

## UNB ASBESTOS FACT SHEET No. 3

### HOW ARE PEOPLE EXPOSED TO ASBESTOS?

People are exposed to asbestos if they inhale asbestos fibres. Asbestos Containing Materials (ACM) which can be crumbled, pulverized, or reduced to powder by hand pressure, are known as friable asbestos. When friable asbestos is damaged or disturbed it may release microscopic fibres into the air. Airborne asbestos fibres are small, odorless, and tasteless. They range in length from 0.1 to 10 microns (a human hair is about 50 microns in diameter). Because asbestos fibres are small and light, they can be suspended in the air for long periods. People who come in contact with friable asbestos are at risk of inhaling fibres.

Asbestos Containing Materials were commonly used in construction materials prior to the 1980s, and it is rarely practical to completely remove ACM from existing buildings. Where damage can be controlled or prevented, managing the exposure risk is often the most cost-effective control measure. Where damage or disturbance cannot be controlled or where deterioration is due to uncontrolled natural causes, management of the exposure risk is very difficult. (Alberta Human Resources and Employment). Therefore, Asbestos Management Plans use various strategies, including removal, encapsulation, and enclosure of ACM, with regular inspection and testing, to ensure that the ACM do not pose a significant health risk to people.

### WHAT DETERMINES THE AMOUNT OF EXPOSURE TO ASBESTOS?

The amount of asbestos a person is exposed to will vary according to several factors:

1. the fibre concentration in the air;
2. the duration of exposure;
3. the breathing rate;
4. the environmental conditions; and
5. whether or not personal protective equipment is worn.

Asbestos has been so widely used in North America that the entire population has been exposed to some degree. Air, water and soil can all contain small natural background levels of asbestos, as may a wide variety of manufactured products, ranging from building materials such as cements, ceiling and floor tiles, drywall, and roof shingles, to automotive brake shoes, and other products like toasters, where heat resistance is important. Asbestos concentrations in outdoor air can be elevated near natural sources of asbestos, or where asbestos is mined or processed, and in addition tend to be higher in urban areas than in rural areas.

### WHAT ARE THE EFFECTS OF EXPOSURE TO ASBESTOS?

Once inhaled, asbestos fibers enter the lungs where they may be deposited and retained. In the alveoli, the location of gas exchange, asbestos causes the development of scar tissue which reduces the amount of oxygen available to the body. Because asbestos fibers remain in the body for a long time, each subsequent exposure increases the risk of developing one or more of the following diseases, which may not develop until many years after exposure.

- Asbestosis: a chronic lung ailment caused by the buildup of scar tissue inside the lungs. Asbestosis can cause shortness of breath, permanent lung damage, and increases the risk of lung infections. The development of asbestosis requires significant prolonged exposure to high concentrations of asbestos fibers and is rarely seen.
- Asbestos related pleural fibrosis: a thickening in the lining of the lungs. This is the most common effect of asbestos seen today and usually causes no symptoms. This condition is not cancer but is a marker of significant asbestos exposure.
- Lung cancer.
- Mesothelioma: a rare form of cancer of the chest cavity lining or abdominal cavity, which is considered to be uniquely caused by asbestos exposure.
- Other cancers: there is evidence to suggest that cancers at some other sites, primarily gastrointestinal, may be associated with asbestos exposure.

Asbestos is so ubiquitous that we are all exposed to it in minute quantities. However, to develop disease one must have substantial exposure to friable asbestos. Usually, such exposure requires working with the friable product over a long period of time. Generally, asbestos respiratory diseases take two or more decades to develop from the time of exposure, and then only after extensive and long-term exposure to friable asbestos. The more extensive and longer the exposure, the more risk an individual has for developing asbestos-related disease.

Studies have shown the combination of smoking and asbestos exposure to be particularly hazardous. Cigarette smokers who are also exposed to asbestos are more likely to develop lung cancer than smokers in general, or non-smokers who are exposed to asbestos.

### WHO CAN ANSWER MY QUESTIONS ABOUT ASBESTOS?

UNBF Faculty and Staff who have concerns regarding any potential exposure to asbestos should discuss them with their Supervisor or Department Head. Any concerns regarding the building and the location of asbestos containing materials should be directed to Capital Planning & Operations (Work Control Centre 453-4889; fm@unb.ca). The Environmental Health and Safety Office (EHS, 453-5075; safety@unb.ca) may also be contacted at any time by Students, Faculty and Staff for information on the risks associated with asbestos in the workplace.

Additional information can be obtained from the websites listed below, including the and Health Canada and US EPA.

<https://www.ccohs.ca/oshanswers/chemicals/asbestos/>

<http://www.epa.gov/asbestos/>