

# P<sub>ré</sub>vention en pratique médicale

## ASBESTOS

### Changing realities

Some people may think that the issue of asbestos-related diseases has been resolved, or at least well documented in Quebec. They should think again. Unexplained data and changing realities have come up in the asbestos dossier...

This newsletter introduces tools to help you:

- Suspect asbestos exposure outside the mining industry.
- Establish occupational histories to document these exposures.
- Consider asbestos as a possible cause of your patient's lung cancer, if he or she is a smoker.

### A few highlights

#### Mesothelioma: surprising data

- The major literature reviews of asbestos-related diseases state that about 80% of cases of mesothelioma are related to previous asbestos exposure. Therefore, we expect that cases of work-related mesothelioma recognised as such by the CSST would make up a significant proportion of cases diagnosed among the general population in Quebec. However, cases recognized by the CSST represent only 22% of cases of mesothelioma diagnosed in the population overall.
- From 1982 to 1996, among Quebec's general population, rates of pleural mesothelioma increased 5% per year among men and 3% per year among women. *How can we explain this difference?* Analyses that have been carried out suggest that this increase might continue to be observed for several years to come. But, needless to say, it is a reflection of past exposure.
- Currently, in Quebec, limitation of exposure to asbestos in the construction and asbestos processing sectors, which generate a high percentage of recognised work-related cases of mesothelioma at the CSST, is less than complete.

- Close surveillance of the situation is required since the increase in the number of these cancers could persist longer than expected. It is also necessary to identify asbestos exposure among people with mesothelioma, particularly by trying to identify exposures that did not occur in the familiar mining industry through extensive occupational histories.

#### Asbestosis: data to explore

- From 1981 to 1996, 116 Quebecers died of asbestosis.
- From 1987 to 1996 in Quebec, 1 386 people were hospitalized with primary and secondary diagnosis of asbestosis.
- From 1988 to 1997, 378 workers in Quebec were diagnosed with asbestosis of recognised occupational origin. These workers were mostly from the construction industry or among those who repair or maintain existing structures or products containing asbestos.
- From 1988 to 1996, calculation suggests that there were almost 4 times more Quebecers hospitalized for the first time for asbestosis than recognised as having an occupational origin. *Once again, what factors can explain such a disparity?*

#### Lung cancer: an underestimated occupational disease

- In 1998 in Quebec, about 3 500 new cases of lung cancer were diagnosed among men.
- From 1988 to 1997, 209 workers in Quebec were diagnosed with asbestos-related lung cancer.
- Most of these workers (62%) were exposed to asbestos in the mining industry, unlike the cases of mesothelioma and asbestosis who worked mainly in construction and maintenance or repair of structures or products containing asbestos.
- Consequently, cases of asbestos-related lung cancer in other sectors—especially construction and renovation and maintenance—are probably underestimated. The 209 workers with asbestos-related lung cancer make up only 0.3% of the total number of cases of lung cancer among the population in Quebec, whereas they should represent from 0.5% to 15% of cases. *How can we explain this difference?*

# Asbestos exposure and populations at risk

## Keypoints on asbestos...

There are two main types of asbestos fibres: serpentines and amphiboles.

Quebec produces chrysotile, a serpentine, but it has imported amphiboles, which explains why it is found in residences and public buildings built before the end of the 1970s and in products manufactured in the past.

The risk of developing mesothelioma varies according to the type of asbestos fibre: it is higher following exposure to amphiboles.

## Diseases, diagnosis and intervention

The three principal asbestos-related diseases are asbestosis, mesothelioma, and lung cancer. They usually appear 20 to 40 years after the first exposure to asbestos, and share the characteristic of developing after heavy exposure to asbestos. However, mesothelioma can also appear following shorter and less intense exposure.

### 1. Asbestosis

Asbestosis is diffuse interstitial fibrosis of the lungs caused by past asbestos exposure. An asbestosis diagnosis is based on: a history of past asbestos exposure, or the presence of asbestos fibres in the lung tissue, or the presence of asbestos bodies at levels greater than expected in the general population.

The most common symptoms are cough and shortness of breath. Basal crackles or rales at inspiration often develop, while clubbing of the fingers occurs less frequently. Functional disturbances can include gas exchange abnormalities, a restrictive pattern, and obstructive features due to small airway disease. Chest x-rays show small opacities coded as 1/0 (see the International Labour Office classification in the *Chronique PPM* entitled: **La silicose une maladie pulmonaire du passé ?** on the Montréal Public Health Department Web site). High-resolution tomography can be used to confirm the x-ray images; in addition, early changes not seen on chest radiography can be found using HRCT.

### 2. Lung cancer

The signs and symptoms of asbestos-related lung cancer do not differ from those of lung cancer due to other causes. Histologic types of lung cancer and its anatomic location do not differ. The presence of asbestosis is an indicator of past heavy exposure to asbestos.

### 3. Mesothelioma

Pleural mesothelioma frequently presents with pleural effusion, dyspnea, and chest pain.

