

Allergies

Introduction

Allergy, sensitivity or intolerance

Allergy - this is a reaction produced by the body's immune system when it encounters a normally harmless substance.

Sensitivity - this is the exaggeration of a normal side effect produced by contact with a substance. For example, the caffeine in a cup of coffee may cause extreme symptoms, such as palpitations and trembling, when it would usually only have this effect when taken in much larger doses.

Intolerance - this is where a substance (such as lactose) causes unpleasant symptoms (such as diarrhoea) for a variety of reasons, but does not involve the immune system. People with an intolerance to certain foods can typically eat a small amount without having any problems. In contrast, people with a food allergy will have a bad reaction even if they come into contact with a tiny amount of the food to which they are allergic.

An allergy is an adverse reaction that the body has to a particular food or substance in the environment.

Most substances that cause allergies are not harmful and have no effect on people who are not allergic.

The allergic response

Any substance that triggers an allergic reaction is called an allergen. Some of the most common allergens include pollen, house dust mites, mould and pets. Less common allergens include nuts, fruit and latex.

An allergy develops when the body's immune system reacts to an allergen as though it is a threat, like an infection. It produces antibodies to fight off the allergen, in a reaction called the immune response.

The next time a person comes into contact with the allergen, the body "remembers" the previous exposure and produces more of the antibodies. This causes the release of chemicals in the body that lead to an allergic reaction.

Common allergic disorders include asthma, eczema and hay fever. Symptoms of an allergy can include sneezing, wheezing, coughing and skin rashes. The nature of the symptoms depend on how you came into contact with the allergen. For example, you may experience problems with your airways if you breathe in pollen.

Seeing your DOCTOR

If you think you have an allergy, tell your DOCTOR about the symptoms you are having, when they happen, how often they occur and if anything seems to trigger them.

You may be offered a skin prick test to identify the allergen that is causing your symptoms.

How common are allergies?

Allergies are very common. One-in-four people suffers from an allergy at some time in their lives. The numbers are increasing every year and as many as half of those affected are children.

The reason for the rise is unclear. Some experts believe it is associated with pollution. Another theory is that allergies are caused by living in a cleaner, germ-free environment, which reduces the number of germs our immune system has to deal with. This causes it to overreact when it comes into contact with harmless substances.

Managing an allergy

The most effective way of managing an allergy is to avoid all contact with the allergen causing the reaction. Taking medication can't cure your allergy, but it can treat the common symptoms.

Symptoms of allergies

Allergic reactions do not happen the first time you come into contact with an allergen, but at a later point of contact.

This is because the body's immune system has to develop sensitivity to the allergen before you can become allergic to it. In other words, your immune system needs to recognise and memorise the allergen (for example, pet hair or pollen) and then make antibodies against it. This process is known as sensitisation.

The time taken to become sensitised to an allergen varies from days to years. Some people stop in the sensitisation phase, experiencing symptoms but never fully developing an allergy to the allergen.

Typical allergic reactions involve irritation and inflammation (swelling) in the body.

Symptoms may include:

sneezing

wheezing

sinus pain (pressure or pain high up in the nose, around the eyes and at the front of the skull)

runny nose

coughing

nettle rash (hives)

swelling

itchy eyes, ears, lips, throat and palate (roof of mouth)

shortness of breath

sickness, vomiting and diarrhoea

It is important to remember that these symptoms can also be caused by other conditions, so see your DOCTOR for advice if you're not sure what's causing your symptoms.

Anaphylaxis

In very rare cases, an allergy can lead to a severe allergic reaction called anaphylactic shock, which can be fatal.

Most allergic reactions occur locally in a particular part of the body, such as the nose, eyes or skin. In anaphylaxis, the allergic reaction involves the whole body and usually happens within minutes of coming into contact with a particular allergen.

The symptoms of anaphylactic shock can include any or all of the following:

swelling of the throat and mouth

difficulty swallowing or speaking

difficulty breathing

a rash anywhere on the body

flushing and itching of the skin

stomach cramps, nausea and vomiting

a sudden feeling of weakness due to a fall in blood pressure

collapse and unconsciousness

You can read up on anaphylaxis for more information on a severe allergic reaction. If you have anaphylactic shock, you will require emergency treatment, usually with an injection of a medicine called adrenaline.

Causes of allergies

An allergy develops when the body's immune system reacts to an allergen as though it is harmful, like it would an infection.

It produces a type of antibody (protein that fights off viruses and infections) called immunoglobulin E (IgE) to fight off the allergen.

When the body comes into contact with the allergen again, IgE antibodies are released, causing chemicals to be produced. Together, these cause the symptoms of an allergic reaction.

One of the chemicals involved in an allergic reaction is histamine, which causes:

tightening of your muscles, including those in the walls of your airways
more mucus to be produced in your nose lining, causing local itching and burning

Common allergens

An allergen is any substance that causes your body's immune system to overreact and produce antibodies against it.

