Work-related Musculoskeletal Disorders

Guide and Tools for Modified Work

TMW

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This guide was produced by the Tools for Modified Work research group under the direction of Dr. Susan Stock.

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FOREWORD

The public health network and its partners acknowledge that work-related musculoskeletal disorders (MSD) are one of the leading causes of disability generating enormous human and economic costs. In 2002, the Commission de la santé et la sécurité du travail (CSST) paid out about 1.24 billion dollars for work-related injuries, 40% of which were considered to be MSD. Moreover, the 1998 Quebec Social and Health Survey showed that a quarter of workers in the province have significant work-related musculoskeletal symptoms.

In this context, we are pleased to present the publication ***Work-related Musculoskeletal Disorders: Guide and Tools for Modified Work.*** The Guide, which includes a series of intervention tools, is intended to help companies who wish to plan and implement return-to-work programs for injured workers. It is designed for a wide range of work environments and responds to the needs expressed in these workplaces. The guide is also in line with the Quebec 2003-2012 National Public Health Program's goal of reducing the duration and severity of MSD-related disability.

This guide is the result of the interdisciplinary efforts of researchers, professionals and academics working in the fields of health, social sciences and ergonomics, and a collaboration of the Direction de santé publique de Montréal, the Scientific Group on Work-related Musculoskeletal Disorders of the Institut national de santé publique du Québec, the Institut de recherche Robert-Sauvé en santé et en sécurité du travail, the CSST and the joint sector-based health and safety association for the metal and electrical products manufacturing sector. The goal is to transfer scientific knowledge in the form of useful and practical tools.

We would like to thank all the authors and their collaborators who worked on developing the Guide. We hope this document will result in effective management of return to work that promotes rehabilitation and prevention of long-term disabilities among workers with MSD.

We hope you will enjoy reading the guide.

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We would also like to thank the research personnel who participated in the evaluation study of the preliminary version of the Guide's tools: Carole Gagnon, Monique Perras, and Silvia Shardonofsky as well as Sébastien Lamy who participated in the project through a student placement. Suzanne Deguire coordinated a large part of the project. Yves St-Jacques and Maya Filteau helped draft the first version of the guide.

Francine Mondor provided many of the illustrations that appear in the Estimate of Physical Work Demands worksheets and in the Temporary Work Restrictions forms. The remaining illustrations in these worksheets and forms, were obtained, with permission from the authors, from the following two publications:

- *Work-Related Musculoskeletal Disorders (WMSDs) - A better understanding for more effective prevention* by Serge Simoneau, Marie St-Vincent and Denise Chicoine, and the
- *Guide to the Diagnosis of Work-related Musculoskeletal Disorders — De Quervain's Tenosynovitis* by Louis Patry, Michel Rossignol, Marie-Jeanne Costa, and Martine Baillargeon.

Our special thanks also goes to Francine Parent for secretarial support, including the huge task of formatting a previous version of this document.

We also wish to acknowledge the contribution of organisations that permitted members of their staff to work on this project: the Institut de recherche Robert-Sauvé en santé et en sécurité du travail, the Commission de la santé et de la sécurité du travail and the ASP metal-électrique, the bipartite health and safety association for the metal and electric products manufacturing association.

Finally, we would like to thank the funding agencies without whose financial support this project could not have been completed: the Institut de recherche Robert-Sauvé en santé et en sécurité du travail and the Health Evidence Application and Linkage Network (HEALNet), a national centre of excellence funded by the predecessors of the CIHR. The Montréal Public Health Department also provided organisational, logistic and communication support for the project.

SUMMARY

Musculoskeletal disorders (MSDs) are one of the leading causes of disability in industrialized societies and generate enormous human and economic costs. Strictly medical approaches to the treatment and rehabilitation of individuals with MSDs have not proven successful in preventing prolonged disability or facilitating return to work.

To reduce the length of MSD-related work absences, companies are increasingly adopting return to work measures such as "temporary assignment" or assignment of "modified work" duties. Scientific studies suggest that rehabilitation strategies that include a modified work component yield better results in terms of work absence and health status than do strictly medical approaches.

However, many companies often have difficulty identifying tasks suitable for workers with MSDs and communicating with their treating physicians. This guide and the intervention strategy and decision-aid tools it includes are intended to address these needs and the difficulties companies encounter when providing modified work assignments to employees with MSDs. It proposes an approach to the planning and implementation of modified work programs as well as identifies specific actions companies may take to carry out effective case management and follow-up of workers with MSD.

The decision-aid tools integrated into the guide, in the form of worksheets and forms, permit the rapid recognition of work-related risk factors for MSD. There are three series of worksheets and forms that allow companies to:

1. estimate the physical demands of work tasks proposed for temporary assignment;
2. submit a temporary assignment proposal to the treating physician based on this evaluation;
3. obtain the treating physician's recommendations about the temporary work restrictions that apply to the injured worker.

Each series includes worksheets or forms that are specific to each of the body regions most commonly affected by these disorders, namely the back, the neck and shoulders, the elbows, and the hands and wrists.

These tools facilitate the selection of modified work tasks with physical demands that match the injured worker's physical capacities, in an effort to avoid recurrences or aggravation of the injury and to promote rehabilitation. The recognition of these risk factors can also facilitate prevention.

This guide may be particularly useful to trainers and other professionals who help companies set up and implement return-to-work programs. They can use it as a support document for training activities. It is also intended as a reference document for workplace-based committees or working groups in occupational health or human resources who are mandated to put into place structured modified work measures.

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INTRODUCTION

BACKGROUND

Musculoskeletal disorders (MSDs) are one of the leading causes of disability in industrialized societies. While the exact proportion of MSDs that are work-related is unknown, it is known that the costs associated with these disorders are very high and primarily accounted for by compensation for lost workdays. Strictly medical approaches to the treatment and rehabilitation of individuals with MSDs have not proven successful in preventing prolonged disability or facilitating return to work.

To reduce the length of MSD-related work absences, companies are increasingly adopting return to work measures such as "temporary assignment" or assignment of "modified work" duties. Rehabilitation strategies that include a modified work component yield better results in terms of work absence and health status than do strictly medical approaches.

Companies often have difficulty identifying tasks suitable for workers with MSDs and communicating with workers' physicians. These were among the principal findings of a 1999 study carried out in the metal and electrical products manufacturing sector by several members of the current research team. This study also highlighted the importance of ensuring that concerned parties in the company (including senior management, human resources and production managers, supervisors, and worker representatives) participate in the planning and implementation of modified work programs for individuals with MSDs.

This guide and the intervention strategy and decision-aid tools it includes are based on the results of a second study undertaken to help companies address these needs and the difficulties they encounter when providing modified work assignments to employees with MSDs. The research team for this study was composed of physicians, occupational therapists, ergonomists, and other occupational health researchers with a professional interest in MSD prevention and the rehabilitation of injured workers.

The guide is intended to help plan and put into place a modified work program for injured workers. You can use this information to find appropriate modified tasks for each injured worker case-by-case or to set up a databank of modified work jobs based on the specific parts of the body that are injured. The guide also contains worksheets and forms that are decision-aid tools to help you recognise work-related risk factors for MSDs. These can also facilitate your prevention activities.

OUTLINE OF THE GUIDE

This guide proposes an **approach** to structure and implement a modified work program for workers with MSDs. The principles underlying this approach are described in Chapter 1. This approach aims to:

- maintain workers with MSD at work or rapidly returning them to work;
- assign injured workers productive tasks that are matched to their physical capacities;
- promote recovery, and, ultimately, the return to regular work.

Chapter 2 describes a four-step intervention **strategy** based on this approach. This intervention strategy permits companies to take action and carry out effective follow up of workers with MSD by assigning them to tasks whose physical work demands are well matched to the workers' physical capacities.

To facilitate implementation of this intervention strategy, the guide includes **three series of worksheets and forms**:

❶ a series of worksheets for estimating the physical demands of proposed modified work tasks;

❷ a series of forms for communicating to the worker's treating physician the modified work proposal based on this estimate;

❸ a series of forms that allow the treating physician to inform the employer of the temporary work restrictions that apply to the injured worker.

Each series contains 3 or 4 separate worksheets or forms that are specific to each of the body regions: the back, the neck and shoulders, the elbows, and the hands and wrists. Detailed instructions for their use can be found in Chapter 4.

The intervention strategy is intended to be integrated into a structured modified work **program** for workers with MSDs. Chapter 3 describes the six steps necessary to set up and implement such a program:

1. Set up a committee.
2. Describe the current situation in the workplace.
3. Analyze the company's needs and set program objectives.
4. Determine program content.
5. Implement the program.
6. Evaluate the program.

This guide may also be useful to trainers and others who help companies implement modified work programs for workers with MSDs by serving as a support document for training activities. It is also meant to serve as a reference document for occupational health and safety working groups or committees or human resources personnel mandated to establish structured modified work measures.

WHY SET UP A MODIFIED WORK INTERVENTION STRATEGY?

Real-world examples of how this approach can be useful

Steve has had pain in his shoulder for a few days. He thinks that this is due to the use of a new screwdriver. He talks about it with his supervisor, who, using the worksheet *Estimate of Physical Work Demands for Workers with Neck* and *Shoulder Problems,* concludes that using the new screwdriver makes Steve adopt a posture that puts stress on his shoulder. The supervisor gives Steve his old screwdriver back and orders a more appropriate one.

Using the *Estimate of Physical Work Demands* worksheets, Ms. Ferreira's employer has set up a list of jobs suitable for workers who require modified work assignment. When Ms. Ferreira is diagnosed with tendinitis of the wrist, her supervisor selects a job considered suitable for workers with wrist injuries from this list. Two days later, during a follow-up meeting, Ms. Ferreira tells her supervisor that one of the new tasks worsens her wrist pain. The supervisor modifies the task. This follow-up allowed immediate action that avoided aggravating the injury.

Jennifer has worked for the same company for a long time and knows all the little tricks of the trade. When she returns from a four-week work absence due to a back problem, completion of the *Estimate of Physical Work Demands for Workers with Back Problems* worksheet reveals that she can no longer keep up with the conveyor belt at her job, although she may be able to perform other tasks. Therefore, someone else is assigned to her job, and Jennifer performs some of her team's other tasks that are chosen based on her work capacity and on production needs. She thus continues to work with her team in a "supernumerary" position.

Giuseppe has been off work for two weeks with a shoulder injury. After completing the *Estimate of Physical Work Demands* worksheet, Giuseppe and his supervisor identify a suitable task and propose it to his treating physician, who approves this temporary assignment proposal. During follow-up, the supervisor realizes that Giuseppe finds his modified work assignment monotonous and wishes to return to his original job. Upon reviewing the *Estimate of the Physical Work Demands* of Giuseppe's regular job, he notes that the work includes a number of risk factors for the shoulder that cannot be modified. After discussing this with Giuseppe, the supervisor asks the treating physician to let Giuseppe try working a half-day at his regular job, with the rest of the time spent performing his modified work task. This solution is successful. The amount of time he spends on his regular work duties is progressively increased until he is able to do a full shift of regular work.

The Health and Safety Committee identifies a job in which several workers have recently developed tendinitis. The *Estimate of Physical Work Demands* worksheets are used to pinpoint what aspect of the work may be overly demanding. It turns out that rearranging the layout of the parts makes everyone's job easier.

Back from a visit to a medical clinic for a neck problem, Emmanuel returns with a prescription for "light work". As no one knows exactly what tasks he must avoid, Emmanuel is asked to go back to his physician and have her complete the *Temporary Work Restrictions* form *for Workers with Neck Problems.* The physician identifies the movements and work activities Emmanuel should avoid. His supervisor finds tasks that respect these restrictions and that Emmanuel is able to do without aggravating his neck problem.

WHAT ARE MUSCULOSKELETAL DISORDERS?

"Musculoskeletal disorders" (MSDs) is a global term for several types of disorders affecting the neck, back, upper limbs or lower limbs. The tissues affected include tendons, muscles, ligaments, nerves and other tissues near the joints. Examples of MSDs include back pain, various types of tendinitis, bursitis, and carpal tunnel syndrome.

