

PREVENTING MUSCULOSKELETAL DISORDERS



**The ball is
in y•ur
court**

**Be
proactive**

**OCCUPATIONAL
HEALTH AND
SAFETY**



*Alliance du personnel
professionnel et technique
de la santé et des services sociaux*

Document prepared by

Pierre Naud

*Occupational health and safety and sustainable development co-ordinator
and*

Maria Piazza

Political officer

In collaboration with

the members of the APTS provincial occupational health and safety committee

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The ball is in your court

Be proactive!

Musculoskeletal disorders are a priority!

Musculoskeletal disorders (MSDs) are a priority for the APTS occupational health and safety committee and in our 2010-2012 action plan. As we know, a substantial number of APTS members have work stations that aren't properly adjusted in their work area. While prevention is a responsibility shared by employers and workers, in our estimation it is often more strategic to activate the assessment and remediation process by preparing and compiling well-documented complaints. That's why the APTS provincial health and safety committee is highlighting this priority in its public awareness campaign. The campaign slogan, "The ball is your court", is intended to challenge us to be proactive in taking our musculoskeletal disorders in hand and to call on our employers to take action and invest in facilitating our work duties. The challenge of taking the problem in hand is to prevent musculoskeletal disorders by identifying at-risk work situations and implementing remedial measures that will last.

"Let's not forget that a request or complaint is often seen as the starting point for preventive action."¹

¹ ST-VINCENT, Marie et autres. *L'intervention en ergonomie*, éditions Multimondes, Québec, 2011, 360 p., page 89

Far from brilliant statistics...

the figures at hand

In Québec, injuries associated with musculoskeletal disorders accounted for about 40% of all employment injuries compensated by the CSST (workers' compensation board) in 2005, for a total of \$700 million. Beyond the statistics, however, it is important to highlight the human and social costs borne by the workers concerned and their families.² For a number of years, musculoskeletal disorders have been a priority at the CSST.³ Its slogan, "Preventing MSDs is a priority", clearly reflects this fact and encourages us to take action.

The health-care system...

A sombre portrait in terms of taking MSDs in hand

Let's be clear: the portrait of the health and social services sector is a sombre one. The level of employment injuries attributable to musculoskeletal disorders⁴ is far too high. A recent study reveals that of the 32 economic sectors represented in Québec, the health-care sector is in a critical situation. Unfortunately, further accentuation of this trend is likely to occur in the coming years, given the intensification of work, particularly with more generalized use of the "LEAN method" designed to maximize work time by eliminating recovery time that is necessary to prevent musculoskeletal disorders.⁵

Many chronic cases of musculoskeletal disorders caused primarily by work are not even reported as employment injury claims.

² See the IRSST report no. R-667: <http://www.irsst.qc.ca/-publication-irsst-intervention-ergonomique-participative-prevenir-tms-dit-la-litterature-francophone-r-667.html>, page 1

³ Consulted April 27, 2011: http://www.csst.qc.ca/NR/rdonlyres/6139FFE2-DB5A-4BA0-8E76-02B050EA9691/296/dc_500_236.pdf

⁴ Consulted April 27, 2011: http://www.inspq.qc.ca/pdf/publications/1156_TMS1998-2007SousSurveillance.pdf, page 5

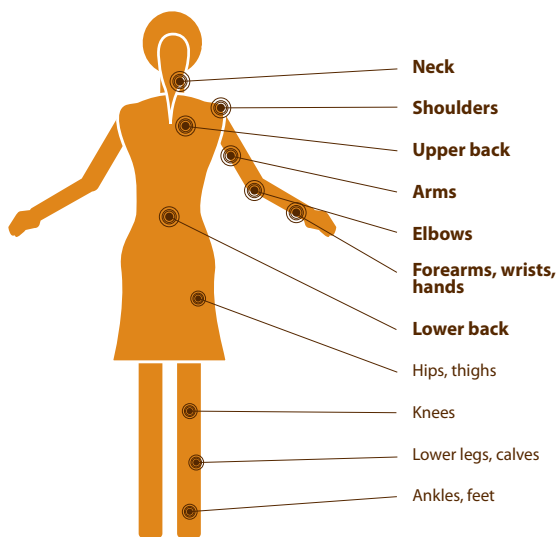
⁵ See the presentation by T.J. Armstrong, "Des notes du congrès de la 7^e conférence scientifique internationale sur la prévention des troubles musculosquelettiques Premus 2010," consulted on July 11, 2011. [http://www.dmt-prevention.fr/inrs-pub/inrs01.nsf/IntranetObject-accesParReference/DMT_TD%20173/\\$File/TD173.pdf](http://www.dmt-prevention.fr/inrs-pub/inrs01.nsf/IntranetObject-accesParReference/DMT_TD%20173/$File/TD173.pdf), page 67

