



Indoor Air Quality

Poor indoor air quality can cause or contribute to the development of infections, lung cancer, and chronic lung diseases such as asthma. In addition, it can cause headaches, dry eyes, nasal congestion, nausea and fatigue. People who already have lung disease are at greater risk.

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.

Common air pollutants, their health effects and ways to control their sources are listed below:

Biological Pollutants

Includes molds, bacteria, viruses, pollen, animal dander and particles from dust mites and cockroaches. These may cause infections, provoke allergic symptoms or trigger asthma attacks. These may be a major cause of days lost from work and school. Means of control include washing bedding to kill dust mites, keeping animals out of areas affected persons frequent, and practicing careful cleaning. It is also critical to control moisture that promotes mold growth.

Secondhand Tobacco Smoke

Secondhand Smoke is a major indoor air pollutant. It contains some 200 known poisons, such as formaldehyde and carbon monoxide, and at least 60 chemicals known to cause cancer. In U.S. nonsmokers, every year it causes an estimated 3,000 lung cancer deaths and up to 50,000 heart disease deaths. In children, especially infants, it is responsible for pneumonia, lower respiratory tract infections and ear infections. It causes asthma to develop, causes asthma attacks, and makes attacks worse. Source control is basic: No one should smoke around children.

Combustion Pollutants

Combustion Pollutants come from sources such as fuel burning stoves, furnaces, fireplaces, heaters, and water heaters, using gas, oil, coal, wood, or other fuel. The most dangerous are both colorless and odorless gases carbon monoxide (CO) and nitrogen dioxide (NO₂). CO interferes with the delivery of oxygen to the body. It can produce fatigue, headache, confusion, nausea, and dizziness. Very high levels can cause death. NO₂ irritates the mucous membranes in the eye, nose and throat and can cause shortness of breath and promote infections. The best way to control these pollutants is to make sure combustion appliances are installed and maintained by reliable professionals, and properly used. A UL-listed CO monitor should also be installed.

Radon

[Radon](#), a naturally occurring radioactive gas, can enter the home through cracks in the foundation floor and walls, drains, and other openings. Indoor radon exposure is

estimated to be the second leading cause of lung cancer in the U.S., responsible for at least 21,000 lung cancer deaths each year. Steps to control radon include testing ones home, and following recommendations for further testing and repairs.

Asbestos

A non-flammable mineral that can produce microscopic fibers, that when inhaled into the lungs can cause asbestosis (scarring of the lung tissue), lung cancer and another cancer called mesothelioma. Many asbestos products are found in the home, including roofing and flooring materials, and insulation for ceilings, walls, pipes and heating equipment. To avoid asbestos exposure, either cover intact source materials with an airtight seal or use professional services to remove damaged source materials.

Formaldehyde

A common chemical, found primarily in adhesive or bonding agents for many materials found in households and offices, including carpets, upholstery, particle board, and plywood paneling. The release of formaldehyde into the air may cause health problems, such as coughing; eye, nose, and throat irritation; skin rashes, headaches, and dizziness. The best control is to avoid using products that emit formaldehyde. Though not as effective, try to be sure that new potential sources are sufficiently aired out before bringing them indoors.

Hundreds of potentially harmful chemicals are emitted by household cleaning agents, personal care products, pesticides, paints, hobby products, and solvents. Such chemicals can cause dizziness, nausea, allergic reactions, eye/skin/respiratory tract irritation, and cancer. Minimize your use of such sources of dangerous chemicals, and be sure to follow manufacturers directions, including using protective equipment and adequate ventilation. An alternative is to find safer substitutes.

Why does Indoor Air Quality matter?

The air quality of our indoor environments effects our health and often contributes to structural degradation and building failures within our homes.

Consider the Facts

According to the American Lung Association of Minnesota, elements within our home and workplaces have been increasingly recognized as threats to our respiratory health. The most common pollutants are radon, combustion products, biologicals (molds, pet dander, pollen), volatile organic compounds, lead dust and asbestos.

The [Environmental Protection Agency](#) lists poor indoor air quality as the fourth largest environmental threat to our country.

There are an estimated 40 million individuals in the United States who are affected by allergies. Learning how to control a homes 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.

The prevalence rate of pediatric asthma has increased from 40.1 to 69.1,—a 72.3 percent increase. Asthma is the sixth ranking chronic condition in our nation and the leading serious chronic illness of children in the U.S.

In the house, poor indoor air quality can result in structural rot within the walls and attic and around window framing from excess moisture.

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

Common housing problems or failures that occur in our homes include: musty odors and mold growth, window condensation, structural rot, peeling paint, back-drafting appliances, damp basements and ice dams, or build-up of ice on the roofs edge, and high utility costs.

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