

# Air pollution

## Heart information sheets

### What do we mean by air pollution?

Air pollution is the name given to describe the amount of microscopic particles or potentially harmful gases in the air that we breathe - which can vary depending on atmospheric conditions.

### What causes air pollution?

Air pollutants that are potentially harmful include nitrogen dioxide, ozone, sulphur dioxide, some organic compounds and particulate matter – which include soot, dust and droplets. Traffic exhaust fumes are a major source of air pollution as they release nitrogen dioxide, carbon monoxide and particles into the atmosphere. Burning fuel for domestic and industrial purposes can also cause air pollution.

### Is there a link between air pollution and heart disease?

There is now enough evidence to suggest a causal link between air pollution, and cardiovascular disease – including coronary heart disease and stroke. Studies indicate that particulate matter can make existing heart conditions worse and can cause cardiovascular events, including heart attacks and strokes, among vulnerable people.

### How does air pollution affect the heart?

Research suggests there are several potential mechanisms by which particulate matter can contribute to the development of cardiovascular disease; however these are not fully understood. It is thought that particulate matter can cause an inflammatory response within the airways and lung – which can in time lead to a number of effects. These include an increase in likelihood of the blood to clot, and therefore cause a heart attack in someone who already has heart disease, and to cause some abnormal heart rhythms, which may lead to sudden death.

However, further research is needed to identify the pollutants, which may cause cardiovascular disease – and the British Heart Foundation is currently funding scientists to look at how air pollution causes abnormalities in the blood vessels.

### Is it safe to exercise outside?

Aerobic physical activity is very good for the heart, and the benefits of exercising outdoors outweigh the risks associated with air pollution for most people. So, if you are fit and able, it's better to go outside for a brisk walk or a bike ride rather than sitting indoors because of the risks associated with air pollution.

However, if you have chronic lung disease or coronary heart disease, you should avoid going outside for long periods and undertaking strenuous exercise in areas where the traffic or industrial air pollution is likely to be high. You may find it more difficult to breathe when you are outside in the winter so when the temperature is very low, it's best to stay indoors and keep warm.

### Should I wear a facemask for protection?

You don't need to buy a special facemask to protect against the damaging effects of pollution on the heart - although some people may find it reassuring to wear one. BHF scientists have also investigated the role of facemasks, and found little evidence to support their use. It is thought the most damaging particles are too small to be filtered out by a mask.

### Who is at most risk?

People with coronary heart disease or chronic lung disease are at greater risk than those without such disease. If you have heart or lung disease and wish to adopt a precautionary approach, you could consider avoiding places where there is high levels of air pollution, for example cities where there are lots of traffic or where pollution generated by industry adds to that produced by

traffic.

**For more information**

**Airtext**

Web: [www.airtext.info/](http://www.airtext.info/)

Phone: 020 8760 5483

Email: [pollution@croydon.gov.uk](mailto:pollution@croydon.gov.uk)

*Provides individuals in London and parts of the South-East of England with free air pollution forecast text alerts to a home phone or mobile, and also by email.*

**Department for Environment, Food and Rural Affairs**

Web: [www.defra.gov.uk/](http://www.defra.gov.uk/)

Phone: 08459 33 55 77

Email: [helpline@defra.gsi.gov.uk](mailto:helpline@defra.gsi.gov.uk)

*For information on levels of air pollution in your local area, what you can do about air pollution and the impact of air pollution on your health.*

**UK Air Quality Archive**

Web: [www.airquality.co.uk](http://www.airquality.co.uk)

Phone: 0800 556677

Email: [aqinfo@aeat.co.uk](mailto:aqinfo@aeat.co.uk)

Teletext: page 156

*Provides information on the current levels of air pollution in local areas across the UK. They also provide statistics and reports on research into air pollution.*

The British Heart Foundation is the nation's heart charity, saving lives through pioneering research, vital information and patient care. But we need your help – we rely on donations of time or money to continue our life-saving work. If you'd like to help or find out more, visit [bhf.org.uk](http://bhf.org.uk)

 Heart Helpline  
**0300 330 3311**  
[bhf.org.uk](http://bhf.org.uk)