How to assess work-related musculoskeletal disorders (MSD)

Musculoskeletal disorders (MSD) represent 10% to 12% of reasons for visits to primary care physicians, and are the main cause of disability among Quebecers. It is estimated that 55% of MSD are work-related. MSD are considered to be work-related when work environment and job requirements are identified, among other possible factors, as preponderant reasons for the disorder.

Role of the physician
When dealing with a worker who consults for MSD, the physician’s role is not limited to diagnostic and therapeutic aspects but also involves prevention. Occupational history is the key to the clinical evaluation process. By taking a patient’s occupational history, the physician can collect information on various risk factors and assess their significance in the development of MSD. The patient’s history can also indicate whether other workers are exposed to the same risk factors, which means that the scope of a problem within a company can be assessed. The information acquired during clinical evaluation about the requirements of a job will also be useful when the patient returns to work; it can be used to ensure that relapse or deterioration of a MSD is prevented.

The physician should also be familiar with the various aspects of compensation, case management and follow-up of workers who file claims with the Commission de la santé et sécurité du travail du Québec (CSST).

Medical assessment and occupational history procedure

There are three main steps involved in the assessment process:

1. Assessment of the musculoskeletal problem
   a. Make a diagnosis
   b. Document how symptoms appeared
   c. Go over the medical history and history of previous injuries

2. Identification of occupational and non-occupational risk factors and documentation of the significance of these exposures

3. Formulation of a medical opinion on the influence of risk factors on the musculoskeletal problem.
Stages in the MSD assessment process

1. ASSESS THE MUSCULOSKELETAL PROBLEM

A. ESTABLISH THE DIAGNOSIS
Diagnosis should be as specific as possible. At the very least, the diagnosis should identify the musculoskeletal structures affected, type of tissue and anatomical location (e.g. tendinitis of the rotator cuff). It is preferable to avoid non-specific terms (e.g. tendinitis of the arm) or referring to the injury mechanism (e.g. injuries attributable to repetitive work).

B. DOCUMENT HOW SYMPTOMS APPEARED
Key elements to consider are documentation of the circumstances surrounding onset of symptoms (sudden or progressive) and assessment of various factors that trigger, accentuate or relieve symptoms. MSD linked to hyperstress usually take hold progressively. Particular attention should be paid to functional impacts that can result from MSD, both on occupational and daily life activities. This information helps assess the disorder’s severity and determine elements of comparison for patient follow-up.

C. REVIEW MEDICAL HISTORY AND HISTORY OF PREVIOUS INJURIES
The multifactorial nature of MSD requires that physicians consider history of previous injuries, systemic diseases and metabolic or inflammatory disorders that may have contributed to the development of MSD. However, the presence of particular health conditions does not exclude a link with work-related activities but risks making musculoskeletal structures more vulnerable to strain.

2. IDENTIFY RISK FACTORS AND DOCUMENT THE SIGNIFICANCE OF THE EXPOSURE
Both recreational and occupational activities that contribute to strain should be identified for all workers who consult for MSD.

A. NON-WORK RELATED ACTIVITIES
Sport, recreational or household activities can be involved in MSD. Consequently, it is important to document the intensity at which the person engages in these activities and to find out if specific symptoms appear while doing the activity.

B. WORK-RELATED ACTIVITIES
Risk factors correspond to conditions associated with the requirements of a task and of the work place. Risk factors can be directly responsible for the onset of MSD or act as triggers. The risk of developing MSD increases depending on the number and intensity of risk factors as well as duration of exposure. (Table 1)

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<thead>
<tr>
<th>Biomechanical factors</th>
<th>Organisational factors</th>
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<tr>
<td>effort</td>
<td>allocation of work time</td>
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<tr>
<td>posture</td>
<td>methods of work performance</td>
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<td>repetitiveness</td>
<td>rate of production</td>
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<td>recovery time</td>
<td>methods of remuneration</td>
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<th>Physical factors</th>
<th>Psychosocial factors</th>
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<tr>
<td>vibrations</td>
<td>perception of high stress or work overload</td>
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<tr>
<td>localised pressure</td>
<td>rapid pace of work</td>
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<tr>
<td>shocks / impacts</td>
<td>high production requirements</td>
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<tr>
<th>Thermal factors</th>
<th>Organisational factors</th>
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<tr>
<td>cold</td>
<td>allocation of work time</td>
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Table 1 : Principal occupational risk factors associated with MSD
Therapeutic approach and management

The aim of the therapeutic approach to treat workers affected by MSD is for them to resume socio-occupational activities as quickly as possible, and in the best conditions.

In general, pain control and strain reduction, both on personal and professional levels, are the cornerstone of the treatment. There are three stages to recovering functional ability:

- restoration of flexibility
- progressive strengthening of structures
- improvement of endurance.

In some cases, a painful syndrome can develop and thus affect patient management. Such an occurrence can prevent early return to work and require individual fear avoidance strategy. This type of behaviour is characterised by anticipation that any physical and psychological situation may cause pain. It is essential to acknowledge this phenomenon early on when managing a patient with a painful syndrome.

Occupational history

A job title is usually not very representative of the work carried out and the risks to which workers are exposed.

Therefore, it is important to ask workers about their tasks, the tools they use and the positions they have to be in to do their jobs.

If needed, workers can be asked to mimic the movements they make. Although a risk assessment done during a consultation is qualitative and subjective, in many cases it also allows the physician to collect enough information to have a good idea of the level of strain to the structures involved.