Musculoskeletal disorders...

a useful definition

Musculoskeletal disorders are “a set of symptoms and inflammation or degenerative effects in the following areas of the body: the neck, back and upper and lower limbs. The nerves and blood vessels connected to these structures may also be affected. Pain or loss of function is a common manifestation of these effects.”⁶

MSDs and anatomy



“The integrity of the entire structure of the human body can readily deteriorate depending on the stresses to which it is subjected. These stresses stem from exertion and intense and constant strain, poor posture or improper work positions, repetitive movements, failure to take breaks or mini-breaks, and psychological factors, which diminish the body’s ability to withstand these stresses. Insufficient recovery from these stresses may cause pain or discomfort. An employment injury is usually associated with an on-going disruption of the balance between a worker’s capacities and the demands of his or her work.”⁷

⁶ http://www.inspq.qc.ca/pdf/publications/1156_TMS1998-2007SousSurveillance.pdf, page 5

⁷ *Manuel d’hygiène du travail, Du diagnostic à la maîtrise des facteurs de risque*, Éditions Modulo-Griffon, Montréal, 2004, 752 p., page 324

Pain...

sounding the alarm

The integrity of the structure gradually deteriorates, causing pain. Pain is a protective mechanism and should be viewed as an alarm system.⁸

A musculoskeletal disorder generally develops in 3 stages.⁹



1st stage:

Pain occurs only at work and disappears when the work stops (during breaks, after the work shift)

- the usual duties are still performed normally;
- the pain may last several weeks;
- **this is the time to take things in hand and be proactive, as the situation is reversible.**



2nd stage:

The pain continues to occur after work

- work capacities are diminished and work becomes increasingly arduous;
- this stage may go on for months;
- it is often at this point that people consult someone for help. There is still time to take action in the work areas involved, as this situation is still reversible.



3rd stage:

The pain becomes on-going and intense

- Work becomes difficult to perform and daily life activities are disrupted. The pain disrupts sleep;
- This stage may go on for months or even years;
- It is never too late to take things in hand, but at this stage the likelihood of an extensive absence from work is high and there is the risk of after-effects.

⁸ Drawn from http://www.asstsas.qc.ca/documents/Publications/Repertoire%20de%20nos%20publications/Autres/GP-Mammo_Partie_2.pdf, page 15

⁹ Drawn from <http://www.santeautravail.net/Afficher.aspx?unite=002007017&langue=fr> and <http://www.asstsas.qc.ca/Documents/Publications/Repertoire%20de%20nos%20publications/OP/op235012.pdf>, page 13

Risk factors...

pointing at work

For APTS members, the risk factors are directly linked to their work environment.¹⁰ These risk factors may be biomechanical, organizational or psychological in nature. They are also linked to individual variables (age, sex, body mass index, smoking, physical fitness, etc.).¹¹

The main risk factors associated with musculoskeletal disorders:

- **Biomechanical factors**
 - Strain and effort
 - Improper posture and constraining work positions
 - Repetitive work
 - Stationary work

- **Organizational factors**
 - Distribution of work time
 - Methods of performing the work
 - Demands and requirements of the department or service

- **Psycho-social factors**¹²
 - High stress
 - Work overload
 - Dissatisfaction
 - Lack of recognition

¹⁰ Drawn from the *Portail de réseau public québécois en santé au travail, Prévention des troubles musculosquelettiques*: <http://www.santeautravail.net/Afficher.aspx?unite=002007017&langue=fr>

¹¹ *Manuel d'hygiène du travail. Du diagnostic à la maîtrise des facteurs de risque*, Éditions Modulo-Griffon, Montréal, 2004, 752 p., page 323

¹² For further information, see the brochure entitled "Psychological distress can be defused!", SST-APTS, 2010 annual activity

Compulsory measures...

Such measures are often imposed as a result of employment injuries recognized by the CSST that require immediate adjustments or accommodation, particularly when it comes to rehabilitation provided for in the *Act respecting industrial accidents and occupational diseases*.¹³ Compulsory measures may also be the consequence of remedial orders issued by CSST inspectors, after identifying departures from the law.¹⁴

¹³ See the *Act respecting industrial accidents and occupational diseases*, R.S.Q., c. A-3.001, section 145 and following.

¹⁴ See the *Act respecting occupational health and safety*, R.S.Q., c. S-2.1, section 177 and following.

