

CHOOSE THE AIR YOU BREATHE



We spend a large portion of our time indoors and it is thus important for us to maintain the quality of air we breathe in in our homes and offices. *Dr. Liew Woei Kang, Consultant Paediatrician, Paediatric Allergy & Immunology, SBCC Baby & Child Clinic at Gleneagles Medical Centre and President of the Asthma and Allergy Association in Singapore*, points out the common sources of indoor pollutants and how they harm our health. He also shares lifestyle habits we can adopt to minimise indoor air pollution. By understanding the air you breathe, you can make the best of it.

1 How can we determine the quality of indoor air in our homes and offices?

The usual air quality index used in Singapore is the Pollutants Standard Index (PSI), but this is more relevant for outdoor air pollution, and not accurate to determine indoor air quality. There is no published indoor air pollution index, though one can express the indoor air quality in the form of concentration of fine particles (eg. PM2.5).

2 What are the common sources of indoor pollutants?

Common sources of indoor pollutants include:

- Tobacco smoke including second hand smoke
- Volatile organic acids from household products such as floor polish, new paints, glue from new furniture and pesticides
- Gases such as radon and carbon monoxide
- Materials used in the building such as asbestos and formaldehyde
- Biological pollutants such as bacteria, molds, and other common aeroallergens

3 In what way do they harm our health? Do they affect children and adults differently? If so, how?

Indoor air pollutants can cause a wide range of health problems including an increased risk of respiratory infections, chronic lung diseases like asthma, and even lung cancers. In addition, poor air quality can cause headaches, dry eyes, nasal congestion, nausea and fatigue. Children are affected more easily, as their immunity is lower and they have a higher ventilation rate as compared to adults.

4 How can we reduce indoor air pollutants? What lifestyle habits can families adopt to minimise indoor air pollution?

We can reduce indoor air pollutants by ensuring the rooms are well-ventilated so as to reduce the buildup of harmful pollutants and molds. Adopting a non-smoking policy within the home avoids the ill effects of second hand smoke. Using a HEPA filter equipped vacuum and air purifier can also reduce harmful airborne pollutants.

5 Assuming a room reeks of cigarette smoke but the smoker left the room an hour ago. Are the remnants of cigarette smoke as harmful as freshly exhaled cigarette smoke?

Second hand smoke is as harmful as freshly exhaled cigarette smoke, as it contains more than 7000 chemicals. More than 250 of these chemicals are known to be harmful, and at least 69 are known to cause cancer.

6 How much will turning on an air purifier for an hour change the quality of indoor air?

An air purifier would improve indoor air quality but the effect, however, depends on the technology, Clean Air Delivery Rate (CADR) of the machine and the size of the room. A HEPA filtered air purifier would remove ultrafine particles (as small as 20 nanometres) in the air more efficiently. These particles include certain viruses. Air purifiers equipped with carbon filters would also assist in eliminating odour and a wide spectrum of harmful airborne chemicals like toluene, formaldehyde and Total Volatile Organic Compounds (TVOC).