



## Indoor Air Quality (IAQ)

### Why is indoor air quality important?

People spend up to 90 per cent of their time indoors - at home, school and work. Poor indoor air quality may cause one or more of the following symptoms: headache, wheezing, tiredness, coughing, sneezing, sinus congestion, shortness of breath, dizziness, nausea, and irritation of the eyes, nose or throat. Allergy or asthma symptoms may also get worse. In rare cases, an inflammation of the lungs called hypersensitivity pneumonitis may develop.

Poor indoor air quality can lead to indoor air pollution. By understanding some of the possible causes of this pollution, you can then start to control or get rid of it.

### What are the major types of pollutants that cause indoor air pollution?

**Biological contaminants** can come from both outside and inside the home and may cause allergic symptoms. Examples of contaminants include: fungi (moulds), insects such as dust mites and cockroaches, fur-bearing animals, such as dander from dogs or cats, and dusts and pollens. For more information, see HealthLink BC File [#65b IAQ: Moulds and Other Biological Contaminants](#).

**Combustion (burning) by-products** are gases and tiny particles that are caused by the incomplete burning of fuels such as oil, gas, kerosene, wood, coal and propane. Examples of combustion by-products include, fine particulate matter, carbon monoxide and nitrogen oxides. Sources include wood heaters and woodstoves, furnaces, gas ranges, fireplaces and car exhaust (in an attached garage). Tobacco smoke is another source. For more information, see HealthLink BC File [#65c IAQ: Combustion By-products](#) and [#30a Second-Hand Smoke](#).

**Formaldehyde and other Volatile Organic Compounds (VOCs):** Formaldehyde is a chemical

found in many building materials, such as plywood and particleboard, in furnishings, such as furniture, drapes and carpets, and in personal care products. Cleaning agents, paints, lacquers and varnishes are additional sources of VOCs. VOCs can be released from these materials for several years. For more information, see HealthLink BC File [#65d IAQ: Volatile Organic Compounds](#).

**Asbestos fibers:** Asbestos was used as an insulator and fire retardant for many years. It is sometimes still found wrapped around older hot water pipes and boilers. It is also found in old flooring material and some types of insulation used in attics and walls. Asbestos does not cause a health risk unless it is frayed or crumbling and releasing fibers into the air that can be inhaled. For more information, see HealthLink BC File [#32 Asbestos](#).

**Radon** is a naturally occurring radioactive gas given off during the natural decay of uranium found in soil and rock. Radon gas is odorless, invisible and without taste. It can enter a home or building indirectly through the soil. High levels of inhaled radon gas may eventually lead to lung cancer. High levels of radon have been found in parts of northern and the interior of British Columbia. For more information, see HealthLink BC File [#42 Radon in the Home](#).

**Lack of proper ventilation:** Inadequate ventilation may occur in tightly sealed buildings or those with too high a level of re-circulated building air. This may reduce indoor air quality. These types of buildings may also have higher indoor moisture (humidity) levels, contributing to the growth of moulds and mildews.

### What can you do to improve indoor air quality?

There are three basic ways to improve indoor air quality.

1. *Control the source:* Remove the source of pollution or reduce the level of the emissions.

2. *Improve ventilation:* Increase the amount of outdoor air coming indoors by keeping your home well ventilated, especially when cooking or painting. Keeping windows open and kitchen and bathroom exhaust fans turned on will improve ventilation. Keep your house clean and dry.
3. *Air cleaning:* Air cleaners, including mechanical filters, may be used in the home in addition to controlling the source and improving ventilation.

### **Biological contaminants**

- Keep the house clean and dust-free to reduce allergens such as dust mites, pollen and animal dander. Clean heating ducts and change furnace, humidifier, and air conditioning filters regularly.
- To stop mould growing, lower the humidity by venting moist areas, such as bathrooms, kitchens and clothes dryers, to the outside.
- Use a high efficiency vacuum cleaner, such as HEPA. You may also consider installing a built-in vacuum cleaner that vents outside the main living area, for example into the basement, crawl space or outdoors.
- If water damage has happened, repair the source of the leak and dry out damaged carpets, underlay and building material, or consider replacing them.
- Do not carpet the basement if the area is subject to moisture or flooding problems.
- Regularly clean your humidifier.

### **Combustion by-products**

- Follow the manufacturers' instructions for fuel burning appliances. Install, service and repair these appliances properly, and change filters regularly. Use correct fuel. Vent to the outside.
- Do not allow smoking in or near the house.
- Inspect furnace, flues and chimneys, and repair cracks and damaged parts.

### **Volatile Organic Compounds (VOCs)**

- Use products with low VOC emissions. If possible, allow gases to be given off in storage before putting new furnishings and carpets into your home. If this is not possible, try to increase the ventilation in the affected area(s) by opening windows and doors for as long as possible over at least several days.

- Store paints and solvents in a well-ventilated area in a separate building. Use only as directed and ensure good ventilation. Recycle unwanted paints and solvents.
- Do not mix different household cleaners or solvents together as this can be dangerous.

### **Air purifiers**

- Air filters and purifiers vary in their cost and in how well they work. Make sure you get the device that best meets your needs. Ozone generators do not work well to control indoor air pollution, and can generate levels of ozone that cause adverse effects on health.

### **For more information**

- The Canada Mortgage and Housing Corporation (CMHC). Call toll-free 1-800-668-2642, or see: [www.cmhc-schl.gc.ca/en/co/](http://www.cmhc-schl.gc.ca/en/co/)
- The British Columbia Lung Association. Call toll-free 1-800-665-LUNG (5864), or see: [www.bc.lung.ca/](http://www.bc.lung.ca/)
- Health Canada. Visit the It's Your Health section at: [www.hc-sc.gc.ca/english/iyh/index.html](http://www.hc-sc.gc.ca/english/iyh/index.html)



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