MSIs are many. Physical risk factors include heavy physical loads, awkward postures, arms positioned above shoulder level, repetitive movements, repetitive activity for prolonged periods and vibration. Psychosocial risk factors include high psychological demands, low job control and lack of social support, as well as personal factors such as number of years of employment. Given the wide variety of risk factors, prevention requires creative solutions.

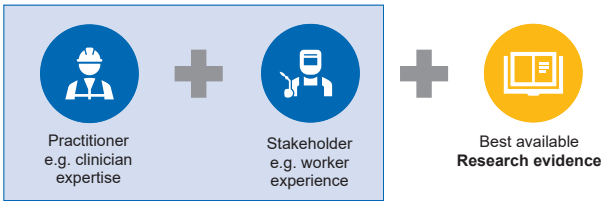
Current practices in MSI prevention are diverse. They include various workplace interventions such as ergonomics training, workstation adjustments and work redesign. However, little research evidence is available on the most effective occupational health and safety (OHS) interventions for MSI prevention, and even less is known about how to implement them successfully. To help address some of these gaps, we have created this resource that draws upon the best available research evidence and integrates it with practice evidence (based on practitioner expertise and stakeholder experiences).

Who should use this resource?

This resource is designed to be used by any person in the workplace interested in MSI prevention. Users may include workers with MSIs or MSI symptoms, managers, human resources (HR) professionals, and union and worker representatives. The content is applicable to all types of workplaces and workers, regardless of sector or role.

What is the content of this resource based on?

This resource is based on an evidence-based approach to informed decision-making. At the Institute for Work & Health (IWH), we consider both research and practice evidence from three sources that contribute to informed decision-making:



The information in this resource synthesizes data collected from these three sources. More specifically, it is informed by the results of:

- an IWH review of the scientific literature on effective workplace approaches to MSI prevention;
- an online survey that collected data on practitioner expertise and stakeholder experiences with MSI prevention in Newfoundland and Labrador workplaces; and
- interviews with practitioners (e.g. ergonomists, OHS professionals), managers, and workers in Newfoundland and Labrador that explored workplace MSI prevention in greater depth.

In this resource, we refer to the best available research evidence as "research evidence" (from the review of systematic reviews) and to the combination of practitioner expertise and stakeholder experiences as "practice evidence" (from the survey and interviews).

For more information about the evidence underpinning this resource, please see Appendix A.

How to use this resource

This resource describes the evidence in three main sections: Awareness, Training, and Hazard Identification and Solutions. These three sections reflect the three main program/practice areas discussed by participants in our research.

Each section offers examples of potential programs/practices, as well as advice to consider when implementing programs/practices. Labelled "Keep in Mind," these important pieces of advice for MSI prevention in the workplace arise from findings gleaned in this current study. Finally, each section includes case examples including details about implementation derived from the practice evidence.

AWARENESS

Awareness programs/practices include initiatives to improve knowledge and recognition of MSIs in the workplace. Examples of awareness programs/practices include bulletin boards, communication campaigns, and the use of "MSI champions" to share information with co-workers about MSI hazards and symptoms.

Practice evidence from this study indicates that awareness programs and practices are considered important and effective for MSI prevention. This includes both formal (e.g. workshops) and informal (e.g. "toolbox talks") awareness programs/practices. (The latter were often noted as effective by our study participants.) Research evidence on the effectiveness of awareness programs and practices is lacking.

Keep in mind

- Knowledge and recognition of MSIs support their prevention. Make sure all workers are aware of the signs and symptoms of MSIs, as well as the work hazards and risk factors that give rise to them.
- Perceived lack of commitment to health and safety can hinder MSI prevention. Ensure managers and supervisors are committed to and accountable for MSI prevention, and that workers know and understand that health and safety are priorities at their workplace.
- Managers/HR professionals play a valuable role in sharing knowledge with their teams. Support these people in communicating to workers that MSI prevention is an important issue, that the workplace is committed to health and safety, and that resources are available to help prevent MSIs.
- Keeping workers updated can alleviate some of the barriers to effective MSI prevention. Share information about your MSI prevention policies and practices with workers on a regular basis.

Awareness case examples

Small construction company builds awareness with limited resources

Maryanne and Connor, a husband-and-wife team, are co-owners of a small construction company, employing between five and 15 people at any given time over the past 17 years. A good friend of theirs recently suffered a work-related back injury, and it was a real wake-up call. They could see his pain, and they hated to think the same thing could happen to one of their workers. As a result, as they gear up for a busy spring season, Maryanne and Connor have decided to make a more concerted effort to highlight to their workers the importance of safe work.

