



Indoor Air Quality

Air pollution is not just an outdoor problem. The air indoors, at your home or your workplace, can also be polluted. Some types of air pollution can reach higher levels indoors than outdoors. With Canadians spending, on average, about 90 per cent of their time indoors. The quality of indoor air is extremely important.

Sources of Indoor Air Pollution

The main sources of indoor air pollutants that affect humans can be categorized into two groups: biological and chemical.

Biological pollutants are things that are, or were once, living organisms. Common biological pollutants include bacteria, mould, animal dander, pollen, and dust mites.

Biological agents need two things to grow: nutrients and moisture. Around your home, sources of biological pollutants may include:

- Bathrooms.
- Damp or flooded basements.
- Appliances such as humidifiers, dehumidifiers and air conditioners.
- Mattresses, carpets and furniture.

Chemical pollutants can be either gases or particles. Some common chemical pollutants include carbon monoxide, nitrogen dioxide, tobacco smoke, formaldehyde, radon, lead and soot.

Around your home, sources of chemical pollutants may include:

- Improperly installed, used or maintained combustion appliances (gas stoves, fireplaces, water heaters, furnaces, etc).
- Household products such as cleaning products, air fresheners, personal care products, glue, etc.



- Paints and paint strippers.
- Building materials and furnishings, including fabrics.

Indoor Air Quality and Your Health

Health effects from indoor air pollutants may be experienced soon after exposure or, possibly, years later. So, even if you do not currently feel any negative health effects, it is a good idea to take precautionary steps to protect you and your family from health complications later on.

The physical symptoms commonly attributed to poor indoor air quality include headache, fatigue, shortness of breath, sinus congestion, coughing, sneezing, skin irritation, dizziness, nausea, and eye, nose, and throat irritation.

Some people may be particularly vulnerable to the effects of poor air quality, including the young, the elderly, people with existing allergies or asthma, and people with respiratory disease or weakened immune systems.



How to Lower Indoor Air Pollutant Levels

Three basic approaches can be taken to lower indoor air pollutant levels: source control, ventilation and air cleaning.

Source Control

The most effective way to reduce indoor air pollution is to eliminate individual sources of pollution or reduce their emissions. In many cases, source control is also a more cost-efficient approach to protecting indoor air quality than increasing ventilation because increasing ventilation can increase energy costs.

Some sources of indoor air pollutants can be easily controlled and avoided, while other sources can be adjusted to decrease the amount of emissions or pollutants. See 'Ten Tips for Reducing Indoor Air Pollutants' for ways to control some of the most common pollutant sources.

Ventilation

Ventilation is important for reducing levels of contaminants that cannot be controlled at the source. Some outdoor air exchange is necessary in all homes to control indoor

Ten Tips for Reducing Indoor Air Pollutants

1. Don't permit smoking in your home.
2. Have any combustion device (furnace, water heater, gas stove, fireplace) inspected by a specialist at least once a year, and properly maintained.
3. Ensure adequate ventilation, especially in rooms with excess water vapour-like bathrooms.
4. Repair water damage and monitor humidity levels to prevent mould growth (keep the relative humidity in your home below 50% in the summer and 30% in the winter).
5. Ensure leaks and cracks in walls, floors, roofs and basements are fixed.
6. Keep your home clean, including regular dusting and vacuuming.
7. Don't idle your car or lawnmower in an attached garage.
8. If you are involved in an activity that generates high levels of pollutants (painting, paint stripping, sanding, etc.), do it in a well-ventilated area, or outside if possible.
9. Look for low-emission alternatives for indoor pollutants such as paints, varnishes, cleaning products, glues, insulation, carpet, and other products.
10. Immediately clean any mould found in your house.

humidity and air contaminants and to keep the house from feeling stuffy. Most home heating and cooling systems, including forced air heating systems, do not mechanically bring fresh air into the house.

Opening windows and doors, operating window or attic fans, when the weather permits, or running a window air conditioner with the vent control open increases the outdoor ventilation rate. Local bathroom or kitchen fans that exhaust outdoors remove contaminants directly from the room where the fan is located and also increase the outdoor air ventilation rate.

More sophisticated mechanical ventilation systems include air-to-air heat exchangers and heat-pump ventilators. These allow outdoor air to be brought into the house while conserving energy.

Adequate ventilation is especially important when you are involved in short-term activities that can generate high levels of pollutants--for example, painting, paint

stripping, heating with kerosene heaters, cooking, or engaging in maintenance and hobby activities such as welding, soldering, or sanding. If possible, try to do some of these activities outdoors.

Air Cleaning

Some indoor air pollutants can be removed with an air cleaner. While air cleaning can be useful, it is never a substitute for source control and ventilation.

Some air cleaners are effective at removing dust and particles from the air. However, most air cleaners have no effect on gases or vapours and should not be expected to provide total air purification.

Air cleaners should always be used and maintained according to the manufacturer's instructions. In homes with forced-air heating or cooling, air filters should be maintained and replaced on a regular basis.

For additional information about specific indoor air pollutants visit www.hnhu.org.