

Is there a medical test to determine whether I have been exposed to asbestos?

The most common test used to determine if you have been exposed to asbestos is a chest X ray. The X ray cannot detect the asbestos fibers themselves, but can detect early signs of lung disease caused by asbestos. While other things besides asbestos can sometimes produce similar changes in the lungs, this test is usually reliable for detecting asbestos-related effects.

It is also possible to test for the presence of asbestos fibers in urine, feces, mucus, or material rinsed out of the lung by a doctor. Low levels of asbestos fibers are found in these materials for nearly all people. Higher-than-average levels can show that you have been exposed to asbestos, but it is not yet possible to use the results to estimate how much asbestos you have been exposed to, or to predict whether you are likely to suffer any health effects.

Despite the ongoing debate concerning health effects resulting from the different asbestos fiber types, Agency for Toxic Substances and Disease Registry (ATSDR) considers the different mineral forms of asbestos to be known, human cancer-causing substances with a prolonged latency period of between 10 and 30 years between exposure and the onset of disease.

Where can I get more information?

If you have any more questions or concerns not covered here, please contact your state health or environmental department or:

**Agency for Toxic Substances and
Disease Registry
Division of Toxicology
1600 Clifton Road, E-29
Atlanta, Georgia 30333**

This agency can also give you information on the location of the nearest occupational and environmental health clinics in your area. Such clinics specialize in recognizing, evaluating, and treating illnesses that result from exposure to hazardous substances, such as asbestos.

U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue (MD-148)
Seattle, Washington 98101-9797



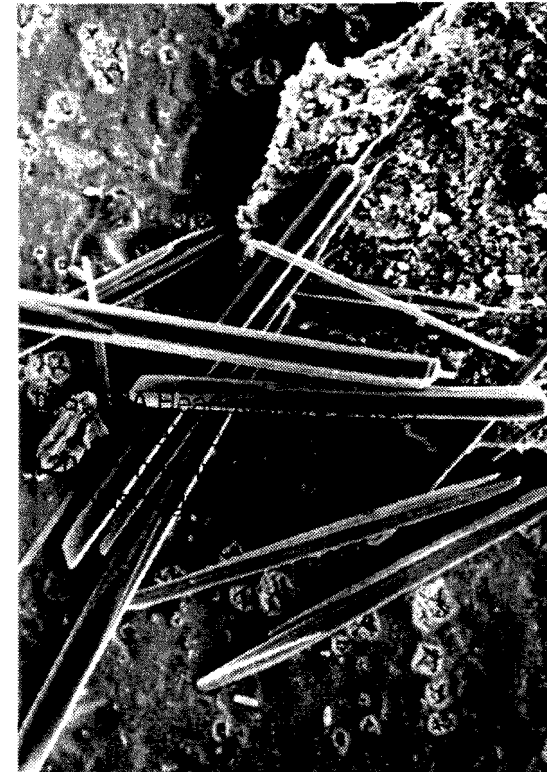
EPA 910-F-98-002



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1200 Sixth Avenue
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Asbestos And Your Health



*A photograph of asbestos fibers
(magnified by an electron microscope).*

*Condensed from
"ATSDR Public Health Statement,
December 1990"*

What is asbestos?

Asbestos is the name applied to a group of six different minerals (amosite, chrysotile, tremolite, actinolite, anthophyllite, and crocidolite) that occur naturally in the environment. The most common mineral type is white (chrysotile), but others may be blue (crocidolite), gray (anthophyllite), or brown (amosite). These minerals are made up of long, thin fibers that appear somewhat similar to fiberglass. Asbestos fibers are very strong and are resistant to heat and chemicals. Because of these properties, asbestos fibers have been used in a wide range of products, mostly in building materials, friction products, and heat-resistant fabrics.

Because the fibers are so resistant to chemicals, they are also very stable in the environment; they do not evaporate into air or dissolve in water, and they are not broken down over time.

How might I be exposed to asbestos?

You are most likely to be exposed to asbestos by breathing in tiny asbestos fibers suspended in the air. These fibers can come from natural outcroppings of asbestos, but many come from the degradation or breakdown of man-made products such as insulation, ceiling and floor tiles, roof shingles, cement, automotive brakes and clutches, and many other products.