Being a small operation, their resources are limited, but they decide that communication and awareness-raising are a good first step. Maryanne spends a few days thinking of topics for toolbox talks that she and Connor can start regularly having with their team. Maryanne and Connor plan to have their first toolbox talk at their annual seasonal kick-off BBQ. At the BBQ, Connor will address all workers, sharing their friend's story and reminding workers about the importance of following safe working practices and contacting him or Maryanne if they have safety concerns or need to modify or purchase equipment. He will also introduce the concept of toolbox talks, and Maryanne will share examples of topics for future talks.

Beyond this initial effort, Connor and Maryanne want to ensure their message isn't forgotten as the season becomes busy. They plan to encourage team leads to host their own toolbox talks on worksites throughout the season to keep up awareness of health and safety.

Employee inspired by new manager's vision for MSI prevention

Daphne, a web developer at a marketing firm, feels her workplace has come a long way in terms of MSI prevention. Since she joined the company 10 years ago, several measures have been put in place to prevent and address MSIs. Daphne believes the turning point was the arrival of Nadiya, a new senior-level manager with a strong conviction about the importance of occupational health and safety (OHS).

Nadiya undertook several OHS initiatives. She organized "lunch 'n' learns" that addressed a number of important topics, such as identifying and addressing MSI hazards and incorporating stretching exercises into the workday using online resources. She put up a bulletin board in the office lobby to display relevant OHS resources and MSI safe practices. She encouraged other senior-ranking colleagues to speak up about the importance of OHS and MSI prevention.

Daphne was inspired by senior management's support of Nadiya's initiatives, so much so that it motivated her to get involved herself. She volunteered to help Nadiya identify online resources for the lunch 'n' learns and created a small working group with colleagues to discuss various OHS concerns on a monthly basis.

Today, Daphne feels that the snowball effect of management buy-in followed by employee engagement via her working group is going a long way to making MSI prevention a visible priority at her workplace.

TRAINING

Training programs/practices include activities to educate workers on how to do their work safely and prevent MSIs. Examples of training programs/practices include safe-lifting programs, materials handling training, and training on using tools and other equipment safely. Training can be either formal or informal, delivered in person or online.

The practice evidence from this study indicates training programs are considered effective and a key element of MSI prevention, especially if workers feel engaged by the training. The research evidence on training programs is not consistent in terms of the effectiveness of training in preventing MSIs.

Keep in mind

- Practice evidence from this study highlights the need to continually update training content based on current evidence. Ensure your MSI training reflects the latest evidence-informed practices.
- Training workers only when they are being oriented to new jobs is likely insufficient. Ensure your MSI training is delivered at regular intervals.
- MSI training materials/information for workers should be as specific as possible to the context of the workplace. Adapt generic materials to your specific workplace environment and job tasks to help facilitate MSI prevention.

Training case examples

Butcher requests training after experiencing MSI symptoms

Lucas is a butcher at a big-chain grocery store. When he first started experiencing neck and wrist pain six months ago, he had no idea what an MSI was, and had never even heard the term. In fact, he did not connect his neck and wrist pain with work until his physiotherapist gave him some information about stretching before and after his shift.

This was the catalyst for Lucas to take matters into his own hands. He approached store management and requested MSI prevention training and stretching education for all employees in the meat department. His request was implemented.

Now, employees receive annual refresher training on MSI prevention every year, and all new employees are trained as part of their orientation. Lucas, for his part, continues to stretch before each shift, encouraging his colleagues to join him.

Consultant adapts training to work context

Tracy is a health and safety consultant who delivers training to workplaces on MSI prevention. Over the years, Tracy has learned that the most effective training tends to be specific to the workers receiving the training, realistically reflecting the work they do and the workplace or other environment they do it in. For example, Tracy knows that common lifting rules do not always apply to all loads, and that sometimes the type of material being lifted may require a different technique.

Tracy has also seen many training courses use examples that are situated in settings unfamiliar to the workers being trained, so the information doesn't resonate with them. She adapts the training she delivers so it is as specific to the workers' context as possible. For example, if she is training a team in a health-care setting on safe cart handling, she will do her best to deliver the training in the actual setting in which this activity typically takes place: a corridor crowded with several rushing people with multiple carts and other equipment in the way. If Tracy is unable to deliver the training on-site, she does her best to acknowledge the realities of the workers' worksite. She finds this goes a long way in improving their engagement, learning and knowledge retention.

HAZARD IDENTIFICATION AND SOLUTIONS

Hazard identification and solution programs/practices include efforts to identify MSI hazards and find solutions to remedy them. Examples include ergonomics assessments and solutions, safety checks of existing equipment, equipment and workstation adjustments, and work or workload modifications.

The practice evidence from this study highlights the necessity and effectiveness of ergonomics programs. The research evidence suggests that a number of hazard solutions are effective, including sit-stand workstations, work accommodations, and computer workstation adjustments. In addition, multi-faceted approaches that combine hazard solutions with exercise and/or rehabilitation are effective. The research evidence also indicates that breaks are effective in the reduction of MSI symptoms.

