



A Brief Bit of Information on Particulates in Your Home

This guide provides information and guidance for homeowners on a few indoor particulates to be aware of, and how they may affect some aspects of your Indoor Air Quality.

This document contains information from the EPA, Consumer Product Safety Commission, and American Lung Association including but not limited to document #402-F-04-021, #402/F-08/008, and added content. Visit www.epa.gov/iaq for more information.



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In the last several years, a growing body of scientific evidence has indicated that the air within homes and other buildings can sometimes be more polluted than the outdoor air. Other research indicates that people spend approximately 90 percent of their time indoors. Thus, for many people, the risks to health may be greater due to exposure to air pollution indoors rather than outdoors.

In addition, people who may be exposed to indoor air pollutants for the longest periods of time are often those most susceptible to the effects of indoor air quality. Such groups include the young, the elderly, and the chronically ill, especially those suffering from respiratory or cardiovascular disease.

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What Causes Indoor Air Problems?

Indoor pollution usually comes from sources that release gases or particles into the air; these are the primary cause of indoor air quality problems in homes. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of the home. High temperature and humidity levels can also increase the concentrations of some pollutants and/or exacerbate the effects of some indoor pollutants.

There are many sources of indoor air pollution in any home; they all contribute to your indoor air quality. These include combustion sources such as gas, wood, and tobacco products; building materials and furnishings such as insulation, carpet, and cabinetry or furniture; products for household cleaning and maintenance, personal care, or hobbies; central heating and cooling systems; pets; and outdoor sources such as radon, pesticides, and pollen; etc.

The relative importance of any single source depends on how much pollutant that source emits and how

hazardous the emissions are. In some cases, factors such as how old the source is and whether it is properly maintained are significant. Some sources, such as building materials, furnishings, and household products like air fresheners, release pollutants more or less continuously. Other sources, related to activities carried out in the home, release pollutants intermittently. These include smoking, the use of solvents in cleaning and hobby activities, the use of paint strippers in redecorating activities, and the use of cleaning products and pesticides in house-keeping. High pollutant concentrations can remain in the air for long periods after some of these activities.

ASTHMA & ALLERGIES: Indoor pollutants and irritants play a significant role in triggering asthma and allergy attacks. Triggers are things that can cause symptoms, an episode or attack or make asthma or allergies worse. If you have asthma or allergies, you may react to just one trigger or you may find that several things act as triggers. Be sure to work with a doctor to identify triggers and develop a treatment plan that includes ways to reduce exposures to your triggers.

There are an estimated 40 million individuals in the United States who are affected by allergies. Learning how to control a home's environment to reduce allergen levels is important for managing allergies and asthma. Individuals who suffer from asthma, or have other respiratory illness may potentially be at a greater risk for health complications associated with poor air quality in their homes.

Dust Mites

Dust mites are tiny bugs that are too small to see. Every home has dust mites. They feed on human skin flakes and are found in mattresses, pillows, carpets, upholstered furniture, bedcovers, clothes, stuffed toys and fabric and fabric-covered items.

Body parts and droppings from dust mites can trigger asthma in individuals with allergies to dust mites. Exposure to dust mites can cause asthma in children who have not previously exhibited asthma symptoms.

Actions you can take: 1) Wash bedding in hot water once a week. Dry completely. 2) Use dust proof covers on pillows and mattresses. 3) Vacuum carpets and furniture every week. 4) Choose stuffed toys that you can wash. Wash stuffed toys in hot water. Dry completely before your child plays with the toy.

Exposure to dust mites may cause asthma in children.

Common house dust may also contain asthma triggers. These simple steps can help: 1) Dust often with a damp cloth. 2) Use a vacuum with a HEPA filter on carpet and fabric-covered furniture to reduce dust build-up. People with asthma or allergies should leave the area being vacuumed.

Pets

Proteins in your pet's skin flakes (dander), urine, feces, saliva and hair/feathers can trigger asthma. Dogs, cats, rodents (including hamsters and guinea pigs) and other warm-blooded mammals can trigger asthma in individuals with an allergy to animal dander. Feathers can often be aggravating to sensitive individuals as well.

The most effective method to control animal allergens in the home is to not allow animals in the home. If you remove an animal from the home, it is important to thoroughly clean the floors, walls, carpets and upholstered furniture.

Some individuals may find isolation measures to be sufficiently effective. Isolation measures that have been suggested include keeping pets out of the sleeping areas, keeping pets away from upholstered furniture, carpets, and stuffed toys, keeping the pet outdoors as much as possible and isolating sensitive individuals from the pet as much as possible.

Actions you can take: 1) Find another home for your cat or dog. 2) Keep pets outside if possible. 3) If you have to have a pet inside, keep it out of the bedroom of the person with asthma. 4) Keep pets off of your furniture. 5) Vacuum carpets and furniture when the person with asthma is not around.