Numerous risk factors including occupational, individual and social factors may be involved in the development of MSDs. The work-related risk factors include physical demands such as handling heavy loads, repetitive movements, forceful exertion, vibration, and maintaining awkward postures. The effects of these factors depend on their duration, frequency, and intensity. Each of these physical demands may also contribute to the aggravation or recurrence of MSDs. Factors related to work organization (schedule, work pace, work environment, psychosocial, etc.) may influence physical work demands and may also be risk factors for MSDs. Individual factors (age, height, health status, level of physical fitness, etc.) may also contribute. However, exposure to a specific risk factor does not necessarily result in the development of an MSD, and the full range of factors must be taken into account when attempting to establish the cause of these disorders. For example, *"A particularly forceful exertion, performed in a poor posture, may be sufficient to cause a musculoskeletal problem, even if the rate of repetition is low. Conversely, a movement that does not require much force, performed in an acceptable posture, can become harmful if it is repeated thousands of times."* (Simoneau et al., 1996).

Regardless of whether or not the MSD is caused by work factors, the physical demands of work tasks assigned to injured individuals should be matched to their functional capacity in order to avoid re-injury or aggravation of the injury. The approach to return to work proposed in this guide focuses on risk factors that play critical roles in the development of MSDs in each of the specific body regions considered.

TERMS USED IN THIS GUIDE

Modified work or Temporary assignment:

The Quebec Health and Safety Commission (CSST) and the Act respecting industrial accidents and occupational diseases use the term "temporary assignment" to refer to work assigned to an employee with an occupational injury while the injury is still not "consolidated" (i.e. attained as full a recovery as possible). This work is performed while awaiting his or her return to regular work or other suitable work. Based on the treating physician's judgement, this work must:

- be able to be reasonably performed by the employee;
- not be hazardous for the health, safety, and physical integrity of the employee, given the nature of the injury;
- promote the employee's rehabilitation.

In this guide, the terms "temporary assignment" and "modified work" are used in a wider sense, to designate work other than a person's usual work tasks assigned to an injured worker because of his or her MSD, regardless of whether the MSD is work-related or whether the worker has sought any workers' compensation benefits.

Many companies call this type of work assignment "light work" or "light duties"; in some companies, other terms are used to describe modified work tasks assigned to workers with MSD who are not receiving workers' compensation benefits.

Physical disability:

"Physical disability" is an individual's inability (or reduced ability) to perform a physical activity.

Regular work:

"Regular work" refers to all the tasks a worker performs in his or her usual job.

Chapitre 1

PRINCIPLES UNDERLYING THIS APPROACH

The approach presented in this guide is based on principles derived from research, expert opinion, and the experience of the guide's authors. Further information about these principles can be found in the references on page 51.

THE PROPOSED APPROACH IS BASED ON THE FOLLOWING PRINCIPLES:

- Prolonged inactivity is generally detrimental to the recovery of individuals with musculoskeletal disorders.
- The longer workers are absent from work, the lower the probability that they will eventually return to work.
- Early rehabilitation and return to work are best conducted in the workers' usual work setting. This allows workers to remain in a familiar environment with people they know.
- Ideally, the case management of injured workers should begin early on.
- To help keep injured workers at work or return them back to work quickly, the physical demands of tasks assigned to workers should match their physical capacities, and should evolve as physical capacity increases or decreases.
- Work that is meaningful, valued, and productive can have a positive effect on recovery.
- Modified work programs can only be successful if everyone concerned participates and communicates effectively.
- The identification and correction of work-related risk factors can prevent the development of MSDs among other similarly exposed workers.

Chapitre 2

MODIFIED WORK INTERVENTION STRATEGY FOR WORKERS WITH MSDs

In some companies, it is generally thought that workers with injuries or musculoskeletal symptoms cannot work, or, if they are at work, they are unproductive. But this need not be the case.

Sometimes it is possible to keep injured workers at work by assigning them tasks that do not put undue strain on the injured muscles and tendons. In other cases, workers must take some time off work before they can return to any work duties. While keeping injured employees at work or returning them to work quickly are worthy goals, it is essential to do so without aggravating their injuries or triggering a recurrence. Identifying symptoms or pain among workers can also be the starting point for prevention activities.

The proposed intervention strategy requires the careful selection and evaluation of the work tasks to be assigned to injured workers as well as close follow up of workers after they have been assigned these tasks. It is designed to ensure that workers are physically able to perform their tasks without further injury. The goal is to promote the return of injured workers to their regular work. The importance of the worker's participation throughout this process cannot be overemphasized.

WHO IS THIS INTERVENTION STRATEGY INTENDED FOR?

The proposed intervention strategy allows you to specifically target workers with MSDs of the back, neck, shoulders, elbows, hands or wrists. It is intended for workers with MSDs who have a temporary work disability and a work absence of less than 90 days. It is applicable whether or not the MSD is due to work and whether or not there has been a work absence. More intensive ergonomic or work-related rehabilitation interventions or follow-up may be required for workers with prolonged work absences or permanent disability.

This intervention strategy may also be used to complement MSD prevention activities among the general workforce by helping the company identify MSD risk factors in the workplace that could then be corrected or eliminated.

WHAT ARE THE OBJECTIVES OF THIS INTERVENTION STRATEGY?

- To promote early case management of workers with MSDs.
- To keep them at work or return them to work under optimal conditions given their symptoms, work restrictions and physical capacity. Thus, assignment to appropriate modified work tasks should promote their rehabilitation and facilitate return to regular work.
- To promote the prevention of MSDs among the general workforce by identifying work-related risk factors and putting into place appropriate solutions or corrective measures.

WHAT ARE THE STEPS OF THIS INTERVENTION STRATEGY?

This intervention strategy encourages keeping injured workers at work or rapidly returning them to work. The algorithm on page 11 presents the four major steps of this strategy, namely:

❶ Identify the injured part of the body.

❷ Choose modified work tasks to be assigned to the worker.

❸ Evaluate whether the proposed tasks are appropriate.

❹ Follow up and evaluate the modified work assignment.

Three series of decision-aid tools are presented; each includes a set of worksheets or forms specific to the parts of the body most frequently injured. These tools are described and explained in Chapter 4. They will allow you to:

- select tasks to be assigned to a worker with a MSD in a specific area of the body;
- evaluate the physical work demands of these tasks;
- decide if these tasks are suitable for the injured worker;
- communicate the physical work demands of the tasks to the worker's treating physician and obtain the physician's opinion about the proposed tasks;
- obtain information from the treating physician about the temporary work restrictions that apply to the injured worker.

This intervention strategy must be part of a larger, structured program. A model for developing such a program is proposed in Chapter 3.

Let us now look at the concrete application of each of the steps of this strategy.

MODIFIED WORK ALGORITHM

1 Identify the injured part of the body

IDENTIFICATION OF THE INJURED PART OF THE BODY

- Worker's symptoms

OR

- Treating physician's work restrictions or diagnosis

2 Choose work tasks

SELECTION OR MODIFICATION OF WORK TASKS

- Modify regular job (changes to tasks, schedule, equipment, etc.)
- Another job in the same department
- Another job in a different department
- Supernumerary work
- Training

3 Evaluate appropriateness of proposed tasks

ESTIMATE THE PHYSICAL WORK DEMANDS OF THE PROPOSED TASKS USING THE TMW WORKSHEET FOR THE APPROPRIATE INJURED PART OF THE BODY

Do the physical work demands of the proposed tasks pose any difficulties?

YES → RETURN TO STEP 2

NO → ***Has a claim been filed with the CSST?***

NO → • Propose the modified work tasks to the treating physician → ***Does the treating physician consent to the worker performing this work?***

YES → ASSIGN THE TASKS

NO → • Ask the treating physician to specify work restrictions → RETURN TO STEP 2

YES → RETURN TO STEP 2

4 Follow-up and evaluate modified work assignment

IMMEDIATE FOLLOW-UP OF THE WORKER (within 2 or 3 days)

Does the worker have any difficulty performing this work?

NO → CONTINUE MODIFIED TASKS

YES → ***Has the treating physician specified any work restrictions?***

NO → • Ask the treating physician to specify work restrictions → RETURN TO STEP 2

YES → RETURN TO STEP 2 TO DECREASE THE PHYSICAL DEMANDS OF THE TASKS

PERIODIC FOLLOW-UP (e. g. every 2 weeks)

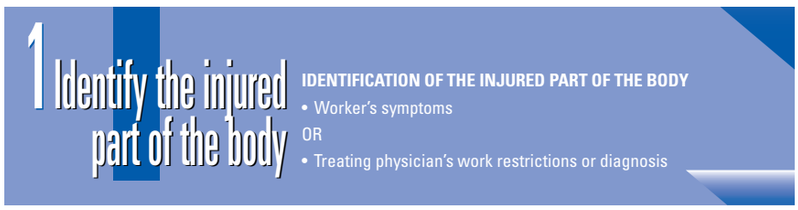
Has the employee's work capacity improved?

NO → RETURN TO STEP 2 TO INCREASE THE PHYSICAL DEMANDS OF THE TASKS

YES → ***Is the worker capable of returning to regular work duties?***

NO → RETURN TO STEP 2 TO INCREASE THE PHYSICAL DEMANDS OF THE TASKS

YES → **Return to regular work duties**

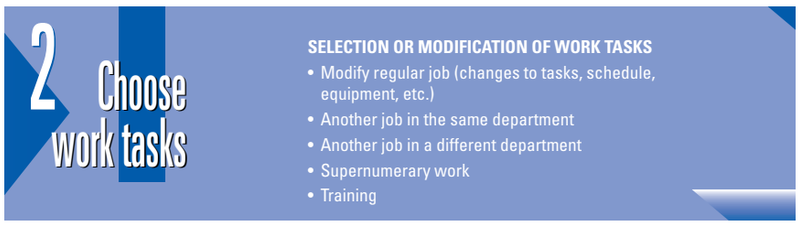


Identify the injured part of the body based on the worker's symptoms or the treating physician's diagnosis.

Choose the appropriate *Estimate of Physical Work Demands* worksheet based on which part of the body is injured. There is a specific worksheet for each of the following areas of the body:

- back,
- neck and shoulder,
- elbow, and
- hand and wrist.

These worksheets are used to estimate the physical work demands of the tasks proposed in Step 3.



Obviously, one should choose tasks that are unlikely to aggravate the worker's condition. For example, the tasks proposed for a worker with shoulder pain should not be physically demanding for the shoulder. To facilitate return to work, the tasks selected should also respect the following principles:

Whenever possible, keep workers in their usual work environment. Ideally, employees who are able to do most of their regular work, if appropriate modifications are implemented, should be kept at their job. This can avoid difficulties associated with collective agreements. If this is not possible, reassign workers to jobs as geographically close as possible to their regular job, so that they are not uprooted from their usual work environment. It is generally recommended that they be assigned within the same department, because the farther the reassigned work is from their regular job, the greater the difficulty they may have returning to it. Keeping workers in a familiar work environment may reduce the duration of the temporary assignment while maintaining their sense of connection to their work team and their links to co-workers.

Modify the work, if necessary. Often, regular work tasks can be modified to suit the physical capacity of injured workers. The ideal solution is to identify work demands that can aggravate injuries and eliminate them either permanently or, if this is not possible, temporarily. The process of estimating physical work demands described in Step 3 may help identify the most appropriate ways to modify the work tasks.

Here are some concrete examples of how work may be modified:

- **Work methods**
  Provide a tool or equipment for a task that is normally done manually; provide the worker with equipment for material handling.
- **Task reorganization**
  Take away one or more tasks that pose a risk; assign an additional worker to help the injured worker; permit rotation to different tasks that do not use the same muscles or tendons.
- **Work schedule**
  Reduce the number of hours worked per day or the number of days worked per week and organize a progressive return to work by increasing the number of hours or days worked each week.
- **Workstation**
  Reduce the distance between where objects are picked up and where they are put down to avoid awkward postures or forceful exertion; modify the height of work surfaces; provide a sit/stand seat.
- **Tools**
  Provide non-vibrating tools that are lighter or have handles that are suited to the angles of the wrist and hand when working.
- **Equipment**
  Provide baskets with self-levelling bottoms, adjustable chairs or tables, and carts for the handling even small objects.