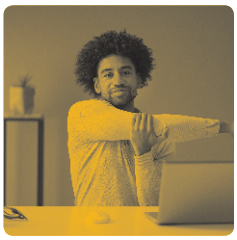
Keep in mind

- The practice evidence from this study stresses that, regardless of the hazard, individualized solutions are understood to be more effective than generic or one-size-fits-all programs for MSI prevention. Tailor and adapt solutions to the specific situations and workplace context of workers.
- An MSI prevention policy is a valuable part of MSI prevention. Ensure such a policy is in place and shared with everyone in the workplace.
- Workload can be an important factor in MSI prevention. Consider workload accommodations alongside other hazard solutions.
- Workers may not always know who is responsible for MSI prevention in the workplace, which can limit the identification of hazards and solutions to overcome them. Make sure workers know who is responsible for MSI prevention.
- Workers, because they are on the frontlines, can play an important role in identifying hazards and finding solutions. Make sure workers feel safe reporting MSI hazards and know that their concerns and potential solutions are being heard.
- MSI prevention programs/practices need sufficient resources to be effective. Ensure enough time, personnel, equipment, etc. are being devoted to MSI prevention.
- According to the research evidence, postural changes during work breaks can be beneficial for people experiencing MSI symptoms, as can increasing the frequency of breaks. Ensure workers are getting enough work breaks and encourage them to change their work posture during these breaks.
- According to the research evidence, worker input and engagement is beneficial to the success of workstation adjustments. Provide an avenue for workers to get involved and have a say about the set-up of their workstations.

Hazard identification and solutions case examples

New employee needs workstation adjustments

It is John's first day in his new job as staff accountant, and he is sitting at his predecessor's desk and chair. While the equipment is in perfect condition and clearly includes top-of-the-line ergonomic features, John's predecessor was 5'8" tall, while John is 6'5".



John is uncomfortable as he does his computer work, but he does not want to complain on his first day on the job. He also doesn't want to take the time on his first day to figure out the adjustable features on his workstation, which look complicated. He mentally prepares himself for a day of typing at an awkward angle.

Luckily for John, his new workplace has an "ergonomic check-in" program for all new employees. Bill, the designated workplace health and safety champion and member of the health and safety committee, welcomes all new employees and helps them adjust their workstations to their individual needs. Bill immediately notices the problems with John's set-up and agrees that his keyboarding posture is less than ideal. Bill shows John how to raise the height of his chair and make other adjustments to his chair, keyboard, work surface, and computer monitor to achieve a more optimal setup.

Responsive manager makes worker feel heard

Robert works at a correctional facility. A few months ago, Robert started experiencing back pain. Reluctantly, he decides he needs to approach his manager, Anne, to mention his discomfort. His reluctance, as well as his low expectations that anything will be done, stem from an experience at his previous workplace in which his report of back pain was simply ignored and no action was taken by management.

Robert talks to Anne and, immediately, he is pleasantly surprised by her response: she listens, takes notes and asks questions about the pain he is experiencing. Anne tells Robert she is going to explore options and get back to him within the next couple of weeks.

Robert, half expecting he won't hear a thing further, is pleased when Anne comes by 10 days later to check in on him and ask to set up a meeting to discuss options.

During the subsequent meeting, Anne acknowledges the material constraints they are facing — primarily due to limited resources for purchasing new or modifying existing equipment. However, she expresses the importance of coming up with a workable solution together. She then presents Robert with the list of potential solutions she has come up with, and asks Robert to consider these options, add any ideas of his own, and then select which he'd like to try first.

Robert very much appreciates Anne's listening, follow-through and responsive approach. He feels confident that, together, they will find a feasible solution to ease his discomfort.

EMERGING EVIDENCE ABOUT EXERCISE

The research evidence indicates that exercise and physical activity programs such as stretching, resistance training and physical conditioning programs are beneficial for both MSI prevention and symptom reduction. The practice evidence from this study suggests physical activity programs are not common. However, some participants mentioned job- and workplace-specific stretching programs and general fitness/wellness programs as having positive effects.

Exercise case example

Employee leads worksite stretching program

Donna has been working in construction for seven years. About six months ago, she began experiencing pain in her shoulders and sought treatment from her health-care provider. Donna also went to her company's occupational health and safety (OHS) representative to ask if she could be doing more at work to help prevent further muscle pain. The OHS rep recommended some simple stretching exercises specific to Donna's work tasks.

Donna started stretching on her own for 15 minutes every morning right before work, at the worksite, as a warm-up to prepare for the job. As her shoulder pain abated, she began thinking the stretches might also help her co-workers, and that it would be more fun to do the exercises with others rather than on her own. She went to her manager, Jack, showed him the quick routine she had been doing, and asked if he thought group stretching before work would be a good idea.

