

Frequently Asked Questions Related to Air Quality Following the World Trade Center Disaster

I live and/or work downtown. Do I need to be concerned about the air I'm breathing?

Numerous federal, state and local agencies (including the U.S. Environmental Protection Agency, the New York State Departments of Environmental Conservation and Health and the New York City Departments of Environmental Protection and Health) have been working together to monitor air quality within NYC and around the disaster area since 9/11/01 and will continue throughout the period that the work area is being cleaned. Additional monitors are being set up to obtain further information.

Following the collapse of the World Trade Center towers, significant quantities of smoke and dust were released into the air. The plume of smoke contained dust, ash, soot and other burning materials present at the site. Other hazardous materials released into the air include materials such as concrete, gypsum, plastics and fiberglass dusts as well as soot that were released during the explosion and collapse of the towers. From a health perspective, the substances of concern include asbestos and fine airborne particles. Therefore, air tests, to date, have focused on assessing levels of these substances.

Testing since 9/11/01 has revealed that, in general, levels of asbestos and fine airborne particles have been low. Until the WTC area has been cleaned up, air quality will need to be monitored.

What are the most immediate health concerns?

Irritating dusts and gases can worsen medical conditions such as asthma, chronic bronchitis, emphysema, other chronic lung conditions and heart disease. Airborne irritants might also trigger an asthma attack in people who may be susceptible, but who have not had an asthma attack before. The most important concern is however, exposure to asbestos.

What is asbestos and what are its potential health effects?

Asbestos is a naturally-occurring mineral fiber that is resistant to heat. Asbestos has been used in a wide range of manufactured products including building materials such as fireproofing. Asbestos was used in the

construction of parts of the World Trade Center buildings. ^{and} ~~Asbestos~~ is present in some of the debris at the site and in areas very close to the site.

In workplaces where levels of asbestos exposure are high and ^{exposure} persist for many years, health concerns include lung diseases such as asbestosis and cancer. However, when exposures are low and of short duration, the risk of developing an asbestos-related illness such as asbestosis or cancer is extremely low.

What levels of asbestos have been found in the area and how do they compare to health-based standards?

The U.S. and NYC standard for asbestos in community and residential buildings is 0.01 fibers/cubic centimeter (f/cc) in indoor air. For workers, the U.S. Occupational Safety and Health Administration's (OSHA) standard is 0.1 fibers/cc in air.

Sampling for asbestos fibers at the disaster site began on September 11. The EPA is currently sampling at fifteen monitoring locations near the site and in the nearby community, and additional testing is being conducted at other locations by city and state agencies. Results indicate that, as expected, asbestos is present in some of the debris at the site and in areas very close to the site. As of September 21, 2001, most air sampling results near the World Trade Center were below the standards for asbestos in indoor air.

As testing continues, there may be the possibility of occasional short-term increases in levels of asbestos in the air above the residential standard of 0.01 fibers per cubic centimeter of air. Short-term exposures to relatively low levels should not pose a health risk to individuals.

My home and / or office is very dusty. What should I do to clean-up?

For people returning to homes or workplaces refer to the NYCDOH's Advisory Factsheet "Recommendations for People Re-Occupying Commercial Buildings and Residents Re-Entering Their Homes". [posted on their website: www.nyc.gov/health?]

NYC Health Department's clean-up recommendations include:

- All cleaning activities should avoid stirring up the dust and making it airborne.
- Clean with a wet mop or wet rag. Do not sweep with a broom.

- If possible,*
- Use a HEPA vacuum, HEPA bags or dust allergen bags with your regular vacuum, *or wet down dust to prevent recirculation.*
 - Keep windows closed when the air outdoors is dusty or smoky.
 - Remove shoes before entering your house especially if you've walked through dust or debris.
 - Dusty clothing should be bagged and washed separately.
 - Clean air-conditioner filter before turning it on.

Is it necessary to have my home or office tested for asbestos?

First, homes or offices should be cleaned of dust and debris by following the recommendations in the NYC DOH's Advisory Factsheet mentioned above. After cleaning, if a home owner or office building manager wants to have an indoor space tested, the environmental services section of the Yellow Pages can be a resource for certified environmental consultants. Consultants should be asked if they are certified to conduct asbestos testing and whether they do indoor air quality tests.

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What are fine airborne particles (~~Respirable Particulate Matter~~)(PM) in the air?