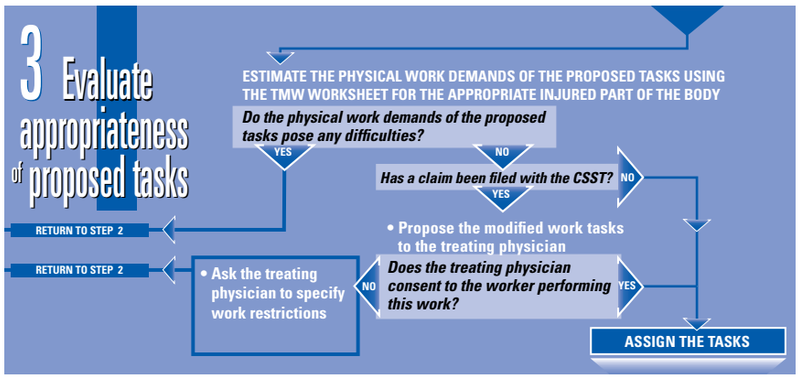
Select productive and rewarding tasks. Employees will feel more useful and certainly more motivated. Conversely, work perceived to be useless might demotivate injured workers and slow their recovery. When injured workers perform productive tasks, the company and co-workers continue to benefit from their experience and effort and it is a "win-win" situation for all.

Be creative and flexible. Selecting tasks that are suited to the individual worker can be complex, and may require flexibility and imagination. Here are some examples:

- **Supernumerary work**
  Supernumerary workers are additional workers added to a work team without including them in the production standards or the calculation of productivity. For example, an injured worker can be paired with one or more co-workers to help them complete their work tasks more quickly or more efficiently. Because they make useful contributions, supernumerary workers are generally appreciated by their colleagues. This strategy avoids the tensions that can arise when co-workers must take up the slack for work that their injured colleagues can no longer perform.

- **Training**
  When one cannot assign production tasks to injured workers, one may be able to offer them technical training related to their work or their trade or profession, or even training in health and safety. Although not directly linked to production, training is generally useful and benefits both the employee and the company.

- **Act as trainers of new employees**
  One can take advantage of the experience of injured workers by having them train new employees.



Use the *Estimate of Physical Work Demands* worksheet that corresponds to the injured part of the body identified in Step 1. This will help you decide if the proposed tasks are suitable for the injured worker; or, if you are setting up a databank of jobs for modified duties, it will help you identify a number of tasks suitable depending on the part of the body that is injured. While the participation of the worker is essential at every step of this process, it is particularly crucial to take his or her point of view into consideration at this step.

Evaluate the physical demands of the selected tasks

Fill out the appropriate *Estimate of Physical Work Demands* worksheet by answering each of the questions. Chapter 4 provides detailed instructions on how to use these worksheets. Evaluate the physical demands of all the tasks of the proposed work assignment, i.e. not only the main tasks but also the minor or related tasks. Describe the proposed job as it is actually performed or how it will be performed, if you intend to modify the work.

The *Estimate of Physical Work Demands* worksheets allow you to look at the overall work situation, and provide the elements necessary to decide if the proposed tasks are suitable for the injured worker. These worksheets are appended to the guide.

Decide if the tasks can be assigned to the worker

The previous step provides a great deal of information and should help you decide whether the proposed tasks are appropriate for the worker. This decision should also take into account aspects such as feasibility, work organization, the terms of the collective agreement, available resources as well as the point of view of the injured worker and co-workers.

If the tasks do not suit the worker's physical capacities, you should modify the work or select other tasks. The following questions from the algorithm may help guide you:

➔ ***Do the physical work demands of the proposed tasks pose any difficulties?***

Yes : You must either modify the tasks to reduce the level of difficulty or risk or select new tasks. Remember that you can make the tasks easier by reducing their *intensity* (weight, resistance), *duration* or *frequency* (speed, work pace). If you must select new tasks, you should go back to Step 2: *Choose modified work tasks.*

No : Proceed to the next question.

➔ ***Has a workers' compensation claim been filed in Quebec?***

No : Assign the modified tasks to the worker and go on to step 4: *Follow-up and evaluate the modified work assignment.*

Yes : In cases in which a workers' compensation claim has been filed, the law in Quebec requires employers to have the worker's treating physician approve the temporary modified work assignment. The *Modified Work Proposal* form

may be sent to the worker's physician to inform him or her of the physical demands of the proposed tasks and obtain an opinion concerning the suitability of these tasks. If necessary, you may ask the physician to complete a *Temporary Work Restrictions* form to specify the current work restrictions of the injured worker.

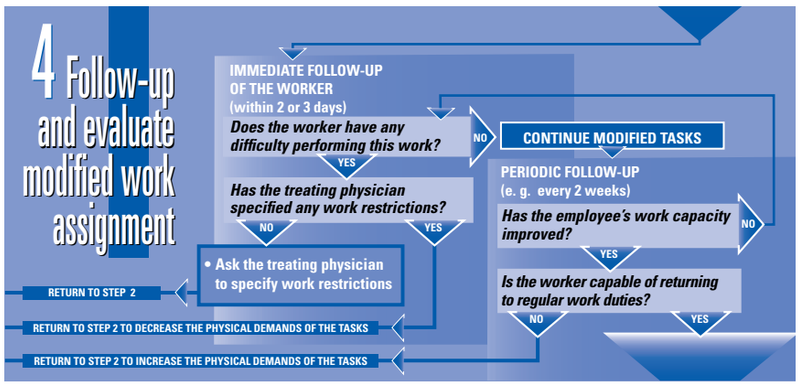
Once you have received the physician's opinion, ask yourself:

➔ ***Does the treating physician consent to the worker performing the proposed job?***

Yes : Assign the tasks to the worker and go on to Step 4: *Follow up and evaluate the modified work assignment.*

No : You must either modify the tasks or select new ones, taking into account the comments of the treating physician. If the physician has not indicated any work restrictions for the injured worker, ask him or her to complete the *Temporary Work Restrictions* form. If you must select new tasks, return to step 2: *Choose modified work tasks.*

If you wish the physician to select from among several jobs, you must send a *Modified Work Proposal* form for each job. On the other hand, if you wish to propose only one job that includes several tasks, you should list all the tasks on a single form that describes the physical work demands of all the tasks combined. Instructions for completing this form are presented in Chapter 4. The *Modified Work Proposal* forms for each of the four areas of the body can be found in the appendix.



The method used to estimate work demands in this intervention strategy is brief and approximate. It is therefore possible that some risks to the worker may be underestimated or go undetected. As a result, it is important to follow up the injured worker shortly after the assignment begins to check that the physical demands of the assigned tasks really do match his or her capacities. This will help prevent aggravation of the injury.

This should be followed by periodic follow-ups, at least once every two weeks, to ensure that the physical demands of the assigned tasks continue to be suitable to the worker's capacities. Normally, the worker's functional capacity should improve, and it may be possible to adjust the work tasks accordingly.

Immediate follow-up

This follow-up should be performed in the first few days following the assignment of the modified work tasks.

Ask the worker if he or she has any difficulty performing the tasks or any pain or other symptoms when performing any of the tasks.

- If there are no difficulties, continue the modified work assignment.
- If the worker experiences difficulty or symptoms associated with this work, the physical demands of the tasks may have exceeded his or her capacities. You must then modify the tasks or select new ones, and, if necessary, have the new modified work assignment approved by the treating physician. If it is impossible to clearly identify the elements of the work responsible for the difficulties, the worker should be referred to his or her physician, who should be asked to complete or update the *Temporary Work Restrictions* form.

Periodic follow-up

The objectives of periodic follow-up are to ensure that the tasks continue to match the worker's capacities and to allow the physical work demands to be adjusted to reflect the worker's evolving condition. Firstly, one should ensure that the worker has neither difficulty nor symptoms that could indicate aggravation of the injury. If the worker is recovering normally, it may be possible to gradually increase physical work demands as work capacity increases. The objective is not to promote an unduly hasty return to regular duties but rather to encourage optimal use of the worker's capacities.

- Ask workers if they are doing better and if they are able to do more.
- If workers have difficulties, develop symptoms or are not improving, ensure that their work situation does not put them at risk of aggravating their injury. If necessary, modify their work tasks or assign new ones.
- If the workers' condition improves, the physical demands of their tasks can be progressively increased; when workers are able to perform their pre-injury work tasks, they should return to their regular jobs.
- Evaluate and follow up any new task assigned to the worker.
- If workers have filed a workers' compensation claim in Quebec, changes of their tasks must be approved by their treating physician.
- If workers are unable to return to regular work, or if the process is taking too long, seek specialized services such as those provided by occupational therapists, ergonomists, or, in more complex cases, a multidisciplinary team specializing in occupational rehabilitation.

Chapitre 3

MODIFIED WORK PROGRAMS

The intervention strategy described in Chapter 2 can only be truly effective if it is part of a well-structured program that includes the participation of representatives of various levels of the company or organisation. Such programs are more successful if their design and planning takes into account organisational realities. Regardless of the corporate culture, available resources, and practices, the design and implementation of a modified work program should follow these six steps:

1. Set up a committee to design and implement the program.
2. Describe the current situation in the workplace.
3. Analyze the company's needs and set program objectives.
4. Determine program content.
5. Implement the program.
6. Evaluate the program.

SUPPORT NECESSARY FOR SUCCESS

The success of a modified work program is largely dependent on the support of various key players within the company or organisation, notably:

- senior management;
- human resources managers and professionals;
- occupational health and safety managers and professionals;
- supervisors;
- workers and their representatives.

Support from senior management must be accompanied by concrete actions:

- Creation of a working group or committee mandated to develop and implement a modified work program
- Participation in the working group or committee of at least one senior manager or director with decision-making power.

The modified work program must be designed to ensure that injured workers play a central role and are consulted at each step of the program, including in the choice of modified tasks and the estimate of physical work demands. Their participation not only allows the company to profit from their knowledge and experience about their work and health status but also fosters their collaboration with return to work measures and conveys to them the company's concern for their well-being.

1 SET UP A COMMITTEE TO DESIGN AND IMPLEMENT THE PROGRAM

Developing and implementing a modified work program is a complex undertaking. It involves many people and requires consideration of many points of view. It is therefore useful to form a committee responsible for developing, putting into operation and evaluating the program.

Choose the committee members

Good results start with a good committee. It is not important whether the committee is formed from scratch or from a team that already exists (e.g. the Heath and Safety Committee). What is important is that its members reflect the company's organizational structure, management style, and available resources, as well as the objectives of the modified work program. Every committee member must be able to devote adequate time to the committee. Here are some examples of key personnel who should be included in the committee.

Managers with decision-making authority

The committee should include at least one senior manager in a position to approve decisions and expenditures. This gives the committee credibility, demonstrates the importance the company accords to the program, and facilitates decision-making and rapid application of the committee's recommendations.

Senior managers are the committee's primary source of information regarding the company's vision, needs, and orientations over the medium and long term. Furthermore, a production manager can help ensure good coordination between the modified work program and production.

Occupational health and safety or occupational health service professionals and managers

Make sure that you have the participation of individuals who are well-informed about occupational health and safety (OHS) issues, intervention techniques, dossiers and procedures.

Example: OHS manager, ergonomist, nurse, company physician, human resources administrator with OHS training.

Representatives of supervisors

The committee should include at least one individual who can provide the point of view of production managers and supervisors and who is familiar with the actual work to be performed, including its technical features. This is particularly important because supervisors are usually responsible for assigning modified work duties.

Representatives of workers

The committee should include at least one worker representative in order to better understand the point of view of injured workers and their co-workers. This will facilitate the implementation of the program and the transmission of information about the program throughout the company. In fact, these representatives can act as intermediaries between the committee and the other workers.

Others

Other individuals may also be included in the committee depending on company needs (e.g. engineers, representatives of technical support services, directors, senior production managers).

Establish the committee's mandate

The committee is responsible for developing, implementing and evaluating the program. This includes:

- Defining what actions will be taken to address the requirements of workers with MSDs.
- Determining the human and financial resources necessary to implement the program.
- Defining the role of each of the individuals who will carry out the program.
- Ensuring that each of the personnel implementating the program has the necessary skills and knowledge, and, when needed, offering them training about the nature of MSDs, basic principles of ergonomics, principles underlying the return to work of workers with MSDs, and about the various elements of the new modified work program.
- Evaluating the implementation and operation of the program at regular intervals.