Any of the following elements should suffice to make a link between mesothelioma and asbestos exposure:

- the number of fibres in the lungs higher than expected
- radiological or pathological evidence of asbestosis
- presence of pleural plaques
- presence of histological abnormalities such as asbestos bodies

If none of the above elements are found, a history of asbestos exposure (occupational, domestic or environmental) should be sufficient to attribute the case to exposure.

## As a physician, what should I do if I see a case?

- **Document asbestos exposure** by taking a detailed occupational history (see the *Check list to document occupational history*).
- **Give information** about protection in the workplace to patients who continue to be exposed to asbestos by referring them to the resources listed on the last page of this newsletter.
- **Tell patients** that they can contaminate their families if they bring home clothing and articles contaminated with asbestos.

## Be on the lookout!

- It is highly probable that a patient with asbestosis, mesothelioma, or lung cancer has been exposed to asbestos outside the customary mining industry; he or she may have been working in construction, renovation or maintenance. In your role as physician, remember to look for an occupational exposure that occurred elsewhere than in an asbestos mine!
- A patient with lung cancer who smokes may have been exposed to a carcinogenic substance during his or her career, particularly asbestos. Cigarettes may not be the only cause of cancer in your patient.
- Therefore, taking a occupational history is a good way to document these situations. The *Check list to document occupational history* can help you ask the right questions.

## Prevention is crucial!

- Asbestos-related diseases can be prevented since exposure can be avoided or controlled by:
  - eliminating the hazard at the source
  - respecting existing laws and regulations designed to protect exposed workers
  - identifying sources and places where asbestos exposure can occur
  - educating and informing workers, employers, and physicians
  - making the general population aware of the dangers of asbestos exposure
- Now more than ever, it is necessary to monitor and follow-up on the sources of asbestos exposure and of asbestos-related diseases. In Quebec, limitation of current exposure to asbestos is less than complete. Moreover, future exposures could be generated by the Policy for increased and safer use of chrysotile asbestos adopted by the Quebec government in June 2002, if the measures to protect workers and population are not respected.

# ASBESTOS

## Check list to document occupational history

- **Exposure to asbestos causing** asbestosis, mesothelioma, or lung cancer goes **20 to 40 years back in the past**. It is important to remember to collect information about your patient's occupational history of occupations or workplaces, activities and operations at risk both currently and in the past.
- **Duration of exposure** to asbestos is also important to document since the probability of developing one of these diseases increases with exposure.
- Do not forget that the first **radiological abnormalities** of asbestosis are rarely discernible before 15 years since the first asbestos exposure.

<i>Activities or operations at risk:</i>	<b>From (year)</b>	<b>To (year)</b>	<b>Duration</b>
Installation of insulating materials containing asbestos around pipes (insulation)			
Asbestos spraying (asbestos blown or pulverised onto structures)			
Demolition of old buildings			
Renovation of old buildings			
Maintenance or repair of old buildings			
Construction of buildings or homes before 1978			
Installation or manufacture of fibre cement			
Asbestos removal			
<b><i>Workplaces at risk:</i></b>			
Refineries			
Paper mills			
Naval shipyards and dockyards			
Train yards			
Commercial buildings			
Industrial buildings			
Institutional buildings			
Asbestos mines			
Brake manufacturing and maintenance			
Asbestos tile or shingle manufacturing			
Asbestos cement pipe manufacturing			
Asbestos panel manufacturing			
Asbestos fire doors			
Asbestos papers or cardboards			
Indirect exposure through colleagues who work with asbestos			
<b><i>Occupations at risk:</i></b>			
Insulators			
Pipe fitters/plumbers/welders			
Sheet-metal workers			
Asbestos removal or demolition workers			
Electricians			
Carpenters			
Elevator mechanics			
Fire-protection mechanics			
Boilermakers			
Refrigerator installers			
Cablemen			
Heating appliance installers			
<b><i>Others:</i></b>			

## For more information

### Major literature reviews:

- Health Effects Institute-Asbestos Research. Asbestos in public and commercial buildings: a literature review and synthesis of current knowledge - Final report. Cambridge: Health Effects Institute - Asbestos Research; 1991.
- INSERM. Effets sur la santé des principaux types d'exposition à l'amiante. Paris: Les Éditions INSERM; 1997.

### Consensus report:

- Consensus report. Asbestos, asbestosis, and cancer : the Helsinki criteria for diagnosis and attribution. Scand J Work Environ Health 1997; 23 : 311-6.

### Clinical aspects:

- Newman LS. Occupational illness. New Engl J Med 1995 ; 333(17) : 1128-34.
- Gauthier JJ, Ostiguy G, Malo JL, Cormier Y. Maladies pulmonaires professionnelles et environnementales. In : Gauthier JJ, Bolduc P, Cormier Y, Nadeau P, eds. Pneumologie clinique. Montréal: Les Presses de l'Université de Montréal; 2002. P. 575-607.
- Guidelines for use of ILO international classification of radiographs of pneumoconioses, revised edition 1980. Occupational safety and health series, no.22, International Labour Office, Geneva 1980.
- Prévention en pratique médicale column on silicosis, on the Public Health Web site at the following address: [www.santepub-mtl.qc.ca](http://www.santepub-mtl.qc.ca).

