



Ventilation – improving air quality in your home

Air quality inside a home can be markedly different from outside especially when there are additional sources of pollutants inside the home and the ventilation is poor.

What causes poor air quality?

Main Indoor Air Pollutants	Sources	Health Effects
Nitrogen Oxide (NO _x)	Combustion by-products, space heaters, gas heaters, cigarettes, cigars, pipes.	Headaches, nausea, bronchitis, emphysema, pleural edema, and CNS effects allergies, respiratory and eye irritations.
Carbon Dioxide (CO ₂)	Tobacco smoke, metabolism and expired air from lungs.	Drowsiness, headaches, and irregular breathing.
Formaldehyde (HCHO)	Urea-formaldehyde foam insulation, particle board, plywood, aerosols, tobacco, smoke, flame retardant, crush-proof and shrink-proof fabrics.	Respiratory, eye and skin irritations, sensitisation, headaches, nausea, and suspect carcinogen.
Micro-organisms (Fungi, Bacteria, Viruses and Spores)	Moist and damp surfaces.	Allergies, respiratory and eye irritations.

Associated health problems

- Unflued gas appliances such as heaters and cooking devices emit combustion by-products directly into the home environment. Without sufficient ventilation the indoor pollution from gas combustion poses a significant health risk to those living inside the home. Nitrogen oxide for example is associated with respiratory conditions such as asthma. Sulphur dioxide can cause eye, nose and respiratory tract infection.
- The impact of second-hand tobacco smoke on public health is significant. Children are particularly susceptible to the health effects of second-hand smoke causing an estimated 500 hospitalisations of children under the age of 2 years with chest infection; 15,000 episodes of child asthma; 1,500 operations for glue ear; and 27,000 GP visitations for asthma and other respiratory conditions.

How to improve air quality

1. The single most effective way to keep the air in your home healthy is to keep things out of your home that cause air pollution, including cigarette smoke, unflued gas heaters, excess moisture and chemicals.
2. The second most important strategy is to ventilate. Ventilation is the exchange of indoor air for outdoor air. There are essentially two types of home ventilation: natural and mechanical. In natural ventilation, fresh outside air enters the house through opened doors and windows. In mechanical ventilation, electronic devices such as fans and air conditioning units remove stale indoor air and then distribute outdoor air throughout a room or house.
3. A third strategy is to install ventilation strips above windows and/or install a heat pump or other mechanical heating/ventilation system.
4. Lastly the cheapest and best way to ventilate is to open windows at opposite ends of your home to ensure good air movement. Also ensure that you run extractor fans in bathrooms and above appliances and stoves.