ACTION STRATEGIES TO DEAL WITH MUSCULOSKELETAL DISORDERS IN OUR WORK AREAS:

To avoid the worst...

be proactive

The joint health and safety committee (CPSST) can set internal strategies for preventing musculoskeletal disorders. These strategies may take the form of subcommittees or an office ergonomics (“Ergo-bureau”) program. It is also important to catalogue risks of MSDs within the framework of the assessments by sector, based on an examination of risks that are present using the occupational health and safety management system (*Système de management de la santé et de la sécurité du travail* - SMSST).¹⁵ Otherwise, making a formal complaint to the head of the department or service and reporting it as an incident may well be appropriate.

7 steps to be proactive and take things in hand:

1. Offer the following screening test to the institution’s sectors of activities;
2. Administer the screening test and compile the results to identify those who have musculoskeletal pain or discomfort at work;¹⁶

THE FOLLOWING STEPS CAN BE TAKEN WITH THE HELP OF A SPECIALIZED RESOURCE PERSON

3. Conduct a brief interview with each of the people concerned;
4. Draw up a comprehensive description of the work duties;
5. Identify the risk factors;
6. Propose a solution that is agreed upon with the individuals concerned;
7. Follow up to ensure that lasting remedial measures are implemented.¹⁷

¹⁵ See the explanation of the various steps of the SMSST, http://www.aqesss.qc.ca/docs/public_html/Produits/DepliantSMSST.pdf

¹⁶ Adapted from ST-VINCENT, Marie et autres, *L'intervention en ergonomie*, éditions Multimondes, Québec, 2011, 360 p., pages 308 and 309

¹⁷ To find out more about lasting remedial measures for MSDs, consult the journal entitled *Prévention au travail*, “Prévention durable des troubles musculosquelettiques en entreprises”: http://www.irsst.qc.ca/media/documents/fr/prev/v21_01/26-27.pdf

Help...

at hand

If co-workers complaint of pain or discomfort at work, you can help them by gathering information that can be included in the screening procedure to take MSDs in hand. First, it is absolutely essential to obtain the consent of your co-workers before taking photos or videos of their work posture.

1. Try to capture “improper” work postures without telling co-workers what you are focussing on;
2. After obtaining the authorization of those concerned, transmit the data to the parties involved (your institution’s health services, your local union executive, the APTS occupational health and safety sector); the information can be sent by e-mail;
3. After that, a specialized resource person will have to promptly step in and take it from there.

Assessment tools...

from expert hands

Tools are used by specialists to offer a proper assessment of stresses on the body’s structures. The Quick Exposure Check (QEC) method is the one suggested by the CSST and the IRSST. Although somewhat technical, this method makes it possible to visualize the various stresses involved in performing specific work duties.¹⁸

Self-massage using the blue ball...

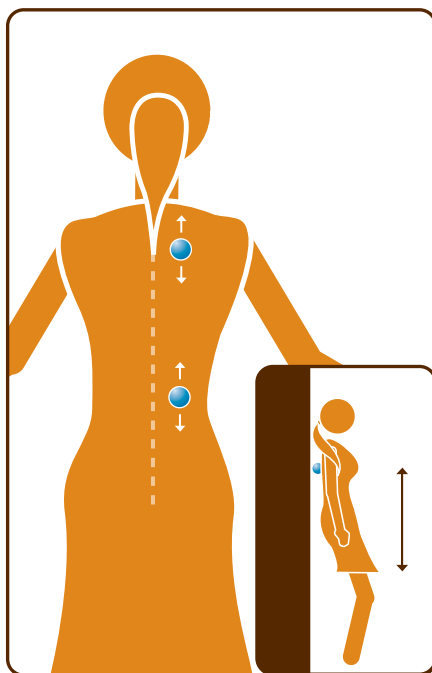
an exercise that encourages us to take the problem in hand

The APTS has given you a blue ball to practise some self-massage exercises to relieve tensions that can set in during your work shift. These exercises are designed to work out the knots and release toxins that build up in sore muscles. Don’t forget that it is also very important to drink lots of water to eliminate these toxins.

¹⁸ The information document on the QEC method is available at http://www.csst.qc.ca/NR/rdonlyres/5374F3E2-FE9A-487F-8D57-43C621700277/4635/DC_200_6993.pdf and the QEC form is available in French at http://www.csst.qc.ca/NR/rdonlyres/BB101042-0FD7-42AB-B050-4BB0E8849D97/4636/DC_500_2393.pdf; for an example of the form in English, see: <http://www.broadwayergonomics.com/resources/qec.pdf>

Back massage:

- Stand with your back to the wall and place the blue ball against the muscles near your spine (never directly on the spine);
- Supporting your body on the ball, roll the ball from your lower back up to the top of your back and down again, keeping the pressure at a tolerable level;
- When you reach more painful areas, stop and breathe deeply a few times to alleviate the pain;
- Reposition the ball and massage your entire back on each side of your spine.¹⁹



On the APTS web site, the APTS occupational health and safety committee suggests other self-massage exercises with the blue ball to target the trapezius area (shoulder muscles) and muscles in the buttocks, the back of the legs and the feet.