Define the roles of the committee members

Define each committee member's role and functions. Review what every member must know in order to adequately perform his or her tasks. This will allow you to identify the committee's information and training needs and determine whether you need to add a resource person with knowledge about MSDs, ergonomics or return to work issues.

2 DESCRIBE THE CURRENT SITUATION IN THE WORKPLACE

In order to identify the company's needs and establish realistic and appropriate objectives, it is important to document the baseline situation by collecting information about the following three areas:

Describe the company's current modified work practices for workers with MSDs

For example: Is temporary assignment practised? If so, under what circumstances? Who intervenes? What training do they have? Who is offered modified work? Is it only those receiving workers' compensation benefits? Is it also offered to those with non-work-related MSDs? Is it offered to those with early symptoms as a preventive measure even when there is no compensation claim? What guidelines or procedures are followed? What forms are used? Is temporary assignment linked to the prevention and elimination of MSD risks? How are modified work tasks chosen? What tasks are usually proposed? Are workers consulted? Are workers assigned to useful and productive modified work tasks?

Document the extent of the problem based on a profile of the company's statistics

For example: Gather statistics on the number of workers with MSDs, the number of workers receiving modified work assignments (with or without worker's compensation), the types of MSDs, the parts of the body injured, the departments involved, the duration of work absences, the duration of reassignments, and the costs associated with the program or with interventions.

Evaluate the situation

For example: Are activities related to modified work planned, varied, flexible, and accessible? Are there problems getting injured workers to participate? Getting supervisors to collaborate? Treating physicians? Co-workers? Do current practices encourage the healthy recovery and rapid return to work of injured workers? Have there

been cases in which temporary assignment resulted in aggravation of injuries or in relapses? Have there been temporary assignments that are unduly long? Have workers been satisfied with their modified work experiences? Supervisors? Co - workers? Has the program yielded the expected results?

3 ANALYSE THE COMPANY'S NEEDS AND SET PROGRAM OBJECTIVES

Analyze needs

Documenting the baseline situation will provide you with the information needed to identify your company's needs. The committee must come to a consensus about these needs and establish priorities. The review of your company's current practices will help you identify the gaps and determine what needs to be improved, what practices should be maintained, and what new practices are needed.

Establish objectives

The objectives of your modified work program must be realistic and measurable. Start from company needs and expectations expressed by the stakeholders on your committee. Once there is consensus, formulate general and specific objectives and evaluation procedures. These objectives will be the criteria you will use to evaluate the effectiveness of your actions. Table 1 presents some examples of general and specific objectives.

TABLE 1: **EXAMPLES OF GENERAL AND SPECIFIC OBJECTIVES**

General objectives	Specific objectives
Give priority to keeping injured workers at their regular jobs, even if this requires adapting or modifying their tasks	• Over the next 12 months, increase by 20% the proportion of workers on modified duties who remain at their regular job by adapting their tasks or their job. • By February 15, reduce by 35% the number of temporary assignments to the Supply Department (the usual destination for modified work assignments).
Improve the effectiveness of the modified work program .	• Over the next 12 months, reduce the average number of days that workers with MSDs on modified duties are absent from regular work to 23 days • By March 31, add 20 jobs to the modified work databank. • By the beginning of next year, decrease by 50% the number of relapses suffered by workers on modified duties.
Improve employee satisfaction with the modified work program	• Identify sources of worker and supervisor's dissatisfaction with temporary assignment by questionnaire and interviews. • By the end of the year, increase supervisors' satisfaction with temporary assignment (evaluated by questionnaire).
Reduce physical work demands in order to prevent the development of MSDs	• In the accident investigation of MSD cases, evaluate whether the job includes MSD risk factors that can be reduced or eliminated permanently.

4 DETERMINE PROGRAM CONTENT

The main function of the modified work program is to structure the measures to be taken in your workplace for the case management of employees with MSDs. The program content must specify the activities necessary to attain your objectives. More specifically, for each objective you have identified, determine the necessary actions and specific measures, tools, procedures and timetable to be followed as well as the personnel, equipment, and other resources needed.

To be effective, the program should be described in written form. This ensures not only that all parties have a reference document, but also that continuity is maintained when those carrying out the program leave the company and are replaced by new staff. Moreover, the act of writing requires the members of the group to thoroughly think through the program. At work, people are usually very busy; but sometimes it is necessary to step back from what has already been done, evaluate what works and what does not, as well as what meets previously established objectives and what does not. Once the program is well thought out and well written, it is time to implement it.

Define your activities

Decide how your company will help workers with MSDs, keeping in mind your objectives and the intervention strategy proposed in the preceding chapter. You can apply this strategy as is or modify it to suit your company's philosophy and management style as well as its organisation and structures, available resources and other realities. For example, you might ask yourselves:

➔ ***Will the modified work program be integrated into health and safety prevention activities?***

The modified work intervention strategy can become a way to identify jobs that pose a risk of MSD to workers, and, thus, may act as a sort of alarm that can trigger preventive occupational health and safety action.

➔ ***Can the program make use of existing structures?***

Examples:

- Will the modified work program be included in the performance appraisals of supervisors or be discussed when supervisors meet?
- What role will the health and safety committee have in the modified work program?

➔ ***Do you want to create a databank of temporary assignment jobs?***

You may decide to evaluate in advance a set of jobs that appear suited to workers with MSDs of a specific part of the body.

- If so, where and how will you maintain the databank of jobs?
- Who will be responsible for it?
- How often will the list be updated?

➔ ***Should you proceed on a case-by-case basis?***

Alternatively, you may prefer to modify the injured worker's regular work, in which case, you may decide that it is not necessary to create a databank of replacement jobs.

Develop a general strategy and create case scenarios that you can apply in specific cases. For example:

- Proactively, you may decide to estimate physical work demands as soon as two workers with the same job make similar complaints.

– In a more reactive fashion, you could decide to delay evaluating the demands of work tasks in workers' compensation cases, until you receive the treating physician's recommendations about the worker's temporary work restrictions.

The activities you decide to put into effect will take concrete form as procedures that describe the measures to be taken, the order they are to be performed in, by whom, when and under which circumstances.

➔ ***Who will select the tasks to assign to workers?***

You may delegate this responsibility to the supervisor, the team leader, the health and safety manager, the person managing the temporary assignment job databank (should one exist), or any other appropriate person.

➔ ***Who will estimate physical work demands?***

The *Estimate of Physical Work Demands* worksheets have been designed to be used by individuals who are familiar with the work. If human resources personnel or members of the health and safety committee are designated for this task, they must ensure that someone who knows the work well participates in the evaluation.

➔ ***How will you ensure that the worker participates in the estimate of physical work demands?***

The involvement of the worker is essential. It also facilitates more effective communication with the treating physician, because the worker will be aware of the tasks that he or she will be asked to do and can confirm his or her capacity to carry out these tasks.

➔ ***Who will complete the Modified Work Proposal form?***

In some cases, the person completing the *Estimate of Physical Work Demands* worksheets will also complete the *Modified Work Proposal* form. In other cases, it may be someone else. For example, one may choose the person responsible for administrative follow-up of workers' compensation cases, an OHS representative, or the supervisor.

➔ ***Who will do follow up of injured workers?***

It is the employer's responsibility to initiate follow-up. The supervisor, the team leader, or a health and safety manager or professional may be involved. Whoever does follow-up must be in a position to take action if difficulties arise.

➔ ***Who will communicate with the treating physician if difficulties arise?***

In some companies, those responsible for administrative follow-up of absenteeism contact the physician directly. In others, procedures are set up so that the worker is given any necessary information or forms before each doctor's visit so that follow-up with the treating physician occurs as part of regular doctor visits.

Write down the procedures

Here are examples of what they may contain:

- The measures to be taken in each step of the program;
- The order in which the measures should be performed;
- The individuals responsible for each step and any other individuals involved;
- The roles and mandates of each of the individuals involved;
- The deadlines to be met.

Table 2 presents examples of procedures to be followed when a worker returns to work with a medical certificate.

TABLE 2 **EXAMPLE OF PROCEDURES**

Steps to follow	Actions	Responsible	Deadline
1. Worker with back pain returns to work with worker's compensation medical certificate	• Receive the treating physician's medical certificate from the worker	Supervisor	Upon reception
2. Transmission of the medical certificate to the human resources department	• Give the human resources assistant the medical certificate	Supervisor	Same day or, at the latest, the next day
3. Selection of modified work tasks	• Identify the tasks to be evaluated based on the part of the body that is injured • Ask the two members of the modified work committee responsible for estimating physical work demands to carry out the evaluation	Supervisor	Same day or, at the latest, the next day
4. Estimate of the physical demands of the proposed tasks	• Ask the worker to participate in the estimate of the physical demands of the tasks • Evaluate the tasks • Complete the *Estimate of Physical Work Demands* worksheet • Decide whether the tasks are suitable for the worker • If not, modify the tasks or find other tasks, and re-evaluate the physical demands of the tasks • Inform the human resources department	2 representatives (management and labour) of the modified work committee	At most two working days after receipt of the request
5. Communication of modified work proposal to the treating physician	• Complete the Modified Work Proposal form • Explain the process to the worker • Verify that the worker believes he or she is able to perform the proposed tasks • Give the injured worker the form to bring to his or her physician	Human resources assistant	Give the MW proposal to the injured worker before the next doctor's appointment
6. Immediate follow-up of workers performing modified work	• Ask the worker at the end of the first day and on the third day of modified work if he or she has any pain or any difficulty accomplishing specific tasks • If so, modify the tasks • Ask the worker to notify his or her team leader of any discomfort or difficulties while doing the modified work assignment	Follow-up: Team leader Task modification: One of the two members of the modified work committee who evaluated the tasks	Within the first three days of modified work
7. Periodic follow-up of workers performing modified work	• Each week, check if the worker has difficulties performing certain tasks • If so, modify the tasks • If not, check if the worker is able to return to regular work • If not, check if the worker is able to perform more demanding tasks • If so, increase the tasks after discussion with the worker and/or asking the treating physician about new work restrictions • If not, maintain the same tasks	Follow-up: Team leader Decrease task demands: One of the two members of the modified work committee who evaluated the tasks Increase task demands: Supervisor and, if needed, one of the two members of the modified work committee who evaluated the tasks	Once a week

5 IMPLEMENT THE PROGRAM

Train the necessary people

The various people involved in the modified work program must be familiar with its content, operation, and implementation strategy. Start with a detailed presentation of the program, including its objectives and underlying philosophy. It may be useful to offer training on MSDs, ergonomic principles, and/or principles underlying maintenance at work and return to work of injured workers. Training should also be offered on the tools, worksheets, and forms to be used in the program.

Publicize the program

It is important to promote the modified work program to the various key players in the company. These people must understand the program's goals and the intervention strategy and be made aware of the importance of the program and its impact for the company as a whole. The program's success depends in part on the support of these people.

Workers must fully understand the program and its advantages. Their collaboration is necessary for the program's success. You can inform employees about the program through the company newsletter, the union newsletter, memos, posters, etc.

Implement the program

When everyone has been informed of the procedures and trained appropriately, it is time to implement the program. List the activities to be performed, train the individuals concerned, and define and assign responsibilities. Then, put the program into operation and see if everything works as planned.

6 EVALUATE THE PROGRAM

Immediately after launching the program, and periodically thereafter, the committee should closely monitor the modified work measures applied to injured workers and how they fare in the program. This will allow the committee to verify how the program is being implemented, to compare what was planned to what actually takes place, to identify any difficulties in the application of the program, and to modify the program as needed. Here are some examples of questions that can be asked at this stage:

- Have the procedures been applied as planned?
- Has the estimate of physical work demands of proposed tasks been carried out?
- Are injured workers participating in the intervention strategy?
- Are the proposed deadlines respected?

It is also important to verify that the program has had the expected effects. It is crucial to evaluate whether objectives have been met, as this determines whether continuation of the program can be justified. It is only possible to do so if criteria for evaluation were identified when the program objectives were defined (step 3). In particular, the following questions should be asked:

- Should specific measurement tools such as questionnaires and focus groups be developed?
- What data should be collected?
- Should this data be reviewed weekly, monthly, or annually?
- Who will conduct the review?
- What will be done with the review? Will it be publicized to managers and other employees?