### Epidemiological aspects:

- Épidémiologie des maladies reliées à l'exposition à l'amiante au Québec. Report of the Sous-comité sur l'épidémiologie des maladies reliées à l'exposition à l'amiante au Québec du Comité aviseur sur l'amiante au Québec presented to the Ministère de la santé et des services sociaux du Québec. Septembre 2002.

## Resources

- Inspectors from the Commission de la santé et de la sécurité du travail (CSST) investigate complaints. Tel.: (514) 906-2911 (24 hours).
- CLSC occupational health teams designated by the CSST provide medical and environmental follow-up in the work place.
- The Occupational and Environmental Health team at the Montréal Public Health Department. Tel.: (514) 528-2400.
- The Interuniversity occupational and environmental health clinic provides consultation and post-exposure follow-up, upon referral by an attending physician. Tel.: (514) 843-2080.

[www.santepub-mtl.qc.ca](http://www.santepub-mtl.qc.ca)



**Prévention**  
en pratique médicale

*A twice-monthly column on the Web*

## Prévention en pratique médicale

A publication of the Direction de santé publique de Montréal-Centre published in collaboration with the Association des médecins omnipraticiens de Montréal, as part of the Prévention en pratique médicale programme coordinated by Doctor Jean Cloutier.

This issue is produced by the Occupational and Environmental Unit.

**Head of the unit:** Dr. Louis Drouin

**Editor-in-chief:** Dr. Louis Patry

**Editor:** Anne Marie Comparot

**Graphic design:** Manon Girard

**Translation:** Sylvie Gauthier

**Texts by:** Doctor Louise De Guire

**Contributors:** Doctor Monique Letellier,  
Doctor Jean-Pierre Villeneuve

1301 Sherbrooke East, Montréal, Québec H2L 1M3

Telephone: (514) 528-2400

<http://www.santepub-mtl.qc.ca>

Legal deposit - 2<sup>nd</sup> trimester 2003

Bibliothèque nationale du Québec

National Library of Canada

ISSN : 1481-3742

Agreement number: 1455958



Direction de la santé publique



Association  
des Médecins  
Omnipraticiens  
de Montréal

# "BE CAREFUL WITH BLOOD" CAMPAIGN:

## Tools for your patients

Some situations in the workplace can expose workers to blood tainted with pathogens such as hepatitis B, hepatitis C or HIV. Health workers, police officers, firefighters, corrections officers, and first-aid attendants are all familiar with the measures to take to protect themselves.



However, other sectors are not as well informed. Statistics from Montréal's regional post-exposure prophylaxis centre, which specialises in treatment for people who have been accidentally exposed to blood and other body fluids, show that between March 1999 and March 2003, 1786 personnes were assessed for a work-related exposure. About 300 of these individuals worked in hotels, restaurants, businesses, or other service sectors. **Accidents involving contact with blood can occur:**

- in a hotel, when cleaning the bathroom
- at a cleaner's, when handling clothing soaked with blood
- In a park, when pruning a bush
- In a golf club, when cleaning a cart
- In a gas station, when emptying a garbage can
- In a restaurant, when cleaning the toilets



Accidental exposures to blood can occur in the workplace through needle-stick injuries with syringes that are left behind or cuts with sharp objects, and when helping clients or colleagues who are injured. Workers should be informed of the risks, of preventive measures to take, and what to do if they are exposed to blood or other body fluids.

### Awareness campaign

The "Be Careful with Blood" campaign, launched by the Montréal Public Health Department in February 2003, was designed to reach these workers and their employers to prevent workplace accidents involving exposure to blood. A kit containing information on the risks of infection following contact with blood, safety practices in the workplace, and what to do following an exposure is now available to all concerned employers and workers.

#### **Included in this kit are:**

- An information flyer for workers (available in French and English)
- A flyer for employers
- A poster entitled "Danger avec le sang"
- A map of CLSCs with occupational health teams
- An order form
- 8 mini-posters:
  - Hand washing
  - Housekeeping
  - Handling waste
  - Handling bedding
  - Handling sharp objects and needles
  - Helping someone who is injured
  - Accidental contact with blood
  - Check list for managers

This kit has been distributed to Montreal-area hotels, restaurants and businesses. Physicians can also procure the kits for patients who could benefit from this information.

These educational tools are available from the Montréal Public Health Department. Complete the order form posted on the Web site at: [www.santepub-mtl.qc.ca/Travail/risquebio/sang/index.html](http://www.santepub-mtl.qc.ca/Travail/risquebio/sang/index.html)

Author: Michèle Dupont, MD, MSc, medical consultant  
Occupational and Environmental Health Unit  
Montréal Public Health Department