Air Pollution

Many people are concerned about air pollution and whether it may affect their health. The fact is that most of the time, air pollution levels are low. The air is certainly a lot cleaner today than in the days of the smog of the 1950's, when factory chimneys belched out smoke and nearly everyone had a coal fire. But if you are concerned about air pollution, there is a free and easy to use service that allows you to check levels in your area.

The following is information on air pollution. This information can be particularly important to people with medical conditions which may be worsened by air pollution.

The ﬁve main pollutants are:

* Sulphur dioxide;
* Nitrogen dioxide;
* Ozone;
* Carbon monoxide; and
* Particles (PM10).

The air pollution level reported in the forecasts and summaries is the highest for any single pollutant. For example, if all but one of the pollutants in a region or city were 1–3 (low), with just a single pollutant registering 7 (high), the summary would describe air pollution as 7 (high). In the UK, very high levels of air pollution are rare. That is why the 'very high' band is only number 10.

*How could air pollution affect me?*

If your health is good, the levels of air pollution we usually experience are unlikely to have any serious short-term effects. On the rare occasions when air pollution levels are high, some people may feel eye irritation, others may start to cough, and some may ﬁnd that deep breathing hurts.

People with lung diseases or heart conditions are at greater risk, especially if they are elderly. Daily changes in air pollution trigger increased admissions to hospital and contribute to the premature death of those who are seriously ill.

People with heart conditions or severe lung diseases (for example, chronic bronchitis or emphysema) may be more sensitive to changes in air pollution than the descriptions suggest.

It is important to look at the levels and bands in the light of personal experience. Some people – especially those who are sensitive to air pollution – will learn from experience how air pollution affects them. Some may still notice the effects for several days after pollution levels have fallen to low or moderate levels.

Information is only provided about the health effects of short-term exposure to certain air pollutants. Air pollution is also likely to affect health over the longer term. Understanding of the long-term health effects of exposure to air pollution is currently rather limited, but experts suggest that cutting long term exposure to ﬁne particles by half could increase life expectancy by between 1 and 11 months on average. This is not as great as the effect of smoking on life expectancy (on average, non-smokers live 7 years longer than smokers).

There is little evidence that air pollution itself causes asthma.

Research is continuing on this subject. However, if you already have asthma, you may ﬁnd that air pollution triggers an attack, although infections and allergens are more likely to do so.

If you suffer from lung diseases or a heart condition, you may like to follow the advice below.

# HEALTH ADVICE FOR PEOPLE WITH LUNG DISORDERS AND OTHERS SENSITIVE TO AIR POLLUTION

If you have asthma or another lung disease, your symptoms are unlikely to change when air pollution levels are 1–3 (low) or 4–6 (moderate). This applies whatever the time of year.

However, your symptoms may get worse when air pollution reaches the 7–9 (high) or 10 (very high) bands, especially if you are elderly. If this happens, you may need to change your treatment in the usual way. If these steps do not help, consult your doctor.

# WHERE DOES AIR POLLUTION COME FROM?

The service reports daily outdoor levels of pollution, mostly from outdoor sources. Different sources are responsible for different pollutants. Road transport is the main source of nitrogen dioxide and carbon monoxide. Power stations and other industrial sources also produce nitrogen dioxide. Industry is the main source of Sulphur dioxide. Particles come from many sources, including road transport, power stations and other industry. The burning of wood or coal for home heating can also be an important source of Sulphur dioxide and particles. Ground level ozone is not emitted directly from any source. Instead it is formed when sunlight acts on nitrogen dioxide and other atmospheric substances close to the ground. The pollutants that cause ground level ozone come from a range of sources, including petrol and other fuels. Ground level ozone is different to the ozone layer, which is affected by ozone depleting substances, such as CFCs, that have been released into the atmosphere.

**Nitrogen dioxide**

These gases irritate the airways of the lungs, increasing the Sulphur dioxide symptoms of those suffering from lung diseases.

**Particles**

Fine particles can be carried deep into the lungs where they can cause inﬂammation and a worsening of heart and lung diseases.

**Carbon monoxide**

This gas prevents the normal transport of oxygen by the blood. This can lead to a signiﬁcant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease.

**DOES IT MAKE A DIFFERENCE WHERE I LIVE?**

People often ask whether they should move home to reduce the risks to their health from exposure to air pollution.This is a difficult question to answer.

It is therefore very difficult to give advice which is relevant to everyone in the same area. Moving home is a major life event and may have other consequences forpeople’s health. It is unlikely to be worthwhile for people to move simply because of concerns about possible effects of air pollution. However, if a person is in the process of moving, they could consider choosing a lower pollution area. Information is available on levels of air pollutants in different areas to enable people to make their own choice.

# HELPING TO REDUCE AIR POLLUTION

The Air Quality Strategy sets the framework for local action to reduce pollution. Local authorities monitor and assess air quality and prepare action plans where they identify pollution hot-spots. The environment agencies and local authorities are monitoring and regulating emissions from industry. The European Union and other international organisations are acting to reduce global pollution. The Government and devolved administrations have introduced a wide range of measures, which have substantially cut harmful emissions from road vehicles and encouraged people to use cleaner fuels and vehicles.

# POLLUTANT HEALTH EFFECTS AT VERY HIGH LEVELS

Nitrogen dioxide These gases irritate the airways of the lungs, increasing the Sulphur dioxide symptoms of those suffering from lung diseases. Ozone

Particles Fine particles can be carried deep into the lungs where they can cause inﬂammation and a worsening of heart and lung diseases.

Carbon monoxide This gas prevents the normal transport of oxygen by the blood. This can lead to a signiﬁcant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease

But everyone can do their bit to reduce air pollution, especially when pollution levels are high.

**On the road**

Road vehicles are a major source of many pollutants in urban areas. They produce over 50 per cent of the emissions of nitrogen oxides and over 75 per cent of carbon monoxide emissions.

**Before using your car, ask yourself:**

* Do I really need to make this journey?
* Could I walk or cycle instead of taking the car?
* Could I take a bus, taxi or train?
* Are the levels of air pollution already too high today?

**If you must drive:**

* Drive smoothly. You will save fuel, and your engine will also pollute less.
* Do not rev your engine unnecessarily.
* Maintain your car. Keep the engine properly tuned and the tyres at the right pressure.
* Turn off the engine when your car is stationary.

**At home**

* Buy water-based or low-solvent paints, varnishes, glues and wood preservatives.
* Avoid burning solid fuels, if possible. If you live in a smoke control area, burn only authorised smokeless fuels (your local authority can advise you).
* Avoid lighting bonﬁres, but if you must, do not light them when pollution levels are high or while the weather is still and cold. Only burn dry material and never burn household waste, especially plastic, rubber, foam or paint. Levels of pollution can be quite high on bonﬁre night and other events/festivals with bonﬁres, and sensitive people, including people with respiratory conditions, may notice some effects. However, exposure can be considerably reduced by remaining indoors and keeping windows closed.

# BIBLIOGRAPHY