Obviously, program evaluation is only useful if it results in necessary changes to the program. If the objectives have not been attained, one must find out why. For example:

- Were the planned measures adequate?
- Were the right people responsible for the right activities?
- Were jobs adapted or modified appropriately?

Chapitre 4

INSTRUCTIONS FOR COMPLETING THE WORKSHEETS AND FORMS

HOW TO FILL OUT THE " ESTIMATE OF PHYSICAL WORK DEMANDS WORKSHEETS "

These worksheets were designed to:

- be used by people familiar with the proposed work. In order for these worksheets to be useful, individuals filling them out who are not familiar with the work should be accompanied by individuals who know the work well;
- focus your observations in relation to the injured part of the body so that you evaluate those aspects of the work that may be particularly demanding or affect the return to work;
- allow you to decide whether the modified work tasks selected are suitable for the injured worker.

The four *"Estimate of Physical Work Demands"* worksheets can be found in found appended to the back cover of the guide. There is a worksheet for each of the following body regions: back, neck and shoulder, elbow and hand and wrist. Each worksheet contains the following sections: identification of the worker and the proposed tasks; a description of the physical demands of the tasks; an estimate of the level of physical work demands of these tasks; the injured worker's perception and the decision about the suitability of the tasks for this worker.

The worksheets contain 4 to 9 questions, depending on the body region, to help determine whether the proposed modified work tasks have any elements that may hinder return to work.

The questions require only short answers - either numbers, lines on a diagram, or a few words. The questions in the "Description" section are intended to help you estimate the duration, frequency, and intensity of each of the demands, based on your knowledge of the work.

Make sure that your answers take into account all aspects, not just a single sub-task, of the work in question. Also, take into account variations in work demands, e.g. as a result of variations in size of orders, models produced or other aspects of production.

If you are asked to provide minimum and maximum values, simply answer to the best of your knowledge. Approximate evaluations are fine - you don't need to get out tape measures, pressure meters and stopwatches.

To estimate the level of physical work demands and to decide if the work is suitable for the worker, you should take into consideration the most demanding requirements of the work. For example, if the worker handles three types of boxes, the heaviest of which weighs 20 kg, your estimate of work demands would be based on the work with the 20 kg boxes.

If you think that the physical demands of the proposed tasks are moderate or high, consider ways to modify the tasks or select other ones.

The caption heading "TAKE NOTE" found in the instructions that follow for each specific body region worksheet, contains detailed information to guide your judgement.

GENERAL INSTRUCTIONS FOR COMPLETING THE IDENTIFICATION SECTION AND THE SECTIONS ON "DESCRIPTION OF WORK DEMANDS" AND "ESTIMATE OF WORK DEMANDS"

ESTIMATE OF PHYSICAL WORK DEMANDS
FOR WORKERS WITH BACK PROBLEMS

Name of the employee :

Proposed tasks:

Indicate the name of the set of proposed tasks.

Description of proposed tasks:

Describe the sequence of tasks to be assigned.

For each question, one must estimate the level of physical work demands. The choices are as follows:

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

Does the work present this type of demand?

If so, describe it. If not, go to the next question.

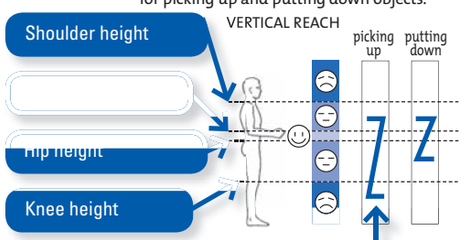
1 Does the work require HANDLING OBJECTS (lifting, carrying, putting down)?

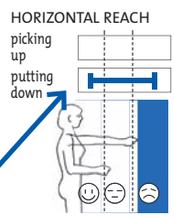
❑ **no** (go to question 2)

❑ **yes**

Objects handled:		
Total number of material handling operations per day:	minimum : _____	maximum : _____
Material handling occurs	❑ throughout the work day	❑ during specific periods lasting : _____ ❑ minutes ❑ hours no. period(s) /day: _____
Weight of objects handled	minimum : _____ ❑ kg ❑ lb	maximum : _____ ❑ kg ❑ lb
Distances covered	minimum : _____ ❑ m ❑ ft	maximum : _____ ❑ m ❑ ft

Draw lines on the diagrams below indicating the minimum and maximun vertical and horizontal reaches for picking up and putting down objects.





If handling the object presents particular difficulties, please explain why:

❑ Because the object is difficult to manipulate (e. g. no handle, too small or too big, object is slippery, fragile, unstable, weight is off centre, etc.)?

❑ Other reasons, specify :

Draw lines to indicate the highest and lowest and the nearest and furthest reaches.

Material handling

Absent ☺ Low ☺ Moderate ☹ High ☹

Proposed changes/comments:

If you think that by modifying the task, the physical work demands will be reduced, rate the new demands after these changes.

After changes

Absent ☺ Low ☺ Moderate ☹ High ☹

Does not present any difficulty for workers with injuries to this part of the body.

Presents some degree of difficulty, to be evaluated in light of the particular work situation

Presents obvious difficulties

N. B.: To identify the height and distance of reaches, indicate the location of the hands when the worker is picking up or putting down a load:

☺ : a reach that can be done without moving the elbows from the sides of the body

😒 : a reach that can be done without extending or flexing the trunk

☹ : a reach that requires trunk flexion

GENERAL INSTRUCTIONS FOR COMPLETING THE "PERCEPTION OF THE INJURED WORKER" AND "DECISION" SECTIONS

This section of the worksheet is very important. Workers often know the work well and are able to evaluate the proposed work tasks even if they are not their usual tasks. Workers are often the best judges of their own capacities, although some may overestimate or underestimate their capacities or the real work demands. This is one reason follow-up is so important.

If the worker believes he or she is unable to perform the proposed tasks, it is advisable to discuss this with him or her. Find acceptable changes or propose other tasks. The worker's perceptions about the proposed tasks often influence the treating physician's decision.

PERCEPTION OF THE INJURED WORKER

The worker believes he or she is capable of performing the work:

- ❑ as described above
- ❑ if the worker can work at his or her own pace
- ❑ if the worker can stop as needed
- ❑ with the changes indicated in the column to the right
- ❑ if work hours are reduced
- ❑ the worker does not believe he or she is capable of performing this work

DECISION

Are these tasks suitable for the worker with neck or shoulder problems?

❑ no ❑ yes ❑ yes, with the following conditions:

Completed by: _____

in the presence of the injured worker

❑ yes ❑ no Date _____

This question asks you to judge whether the tasks are suited to the worker's capacities.

If at least one of the physical work demands is rated either moderate or high (in the right-hand column under «Estimate of Work Demands»), the work will usually not be suitable for the worker. In certain situations, you may nevertheless decide to assign such tasks, if the worker considers he or she is able to perform them and there will be close follow up. If this is not the case, modify the tasks or select new ones.

However, if the worker has reservations about performing the tasks even though the analysis indicates they should not be too demanding, it may be necessary to re-evaluate the demands of the tasks or consult the treating physician.

HOW TO FILL OUT THE "ESTIMATE OF PHYSICAL WORK DEMANDS FOR WORKERS WITH **BACK** PROBLEMS WORKSHEET"

Here are specific instructions for each of the questions of this worksheet, found on the right-hand page.

Question 1:

TAKE NOTE

- The risk of injury increases with the number of lifts, the weight of the objects, and the duration of handling.
- Picking up or putting down an object above shoulder level is demanding on the back and shoulders.
- Picking up or putting down an object below the knees poses an important load on the lower back because of the degree of back flexion it almost always requires.
- Picking up or putting down an object far from the body requires significant exertion of the lower back muscles, which must compensate for the weight of the object and maintain the worker's balance.
- Handling an object that is difficult to hold (e.g. slippery, fragile, unstable, or whose weight is unevenly balanced) increases the effort required and the risk of making a sudden movement to keep hold of the object.
- Carrying an object in a cluttered environment, in a stairway or on inclined surfaces may require increased exertion or awkward postures for the back.

Question 2:

Pulling: Determine whether the worker performs forceful exertions while pulling, e.g. opening or closing doors, pulling carts, clearing cables or other objects.

Pushing: Determine whether the worker performs forceful exertions while pushing, e.g. opening or closing doors, pushing carts, holding an object while someone installs it

TAKE NOTE

- The risk of injury increases with the intensity of the exertion. In other words, the harder the exertion is for the worker, the greater the risk of back injury.
- Pulling is generally harder on the back than pushing.
- Pulling an object or equipment above the shoulders or below the waist generally requires postures that put stress on the back. Consider changing the height of the grip.
- It is easier to push or pull carts whose wheels are well oiled and are well-designed (size, covering) for the type of ground over which they roll.
- The force required to pull or push increases on surfaces that are uneven, on an incline, cluttered, or very narrow.

Question 3:

This question is the only one you must always answer.

Sitting or standing, as the worker prefers: Generally, if the job is organized so that the worker can work comfortably both seated and standing, check off "Low" in the Estimate of Work Demands in the right-hand column.

Sitting or standing, depending on production demands: Here, it is production demands, not the worker, that determine the posture. For example, delivery personnel are seated in their trucks and get up regularly, but these changes in posture are dictated by the deliveries they make.

Standing in a fixed position: Check this box when the worker performs the work standing up and only moves within a restricted space.

Standing, with some movement: Check this box when the worker performs the work primarily standing up, but has the freedom to move a few metres regularly.

TAKE NOTE

- Remaining seated or standing for long periods without the freedom to change posture may aggravate a back problem.
- Workers with back problems should be free to change their posture, regardless of production demands.
- When working in a seated position, a back problem can be aggravated if the lower back is not supported or the feet are not flat on the ground.
- When working in a standing position, work that allows one to move around is less demanding than work in a fixed position.

TMW Tools for Modified Work

ESTIMATE OF PHYSICAL WORK DEMANDS
FOR WORKERS WITH BACK PROBLEMS

Name of the employee: Émile F.

Proposed tasks:
Housekeeping tasks in a school

Description of proposed tasks:
- Empty garbage cans
- Dry and wet mop
- Clean washrooms/Sweep entrance and 2nd floor carpets/Polish floors 1x/ month/associated tasks

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

1 Does the work require HANDLING OBJECTS (lifting, carrying, putting down)?

Material handling

Absent Low Moderate **High**

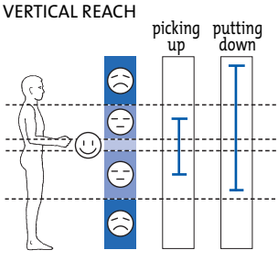
Proposed changes/comments:
- Use a cart to transport heavy bags of garbage

☐ **no** (go to question 2)
☑ **yes**

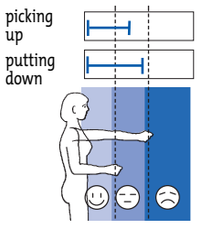
Objects handled:	Garbage bags, sweeper, chair	
Total number of material handling operations per day:	minimum: 12	maximum: 300
Material handling occurs	☐ throughout the work day	☑ during specific periods lasting: 30 ☑ minutes ☐ hours no. period(s)/day: 2-4 x
Weight of objects handled	minimum: 5 ☐ kg ☑ lb	maximum: 30 ☐ kg ☑ lb
Distances covered	minimum: 2 ☐ m ☑ ft	maximum: 20 ☐ m ☑ ft

Draw lines on the diagrams below indicating the minimum and maximun vertical and horizontal reaches for picking up and putting down objects.

VERTICAL REACH



HORIZONTAL REACH



If handling the object presents particular difficulties, please explain why:

☐ Because the object is difficult to manipulate (e. g. no handle, too small or too big, object is slippery, fragile, unstable, weight is off-centre, etc.)?
☑ Other reasons, specify:
Has to raise arms very high to remove bags from garbage cans

After changes
Absent Low **Moderate** High

2 Does the work involve FORCEFUL PUSHING or PULLING of objects or equipment?

Forceful Pushing or Pulling

Absent Low Moderate **High**

Proposed changes/comments:
- Train employee to push, not pull, sweeper.
- Alternate between dry and wet-mopping and other tasks.