Jack thought it would be a great idea. He sent out a text message to the entire team, telling them about Donna's offer to lead them in some stretches. The next morning, Donna recruited a few co-workers and shared what she had learned.

Over time, more and more co-workers became interested in the stretching program, and they invited the OHS rep to add a full range of stretches to their 10-minute routine. Today, Donna continues to lead the group before the day starts. What's more, her shoulder pain remains at bay.

CONCLUSION

Having MSI prevention programs/practices in place is necessary to MSI prevention, but their proper implementation is crucial if they are to be fully effective. Realizing the full potential of MSI programs/practices requires careful consideration of the workplace context.

In addition, policies, programs and practices must be clearly communicated to the entire workplace so everyone can contribute to MSI prevention. Indeed, clear and open communication—whether it be for the purpose of awareness, training, or hazard and solution identification—benefits all aspects of MSI prevention.

Practice evidence from this study also indicates the importance of a proactive approach to MSI prevention. In addition, some research evidence indicates that early intervention leads to a reduction in the duration and recurrence of sickness absence in workers with MSIs.

In short, be proactive when it comes to identifying MSI hazards and finding solutions. Consider the evidence on what helps ensure the successful implementation of MSI prevention programs. Think carefully about what will work for your workplace in particular. Communicate clearly about MSI prevention with all workplace stakeholders—managers, supervisors and workers.

Appendix A: Additional information on the evidence behind this guide

This resource and its accompanying summary are designed to offer an evidence-based approach to decision-making with respect to implementing musculoskeletal injury (MSI) prevention programs in Newfoundland and Labrador (NL) workplaces. The approach gathers and synthesizes evidence from both research and practice.

The research evidence

The research evidence is based on a synthesis of systematic reviews of the research literature on MSI prevention. We searched for systematic reviews in five electronic databases and found 2,071 references. Of these, we reviewed 21 that were relevant to answering our question and met quality criteria. We extracted data on MSI intervention effectiveness from reviews with sufficient quality, sorting the data by intervention category (e.g. MSI hazard solutions, training) and outcomes, among other things. We then synthesized the data according to the following algorithm: an intervention "was found to have" [size of] effect "on" [type of] outcome "for" [a given] population (to the extent that all of this information was available). If an intervention was found to have a positive effect on a desired MSI prevention outcome, it was included in our final synthesis.

The practice evidence

The practice evidence is based on practitioner expertise and stakeholder/worker experiences. The practice evidence was collected from two sources. The first was an online survey that was made available in NL from July 2019 to February 2020. We received 645 completed survey responses from expert practitioners (e.g. ergonomists, occupational health and safety professionals) and stakeholders (e.g. workers and managers) with experience in MSI prevention in NL workplaces. The survey included a brief section on context and demographics (e.g. sector, company size, respondent job title, job tenure), a section on MSI concerns at the workplace and previous (or ongoing) interventions (e.g. who is responsible for implementation, implementation steps, best practices and policy) and, finally, a section on implementation experiences (e.g. facilitators and barriers to implementation, program sustainability). Practice evidence was also collected through 45- to 60-minute interviews with 16 people who included among them experienced practitioners, managers and workers in NL, as above. The semi-structured interviews explored participants' experiences in implementing MSI prevention programs, gaps in programs, and program areas in need of improvement.

Survey data was analyzed descriptively to determine the MSI practices most often endorsed. Data from interviews were reviewed, analyzed for content, and organized into tables that allowed researchers to identify emerging themes. Survey and interview results were then considered together to support and contrast findings among respondents. A descriptive analysis of the practice evidence included stakeholder views of intervention implementation, workplace experiences, and

perceived barriers and facilitators to implementation. Results from this analysis, along with the expertise and experience of a 10-member stakeholder advisory committee (made up of key leaders in the public and private sectors with expertise in OHS in NL, including policy advisors, industry leaders, ergonomists, and physiotherapists and allied health professionals specializing in rehabilitation), allowed the research team to determine the MSI practices that were often described and considered to be important in preventing MSIs or related disability. These practices were included in our final synthesis.

Bringing it all together

In completing the final synthesis, the research team was guided by the intervention categories identified in the scientific literature and the key themes that emerged from the analysis of the interview and survey data. The team used these to frame the prevention programs/practices, along with the facilitators and barriers related to the implementation of these programs/practices in the workplace, using concepts and terminology familiar to stakeholders. In this way, the team was able to summarize all available evidence. The advisory statements in the guide (i.e. the 'Keep in mind' sections) reflect our summary of the available evidence (research, practice or both), within the context of the key MSI practices described.

Notes

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