3. FORMULATE A MEDICAL OPINION ON THE ROLE OF THE RISK FACTORS ON THE MUSCULOSKELETAL DISORDER

Formulating a medical opinion on the aetiological factors should be part of the assessment of a worker who consults for an MSD that may be work-related. The goal of this opinion is to establish the contribution of the worker’s job in developing or aggravating an MSD, and not to determine whether or not a person qualifies for compensation. Formulating an opinion should be based on occupational history, documentation of symptoms and identification of the different risk factors. Given the multifactorial nature of MSD, an opinion formulated on an association between an MSD and work should be expressed in terms of probability rather than certainty.

Stages in the MSD assessment process

1. Prevention en pratique médicale, Septembre 2006
Return to work and functional limitations

Return to work may necessitate an assessment of work-related constraints to ensure that task requirements correspond to the worker’s capacity. In some cases, it may be necessary to suggest certain modifications to the work station or processes to facilitate progressive return to work.

When functional limitations are identified, it is important that they correspond to the worker’s specific disabilities. The recommendations given to company management should be clear and concise, and should not refer to the diagnosis or to any other medical information; depending on the case. They should take into account limits of loads to be lifted, range of motion not to exceed, frequency of movements and maximum duration during which a position can be held.

General unspecific recommendations such as "can do light work", are a source of confusion and should be avoided.

Preventive approach during worker assessments

Conducting assessments of workers consulting for MSD provide excellent opportunities for physicians to reflect on the scope of a problem within a company and suggest prevention programmes to implement. The goals of these programmes are to reduce the level of risk, and to monitor and screen symptomatic workers before they develop clinical lesions.

Resources: Public occupational health services network

**Occupational health physicians**

1. CSSS d’Ahuntsic et Montréal-Nord (previously CLSC Montréal-Nord)
   75 Port-Royal East, room 430
   Montréal, Quebec H3L 3T1
   Tel.: 514-858-2471 Fax: 858-6568

2. CSSS Jeanne-Mance (previously CLSC des Faubourgs)
   2260 Parthenais
   Montréal, Quebec H2K 3T5
   Tel.: 514-527-4072 Fax: 527-9770

3. CSSS de la Montagne (previously CLSC Côte-des-Neiges)
   5700 chemin de la Côte-des-Neiges
   Montréal, Quebec H3T 2A8
   Tel.: 514-731-1386 Fax: 739-8132

4. CSSS de l’Ouest-de-l’île (previously CLSC Lac Saint-Louis)
   180 avenue Cartier
   Pointe-Claire, Quebec H9S 4S1
   Tel.: 514-697-4111 Fax: 697 0647

5. CSSS de la Pointe-de-l’île (previously CLSC Pointe-aux-Trembles / Montréal Est)
   13,926 rue Notre-Dame Est
   Montréal, Quebec H1A 1T5
   Tel.:514-642-2121 Fax: 642-1684

**Clinique en santé au travail**

Clinique interuniversitaire de santé au travail et de santé environnementale
   3650 rue St-Urbain
   Montréal, Quebec H2X 2P4
   Tel.:514 934-1934, extension 32622

**Internet**

- Institut National de recherche et de sécurité (INRS France)
  http://www.inrs.fr/htm/les_troubles_musculosquelettiques_tms_membre.html
- National Institut of Occupational and Safety Health (NIOSH)
  http://www.cdc.gov/niosh/topics/ergonomics/

References:

http://www.santepub-mtl.qc.ca/mdprevention/index.html
A worker’s occupational history can be taken in two stages, using the following tools:

- a screening *questionnaire* to assess workers who consult for MSD;
- a detailed *questionnaire* when work-related MSD is suspected. This questionnaire can be mostly completed by the worker on his or her own.

### Screening questionnaire

- What kind of work do you do?
- Does your job require:
  - being in uncomfortable positions?
  - sustained physical efforts?
  - repetitive movements?
- Do you think your health problems are work-related?
- Are your symptoms different at work than at home?

### Detailed questionnaire

1. **Current or most recent job**
   - What is your current job? ____________________________________________________________
   - In what kind of company? __________________________________________________________
   - How long have you been doing this job? ______________________________________________
   - Number of days/week? _______________________________________________________________
   - What are your main work tools? ______________________________________________________
   - What is your main work position? _____________________________________________________
   - Do you have to be in a position where:
     - your head or back are bent? _______________________________________________________
     - your arms or hands are held away from your body? ___________________________________
   - Do you often handle objects or tools above shoulder height or away from the body? ______
   - Do you do repetitive movements with your arms or hands?
     - do you know how often? ___________________________________________________________
   - Do you handle heavy loads?
     - do you know how much a load weighs? _____________________________________________
     - how many hours a day? __________________________________________________________
   - Among the tasks you do, indicate which ones you find most difficult: ______________________
     _______________________________________________________________________________
     _______________________________________________________________________________
     _______________________________________________________________________________
   - Have there been any changes at work recently (job, tasks, tools)? ______________________
   - Do you use vibratory or striking tools? ______________________________________________
   - Do you work in a cold environment? __________________________________________________
   - Do you work under time constraints? ________________________________________________
   - Do you have production quotas? _____________________________________________________

2. **Previous jobs (if applicable)**
   - List your previous jobs, starting with the most recent one: ______________________________
     _______________________________________________________________________________
     _______________________________________________________________________________