☐ **no** (go to question 3)
☑ **yes**

Indicate on the diagrams below the minimum and maximum duration and frequency of moderate and intense exertion.

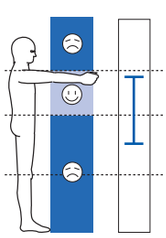
☐ **Pulling**

	Light exertion	Moderate exertion		Intense exertion	
		Min.	Max.	Min.	Max.
Duration		2hr	4hr		
Frequency		5x/min	35x/min		

☐ **Pushing**

	Light exertion	Moderate exertion		Intense exertion	
		Min.	Max.	Min.	Max.
Duration		2hr	4hr		
Frequency		5x/min	35x/min		

Indicate the minimum and maximum heights at which contact is made with the object.



If pushing or pulling presents particular difficulties, explain why:

☑ Because of the characteristics of the objects or equipment (e.g. inadequate grips, shape and size, poor state of the equipment)
Mop is heavier when wet.
☐ Because of the cramped space and/or the awkward postures the work imposes (e.g. twisting the trunk while pulling)
☐ Other reasons (please specify):

After changes
Absent Low **Moderate** High

3 Is the work done in a SITTING or a STANDING POSITION?

Sitting or Standing

Absent Low Moderate **High**

Proposed changes/comments:

Indicate which of the following best describes the general work posture in this job:

☐ Sitting
☐ Sitting or standing, as the worker prefers
☐ Sitting or standing, depending on production demands
☐ Standing in a fixed position
☑ Standing, with some movement

While sitting:

Is the lower back supported?	☐ Yes	☐ No
Are the feet level either on the ground or on a footrest?	☐ Yes	☐ No

After changes
Absent Low Moderate High

Here are the specific instructions for each of the remaining questions of this worksheet.

Question 4:

TAKE NOTE

- Three elements must be taken into account when evaluating the demands of a posture:
  - ❶ Amplitude, i.e. the degree of movement from the neutral position
  - ❷ Duration, i.e. the amount of time spent in the posture
  - ❸ Frequency, i.e. the number of times this posture is adopted.
- Working with the arms extended and unsupported may place significant stress on the back.
- A posture, even one of small amplitude, can place significant stress on the back, if it is maintained for prolonged periods.
- The risk associated with an awkward posture increases when physical effort or force is exerted at the same time.
- The greater the posture's amplitude, the more stress it places on the back (e.g. posture C presents a higher risk than posture A).

Question 5:

TAKE NOTE

- Walking for long periods, even without a load, can be difficult for some people with back problems.
- Walking quickly can be difficult for some people with back problems.
- Rapid changes in direction and sudden starts and stops may aggravate a back injury.
- Any situation that increases the risk of falling is dangerous, because of the sudden and unexpected effort required to regain balance and avoid falling. Thus, a slippery (e.g. wet or greasy) walking surface increases the risk of back re-injury.
- Walking in a cluttered environment, on a stairway or on irregular (e.g. littered with objects) or inclined surfaces may require increased exertion or awkward postures for the back.

Question 6:

TAKE NOTE

- The greater the distance between the steps of a ladder or stairway, the greater the stress on the back.
- When foot movement is limited, such as on a ladder rung, having to adopt precarious positions to reach objects can increase the risk of back injury.

Question 7:

TAKE NOTE

- Operating foot pedals, especially while standing, increases the risk of back injury because it requires an asymmetric back posture and may impose a static posture.
- The further the pedal travels and the greater the force required to operate it, the greater the stress on the back. Activities when preparing to operate a pedal (e.g. finding the pedal, bringing it closer to the body, reaching for it) may also be difficult for individuals with back problems.
- The more often the pedal is activated, the greater the risk of back injury.

Question 8:

TAKE NOTE

- Driving a vehicle may expose a worker to whole-body vibration and to possible impact shock, due to driving over uneven terrain or the uses made of the vehicle, which are often contraindicated for workers with back problems.
- The vehicle's suspension system and seat adjustment may affect the back.
- Driving certain vehicles (e.g. forklifts) can cause a person to adopt a posture that is demanding on the back, such as when the driver backs up and looks behind, twisting the back.
- Driving a vehicle may require a worker to remain in a fixed posture. The longer the position is maintained, the more demanding it is.

Question 9:

An example of exposure to whole-body vibration from machines, equipment or the ground is the use of a jackhammer.

TAKE NOTE

- Whole-body vibration, whether transmitted from the ground or from direct contact with the source of vibration, may cause or aggravate back problems.

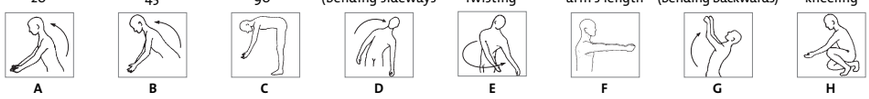
DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

4 Does the work require the worker to adopt AWKWARD BACK POSTURES?

☐ **no** (go to question 5)

☒ **yes**



Identify the 3 most demanding postures for the back in this work. In the table below, indicate the letters of the above illustrations that best describe these 3 postures, identify the tasks in which they occur and describe them as indicated.

The 3 most demanding postures Letter(s)	Task(s)	Sitting	Standing	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Forceful exertion? Yes	Forceful exertion? No
H	Clean toilets	☐	☐	5 min.	10 min.	10x/d	20x/d	☒	☐
A	Wash windows	☐	☒	5 min.	2 hr	—	20x/d	☒	☐
G	Change light bulbs	☐	☒	5 min.	10 min.	—	30x/d	☐	☒
E	Vacuum		x	10 min.	30 min.	2x/d	30x/d		x

Awkward Postures

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

Provide an extension pole to change light bulbs, a toilet brush, and a squeegee.

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

5 Does the work require WALKING?

☐ **no** (go to question 6)

☒ **yes**

Describe the situations in which the worker must walk the most.

Must cover stairs and 5000 ft² per floor

Duration: min.: 10 min max.: 8 hr Frequency/day: min.: 20x max.: 100x

Does the worker have to walk hurriedly to respond to a sudden event?

☒ Never ☐ Occasionally ☐ Often ☐ Always

Does the worker have to walk on unstable, uneven, slippery, cluttered or inclined surfaces?

☐ no ☒ yes If yes, please specify.

Occasionally, on wet floors

Walking

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

Wait for floor to dry.

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

6 Does the work involve UNSTABLE POSTURES (e.g. on scaffolding, in stairways, while climbing)?

☐ **no** (go to question 7)

☒ **yes**

Please specify.

Change light bulbs, wash window in entrance

Unstable Postures

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

7 Does the work involve OPERATING A PEDAL?

☒ **no** (go to question 8)

☐ **yes**

Please specify.

Frequency/day: min.: _____ max.: _____

☐ Standing ☐ Requires significant exertion ☐ In an awkward posture

Pedals

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

8 Does the work require driving a VEHICLE or other MOBILE EQUIPMENT?

☒ **no** (go to question 9)

☐ **yes**

Duration of driving/day	minimum:	maximum:
Type of vehicle/equipment driven:		
Quality of suspension:		
Risk of rebound or impact shock:	☐ None ☐ Low ☐ Moderate ☐ High	

Mobile Equipment

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

9 Does the work expose the worker to whole-body VIBRATION from machines, equipment, or the ground?

☐ **no**

☒ **yes**

Please specify.

Use of floor polisher 1x/month

Vibration

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

PERCEPTION OF THE INJURED WORKER

The worker believes he or she is capable of performing the work:

☐ as described above

☐ if the worker can work at his or her own pace

☐ if the worker can stop as needed

☐ with the changes indicated in the column to the right

☐ if work hours are reduced

☐ the worker does not believe he or she is capable of performing this work

DECISION

Are these tasks suitable for the worker with back problems?

☒ no ☐ yes ☐ yes, with the following conditions:

Completed by: Paul V. (supervisor)

in the presence of the injured worker

☐ yes ☒ no

Date May 10, 2004

HOW TO FILL OUT THE "ESTIMATE OF PHYSICAL WORK DEMANDS FOR WORKERS WITH **NECK AND SHOULDER** PROBLEMS" WORKSHEET

Here are specific instructions for each of the questions of this worksheet found on the opposite page.

Question 1:

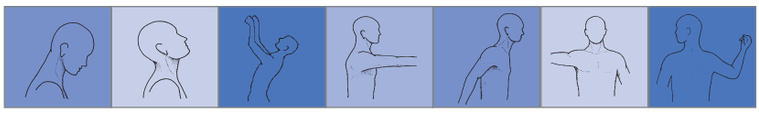
See the guidelines for Question 1 of the *"Estimate of Physical Work Demands for Workers with Back Problems"* worksheet, page 30.

Question 2:

TAKE NOTE

- The risk of injury increases with the intensity of the exertion. In other words, the harder or more forceful the work is, the greater the risk of neck and shoulder injury. Risk also increases with repetition and the duration of the exertion.
- Handling an object or equipment above shoulder level places particular stress on the neck and shoulders.
- Objects which are difficult to hold require special precautions. In order to maintain their grip on such objects, workers may need to exert greater force, perform sudden movements, or adopt awkward postures of the neck and shoulders.
- Any sudden action or movement that involves the neck and shoulders may require workers to exert greater force, increasing the risk of injury.

TMW Tools for Modified Work



ESTIMATE OF PHYSICAL WORK DEMANDS
FOR WORKERS WITH NECK OR SHOULDER PROBLEMS

Name of the employee: Jo Ann T.

Proposed tasks:
Office work in medical clinic.

Description of proposed tasks:
- File papers in filing cabinets
- Answer the telephone

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

1 Does the work require HANDLING OBJECTS (lifting, carrying, putting down)?

☐ **no** (go to question 2)

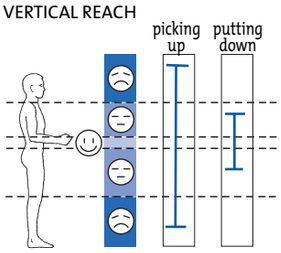
☑ **yes**

Objects handled: Heavy boxes

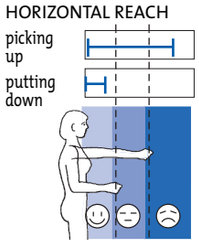
Total number of material handling operations per day:	minimum: 0	maximum: 10
Material handling occurs	☐ throughout the work day	☑ during specific periods lasting: 2 ☑ minutes ☐ hours no. period(s) /day: 0-4
Weight of objects handled	minimum: 20 ☑ kg ☐ lb	maximum: 50 ☐ kg ☑ lb
Distances covered	minimum: 2 ☐ m ☑ ft	maximum: 10 ☐ m ☑ ft

Draw lines on the diagrams below indicating the minimum and maximun vertical and horizontal reaches for picking up and putting down objects.

VERTICAL REACH



HORIZONTAL REACH



If handling the object presents particular difficulties, please explain why:

☐ Because the object is difficult to manipulate (e. g. no handle, too small or too big, object is slippery, fragile, unstable, weight is off-centre, etc.)?

☑ Other reasons, specify: Sometimes, obstacles and clutter around the boxes have to be moved before the boxes can be lifted

Material handling

Absent ☺ Low 😐 Moderate 😐 High ☹

Proposed changes/comments:
A co-worker will move the heavy boxes.

After changes

Absent ☺ Low 😐 Moderate 😐 High ☹

2 Does the work require other FORCEFUL EXERTION OF THE ARMS (e. g. pulling, pushing, raising, lowering, turning)?

☐ **no** (go to question 3)

☑ **yes**

Indicate on the diagrams below the minimum and maximum duration and frequency of moderate and intense exertions

☑ **Pulling**

	Light exertion	Moderate exertion Min.	Moderate exertion Max.	Intense exertion Min.	Intense exertion Max.
Duration	✓				
Frequency	✓				

☑ **Pushing**

	Light exertion	Moderate exertion Min.	Moderate exertion Max.	Intense exertion Min.	Intense exertion Max.
Duration		10-15 sec.	30 sec.		
Frequency		10x/h	50x/h		

☐ **Raising up**

	Light exertion	Moderate exertion Min.	Moderate exertion Max.	Intense exertion Min.	Intense exertion Max.
Duration					
Frequency					

☐ **Lowering**

	Light exertion	Moderate exertion Min.	Moderate exertion Max.	Intense exertion Min.	Intense exertion Max.
Duration					
Frequency					

☐ **Turning**

	Light exertion	Moderate exertion Min.	Moderate exertion Max.	Intense exertion Min.	Intense exertion Max.
Duration					
Frequency					

If these exertions present particular difficulties, explain why:

☐ Because of the characteristics of the objects or equipment (e. g. inadequate grips, shape and size, poor state of equipment).

