

How useful are air cleaners/filters? Air filters may remove some pollutants from the air, but have limitations. They are usually not the best way to fix an indoor air problem. Filters must be properly sized for a given area. No single filter removes all types of pollutants. NOT recommended are "ozone generators." Their ability to clean air is questionable and they produce ozone which can be toxic and dangerous for asthmatics. (see "Indoor Air Facts No.7 - Residential Air Cleaners" at www.epa.gov/iaq/pubs/airclean.html or call the EPA Hotline at (800) 438-4318).

When should I have the air in my home tested?

In general, air testing is not the best way to identify an indoor air quality problem. A thorough visual inspection is often able to identify sources of indoor air pollution that should be eliminated. Air testing usually provides data that raises more questions than answers. This is because there are no standards for indoor air pollutants and because most pollutants are normally present in homes at very low levels. Companies that do indoor air testing are not certified. However, if you want to have your home's air tested, you can go to the American Industrial Hygiene Association's website: www.aiha.org/consultants_consumers/html/consultantslist.asp. They publish a list of consultants who specialize in indoor air quality.

For general information on indoor air, call or go online:

Connecticut Department of Public Health
(860) 509-7740
www.ct.gov/dph/icq



EPA Indoor Air Hotline (800) 438-4318
www.epa.gov/iedweb00



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Healthy Homes: Indoor Air Quality

How to Discover if You Have a Problem with:

- **Mold**
- **Carbon Monoxide**
- **Radon**
- **Asbestos**
- **Formaldehyde**
- **Household Chemicals**
- **Allergens that can worsen asthma**

People spend most of their time indoors, with much of this being spent at home. However, your home's air can contain a variety of pollutants such as chemicals in oven cleaner and cigarette smoke, and different types of mold. In some cases, the levels of these pollutants can be high enough to increase the risk for health effects. Children's risks for developing asthma are greater in homes that are damp or where there are smokers. Poor air quality may be obvious - you may notice bad smells or see smoke. However, other dangers, such as carbon monoxide or radon, are not obvious and require testing to detect.

This fact sheet provides information on the most common indoor air pollutants and lets you know where you can get more information.

Mold and Moisture



Mold in the home is not a new issue, but recent news stories have increased concerns over mold. Mold requires moisture to grow. When household materials such as carpeting, fabric, sheetrock, or wood become damp, mold can grow and release spores. When inhaled, these spores can cause irritation and allergic reactions. Musty smells may signal mold, mildew or rot. Keep water from entering your home by maintaining the roof, checking and cleaning drainage systems regularly (down spouts and gutters), and repairing any damage to exterior siding. The basement may need a dehumidifier and bathrooms should have a ventilation fan. Quick action is needed following flooding or plumbing leaks. Carpets and furniture that are wet for over 24 hours will grow mold. To prevent mold growth, dry out any water-soaked or damp material within 24 hours. Items wet longer than that, may need to be discarded. Hard (non-porous) surfaces that water cannot seep into, can be cleaned with warm soapy water (see EPA mold fact sheet

www.EPA.gov/iedweb00/pubs/moldresources.htm).

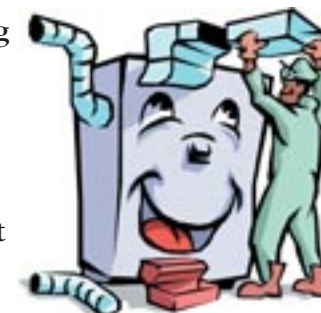
Identifying mold/moisture problems does not need to be complicated. Look for obvious signs of water damage (stains, warping of wood) and mold growth (musty odor; often looks fuzzy, velvety and discolored - green, brown or black). Sometimes mold occurs in hidden areas (inside walls or air ducts) if these areas had been wet in the past. Many home inspectors are now experienced at looking for mold/moisture problems. Air testing is not recommended: the results are usually not clear because mold spores are everywhere and there are no air quality standards for mold. (see "Mold in the Home: Health Concerns" at www.ct.gov/dph/mold).

Carbon Monoxide (CO)

CO poisoning is a serious health risk that can easily be prevented. Carbon monoxide builds up in the blood and can cause headache, dizziness, nausea, and death. CO is produced by anything in your home that burns fuel. Furnaces that are not properly tuned up or vented are the most common source of CO. Other sources include portable (e.g., kerosene or propane gas) heaters, gas grills, back-up generators and cars.

The following precautions are very important when running these devices:

- Never operate a portable gas heater, gas grill or back-up generator in the home or garage. This has been a major problem after storms that cause power outages.
- Do not use a gas oven to heat your home
- Do not leave a car running inside an attached garage.
- Furnaces should be checked and cleaned annually, making sure that the furnace is ventilated properly to the outside.



Despite these precautions, CO can still occur in any house without warning. It is strongly recommended that all homes be equipped with at least one **carbon monoxide alarm**. The alarms are available at most hardware stores. If you suspect CO poisoning in your home, leave the house immediately and call your local fire department. (See "Carbon Monoxide: The Quiet Killer" at <http://www.ct.gov/dph/co>).

