

Indoor air quality (IAQ) issues have been around for some time, but recently several problems have become more severe. A common culprit for this increase is building homes “tight” to save energy. Energy efficient construction reduces the ability of outside air to replace the air inside our homes. This condition causes the contaminants such as dust, gases, chemicals, mold spores, and pet dander to build to levels that can affect our health.

Health Effects

A person’s reaction to a contaminant depends on individual sensitivities, which vary greatly between people. Individuals that may be more susceptible are the young, elderly, and chronically ill -- especially those suffering from cardiovascular disease, asthma, or bronchitis.

Symptoms

Symptoms of poor indoor air quality are very broad and depend on the contaminant. They can easily be mistaken for symptoms of other illnesses such as allergies, stress, colds and influenza. The most common symptoms are coughing, sneezing, watery eyes, fatigue, dizziness, headaches and upper respiratory congestion. If you notice relief from your symptoms soon after leaving a particular room or building, your symptoms may be caused by indoor air contaminants.

Controlling the Indoor Environment

There are two key elements to maintaining a healthy indoor environment: ventilation and humidity.

Ventilation is the exchanging of the air indoors with new air from outside. It is recommended that a home have a complete air exchange every 3 hours.

Humidity is the amount of moisture that the air is able to hold. Excessive humidity levels can allow illness-causing organisms to live and grow. Elimination of standing water, water leaks and humidifiers can help reduce the amount of

moisture in the air, thereby decreasing the ability of these organisms to survive. Maintaining a humidity level of 30-50% will help keep moisture issues away. Condensation on the inside of windows can be an indication of high humidity and poor ventilation in your home.

Reducing Indoor Air Contaminants

The following describes the some of the contaminants that may be found in a home. When deciding what actions to take for yourself and your family, determine what the allergy and asthma triggers are and address those issues first.

Biological Contaminants

Biological contaminants are those from living or once living organisms. They include molds, mildews, animal dander, dust mites, cockroaches, and pollen. Some of the most frequent problems in a home are caused by:

Dust Mites: Dust mites thrive in furniture, carpets, bedding and other places that are warm and moist. Dust mites and their fecal pellets cause allergic reactions in sensitive individuals.

Prevention Tips:

- Encase pillow, mattress and box springs in an allergen control cover.
- Wash sheets weekly and other bedding every 2 weeks in hot water.
- Replace upholstered furniture with wipeable furniture, such as wood, leather and vinyl.

Mold. Mold and mildew originate in standing water, water-damaged materials or on wet surfaces. Removal of water-damaged materials is important to remove a potential source of the mold.

Prevention Tips:

- Fix water leaks immediately and dry area as quickly as possible.
- Use exhaust fans when cooking and bathing.
- Inspect and clean appliances such as furnaces, heat pumps, and central air conditioners before seasonal use.
- Ventilate the attic and crawl spaces.
- Cover the dirt in a crawl space with 6 ml plastic to help prevent moisture from entering your home.

Combustion Products

Combustion products are gases, vapors and particles produced during a burning process.



Tobacco smoke is a major source of indoor air pollution and is a leading asthma trigger. It is a mixture of over 4,000 chemicals, many of which are known to cause cancer. People with asthma and other respiratory diseases are often severely affected by exposure to tobacco smoke. Infants and young children exposed to smoke are at increased risk of pneumonia, bronchitis and ear infections.

Prevention Tips:

- Do not allow smoking in your house or around your children.
- Do not smoke or allow anyone to smoke in your car.
- If you must smoke, smoke outside and wear a jacket or long sleeved shirt you can take off when you come back inside. Particles will stick to the jacket instead of your clothing.

Carbon Monoxide (CO) is a colorless, odorless, poisonous gas. Sources of CO include: natural gas or propane powered appliances, such as stoves and furnaces; fireplaces and wood stoves; automobile exhaust; barbecues; and tobacco smoke. Symptoms of CO poisoning include headaches, dizziness, and fatigue and may progress to nausea, convulsions, coma, and death.

Prevention Tips:

- Ensure all gas appliances are maintained and properly vented to the outside. Flames should be blue, not yellow, for natural gas.
- Never idle your car in an enclosed garage regardless of whether the door is open or closed.
- Clean and inspect your chimney seasonally.
- Never barbecue, burn charcoal, or use a camp stove indoors.

If you have natural gas or propane powered appliances invest in a carbon monoxide detector for your home.

Household Chemicals. Think of all the chemicals we use in our homes: hair sprays, rug and oven cleaners, furniture polish, air fresheners, paints, pesticides, dry cleaning products and craft materials. When we use these chemicals in our home, we put them into our air.

Prevention Tips:

- Read the label and use the product correctly.
- Use chemicals in a well-ventilated space.
- Use environmentally friendly cleaning products.

Formaldehyde. This chemical is used in particle board, plywood and may be found in some types of foam insulation. It may also be found in fabrics, carpets, and paints. Symptoms of formaldehyde exposure include: watery eyes, skin rashes, eye/nose/throat irritation, nosebleeds and asthmatic attacks.

Prevention Tips:

- Ask about formaldehyde content when purchasing new paneling or pressed wood furniture/cabinetry. Some types of pressed-wood emit less formaldehyde than others.
- Ask the warehouse to lay out new carpet for several days before delivery.
- After installing materials containing formaldehyde ventilate the area with fans and open windows for 2 to 3 days.

Air Cleaning Devices.

There are many different types of air cleaning devices on the market. Keep in mind that while these units can help reduce the amount of various particles in the air, they do not remove the source of the contaminants. Some units produce ozone as a by-product and as a means of “cleaning” the air. Whatever you choose to use, please keep in mind that ozone is a respiratory irritant and can cause lung problems. The Health District does not recommend the purchase of an air cleaner that produces ozone.

Basic Steps to Improve Indoor Air Quality.

While each type of contaminant has specific control measures, some measures are common:

- Vacuum frequently using a vacuum with a beater brush or power head.
- Replace regular vacuum cleaner bags with multi-layer allergen control bags.
- Dust the home on a weekly basis using a damp cloth to avoid putting particles in the air.
- Wherever possible, replace carpeting with wood, tile or linoleum flooring.
- Keep humidity levels at 30-50%.
- Find and fix all water leaks, then replace all water damaged materials.
- Use exhaust fans in the kitchen and bathroom when cooking and bathing. Make sure that the fans are vented to the outside.
- Ventilate the home by running the ventilation system and/or opening windows whenever possible.
- Replace filters in furnace and air conditioning unit with pleated filters.
- Change the filters in furnace and air conditioning units on a regular basis.
- Clean air conditioners, humidifiers, and dehumidifiers regularly.
- Keep pets out of the bedroom.

The best place to start is in the bedroom of the person affected!

For more information contact:

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Also see: Mold

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Healthy Homes