☑ Because of the cramped space and/or the awkward postures the work imposes (e. g. twisting the trunk while pulling).

When the drawers are full, one must push harder to insert file folders.

☐ Other reasons, specify:

Forceful exertion

Absent ☺ Low 😐 Moderate 😐 High ☹

Proposed changes/comments:
File for one hour in the morning and one hour in the afternoon.

After changes

Absent ☺ Low 😐 Moderate 😐 High ☹

Here are the specific instructions for each of the remaining questions of this worksheet.

Question 3:

Postures A, B, C, D, E, F: These postures represent movements away from the shoulders' neutral position. The shoulders are in the neutral position when the arms are hanging at rest by the side of the body.

Elevation of the shoulders: This posture may be difficult to observe, since there is no visible motion. This posture is common when working on surfaces that are too high.

Posture G, H, I, J: These postures correspond to movements away from the neck's neutral position. The neutral position of the neck occurs when the head is held erect.

TAKE NOTE

- The risk of injury increases the more extreme the posture adopted is, the longer the posture is maintained and the more frequently it is repeated.
- Working with arms outstretched without support, even without carrying a load, places stress on the neck and shoulders. The exertion is particularly demanding when the elbows are above shoulder level.
- Even a posture with a small range of movement can be very demanding if it is maintained for prolonged periods. The sustained contraction of a muscle is termed "Static muscle load". Muscles tire out much more quickly in static contraction. This is why it is tiring to hold the arms up without support.
- Static muscle contraction is not always easy to identify because of the absence of movement.
- The risk associated with a demanding posture increases when force is exerted at the same time.
- The greater the movement away from the neutral position (i.e. the greater the range of flexion, extension or rotation of the neck, or of elevation, abduction or rotation of the shoulder), the greater the risk of injury.

Question 4:

TAKE NOTE

- Even if the range of movement is limited and the effort required is minimal, repetitive movements of the arms or head can lead to neck and shoulder problems.
- Repeating the same movements without a pause results in repetitive exertion of the same muscles and tendons.

Question 5:

TAKE NOTE

- Exposure of the arms or hands to vibration may aggravate shoulder problems.
- Certain neck conditions may be aggravated by vibrating hand tools or whole-body vibration, such as occurs with the use of mobile equipment or when working next to vibrating machinery.

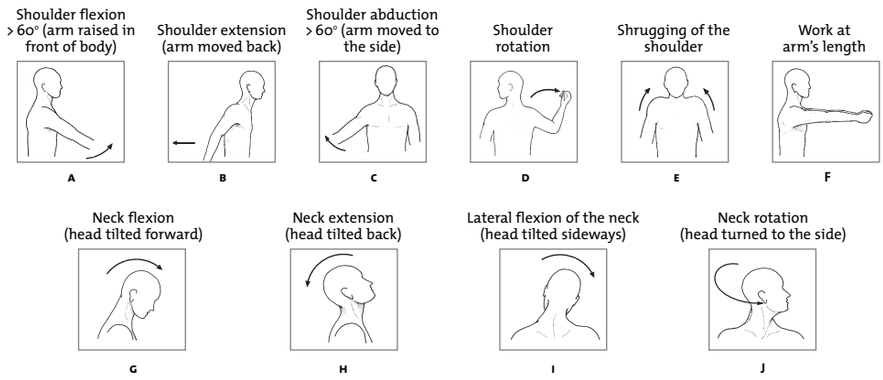
DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

3 Does the work require AWKWARD POSTURES of the neck or shoulders?

☐ **no** (go to question 4)

☑ **yes**



Referring to the above drawings, identify the letter(s) that best describes the 3 postures that are the most demanding for the neck or shoulders; describe each posture in the table below and identify the tasks associated with it.

The 3 most demanding postures		Duration		Frequency		Forceful exertion?	
Letter(s)	Task (s) :	Minimum	Maximum	Minimum	Maximum	Yes	No
AC	Reach top drawer	1-2 sec.	3-5 min.	1x/hr	40x/hr	☐	☑
A	Pick up the telephone	1-2 sec.	3-5 min.	1x/hr	40x/hr	☐	☑
I	Hold the telephone on the shoulder	30 sec.	30 min.	1x/hr	40x/hr	☐	☑

Awkard postures

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

- Provide a step-stool to help reach the top drawers while filing.
- Provide a telephone headset.
- Bring the telephone closer to the edge of the table.

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

4 Does the work require REPETITIVE MOVEMENTS of the arms?

☐ **no** (go to question 5)

☑ **yes**

Describe the movement:

File papers, pick up the telephone.

The repetitive movements occur:

☑ throughout the day

☐ during specific periods lasting: _____ ☐ minutes ☐ hours no. of periods/day: _____

Frequency of repetitive movements:

min.: 1x/hr max.: 40x/hr

Repetitive movements

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

With the changes described in points 2 and 3.

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

5 Does the work expose the arms or hands to VIBRATION from hand tools?

☑ **no**

☐ **yes**

Please specify:

Vibration

Absent ☺ Low ☺ Moderate 😐 High ☹

Proposed changes/comments:

After changes

Absent ☺ Low ☺ Moderate 😐 High ☹

PERCEPTION OF THE INJURED WORKER

The worker believes he or she is capable of performing the work:

☐ as described above

☐ if the worker can work at his or her own pace

☑ if the worker can stop as needed

☑ with the changes indicated in the column to the right

☐ if work hours are reduced

☐ the worker does not believe he or she is capable of performing this work

DECISION

Are these tasks suitable for the worker with neck or shoulder problems?

☐ no ☐ yes ☑ yes, with the following conditions:

With the changes described above

Completed by: Paul V. (supervisor)

in the presence of the injured worker

☑ yes ☐ no Date May 10, 2004

HOW TO FILL OUT THE "ESTIMATE OF PHYSICAL WORK DEMANDS FOR WORKERS WITH **ELBOW** PROBLEMS" WORKSHEET

Here are specific instructions for each of the questions of this worksheet found on the opposite page.

Question 1:

TAKE NOTE

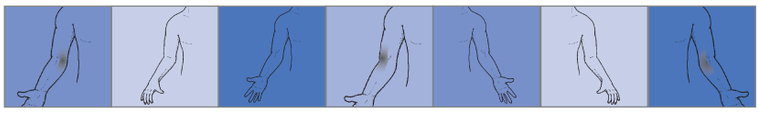
- The risk of injury increases with frequency (the number of times force is exerted), duration (the length of time force is exerted) and intensity (the amount of force exerted) of effort.
- Holding or gripping an object with the fingertips is much more demanding than holding or gripping with the entire hand.
- More force is required to hold or grip an object, when the object is slippery, wet or soft or when wearing gloves

Question 2:

TAKE NOTE

- The risk associated with pronation (diagram A) or supination (diagram D) of the forearm is greater when holding an object at arm's length with the elbow extended.
- The risk of injury associated with these postures is greater when performed repetitively or while applying force.

TMW Tools for Modified Work



ESTIMATE OF PHYSICAL WORK DEMANDS
FOR WORKERS WITH ELBOW PROBLEMS

Name of the employee : Francine B.

Proposed tasks:
reception at a chronic-care hospital

Description of proposed tasks:
- Greets visitors/Has visitors sign register / Calls nursing station to announce visit / Directs visitors as needed.

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

1 Does the work involve GRIPPING, HOLDING TIGHTLY or SQUEEZING objects?

❑ **no** (go to question 2)

☒ **yes**

Description of activity:	Picks up telephone	
Total number of gripping actions per day:	minimum : 1x/d	maximum : 20x/d
Gripping actions occur...	☒ throughout the day	❑ during specific periods lasting : _____ ❑ minutes ❑ hours no. period(s)/day: _____
Approximate duration	minimum : 20 ☒ minutes ❑ hours	maximum : 150 ☒ minutes ❑ hours
Approximate frequency	minimum : 1x/d ❑ minutes ❑ hours	maximum : 20x/d ❑ minutes ❑ hours

Forceful Hand Exertion

Absent | Low | Moderate | High

Proposed changes/comments:

After changes

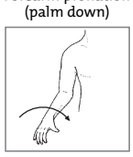
Absent | Low | Moderate | High

2 Does the work involve AWKWARD POSTURES?

❑ **no** (go to question 3)

☒ **yes**

Forearm pronation (palm down)



A

Wrist or finger flexion

B

Ulnar deviation of the wrist

C

Forearm supination (palm up)

D

Wrist or finger extension

E

Radial deviation of the wrist

F

Identify the 3 most demanding postures for the elbow in this work. In the table below, indicate the letters of the above illustrations that best describe these 3 postures, identify the tasks in which they occur and describe them as indicated.

The 3 most demanding postures		Duration		Frequency		Forceful exertion?	
Letter(s)	Task (s) :	Minimum	Maximum	Minimum	Maximum	Yes	No
A	Pick up telephone	20	150	1x/d	20x/d	❑	☒
						❑	❑
						❑	❑
						❑	❑
						❑	❑
						❑	❑

Awkward Postures

Absent | Low | Moderate | High

Proposed changes/comments:

After changes

Absent | Low | Moderate | High

Here are the specific instructions for each ot the remaining questions of this worksheet.

Question 3:

TAKE NOTE

- Exposure of the hands to vibration, impact shock or rebound from tools may aggravate elbow problems.
- The risk from vibration increases with the duration and intensity of exposure. The risk from impact shock and rebound increases with frequency and intensity of exposure.

Question 4:

TAKE NOTE

- Rubbing or prolonged contact of the elbow with a hard surface can compress nerves or damage other tissues.
- Compression of a nerve near the elbow may cause pain, numbness or tingling in the hands.

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

3 Does this work expose the hands to VIBRATION from tools, IMPACT SHOCK or REBOUND?

❑ **no** (go to question 4)

❑ **yes**

Please specify (tool, activity, etc.)

.....

Total time vibrating tools are used each day: Minimum : _____ Maximum : _____

Frequency of impact shock or rebound (number per day): Minimum : _____ Maximum : _____

Vibration, Impact shock, Rebound

Absent ☺ Low 😐 Moderate ☹ High ☹

Proposed changes/comments:

After changes

Absent ☺ Low 😐 Moderate ☹ High ☹

4 Does the handling of a tool or object produce PRESSURE POINTS or RUBBING in the elbow region?

☒ **no**

❑ **yes**

Please specify (tool, activity, etc.)

.....

Where on the elbow?

.....

Total time each day: Minimum : _____ Maximum : _____

Pressure Points or Rubbing

Absentes ☺ Faibles 😐 Moyennes ☹ Élevées ☹

Proposed changes/comments:

After changes

Absent ☺ Low 😐 Moderate ☹ High ☹

PERCEPTION OF THE INJURED WORKER

The worker believes he or she is capable of performing the work:

☒ as described above

❑ if the worker can work at his or her own pace

❑ if the worker can stop as needed

❑ with the changes indicated in the column to the right

❑ if work hours are reduced

❑ the worker does not believe he or she is capable of performing this work

DECISION

Are these tasks suitable for the worker with elbow problems?

❑ no ☒ yes ❑ yes, with the following conditions:

Completed by: *Paul V. (supervisor)*

in the presence of the injured worker

☒ yes ❑ no

Date *May 10, 2004*

HOW TO FILL OUT THE "ESTIMATE OF PHYSICAL WORK DEMANDS FOR WORKERS WITH **WRIST AND HAND** PROBLEMS" WORKSHEET

Here are specific instructions for each of the questions of this worksheet found on the opposite page.

Question 1:

TAKE NOTE

- Holding or gripping an object with the fingertips is much more demanding than holding or gripping with the entire hand.
- More force is required to hold or grip an object when the object is slippery, wet or soft or when wearing gloves.
- The risk of injury increases with frequency (the number of times force is exerted), duration (the length of time force is exerted) and intensity (the amount of force exerted).
- Pain, numbness or tingling in the hands or wrists may be due to a pinched nerve at the level of the wrist or be caused by compression of a nerve above the wrists, such as in the elbow, the shoulder region or the neck.