Wood Smoke & Ash

Smoke from wood-burning stoves and fireplaces contain a mixture of harmful gases and small particles. Breathing these small particles can cause asthma attacks and severe bronchitis, aggravate heart and lung disease and may increase the likelihood of respiratory illnesses. If you're using a wood stove or fireplace and smell smoke in your home, it probably isn't working as it should.

Actions you can take: 1) To help reduce smoke, make sure to burn dry wood that has been split, stacked, covered and stored for at least 6 months. 2) Have your stove and chimney inspected every year by a certified professional to make sure there are no gaps, cracks, unwanted drafts or to remove dangerous creosote build-up. 3) If possible, replace your old wood stove with a new, cleaner heating appliance. Newer wood stoves are at least 50% more efficient and pollute 70% less than older models.

Common pollutants can sometime enter our houses through air leaks in the structure.

These actions can help make your home healthier and safer AND help cut energy costs.

Pollen

Outdoor air quality is affected by pollen from plants, crops and weeds. Particle pollution can be high any time of year and are often higher near busy roads and where people burn wood.

When inhaled, outdoor pollen can aggravate the lungs, and can lead to chest pain, coughing, digestive problems, dizziness, fever, lethargy, sneezing, shortness of breath, throat irritation and watery

eyes. Pollen may also worsen chronic respiratory diseases, such as asthma.

Actions you can take: 1) Know when and where pollen may be elevated. 2) Regular exercise is healthy. Check your local air quality to know when to play and when to take it a little easier. 3) Schedule outdoor activities at times when the air quality is better. In the summer, this may be in the morning. 4) Stay inside with the windows closed on high pollen days. 5) Use your air conditioner to help filter the air coming into the home. Central air systems are the best. 6) Remove indoor plants if they irritate or produce symptoms for you or your family.

Pests & Bugs

Droppings or body parts of cockroaches and other bugs or pests can be aggravating to those who are sensitive. Certain proteins are found in pest feces, frass, and saliva and can cause allergic reactions or trigger asthma symptoms in some individuals.

Actions you can take: 1) Keep counters, sinks, tables and floors clean and free of clutter. 2) Clean dishes, crumbs and spills right away. 3) Store food in airtight containers. 4) Seal cracks or openings around or inside cabinets.

Insecticides and pesticides are not only toxic to pests – they can harm people too. Try to use pest management methods that pose less of a risk.

What about Carpet?

In recent years, a number of consumers have associated a variety of symptoms with the installation of new carpet. Scientists have not been able to determine whether the chemicals emitted by new carpets are responsible. If you are installing new carpet, you may wish to take the following steps:

- Talk to your carpet retailer. Ask for information on emissions from carpet.

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- Ask the retailer to unroll and air out the carpet in a well-ventilated area before installation.
- Ask for low-emitting adhesives if adhesives are needed.
- Consider leaving the premises during and immediately after carpet installation. You may wish to schedule the installation when most family members or office workers are out.
- Be sure the retailer requires the installer to follow the Carpet and Rug Institute's installation guidelines.
- Open doors and windows. Increasing the amount of fresh air in the home will reduce exposure to most chemicals released from carpet. During and after installation, use window fans, room air conditioners, or other mechanical ventilation equipment you may have installed in your house, to exhaust fumes to the outdoors. Keep them running for 48 to 72 hours after the new carpet is installed.
- Contact your carpet retailer if objectionable odors persist.
- Follow the manufacturer's instructions for proper carpet maintenance.

When Building a New Home

Building a new home provides the opportunity for preventing indoor air problems. However, it can result in exposure to higher levels of indoor air contaminants if careful attention is not given to potential pollution sources and the air exchange rate.

Express your concerns about indoor air quality to your architect or builder and enlist his or her cooperation in taking measures to provide good indoor air quality. Talk both about purchasing building materials and furnishings that are low-emitting and about providing an adequate amount of ventilation.

First Line of Defense

The American Lung Association recommends that the first line of defense against indoor air pollution is finding ways to keep the pollutants from being added to the air in the first place. This is known as source control. Appropriate ventilation with clean fresh air can also reduce levels of indoor air pollutants. Finally, while air cleaning devices can be useful, they are no substitute for preventing the air from getting dirty in the first place.

Additional Resources

For more information on issues related to indoor air quality, you can call the EPA Indoor Air Quality Information Clearinghouse at **(800) 438-4318**.

- Consumer Product Safety Commission:
<http://www.cpsc.gov/en/Safety-Education/Safety-Guides/Home/Biological-Pollutants-in-Your-Home/>
- American Lung Association:
<http://www.lung.org/associations/charters/mid-atlantic/air-quality/indoor-air-quality.html>
- EPA:
<http://www.epa.gov/iaq/index.html>

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