¹⁹ Exercises suggested by the CSSS de Témiscouata's rehabilitation services.

Exercises...

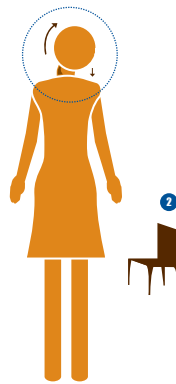
to give you the upper hand

According to a recent study, it only takes two minutes of exercise each day to develop your upper back muscles and thereby relieve pain.²⁰ In a standing or sitting position, you can perform the 9 short stretching exercises at work that we recommend to relieve muscle tension in your upper limbs.

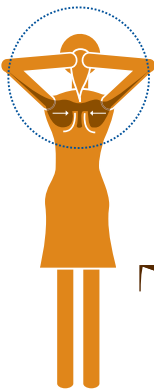
- The idea is to hold the stretch until you feel a slight pull.
- BE CAREFUL! Stop immediately at the first sign of pain.²¹



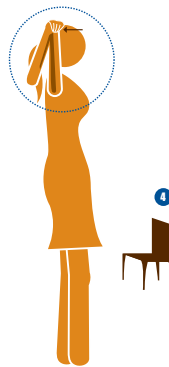
Shoulder shrug
Raise your shoulders as high as possible and lower slowly.



Neck stretch
Tilt your head to the side, ear toward your shoulder.



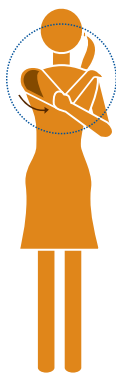
Shoulder blade stretch
With your hands behind your head, slowly bring your shoulder blades closer together to relax your upper body.



Arm stretch: triceps
With one arm behind your head, grasp the elbow with your other hand, gently drawing it backwards and behind your head.

²⁰ *Passeportsanté.net*, June 21, 2011 issue. See the following scientific article: <http://www.ncbi.nlm.nih.gov/pubmed/21177034>

²¹ Based on and adapted from the 0-5-30 program of Kino Québec and the *Agence de la santé et des services sociaux des Laurentides*.



Back shoulder stretch: deltoid

With one arm bent in front of you, grasp the elbow and gently draw it toward you.



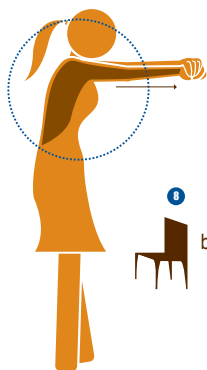
Torso side stretch: latissimus dorsi

With one arm extended over your head, bend your upper body to the side.



Back and arm stretch

With both arms above your head, gently stretch them upward, bending back slightly.



Upper back stretch: trapezius

With arms extended in front of you, gently grasp one hand and draw arms forward, bending forward to stretch the entire upper back.



Torso twist

With hands on hips, rotate your pelvis to the side, looking over your shoulder.



Musculoskeletal disorders and legislation, regulations and standards...

lending a hand

The *Act respecting occupational health and safety* governs workers' obligations (section 49) and employers' obligations (section 51) in preventing musculoskeletal disorders. It can be invoked to force the employer to set up concrete measures to prevent musculoskeletal disorders from occurring. You can also refer to the *Regulation respecting occupational health and safety*, which includes a few sections on ergonomic measures (see sections 166 to 170). There is also a Canadian ergonomic standard, the "CSA Z-1004", which should come into force in the near future.²² In the meantime, we can count on a number of useful international standards.²³

Recourse

a helping hand from the APTS:

Given that cases involving claims for MSD-related injuries are often contentious, the APTS offers advocacy/representation services and medical and legal expertise, which are crucial for this type of claim. Don't hesitate to discuss this with your local union executive or the labour relations counselor assigned to your institution.

On the APTS web site reserved for members, under the heading of health and safety ("SST"), you can consult the subsection on on-line training ("formation en ligne"), particularly the sections on eligibility ("Admissibilité Partie 1, Partie 2"). You'll find relevant information on the time limits, statutes of limitations and types of recourse.