The explosion at the World Trade Center released fine airborne particles (also called "respirable particulate matter") into the air. Fine particulate matter comes mostly from combustion such as fires, exhaust from cars, trucks, buses and other vehicles, power plants, boilers and other operations that involve the burning of fuel. Particulate matter ranges in size from very small to larger particles. The most commonly measured sizes are PM_{2.5} and PM₁₀. PM_{2.5} refers to particles that are 2.5 microns or less in diameter. These particles are extremely small and therefore more likely to be inhaled deeper into the lungs. PM₁₀ refers to larger particles that are 10 microns or less in diameter, and because of their larger size, do not travel as far into the lungs. Some particulate matter continues to be released from the World Trade Center site.

What are the health risks from fine airborne particles (Particulate Matter)

Increased levels of fine airborne particles can cause eye, nose, throat and lung irritation, which can trigger coughing and sneezing. Such exposures may aggravate symptoms for persons with asthma or other underlying respiratory conditions. Symptoms should diminish once exposure ceases.

Are there air quality standards for Fine Airborne Particles in outdoor air?

Yes. In 1997, the United States Environmental Protection Agency (EPA) recommended National Ambient Air Quality Standards for PM_{2.5}. National Ambient Air Standards are established to be protective of public health. The short-term standard (24-hour or daily average) for PM_{2.5} is 65 micrograms per cubic meter (ug/m³). Generally, levels below the standard are considered to have a low risk of adverse health effects. The long-term standard (annual average) is 15 ug/m³. The short-term standard (24-hour or daily average) for PM₁₀ is 150 ug/m³ and the long-term standard (annual average) is 50 ug/m³.

Are you monitoring for PM_{2.5}?

Yes. The New York State Department of Environmental Conservation (NYS DEC) has had continuous (real-time) air particulate monitors (PM_{2.5}) collecting samples at eleven sites in New York City. These routine monitors are two on Staten Island, three in Manhattan, one in Brooklyn, three in Queens and two in the Bronx. The data from these monitors are evaluated daily. The Environmental Protection Agency is setting up additional monitors to collect particulate data (PM_{2.5} and PM₁₀) in the community near the site.

What are the results of the PM_{2.5} monitoring and how do they compare to the levels measured in air before September 11th?Routine DEC air monitors:

Beginning September 11th at 1:00 pm, the daily average standard of 65 ug/m³ for PM_{2.5} has not been exceeded at any of the routine DEC monitoring locations. On most days since September 11, PM_{2.5} levels at each of the monitoring sites have been similar to those measured earlier in September.

How do the monitoring data for PM_{2.5} compare to the standards?Routine DEC monitoring:

As of September 26, the highest daily average level of PM_{2.5} was measured at Public School 64 on September 13th. This school is at East 6th Street and Avenue B and is the nearest routine monitoring site to the World Trade Center. The highest daily average at that location was 42.1 ug/m³, which does not exceed the EPA's standard of 65 ug/m³. Daily averages of PM_{2.5} at all the other routine sites were below 35 ug/m³.

As the name implies, the annual average standard is based on a year of measurements and, therefore, it is not appropriate to use this standard in evaluating the data collected since the disaster. However, because the data from all eleven sites are consistent with historic data there is no reason to expect this event will elevate the annual average very much.

Should I be concerned about my car if it was parked in the disaster zone?

If your car was parked downtown during the blast on 9/11/2001 it is possible it may have sustained some structural damage and could be very dusty, both inside and outside. Once activity is no longer restricted in the disaster zone, it will be safe to remove your car from the area. If your car sustained structural damage from the blast, have your car towed from the area. Otherwise, you can drive your car out of the area. If you would like to take precautions to minimize your exposure to dust, recommended actions include: Wear a dust mask while driving your car to a place for cleaning. Wash the exterior of your car, use a HEPA vacuum to clean the inside, and have an auto mechanic inspect the heater and air conditioning system prior to using these systems. (See fact sheet on Information for Motorists.)

Should I be concerned about fiberglass in air due to the World Trade Center disaster?

Fiberglass is the trade name for a manmade mineral fiber that also may be called fibrous glass or glass wool. Fiberglass can be found in many different consumer products. In the past it was used for home furnace filters and insulation. Today it is used to insulate pipes and appliances, for sound control in aircraft and automobiles, and in curtains, roofing materials and reinforced plastics.

Fiberglass was most likely used in the construction of the World Trade Center. It has been detected in run-off from the disaster site, suggesting it may have been released during the buildings' collapse. However, air samples taken in and around the World Trade Center site can detect fiberglass if it is present. Extensive air monitoring to date has indicated that fiber concentration in air (including asbestos, fiberglass and cellulose) are low.

What health effects may be associated with short-term exposures to fiberglass particles in air?

Occupational exposure to fiberglass fibers may cause skin irritation and itching because it can get into the skin. It may also cause upper respiratory tract irritation and may aggravate asthma or bronchitis. These are temporary conditions and are unlikely to occur for people in the community given the low concentrations of fibers in the air in general around the WTC disaster area.