

## ASBESTOS EXPOSURE

### What is asbestos?



Asbestos is the name of a group of fibrous minerals used in a variety of products. The most common form, chrysotile provides about 95% of the world's asbestos. Asbestos fiber is separated from the host rock by milling, a process which yields very strong, fine, silky fibers.

### How is asbestos used?

Before 1978, asbestos was found in many building materials because of its strength and fire-resistant qualities. It was commonly combined with binders to make adhesives, sealants, caulking compounds, insulating materials, textiles, pipes and vinyl floor tiles. Asbestos is no longer added in the manufacture of most of these materials.

Any older building is likely to have a significant amount of asbestos-containing components. These are commonly referred to as asbestos- containing building materials (ACBM).

### When is asbestos dangerous?

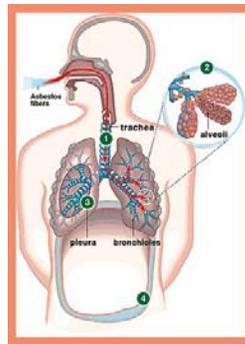
**Asbestos-containing material poses no risk to building occupants when it is in good condition.**

However, when pipe lagging, ceiling tiles and other building materials are damaged or deteriorated, asbestos can become "*friable*" (i.e. easily pulverized or crushed into a dust when handled), and the fibers can be liberated into the air. These fibers are generally microscopic and become mixed with ordinary dust.

**WORK**  
shouldn't  
**HURT**

## **What happens when people are exposed to asbestos?**

Inhaling asbestos fibers is the greatest health hazard of asbestos exposure, but there is no immediate or acute health effect upon first or recent exposure. When asbestos fibers are mixed with dust or debris, the dust or debris may trigger an asthma episode or cause respiratory symptoms – but these symptoms are not caused by asbestos.



Asbestos fibers become embedded in the lung tissue and the tissue that lines the lungs and abdomen. Once in the tissue, they cannot be dissolved or eliminated in any way. The more fibers there are, the longer that they have been there, the greater the risk of developing disease.

Custodial and maintenance workers whose work requires them to disturb asbestos are at the greatest risk of exposure. However, building occupants can also be exposed to asbestos-containing fibers if proper precautions are not taken during removal and repair operations.

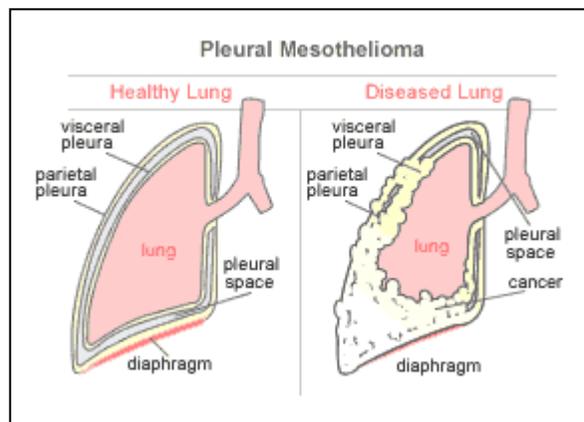
Unfortunately, there is no way to diagnose or document the health impact of a recent asbestos exposure. There are no tests that a physician can use to find out if patients have been exposed to asbestos and/or any of the potential health outcomes of a recent exposure. A physician should note the asbestos exposure in an exposed person's medical record. Also, the physician may recommend that an exposed person have a "base-line" chest x-ray that should be read by a radiologist who is a certified "B" reader. Physicians may counsel patients to have future x-rays (perhaps every five years) to compare with the base-line to see if any asbestos-related damage has occurred.

## **What diseases are caused by asbestos exposure?**

There is generally a long period between asbestos exposure and the appearance of a disease. It takes at least five years – often more than 15-35 years, for these diseases to develop. It's important to remember that exposure to asbestos today will cause no immediate ill effects or symptoms. For example, an eighteen-year old worker exposed to asbestos for a recent extended period will probably not have any chest abnormality until he/she is at least 35, and the risk of asbestos-related cancer does not become great until the worker is fifty or older.

The most common asbestos-related disease is asbestosis, a non-cancerous condition. It is almost always seen in workers with routine, heavy asbestos exposure – not in those with brief or sporadic exposure to asbestos. It is a thickening (fibrosis) of the lining of the chest cavity. Symptoms include shortness of breath and in some advanced cases, enlarged fingertips or a bluish coloration of the skin. It is diagnosed by x-ray and lung function tests.

Asbestos exposure can also cause certain types of cancer. Most of these cancer cases are found in construction workers, ship yard workers and/or maintenance workers who are exposed for long periods of their working careers. The greatest cancer risk to asbestos-exposed workers is lung cancer. The risk of lung cancer is even greater for asbestos-exposed workers who are smokers. Asbestos-exposed workers also have slightly higher rates of cancer of cancers of the gastrointestinal tract and bladder.



Another troubling cancer risk is mesothelioma, the rare cancer of the lining of the chest cavity (pleura) or the abdomen. It is caused almost exclusively by asbestos exposure. This cancer has been found in workers who have never worked in construction or ship yards where asbestos exposure was common. For instance a cancer registry in the state of Wisconsin has recorded a few mesothelioma cases in teachers who had no other asbestos exposure except in a school where they spent long careers.

### **What precautions should be taken to protect workers and building-occupants from asbestos exposure?**

There is a strict OSHA standard for any worker who is involved in asbestos removal in schools and buildings or work activity that brings him/her into contact with asbestos. The standard is very comprehensive and requires that the school district or employer take several steps to reduce and eliminate exposure to asbestos on the job.

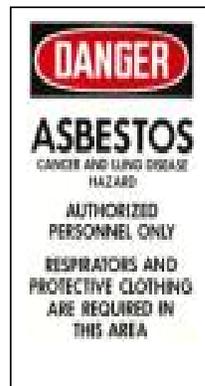


To protect workers who are conducting asbestos removal jobs, school districts and employers must:

- Determine the amount of asbestos exposure and limit the concentration or amount of exposure to 0.1 fibers per cubic centimeter of air;
- Isolate areas where asbestos is being removed or disturbed with special plastic barriers and provide separate ventilation for those areas when appropriate;
- Follow strict procedures for wetting and removal of asbestos and provide special vacuum equipment (HEPA vacs) to reduce the amount of asbestos dust;
- Dispose of asbestos waste in a safe manner
- Provide training to workers who will be exposed to asbestos;
- Provide respirators that are specifically fitted and maintained for every worker;

- Provide protective clothing and special shower areas for asbestos-exposed workers;
- Provide medical surveillance to workers who routinely will be exposed to dust.

For building occupants, the employer or district must:



- Post warning signs where asbestos is being removed;
- Isolate the area so that only authorized workers enter and leave; and
- Perform air monitoring during and after the removal to guarantee that air levels are safe for building occupants. If removal is taking place in your area, ask for “clearance” test results. If the results are measured using phase contrast microscopy (PCM), the results should be 0.01 fibers per cubic centimeter or less. If an electron microscope (transmission electron microscopy – TEM) is used the results should be 70 structures per square millimeter or less.

There is no cure for the diseases caused by asbestos. Prevention of asbestos exposure is the only guarantee against asbestos-related diseases. If you feel that you are being exposed to asbestos as a building occupant or a worker, protect your health by contacting your local leadership or AFT Health and Safety for further information and assistance.