There are thousands of allergens that can trigger allergies, but some of the most common include:

house dust mites

grass and tree pollens

pet hair or skin flakes

fungal or mould spores

food (particularly milk, eggs, wheat, soya, seafood, fruit and nuts)

wasp and bee stings

certain medication, such as penicillin

latex

household chemicals

Who is at risk?

Some people are more likely to develop an allergy because it runs in their family. If this is the case, you are said to be atopic, or to have atopy. People who are atopic are more likely to develop allergies because their body produces more IgE antibodies than normal.

Environmental factors also play a part in the development of allergic disorders. The exact role of the environment is unknown, but studies have shown that several factors seem to increase the chance of a child developing atopy, such as:

growing up in a house with smokers

exposure to house dust mites

exposure to pets

using antibiotics

Boys are more likely to develop atopy than girls, as are babies who have a low birth weight. The reasons for this are unclear.

Diagnosing an allergy

A skin prick test is the first test your doctor will suggest if they suspect an allergy

If you think you have an allergy, tell your DOCTOR about the symptoms you are having, when they happen, how often they occur and if anything seems to trigger them.

Your DOCTOR will also want to know if any family members have similar symptoms, or if there is a family history of allergy.

After asking about your allergy history, your DOCTOR may carry out tests to identify the allergen that is causing your symptoms, or refer you to a specialist at an allergy clinic.

Even if you think you know what's causing the allergic reaction, you may need to be tested to determine the exact allergen and get a definite diagnosis.

The type of test you are offered will depend on your symptoms, the condition of your skin and any medication you are taking. Possible tests include:

Skin prick test. This is usually the first test to be done when looking for an allergen. The skin is pricked with a tiny amount of the suspected allergen to see if there is a reaction. If there is, the skin around the prick will very quickly become itchy, red and swollen. Because the skin prick test introduces such a tiny amount of allergen into the skin, the testing is considered very safe and can be used on almost any age group, including babies. However, it may not be suitable if you have severe eczema or if you are taking antihistamines.

Blood test. This is used to measure the amount of IgE antibodies in your blood that have been produced by your immune system in response to a

suspected allergen. The results are given on a scale from zero to six: zero indicates a negative result and six indicates an extremely high sensitivity. Blood tests are particularly useful when you are at risk of an extreme reaction or when a rare allergen is suspected.

Patch test. This test is used to find an allergen causing eczema (contact dermatitis). A small amount of the suspected allergen is added to special metal discs, which are then taped to your skin for 48 hours and monitored for a reaction. This test is usually carried out at a dermatology (skin) department in a hospital.

The use of commercial allergy-testing kits is not recommended. Also, allergy tests should be interpreted by a qualified professional who has detailed knowledge of your symptoms and medical history.

Treating allergies

Severe allergic reactions (anaphylaxis) are treated with an adrenaline injection.

Wherever possible, the most effective way of managing an allergy is to avoid all contact with the allergen.

Medication

Medication can't cure your allergy, but can be used to treat the common symptoms of an allergy, such as a runny nose, itchy mouth and sneezing. Most treatments are available over the counter but always ask your pharmacist or DOCTOR for advice before starting to take any new medication.

Antihistamines

Antihistamines treat allergies by blocking the action of the chemical histamine, which the body releases when it thinks it is under attack from an allergen. Antihistamines can be taken in tablet, cream or liquid form, or as eye drops or nasal sprays.

Nasal sprays can be used to reduce swelling and irritation in your nose, and eye drops will help to relieve sore, itchy eyes. Some sprays and

drops are only suitable for adults, so always ask your DOCTOR or pharmacist for advice before buying treatments for yourself or your children.

Decongestants

Decongestants help to relieve a blocked nose, which is often caused by hay fever, a dust allergy or a pet allergy. Decongestants can be taken as tablets, capsules, nasal sprays or liquids. They should not be used long-term.

Leukotriene receptor antagonists

Leukotriene receptor antagonists are tablets that block the effects of leukotrienes, which are chemicals released during an allergic reaction that cause inflammation (swelling) of your airways. They are used to treat asthma when other treatments have failed, and as a supplement to steroid treatment.

Steroid sprays

Corticosteroid sprays designed to act on the nasal lining and airways are effective in suppressing inflammation, particularly nasal congestion. Absorption into the body is minimal, so adverse side effects are avoided.
Hyposensitisation (immunotherapy)

Another form of treatment for allergies is hyposensitisation, also known as immunotherapy.

Hyposensitisation works by gradually introducing more and more of the allergen into your body to make it less sensitive to it.

The allergens are usually given as injections under the skin of your upper arm. In the initial stages of treatment you will be given injections at intervals of a week or less, while allergen doses are gradually increased. When you reach the "maintenance dose", a dose that is effective in reducing your normal allergic reaction, you will need to continue to have injections of this dose every few weeks for at least two years.

