

## ASTHMA and Air Pollution

While there is no evidence that air pollution causes asthma, it can trigger attacks in people who have asthma. Some air pollutants can also worsen asthma symptoms.

### Outdoor air

People with asthma have sensitive airways that are easily affected by air pollutants such as particles, sulphur dioxide, nitrogen oxides and ozone.

#### Airborne particles

The sources of particles in air can be natural (pollens, bacteria, fungi) or man-made (motor vehicle emissions, tobacco smoke, wood heaters). Smoke from bushfires is also a source of airborne particles. Fine particles are the worst offenders as they can get deep into the lungs. These particles irritate airways and can trigger asthma attacks.

#### Sulphur dioxide

Sulphur dioxide is formed when coal and oil are burned. People with asthma who are exposed to sulphur dioxide can experience wheezing, chest tightness and shortness of breath. Sulphur dioxide is not a major air pollutant in Australia outside areas near power stations and smelter

#### Nitrogen oxides

The major sources of nitrogen oxides are the burning of coal and oil in power stations and motor vehicle emissions. Exposure to nitrogen oxides may cause infection in airways – especially in children – and the worsening of asthma symptoms.

#### Ozone

The ozone layer in the upper atmosphere protects us from harmful ultraviolet rays, but if present in the air we breathe ozone can irritate the lungs and make breathing difficult. Studies show that hospital admissions for asthma increase when there is more ozone in the air.

Ozone and nitrogen oxides are the major pollutants in smog (smoke and fog) that occurs in some busy cities

## Air Quality Index

The Air Quality Index, which is presented as part of weather forecasts in the media, will help you in monitoring information on air pollution. The lower the index is, the better the quality of our air. There are five categories in the index:

1. Very Good 0 - 33
2. Good 34 - 66
3. Fair 67 – 99
4. Poor 100 - 149
5. Very Poor > 150

## What you can do

The following measures may help reduce exposure to outdoor air pollutants:

### Smog

- Remain indoors and close external doors and windows on smoggy days.
- If outdoors, avoid heavy physical activity.

### Bushfires

- Remain indoors and close external doors and windows, unless advised to evacuate.
- If travelling in a vehicle through smoke, close windows and vents and use recirculated air to stop smoke entering the vehicle.
- Wear a dust mask if exposure to smoke cannot be avoided. The mask will need to firmly cover the nose and mouth to stop smoke entering from around the mask.
- Water down any dry dusty areas before trying to clean up after a fire.

## Indoor air

When we are indoors, we are generally exposed to outdoor pollutants that have entered the building as the result of natural air flow and ventilation systems. We are also exposed to other chemical pollutants that come from the building, furnishings, heaters and its occupants.

These include:

### Tobacco smoke

Tobacco smoke is the worst indoor pollutant, especially around young children. It contains a mixture of chemicals that irritate the throat and lungs. Australian studies have shown that smoking by either parent – and particularly by the mother – increases the risk of asthma in young children. Children with asthma who are exposed to smoking in the home generally have severe asthma.

Tobacco smoke may trigger asthma symptoms in adults.

### Formaldehyde

Wood-based panels, furniture, glues, dyes, permanent-press clothes, markers, paints and cigarettes emit formaldehyde gas which has a sharp smell. Formaldehyde irritates our eyes and airways. Symptoms are temporary and, depending upon the level and lengths of exposure, may range from burning or tingling sensations in eyes, nose and throat to chest tightness and wheezing.

### Nitrogen dioxide

The main sources of indoor nitrogen dioxide are unflued gas appliances. High exposure to nitrogen dioxide can worsen asthma symptoms.

### Volatile organic compounds

Most synthetic and natural materials release volatile organic compounds. Floor coverings, furniture, cleaning agents, office equipment, and products such as paints, adhesives and sealants are the major sources of these harmful vapours. Volatile organic compounds can cause irritation of the nose, throat and airways.

## Further information

Talk to your doctor or pharmacist, or contact the Asthma Foundation in your State or Territory on 1800 645 130.

Asthma Australia website: [www.asthmaaustralia.org.au](http://www.asthmaaustralia.org.au)

Australasian Society for Clinical Immunology and Allergy website: [www.allergy.org.au](http://www.allergy.org.au)

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