In indoor air, the concentration of asbestos depends on whether asbestos was used for insulation, ceiling or floor tiles, or other purposes, and whether these asbestos-containing materials are in good condition or are deteriorated and easily crumbled. People who work with asbestos (e.g., miners, insulation workers, automobile brake mechanics) are likely to be exposed to much higher levels of asbestos particles in air than people who work, live, or attend school in buildings containing asbestos products. You can also be exposed to asbestos by drinking fibers present in water. Even though asbestos does not dissolve in water, fibers can enter water by being eroded from natural deposits or piles of waste asbestos, or from cement pipes used to carry drinking water.

How can asbestos enter and leave my body?

If you breathe asbestos fibers into your lungs, some of the fibers will be deposited in the air passages and on the cells that make up your lungs. However, very few of these fibers move through your lungs into your body. Instead, most fibers are removed from your lungs by being carried away in a layer of mucus to the throat, where they are swallowed into the stomach. This usually takes place within a few hours of exposure, but fibers that are deposited in the deepest parts of the lung are removed more slowly, and some can remain in place for many years and may never be removed.

If you swallow asbestos fibers (either those present in water or those that are moved to your throat from your lungs), nearly all the fibers pass along your intestines within a few days and are excreted in the feces. A small number of fibers become stuck in the cells that line your stomach or intestines, and a few penetrate the lining and get into the blood. Some of these become trapped in other tissues, and some are removed in the urine.

How can asbestos affect my health?

The U.S. Department of Health and Human Services has determined that asbestos is a known carcinogen, that is, causes cancer in humans. Asbestos fibers can have serious effects on your health if inhaled. There is no known safe exposure to asbestos. The greater the exposure, the greater the risk of developing an asbestos-related disease. Information on the health effects of asbestos in humans comes mostly from studies of people who were exposed in the past to high levels of asbestos in the workplace. These asbestos workers were found to have increased chances of getting two types of cancer: cancer of the lung tissue itself, and mesothelioma, a cancer of the thin membrane that surrounds the lung and other internal organs. Both lung cancer and mesothelioma are usually fatal. The amount of time between exposure to asbestos and the first signs of disease can be as much as 30 years. It is known that smokers exposed to asbestos have a much greater chance of developing lung cancer than just from smoking alone.

These diseases do not appear immediately, but develop only after around 20 years. There is also some evidence from studies of workers that breathing asbestos can increase the chances of getting cancer in other locations (e.g., stomach, intestines, esophagus,

pancreas, kidneys), but this is less certain. Members of the public who are exposed to lower levels of asbestos may also have increased chances of getting cancer, but the risks are usually small and are difficult to measure directly.

Besides causing cancer, breathing asbestos can also cause a slow accumulation of scar-like tissue in the lungs and in the membrane which surrounds the lungs. This scar-like tissue does not expand and contract like normal lung tissue, and so breathing becomes difficult. Blood flow to the lung may also be decreased, and this causes the heart to enlarge. When the injury is mostly in the lung itself, the disease is called asbestosis. This is a serious disease, and can eventually lead to disability or death in people exposed to high levels of asbestos. However, asbestosis is not usually of concern to people exposed to low levels of asbestos. Similar injury to the membrane surrounding the lung is quite common in people exposed to asbestos, but effects on breathing are usually not serious.

The health effects from swallowing asbestos are unclear. Some groups of people who have been exposed to asbestos fibers in their drinking water have higher-than-average death rates from cancer of the esophagus, stomach, and intestines. However, it is very difficult to tell whether this is caused by asbestos or by something else. Where asbestos fibers penetrate the skin, asbestos warts (which are non-malignant) may result.

What levels of exposure have resulted in harmful health effects?

No "safe" exposure threshold (with respect to for inhaling asbestos fibers) has been established, but the risk of disease generally increases with the length and amount of exposure. Another key factor which increases the risk of asbestos-related diseases is smoking cigarettes.

As noted above, eating or drinking asbestos fibers may increase risk of cancer, but this is not certain. Eating or drinking asbestos fibers is not thought to cause any harmful noncancer effects.