

Your quick guide to: Outdoor Air Quality: Why it Matters

Air pollution is the top environmental risk to human health in the UK, and the fourth greatest threat to public health after cancer, heart disease and obesity. It makes people more susceptible to respiratory infections and other illnesses and it can have a significant impact on those living with allergies.

How outdoor air quality links to allergy

There is a proven link between the quality of the air we breathe and the health of people living with allergic disease. Sensitivity to the adverse effects of air pollutants will vary in individuals and air pollution levels will also vary seasonally, from day to day, as well as by the time of day. Pollutants in the air can trigger respiratory symptoms, for example a cough, breathing difficulties or wheeze in those people who are susceptible to a substance in the environment that can cause allergic symptoms (environmental allergies) if inhaled. These exposures can impact on how well controlled allergic rhinitis (hay fever), asthma and other allergic disorders are and, at worst, may contribute to a flare up or exacerbation which requires a GP appointment or even an Accident and Emergency visit.

So it is very important to be aware of the substances present in the air (environmental allergens) so that you can recognise if these are possible trigger factors which cause allergic symptoms that worsen your allergy.

Where air pollution comes from Traffic and Travel:

Traffic pollutants are a major source of airborne pollution, especially in busy urban areas. Particulates from diesel exhaust are a particular problem as they contain very small particles which can remain in the atmosphere for a long time and can be breathed in and deposited deep into the lungs causing symptoms in respiratory conditions. The very small particles can pass into the bloodstream and cause cardiovascular disease. Outdoor

air pollution can also access our living and working spaces creating additional sources of exposure.

Travel, whether commuting to work or to school by your own or public transport, can lead to daily exposure as these pollutants can enter through open doors and windows.

Burning of fossil fuels:

Burning of fossil fuels is also a significant source of air pollution and the UK government, in association with industry, is working to promote cleaner fuel and invest in new technology.

Farming and agriculture:

Ammonia emissions from the agricultural sector also contribute to pollution in urban areas. Ammonia is emitted during the storage and spreading of manure and slurries and from the application of inorganic fertilisers. As well as causing damage to sensitive natural habitats, ammonia emissions can contribute to particulate pollution.

Wood burning stoves and open fires:

These can also make a contribution to the tiny particles in the air that can be inhaled and deposited in the lungs, especially if wet or damp wood is burned.

Weather and pollen:

The season, climate and weather conditions can all influence the levels of pollen in the atmosphere. Weather conditions that cause rapid changes in wind, temperature and humidity can lead to a condition called 'Thunderstorm asthma'. This type of asthma is rare but is understood to be triggered by large amounts of small pollen allergen particles released into the air from pollen grains during summer thunderstorms. Warm, dry sunny days during the summer months commonly lead to high pollen counts. If your asthma or hay fever is triggered by pollens, then it is likely to be worse during the spring and summer months when the tree and/or grass pollen levels are at their highest.

Key facts:

Pollutants in the air can trigger **respiratory symptoms**, for example a cough, breathing difficulties or wheeze

Where pollution is a trigger **avoid** regular physical activity alongside **high volume traffic**

Traffic pollutants are a major source of airborne pollution, especially in busy urban areas

Allergy UK Helpline

Mon-Fri, 9am-5pm:

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Visit us at:

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What you can do to help reduce your exposure to air pollutants/allergens

Monitoring air pollution levels can help to make decisions about the time you spend outdoors so that you can help reduce your exposure and reduce the risk of exacerbating your asthma and/or allergic rhinitis symptoms. Information on air pollution levels can be found at the UK Air Information Source <https://uk-air.defra.gov.uk/> Make sure that you have the correct medications and treatments for your allergy and know how and when to use them. There many different types of medication and treatments available both over the counter and on prescription. Some common types include antihistamine tablets and syrups for children (these should be long-lasting and non-sedating) nasal saline douches and steroid nasal sprays. Some people with allergic rhinitis also have asthma. If this is the case make sure you have treatment for your asthma and know how to manage it. Better control of allergic rhinitis has been shown to result in better asthma control in both adults and children. Always discuss your medication needs and any concerns with pharmacist or your GP.

Top tips on avoidance

- Where pollution is a trigger avoid regular physical activity alongside high volume traffic roads or near other sources of combustion such as burning of wood, biomass, or other

materials

- When pollen is a trigger avoid activities and being outside on high pollen days, particularly during windy days and thunderstorms. Keep a current asthma action plan
- In choosing walking, biking or exercise routes consider your potential exposure to traffic pollutants and, if you can, choose routes that take you away from polluted areas.

Avoidance of air borne allergens and pollutants can be difficult but the following may help

- Check daily the pollen and air pollution forecasts where you live
- Consider reducing time spent outside during high pollen/pollution counts (e.g. If you usually exercise outside consider an indoor swim/gym session instead)
- Remain indoors (when possible) during high pollen seasons, particularly on windy days or after thunderstorms
- Avoid activities known to cause exposure to pollen, such as mowing grass
- Shower after outdoor activities where exposure to pollen has been high
- Use re-circulated air in the car when pollen/pollution levels are high, keeping windows closed
- If you cycle to work/school consider the use of a face mask that can filter small particulates

- Consider carpooling to work or shared school runs to minimise the amount of vehicles making the same journey
- Wearing sunglasses and a hat to prevent pollen getting onto the skin, eyes, hair.

What's happening around Air Quality in the UK?

The UK Department for Environment, Food and Rural Affairs published a Clean Air Strategy consultation document in 2018 which outlines its objectives to tackle the sources of air pollutants that damage human health and the environment. (<https://www.gov.uk/government/publications/clean-air-strategy-2019>)

Clinical contributions:

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Additional Resources / References

Asthma

<https://www.allergyuk.org/types-of-allergies/asthma-respiratory/>

Hay Fever and Allergic Rhinitis

<https://www.allergyuk.org/types-of-allergies/hayfever/>

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