

Asthma and allergy



The asthma–allergy connection

For many people with asthma, it is an allergy that brings on ('triggers') their asthma symptoms. In fact, allergy is a likely cause of asthma in 70–90 per cent of people with asthma.

In this situation, exposure to the substance to which you are allergic (the 'allergen') is considered to be an asthma trigger. The allergic reaction causing asthma may range from mild to severe and life-threatening.

Having asthma due to an allergy may mean you also have other signs of allergy, such as eczema and hay fever, after being exposed to the allergen. This is often due to an inherited tendency to develop allergy called 'atopy'.

How do you develop an allergy?

Development of an allergy usually involves:

- ▶ the genetic tendency to develop an allergy in the first place; and
- ▶ repeated exposure to small amounts of the allergen, often in early life, to become sensitised to it — this is called 'sensitisation'.

Sensitisation involves your immune system reacting abnormally during exposure to an essentially harmless substance, the allergen — for example, pollen or house dust mite faeces — by developing specific antibodies against it. These antibodies are designed to fight disease-causing invaders such as gut parasites. The type of antibody produced in an allergic reaction is called IgE (immunoglobulin E) antibody.

After repeated exposure to the harmless substance the immune system becomes primed and you have become sensitised to that substance. Your body now treats the substance as a harmful invader. Further contact with the allergen will result in the IgE antibodies swinging into action in what is called an 'IgE-mediated allergic reaction' — your IgE antibody sparks a series of chemical reactions in the cells of your airways to cause narrowing. This can then lead to some or all of the typical asthma symptoms of wheeze, cough, tightness in the chest and/or difficulty in breathing, with one of the symptoms being asthma in some people.

Your asthma triggers: allergy or not?

In some people, asthma does not involve an allergic reaction. For example, you may have asthma only after vigorous exercise — this is called exercise-induced asthma and has nothing to do with allergy.

The table below shows some common asthma triggers — those that are allergens are on the left, and those that can trigger asthma symptoms but do not involve an allergic reaction are on the right.

Common asthma triggers

Common asthma triggers	
Allergens (substances that produce an allergic reaction)	Other triggers
<ul style="list-style-type: none"> ▶ Dust mites and their droppings ▶ Pollens (usually from grasses, trees or weeds, rather than flowers) ▶ Animal dander (skin scales, or flakes from the hair or feathers of animals), saliva or urine ▶ Moulds ▶ Cockroach allergen (cockroach droppings found in the dust of houses where cockroaches are present) ▶ Some foods: shellfish, nuts, fish, eggs, milk, seeds (e.g. sesame seeds) ▶ Occupational allergens (e.g. sawdusts, soldering flux) 	<ul style="list-style-type: none"> ▶ Some medicines such as aspirin ▶ Air pollution (including cigarette smoke) ▶ Exercise ▶ Emotions and emotional reactions such as stress, anxiety, hearty laughing or crying ▶ Heartburn (reflux) ▶ Viral respiratory infections ▶ Cold air and ambient temperature changes ▶ Some food additives (sulphur dioxide is the food additive most likely to trigger asthma)

Allergens that cause asthma are usually breathed in, but rarely they may be swallowed, applied to the skin or injected.

Having asthma that is brought on by an allergy means you are also likely to have asthma in response to other common non-allergic asthma triggers. This is because your inflamed airways will have become hypersensitive and will react (narrow) in response to many inhaled irritants, not just to your allergen. So your asthma may be triggered by things such as cold air, strong perfume scents or disinfectant fumes, and polluted air.

An allergy to a food is an uncommon cause of asthma, and food allergies must be confirmed by testing organised by your doctor. However, if you do have asthma triggered by a food allergy, especially to nuts, it can be a severe, even life-threatening, allergy. If you do have a proven food allergy causing asthma, you must completely avoid that food.

'Occupational asthma' is an important cause of asthma due to allergy in adults. Workers can become sensitised to substances in their workplace that are breathed in. Examples of allergens involved in occupational asthma include the chemicals in paints and varnishes, soldering flux, wood dust, inhaled flour, grain mite, and metal salts. Going on holidays, that is, away from the allergen, often improves or resolves the symptoms.

Finding out if an allergy is triggering your asthma

When your asthma is diagnosed, your doctor may refer you to an allergy clinic to find out which, if any, allergens are causing the asthma. This usually involves skin-prick tests or blood tests called radioallergosorbent tests (RASTs).

If a baby has a recurring wheeze, and other members of the baby's family have allergies or asthma, a doctor may suspect asthma in the baby on the basis of this family history. However, asthma in babies can be difficult to distinguish from other more common causes of wheeze that can occur at this age.

Sometimes, identifying an allergen that is triggering your asthma seems clear cut, as the asthma symptoms come on soon or

very soon after you are exposed to a particular substance. Allergy tests aim to confirm which allergens are triggering your asthma, and so allow you to take steps to avoid being exposed to these allergens in the future. It is important that a doctor interprets any allergy test results to help identify the true triggers of your asthma, as a positive skin test may not always mean that the suspect allergen is causing the symptoms in your lungs.

The National Asthma Council advises that unorthodox allergy tests such as Vega testing, iridology and kinesiology are unproven as methods of detecting allergy. For allergy diagnosis, see your doctor.

Controlling your allergy and your asthma

Although it would seem sensible to avoid breathing in allergens that trigger your asthma, the National Asthma Council warns that many strategies to avoid inhaled allergens have not been proven to reduce asthma symptoms. It also states that these measures can be expensive and inconvenient.

However, some people with asthma may benefit from reducing their exposure to inhaled allergens. For house dust mites this involves making your house a less favourable place for the dust mite to live, for example, covering mattresses and pillows in dust mite covers, removing soft toys from the bedroom, and selecting furniture and cleaning methods that make controlling dust build-up easier and more effective.

If you have an allergy to animal dander, animals should not be kept in the house. To prevent the build up of moulds, which can contribute to asthma and allergy, keep your house well ventilated. However, on high-pollen, windy days shutting the windows and doors can help those with pollen allergy.

For further advice on how to minimise your exposure to allergens, see your doctor or contact your local asthma or allergy association.

Immunotherapy is a treatment for allergies that may have a role in some people with allergies that are not triggered by foods. Immunotherapy is carried out by an allergy specialist and involves a series of injections of increasing amounts of your allergen over 2-3 years. The aim is to decrease your sensitivity to the allergen, and so settle your asthma symptoms that arise from exposure to the allergen.

Immunotherapy is not a substitute for asthma medicines, and is not suitable for everyone with asthma. Ask your doctor for advice.

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