²² The draft CSA Z-1004 standard is available in English:
<http://www.csa.ca/cm/ca/en/search/article/standard-to-prevent-canadian-workplace-injuries-and-fatalities>; https://review.csa.ca/opr/opr_about.asp?loc=CAN

²³ For a complete list in French, consult the following site: http://www.suva.ch/fr/startseite-suva/praevention-suva/arbeit-suva/gefahren-filter-suva/belastungen-bewegungsapparat/ergonomie-normen-suva/filter-detail-suva.htm?WT.mc_id=shortcut_normes-ergonomie#/txt76223-76210

Conclusion

Musculoskeletal disorders are now a concern shared by all occupational health and safety practitioners, in the same vein as work-related psychological health problems. A wealth of documents, special internet sites and studies are available on the subject. For instance, the ASSTSAS, the joint association for occupational health and safety in Québec's social affairs sector, offers a whole range of publications and training on preventing MSDs (principles for moving beneficiaries safely, office ergonomics, handling heavy loads). In addition, special dossiers on musculoskeletal disorders are available for medical technologists (data sheets, videos, brochures), medical imaging technologists (in echocardiography and mammography) and dental hygienists. And at the APTS, we have considerable expertise in preventing musculoskeletal disorders for various types of jobs held by Class 4 personnel. We invite you to be proactive by contacting the APTS occupational health and safety sector or your labour relations counsellor.

APPENDIX

SCREENING TEST

SUMMARY OF MUSCULOSKELETAL DISORDERS

NAME OF THE PERSON AFFECTED (PLEASE PRINT)

DATE: _____

WORK AREA: _____

1. Have you experienced any pain in the last 7 days?

yes no

If you answered "NO", go directly to question 2.

If you answered "YES", indicate on the figure below the areas of the body where you recently felt pain:

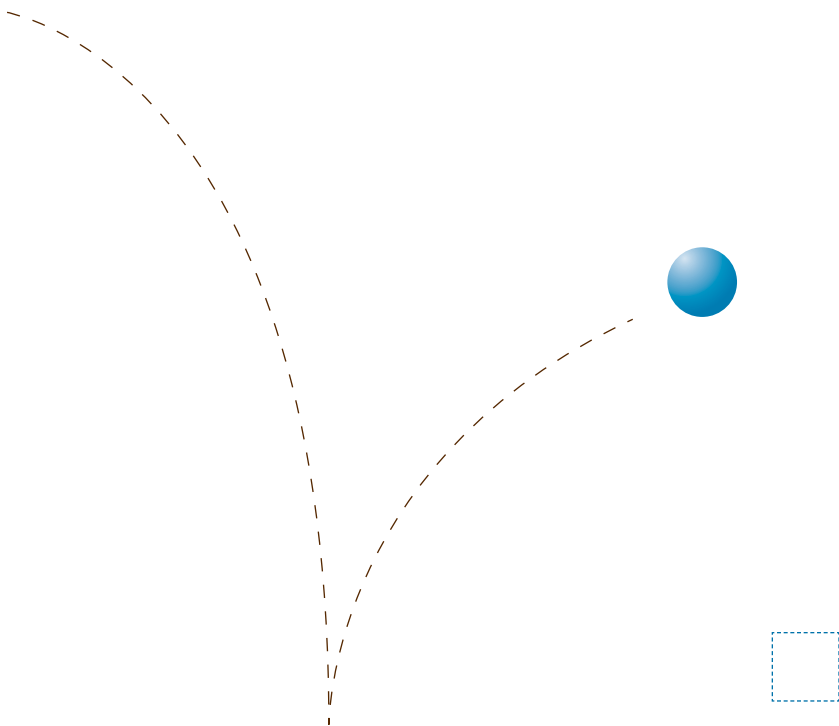
- A) Place an X on each of the areas where you experienced pain.
- B) If any pain that you experienced was sufficient to hinder your activities (sleeping, sports, or other), circle the X corresponding to these areas.



2. To which work station do you devote most of your time?
(office, work room, lab bench)

3. Are there operations and/or specific conditions associated with your work that are likely to cause discomfort? **If the answer is "YES", please explain:**

4. What improvements, if any, would you like to make to your work station?



Head office:

1111, rue Saint-Charles Ouest, bureau 1050,
Longueuil, Qc, J4K 5G4
Tel.: 450 670-2411 or 1 866 521-2411
Fax: 450 679-0107 or 1866 521-2411

Québec City office:

1305, boul. Lebourgneuf, bureau 200,
Québec, Qc, G2K 2E4
Tel.: 418 622-2541 or 1 800 463-4617
Fax: 418 622-0274 or 1 866 480-0086