Hyposensitisation is normally only recommended for the treatment of severe allergies (such as hay fever and pet allergies) that have not responded to other treatments, and for specific allergies such as bee and wasp stings.

This type of treatment must only be carried out under the close supervision of a doctor in a hospital, because there is a risk that it may cause a serious allergic reaction.

Treating anaphylaxis

If you have anaphylactic shock, you will need emergency treatment with an injection of adrenaline into the muscle.

If you have an allergy that could cause anaphylactic shock, or if you have had a severe allergic reaction in the past, you will be given an auto-injection kit of adrenaline. This is an easy-to-use syringe that you should carry with you at all times. The brands currently prescribed in the UK are the EpiPen and Anapen.

You might also want to consider wearing a medical information bracelet or another form of identification that carries information about your condition.

Preventing allergies

The best way to prevent an allergic reaction is to avoid the allergen that causes it.

This is not always easy. Allergens such as house dust mites or fungal spores can be hard to spot and can breed in even the cleanest house.

It can also be hard to avoid pets, particularly if they belong to friends and family, and many food allergies are triggered because people do not realise they are eating food to which they are allergic.

Below is some practical advice that should help you to avoid the most common allergens.

House dust mites

One of the biggest causes of allergies are dust mites. Dust mites are microscopic insects that breed in household dust. Below are ways that you can limit the amount of mites in your house.

Choose wood or hard vinyl floor coverings instead of a carpet.

Fit roller blinds that can be easily wiped clean.

Clean cushions, soft toys, curtains and upholstered furniture regularly, either by washing (at high temperature) or vacuuming.

Use synthetic pillows and acrylic duvets instead of woollen blankets or feather bedding.

Use a vacuum cleaner fitted with a HEPA (high efficiency particulate air) filter, because it can remove more dust than ordinary vacuum cleaners.

Wipe surfaces with a damp, clean cloth, as dry dusting can spread the allergens further.

Concentrate your efforts at controlling dust mites in the areas of your home where you spend the most time, such as the bedroom and living room.

Pets

It's not the pet fur that causes an allergic reaction, it's exposure to flakes of their dead skin, saliva and dried urine.

If you can't permanently remove a pet from the house, you may find the following tips useful.

Keep pets outside as much as possible, or limit them to one room, preferably one without carpet.

Don't allow pets in bedrooms.

Wash pets at least once a fortnight.

Groom dogs regularly outside.

Wash all bedding and soft furnishings on which a pet has lain (ideally at 60C).

If you are visiting a friend or relative with a pet, ask them not to dust or vacuum on the day you are visiting, as this will stir up the allergens into the air. Taking an antihistamine medicine one hour before entering a pet-inhabited house can help to reduce symptoms.

Mould spores

Moulds can grow on any decaying matter, both in and outside the house. The moulds themselves aren't allergens but the spores they release are. Spores are released when there is a sudden rise in temperature in a moist environment, such as when central heating is turned on in a damp house, or wet clothes are dried next to a fireplace.

Here are some ways that you can prevent mould spores:

Keep your home dry and well ventilated.

When showering or cooking, keep internal doors closed to prevent damp air from spreading through the house and use extractor fans.

Do not dry clothes indoors, store clothes in damp cupboards or pack clothes too tightly in wardrobes.

Deal with any damp and condensation in your home.

Food allergies

Many people experience an allergic reaction while eating out at a restaurant. You can avoid this by:

not relying on the menu description alone (remember, many sauces or dressings could contain allergens)

communicating clearly with the waiting staff and asking for their advice
avoiding places where there is a chance that different types of food could come into contact with each other, such as buffets or bakeries

Remember, simple dishes are less likely to contain "hidden" ingredients.

Pollen allergies

Pollen allergies, more commonly known as hay fever, are caused when plants (trees and grasses) release pollen particles into the air. Different plants pollinate at different times of the year, so the months that you get hay fever will depend on what sort of pollen(s) you are allergic to. Typically, people are affected during spring (trees) and summer (grasses).

To avoid exposure to pollen you can:

Avoid drying clothes and bedding outside when the pollen count is high.

Wear wraparound sunglasses to protect your eyes from pollen.

Keep doors and windows shut during mid-morning and early evening, when there is most pollen in the air.

Shower, wash your hair and change your clothes after being outside.

Avoid grassy areas, such as parks and fields.

Get someone else to cut the grass for you if you have a lawn.

Severe allergies

If you have ever had a severe allergic reaction (anaphylaxis), make sure you carry two EpiPens with you everywhere you go.

Wear a MedicAlert or Medi-Tag medallion or bracelet so that people are aware of your allergy in an emergency, and consider telling your teachers, work colleagues and friends so they can give you your adrenaline injection in an emergency while waiting for an ambulance. Following this advice could save your life.