Radon

Radon is a naturally occurring radioactive gas that can enter a home when it is present in bedrock and soil. Elevated levels can increase the risk of lung cancer. It is recommended that all homes be tested for radon and those above the action level (4 picocuries per liter or 4pCi/L) in the lowest occupied area have a radon removal system installed. Testing devices are available at hardware stores. A list of firms that remove radon is available from the Connecticut Department of Public Health Radon Program (860) 509-7367 or on its website: www.ct.gov/dph/radon



Asbestos

Asbestos is present in many homes built prior to 1970. The mere presence of asbestos does not present a major health risk. However, it should be checked to ensure that it will not release asbestos fibers. Long-term inhalation of asbestos fibers can increase the risk of lung cancer. The most common place for asbestos in older homes is the insulation around pipes and boilers in the basement. This insulation usually looks like white plaster/fabric wrapping. If the asbestos is in good condition (no rips, tears, breaks) it is not likely to release fibers and does not need to be removed. Such material should be inspected periodically to assure good condition. If remodeling or plumbing work requires asbestos insulation to be disturbed, the asbestos must be removed by a licensed company prior to the work. Asbestos may also be present in floor tiles and exterior siding. In these cases, the asbestos is in a solid form and should not release fibers unless damaged. For information on which companies are licensed to inspect and clean up asbestos, call the Connecticut Department of Public Health Asbestos Program at (860) 509-7367 or visit its website: www.ct.gov/dph/asbestos

Formaldehyde

Formaldehyde is a common indoor air pollutant due to its presence in many consumer products (plywood, carpeting, clothing and some insulation products). High levels of formaldehyde can be irritating to the eyes, nose and throat. Homes with large amounts of new formaldehyde-containing products may have elevated levels. When possible, "air out" products (carpets, particleboard furniture) prior to use or ventilate areas that have been remodeled until any odors go away. When purchasing plywood or particleboard, ask for grades that emit lower amounts of formaldehyde. Urea formaldehyde foam insulation (UFFI) was once a problem in some Connecticut homes. It is no longer a health concern because its use was discontinued many years ago and what remains in homes no longer releases formaldehyde. For more information go to: <http://www.ct.gov/dph/ieq>

Household Chemicals

Household cleaning products, personal care products, pesticides, paints, glues, hobby products and solvents can release potentially harmful chemicals into the air. In certain cases, these chemicals may cause irritation to eyes, nose, or throat or increase the risk of long-term health effects. Some ways you can reduce exposure to these chemicals include:

- Use household products according to directions (e.g., do not spray near face; wear protective gloves).
- Decrease use of products with harmful chemicals and find alternative, safer products.
- Purchase products in small quantities or only the amount needed so that there will be little left over. Use the least amount of chemical product (e.g., pesticides) possible.
- Provide adequate ventilation. Open windows and doors to increase natural ventilation. Using bathroom and kitchen exhaust fans that are vented



- outside can lower pollutant levels. Install local exhaust over workbench if hobbies or home repairs involve frequent use of chemicals.
- Keep paints, cleansers, pesticides and other household chemical products in a separate, well-ventilated area that is out of the reach of children. Consider keeping children out of the area where chemical-containing products are being used.

For more information on pesticides call the U.S. EPA at 1-800-858-PEST. For information on indoor air pollution and chemical products contact the EPA Indoor Air Hotline 1-800-438-4318.

Tobacco Smoke



Secondhand smoke, also known as environmental tobacco smoke (ETS) is an indoor hazard to non-smoking residents, especially children. It is highly recommended that people not smoke in the presence of children. ETS is a known irritant that can trigger asthma attacks and increase the risk of respiratory infections and lung cancer in non-smokers.

Allergens, Biological Pollutants and Asthma

Typical household dust can contain allergens such as pet hair/dander and insect remains (dust mites, roaches). These biologic pollutants can cause respiratory problems and asthma attacks. Pet hair and dander can be reduced by regular vacuuming with a HEPA vacuum. Wood floors are easier to keep clean of biological pollutants than carpets.



Dust mites are microscopic insects commonly present in homes. Control of dust mites requires frequent cleaning. The following are added precautions for asthmatics:

- Encase mattress and pillows in dust proof zippered covers
- Wash all bedding once a week in hot water

- Remove carpeting from the bedroom
- Avoid steamcleaning; it wets carpets.
- Use a HEPA filter on vacuum cleaner.
- Reduce moisture and keep humidity below 50%

Other Indoor Air Issues



Remodeling precautions:

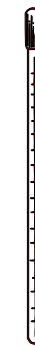
Construction within the home may release lead paint, asbestos, mold spores and dust.

To prevent indoor air pollution from remodeling:

- Identify where lead paint, asbestos and mold exist before remodeling.
- Use low-dust practices: mist surfaces before sanding and cover the floor and furnishings with plastic sheeting; use barriers to contain dust in the work area.
- Provide ventilation.
- Allow paints and glues to dry completely before re-entering the area.



Visit the Connecticut Department of Public Health website to learn more about these specific precautions.



Mercury Spills:

Mercury thermometers and blood pressure gauges contain enough mercury that, if broken, can release mercury into the air. Rapid cleanup is important to prevent this potential exposure. Visit the Connecticut Department of Public Health website www.ct.gov/dph/mercury to learn about proper cleanup procedures.

Replace old mercury thermometers with newer types that do not contain mercury. Discard your old thermometers by bringing them to your town's chemical waste collection day.