Mount Sinai Pediatric Environmental Health Specialty Unit
WTC Asbestos Fact Sheet

This fact sheet answers frequently asked health questions (FAQs) about asbestos. It is part of a series of fact sheets describing potential health risks to children from exposures related to the World Trade Center.

What is asbestos?

Asbestos is a naturally occurring fibrous mineral. Two properties account for asbestos' widespread use: its strength when the fibers are woven together and its heat and flame resistant properties. Asbestos has been used in a variety of products including insulation, roofing shingles, ceiling and floor tiles, washers and dryers, paper products, automobile parts, and heat resistant fabrics.

How are children exposed to asbestos?

Inhalation is the main route of children's exposure to asbestos. Asbestos is present in the air we breathe in very small amounts at levels ranging from 0.00001 to 0.0001 fibers/mL of air. Once airborne, asbestos can be inhaled into the lungs.

The primary source of asbestos is insulation and other construction materials in buildings built before the 1970s. It may be released into the air if the asbestos is deteriorating or during renovation or demolition of old homes, apartments and buildings. Areas located near industries that use or make asbestos products tend to have higher air levels of asbestos. Also, employees of these industries are at high risk of exposure and may expose their children by bringing asbestos fibers into the home.

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Where was asbestos used at the World Trade Center?

Asbestos was used on the steel beam infrastructure of the World Trade Center as an insulator and fire retardant, mainly in the North Tower up to the 40th floor. Asbestos was released into the air from these steel beams when the World Trade Center was destroyed. Asbestos has been found in substantial quantities in the rubble of Ground Zero.

Is my child at risk of exposure to asbestos related to the World Trade Center?

To assess the risk of exposure to asbestos, air samples were obtained from the World Trade Center Site from September 2001 through May 2002. The strictest guidelines for asbestos levels, the Asbestos Hazard Emergency Response Act (AHERA), were used to evaluate these samples. AHERA sets the guidelines for levels of exposure at which children may re-enter a school building after asbestos has been removed or abated.

Children are allowed to re-enter buildings if asbestos measurements are less than 70 structures per square millimeter. AHERA guidelines were set to protect children from long-term exposure during childhood. The average level of asbestos found at the World Trade Center site through May 2002 was 12.39 structures per square millimeter, well below the AHERA standard of 70.

Asbestos air sampling done in schools located in the World Trade Center area such as P.S. 150, P.S. 234, P.S. 89, and the High School for Economics and Finance all met the AHERA guidelines of less than 70 structures per square millimeter. The High School for Leadership and Public Service had moderately elevated levels of asbestos in one room, which may not have been related to the World Trade Center. However, the asbestos was removed and immediate follow up tests were below the DOH and EPA guidelines.

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Most recent air samples obtained from all of the schools through May 2002 have consistently met the DOH and EPA guidelines.

Another method used to detect asbestos is bulk sampling, which is like taking a scoop of dust with a spoon and checking for the presence of asbestos. A private consulting firm conducted bulk sampling for asbestos in a Battery Park playground after it had been cleaned with a HEPA vacuum and found no asbestos in the playground soil.

Air sampling for asbestos at Stuyvesant High School consistently met AHERA guidelines from September 2001 to May 2002. However, test results released in August 2002 revealed elevated levels of asbestos in a carpet in a school auditorium. These levels ranged from 60,000 to 2.5 million asbestos fibers per square centimeter. According to Occupational Health and Safety Guidelines (OSHA), presence of greater than 100,000 asbestos fibers per square centimeter requires emergency cleanup. Asbestos abatement will take place, including carpet removal prior to the start of the 2002-3 school year. That area of the school had been used as a station for rescue workers. Dust and debris may have been brought in from worker's shoes and clothing.

As per AHERA guidelines, students can return to class when asbestos levels are less than 70 structures per square millimeter. If these criteria are met, the risk to students of developing any health effects is very low. Ongoing testing for asbestos in Stuyvesant High School is planned to ensure the safety of the students attending the school.

No level of exposure to asbestos is safe, but the risk of disease is directly related to the intensity and duration of exposure.

How does asbestos affect the health of children?

Diseases related to asbestos include asbestosis, a form of scarring of the lungs, lung cancer and mesothelioma, a cancer of the outer lining of the lungs. Clinical symptoms do not appear until many years after the exposure, even decades later. These illnesses are most commonly seen in employees working in industries where asbestos products were made or used. Typically, these workers have had prolonged intense exposure to asbestos. People with a history of asbestos exposure who smoke have an even greater risk of developing lung cancer. There are no immediate symptoms from exposure to asbestos.

Workers at Ground Zero, especially those who were not provided adequate respiratory protection may have sustained substantial exposure to asbestos. Fortunately, levels in the residential communities of lower Manhattan and in the schools were generally low and of brief duration, except possibly in certain apartments where proper cleaning was delayed and exposure took place over months.

In general, therefore, we feel confident in stating that the increased risk of cancer or other diseases caused by World Trade Center related asbestos exposure in the children of lower Manhattan is very low.

How do we test for exposure to asbestos?

There is no test that can determine if your child has been exposed to asbestos. Chest x-rays are useful only in detecting illness years after the exposure, not early on. **For this reason, chest x-rays are not recommended at this time to detect children's exposure to asbestos.** The best way to assess your child's risk from exposure is by having your pediatrician take a thorough history of exposure and by documenting the levels of asbestos at the source.

How do we treat asbestos related illnesses?

There is no treatment for acute exposure to asbestos. Early detection is important in the treatment of asbestosis, lung cancer and mesothelioma. If you have a history of any exposure to asbestos you should refrain from smoking. Smoking combined with exposure to asbestos increases the risk of lung cancer significantly.

How do we prevent further exposure?

Asbestos has been banned from use since 1989. If you are concerned that your home has asbestos, have a professional asbestos manager inspect your home. Your state or local health department or regional EPA office can help you locate a certified contractor. Existing products with asbestos may be left in place if it is in good condition. If it is deteriorating or is in an area undergoing renovation or demolition, the asbestos should be contained or removed by certified contractors. Never allow children to play in areas where asbestos is exposed and in poor condition. EPA regulations require schools to inspect for asbestos. Asbestos containment or removal must meet AHERA guidelines of levels less than 70 structures per square millimeter prior to children re-entering the building.

Any one who works with asbestos containing products should take precautionary measures such as showering and changing shoes and clothing before getting into the car and going home. This prevents exposing family members to asbestos.

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Where can I get more information?

For more information, contact the Mount Sinai Pediatric Environmental Health Specialty Unit, Mount Sinai Medical Center, 1 Gustave L. Levy Place, Box 1512, New York, NY 10029. Phone:1-866-265-6201 or 212-241-0938. Fax:212-241-4309. Visit us online at http://www.mssm.edu/cpm/peds_environ.shtml.

You may also contact your local health or environmental department or regional EPA office. Visit the U.S. Department of Health and Human Service's Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs for asbestos.