Question 2:

TAKE NOTE

- Workers with pain at the base of the thumb may have difficulty performing movements or adopting postures illustrated in the second row of drawings (drawings F to I).

TMW Tools for Modified Work

ESTIMATE OF PHYSICAL WORK DEMANDS
FOR WORKERS WITH HAND OR WRIST PROBLEMS

Name of the employee : Carole D.

Proposed tasks:
Winding

Description of proposed tasks:
- Feed the machine
- Pick up a bar/Place bar in machine/Press button/Remove bar and put it away/Begin again

DESCRIPTION OF WORK DEMANDS

1 Does the work involve FORCEFUL EXERTION of the HANDS or FINGERS?

☐ **no** (go to question 2)

☑ **yes**

☑ **Gripping, holding tightly or squeezing with the entire hand**

Description of action	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Particular difficulties (e.g. gloves, cold, poor grip)?
Pick up bar	5 sec.	15 sec.	100x/hr	220x/hr	☑ no ☐ yes, specify:

☐ **Gripping, holding tightly or squeezing with the fingertips**

Description of action	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Particular difficulties (e.g. gloves, cold, poor grip)?
					☐ no ☐ yes, specify:

☐ **Gripping, holding tightly or squeezing with the fingers fully extended or spread apart**

Description of action	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Particular difficulties (e.g. gloves, cold, poor grip)?
					☐ no ☐ yes, specify:

☐ **Gripping, holding tightly or squeezing between the fingers**

Description of action	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Particular difficulties (e.g. gloves, cold, poor grip)?
					☐ no ☐ yes, specify:

☑ **Other actions using the hands or fingers (e.g. tearing, folding, opening, carrying)**

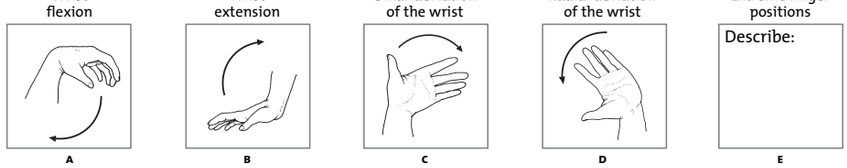
Description of action	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Particular difficulties (e.g. gloves, cold, poor grip)?
Press button with thumb	5 sec.	10 sec.	100x/hr	220x/hr	☐ no ☑ yes, specify: A little hard

2 Does the work require AWKWARD POSTURES of the WRIST or HAND?

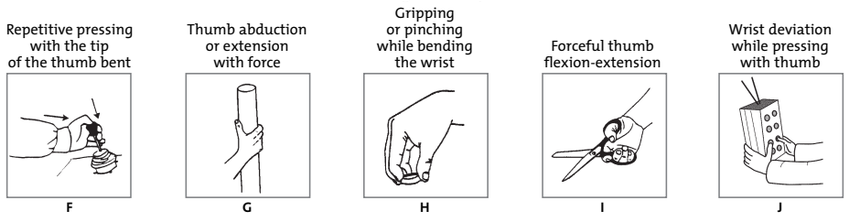
☐ **no** (go to question 3)

☑ **yes**

Awkward wrist or hand postures



Demanding thumb postures



Identify the 3 most demanding postures for the wrists, hands or thumbs in this work. In the table below, indicate the letters of the above illustrations that best describe these 3 postures, identify the tasks in which they occur and describe them as indicated.

The 3 most demanding postures Letter(s)	Task (s) :	Duration Minimum	Duration Maximum	Frequency Minimum	Frequency Maximum	Forceful exertion? Yes	No
F	Press button	5 sec.	10 sec.	100x/hr	220x/hr	☑	☐
A	Take bar from top shelf	5 sec.	15 sec.	100x/hr	220x/hr	☐	☑
						☐	☐
						☐	☐
						☐	☐

ESTIMATE OF WORK DEMANDS

Exertion of Hands or Fingers

Absent | Low | Moderate | High

Proposed changes/comments:
- Modify button to allow use of whole hand
- Reduce frequency of pressing button - worker can work at her own pace

After changes

Absent | Low | Moderate | High

Awkward Postures

Absent | Low | Moderate | High

Proposed changes/comments:
- Modify button to allow use of whole hand
- Lower top shelf

After changes

Absent | Low | Moderate | High

Here are the specific instructions for each of the remaining questions of this worksheet.

Question 3:

TAKE NOTE

- Even if the range of movement is limited and the effort required is minimal, repetitive movements of the arms or head can lead to neck and shoulder problems.
- Repeating the same movements without a rest break results in repetitive exertion of the same muscles and tendons.

Question 4:

TAKE NOTE

- Exposure of the hands to vibration from tools or impact shock or rebound (e.g. from using the hand to strike something) may aggravate wrist or hand problems.

Question 5:

TAKE NOTE

- Rubbing or prolonged contact of the wrist or hand with hard surfaces may compress nerves or damage other tissues (e.g. tendon sheaths, ligaments, skin, etc.).

DESCRIPTION OF WORK DEMANDS

ESTIMATE OF WORK DEMANDS

3 Does the work involve REPETITIVE MOVEMENTS of the wrists, hands or fingers?

☐ **no** (go to question 4)

☑ **yes**

Description of movements:

Pick up bars, press the button, puts bars away.

Repetitive movements occur

☑ throughout the day

☐ during specific periods lasting: _____ ☐ minutes ☐ hours No. of periods/day _____

Frequency of repetitive movements: min.: 100x/hr max.: 220x/hr

Repetitive Movements

Absent ☐ Low ☐ Moderate ☐ High ☑

Proposed changes/comments:

• Works at her own pace.

After changes

Absent ☐ Low ☑ Moderate ☐ High ☐

4 Does this work expose the hands to VIBRATION from tools, IMPACT SHOCK or REBOUND?

☑ **no** (go to question 5)

☐ **yes**

Please specify (tool, activity, etc.)

Total time vibrating tools are used each day: Minimum: _____ Maximum: _____

Frequency of impact shock or rebound (number per day): Minimum: _____ Maximum: _____

Vibration, Impact shock, Rebound

Absent ☑ Low ☐ Moderate ☐ High ☐

Proposed changes/comments:

After changes

Absent ☐ Low ☐ Moderate ☐ High ☐

5 Does the handling of a tool or object produce PRESSURE POINTS or RUBBING in the hand or wrist area?

☑ **no**

☐ **yes**

Please specify (tool, activity, etc.)

Where on the wrist or hand?

Total time each day: Minimum: _____ Maximum: _____

Pressure Points or Rubbing

Absent ☑ Low ☐ Moderate ☐ High ☐

Proposed changes/comments:

After changes

Absent ☐ Low ☐ Moderate ☐ High ☐

PERCEPTION OF THE INJURED WORKER

The worker believes he or she is capable of performing the work:

☐ as described above

☑ if the worker can work at his or her own pace

☑ if the worker can stop as needed

☑ with the changes indicated in the column to the right

☐ if work hours are reduced

☐ the worker does not believe he or she is capable of performing this work

DECISION

Are these tasks suitable for the worker with hand or wrist problems?

☐ no ☐ yes ☑ yes, with the following conditions:

Workers works at her own pace.

Completed by: Paul V. (supervisor)

in the presence of the injured worker

☑ yes ☐ no Date May 10, 2004

HOW TO FILL OUT THE "MODIFIED WORK PROPOSAL FORMS FOR TEMPORARY ASSIGNMENT"

The *Modified Work Proposal* forms for temporary assignment were designed to allow you to inform the injured worker's treating physician of your estimate of the physical work demands of the proposed tasks. It permits you to provide treating physicians a brief description of the tasks and other relevant information in a readily accessible form. In Quebec, it can be used instead of the more standard CSST temporary assignment forms to propose modified work tasks to the treating physician.

There is a form for each of the four parts of the body, i.e. the back, neck and shoulders, elbow, and wrist and hand (see appendix).

If you used the *Estimate of Physical Work Demands* worksheets to determine the level of physical work demands of the proposed tasks, you can use that information to complete this form.

The "Work Demands" column of each form lists the work demands that may present a risk of injury for workers with MSDs of that body region.

The "Estimate of Physical Work Demands" column allows you to indicate your rating of the level of each of the work demands.

The right-hand column of the form allows you to describe the characteristics of the work demands rated moderate or high. If you have modified a task in order to reduce its physical demands, you may describe these changes in this column.

An example of a completed form can be found on page 47.

TMW Tools for Modified Work

MODIFIED WORK PROPOSAL
for workers with NECK or SHOULDER problems

Employee name: Jo Ann T. Site of injury: Neck Date: May 10, 2004

Proposed tasks: Office work in a medical clinic

Description of proposed tasks: File papers in a filing cabinet. Answer telephone (using a headset)

With the employee's participation, we have reviewed the physical work demands for the neck or shoulder of the proposed tasks using the *"Estimate of physical work demands for workers with neck or shoulder problems"* worksheet. Here are the results:

	Work demands	Estimate of physical work demands				Describe the characteristics of the moderate and high work demands (e.g. duration, frequency, intensity) and any changes applied
		Absent	Low	Moderate	High	Co-worker will move the heavy boxes
1	Material handling		✓			
2	Forceful exertion of the arms (e.g. pulling, pushing, raising, lowering, turning)		✓			
3a	Awkward postures for the shoulder (e.g. abduction or forward flexion > 60°, rotation)		✓			
3b	Awkward postures for the neck (e.g. flexion, extension, lateral flexion, rotation)		✓			
3c	Static postures of neck or shoulder		✓			
4	Repetitive movements of the arms		✓			
5	Exposure of the hands or arms to vibration from hand tools	✓				

The employee believes he or she is capable of performing the work:

☑ as described above ❑ if the worker can work at his or her own pace

❑ The employee does not believe he or she is capable of performing this work

To be completed by the treating physician:

1. Is the employee able to perform this work? ❑ yes ❑ no
2. Is this work without danger to the health, safety and physical well being of the employee, given his or her injury? ❑ yes ❑ no
3. Does this work promote the rehabilitation of the employee? ❑ yes ❑ no

Assignment permitted: ❑ yes ❑ no ❑ yes with the following changes or restrictions:

If no, reason for refusal: _____

Start date of this work assignment: _____

I recommend that this person be re-evaluated in _____ days.

Signature of treating physician: _____ Date : _____

Name in block letters: _____

WHEN SHOULD ONE USE THE "TEMPORARY WORK RESTRICTIONS" FORMS?

The Temporary Work Restrictions forms (see appendix) allow the employer to obtain information from the treating physician about the conditions or work restrictions to respect when choosing modified work tasks for the injured worker. They will be particularly useful in the following situations:

- a worker is ready to return to work but the employer does not know exactly which tasks to assign. This situation includes the worker who returns from the doctor with a prescription for "light duties";
- the proposed modified work tasks or temporary assignment have been refused by the treating physician;
- a worker experiences difficulty or pain when performing the modified work tasks assigned to him or her;
- a worker finds the modified work tasks too easy and it would be beneficial to modify the tasks and thereby increase their physical demands.

Treating physicians may also use this form to specify temporary work restrictions when an injured worker returns to work or to temporary assignment.

CONCLUSION

This guide and all its proposed worksheets and forms have been designed to respond to the needs of companies wanting to return employees with MSD to the workplace quickly and safely.

However, some situations, for example, cases involving prolonged work absences or permanent disability, may be difficult to resolve. Specialized services may be needed when there is uncertainty about whether work tasks are appropriate to the injured worker or the strategies followed do not result in return to work. In these situations, professionals specializing in work rehabilitation may be useful. These can include occupational therapists, ergonomists, physicians or, for particularly complex cases, multidisciplinary teams.

Early return to work of employees with MSDs to appropriate tasks is a major challenge. We hope that the strategies and tools in this guide will prove useful in helping companies:

- better organize modified work activities;
- better equip those responsible for selecting modified work tasks;
- facilitate communication within the company and with treating physicians;
- involve injured workers in the process and encourage their social and occupational rehabilitation;
- promote the prevention of MSDs in the general workforce by identifying risk factors and implementing appropriate corrective measures or other solutions.

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