

Idiopathic anaphylaxis

The most frequent causes of anaphylaxis are allergy to certain foods, medicines and insect stings, but sometimes a cause can't be found. This is called idiopathic anaphylaxis. Here we explain some possible causes, how your specialist will try to find the cause, and how to treat any future reactions.

What is idiopathic anaphylaxis?

Anaphylaxis (pronounced ana-fil-ax-is) is a serious allergic reaction that affects the whole body. It can be life threatening, so it always needs treating straight away. There are some common causes of anaphylaxis including various foods, insect stings, latex and some medicines, but sometimes people have a reaction with no obvious cause or 'trigger'.

If allergy specialists can't find the cause using medical tests, they will refer to the reaction as '**idiopathic anaphylaxis**', which means 'cause unknown'. This doesn't necessarily mean there was no trigger, it simply means that no trigger can be found.

External and internal causes

Sometimes there could be an unusual trigger such as a rare food allergen for which there is no skin or blood test, or which tests don't pick up.

Sometimes there is no 'external' trigger, such as a food or medicine, but the cause is 'internal', where the immune system temporarily becomes more reactive. An overactive immune system usually settles down within a few weeks or months but can occasionally take a year or two.

If you have had any allergic reactions, visit your GP so you can find out what's going on. They can refer you to an allergy clinic if necessary.

What are the symptoms of idiopathic anaphylaxis?

The symptoms of idiopathic anaphylaxis are the same as anaphylaxis where the cause is known. Symptoms usually come on quickly, within minutes of coming into contact with the allergen (the food or substance that triggers the reaction). However, there are rarely delayed responses to specific triggers which may be overlooked.



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Most healthcare professionals consider an allergic reaction to be anaphylaxis when it involves difficulty breathing or affects the heart rhythm or blood pressure. Any one or more of the following symptoms may be present – these are often referred to as the ABC symptoms.

- **AIRWAY** - swelling in the throat, tongue or upper airways, hoarse voice, difficulty swallowing.
- **BREATHING** - sudden onset wheezing, breathing difficulty, noisy breathing, persistent cough.
- **CIRCULATION** - dizziness, feeling faint, sudden sleepiness, confusion, pale clammy skin, loss of consciousness or collapse.

In extreme cases there could be a dramatic fall in blood pressure. The person may become weak and floppy and may have a sense of something terrible happening. Any of the ABC symptoms may lead to collapse and loss of consciousness and, on rare occasions, can be fatal.

[Read more about anaphylaxis.](#)

Other symptoms

Other symptoms that might be present include:

- a red raised itchy rash (known as hives or urticaria) anywhere on the body
- swelling of the face, lips and/or eyes
- a tingling or itchy feeling in the mouth
- mild throat tightness
- stomach pain, vomiting or diarrhoea

These symptoms can also happen on their own. If you don't have the ABC symptoms, the reaction is likely to be less serious and is not the same as anaphylaxis, but watch carefully in case ABC symptoms develop.

Recognising idiopathic anaphylaxis

The first episode of idiopathic anaphylaxis tends to be the most frightening because the person has no understanding of what's happening or what to do about it. After that, you may recognise the symptoms and be able to act quickly.

Getting a diagnosis

If you have had symptoms that you think were caused by an allergic reaction, see your GP as soon as possible. They can refer you to a specialist allergy clinic if needed. They can find a clinic in your area from the [British Society for Allergy and Clinical Immunology \(BSACI\)](#).

Once you get a referral, the consultant will discuss your medical history and symptoms with you. They might suggest skin prick tests, blood tests, and food challenge tests to help find out what caused your reaction and work out how serious your allergy may be.

If they can't find a cause, they might use the term idiopathic anaphylaxis. A diagnosis of idiopathic anaphylaxis should only be made after an extensive medical investigation, including a review of all hospitalisation and A&E records.

Sometimes the cause of your first reaction may not be obvious, but might become clearer if you have further reactions.

[Read more about allergy testing.](#)

Treating symptoms of anaphylaxis

If you have mild allergic symptoms, you may be prescribed antihistamine medicine that you take by mouth. But if you are at risk of a serious allergic reaction (anaphylaxis), you may be prescribed adrenaline – the emergency medicine used to treat anaphylaxis. It is also known as epinephrine.

Because anaphylaxis can happen very quickly, adrenaline is available in different forms that are designed to be easy to use. It's important to know exactly how and when to use your prescribed adrenaline. Healthcare professionals can show you how to use it, and there are also resources such as practice devices and videos on manufacturer websites.

Options currently available on prescription in the UK include:

- **Adrenaline auto-injectors (AAIs)** – such as EpiPen and Jext.
- **Intranasal adrenaline** – EURneffy, a needle-free nasal spray.

You must carry two in-date forms of prescribed adrenaline at all times as a second dose may be needed if symptoms do not improve after five minutes or get worse.

[Find out more about adrenaline.](#)

If you have asthma and it is not well controlled, this could make an allergic reaction worse. Make sure you discuss this with your GP or allergy specialist and take any prescribed medicines.

If you have idiopathic anaphylaxis it's a good idea to wear a medical identification bracelet or talisman.

[Read more about what to do in an emergency.](#)

Treatments when the cause is an overactive immune system

If your anaphylaxis is caused by a temporary increase in the reactivity of the immune system, and you are having reactions often, you might need treatment to help your immune system settle down and prevent further serious reactions. For example, you might be prescribed antihistamines or steroids to take by mouth every day for a few weeks or months. For some people, it can take up to two years for your immune system to settle down.

What are the most likely causes of reactions?

Food

Foods eaten a few minutes before the start of a reaction are often the most likely cause. The food can be hidden in something such as a soup or fruit salad, or there could be cross-contamination – where one food comes into contact with another at some point during production or cooking.

Many foods have been known to trigger anaphylaxis including the [14 most common food allergens](#). Rarer causes include a range of spices and additive-colourants from natural foods.

There are some unusual cross reactivities such as to pink peppercorns in some people with cashew and pistachio allergy.

If you last ate more than an hour before having a reaction, it's less likely the food was the cause, but there are some rare food allergies where there is a delay between eating and having a reaction, such as alpha-gal (in red meat) allergy, or LTP allergy which tends to cause delayed symptoms from 30 minutes to 2-3.

If you or your consultant think a particular food caused your reaction, but skin or blood tests are negative, your consultant may suggest an oral food challenge test. This is where you eat a very small amount of the food and gradually build up the amount until you either have a reaction or it's clear that the food is not the cause. This must only be done under medical supervision in case you have a serious reaction.

Food plus exercise

Occasionally, a food allergy only causes a reaction if you exercise or are exposed to particular medicines, Non-Steroidal Anti-inflammatory Drugs (NSAIDs) or alcohol soon before or after eating. The most well-known is wheat allergy dependent on augmentation factors (WANDA, previously called wheat-dependent, exercise-induced anaphylaxis [WDEIA]). WANDA is usually caused by sensitisation to the allergen omega-5 gliadin in gluten for which there is an allergy blood test. [Read more about reactions to food with exercise.](#)

Medicines

Medicines including vaccines, insulin, antibiotics, painkillers, Angio-tensin-Converting Enzyme (ACE) inhibitors (used to lower blood pressure) and anti-inflammatories and anaesthetics can cause reactions. Even medication that you've taken for years can suddenly cause anaphylaxis. If skin tests are not available for a given medication, you may need to stop taking it for a short time and then take a test dose. This must be done under supervision in hospital. Read more about [drug allergy](#).

Insect stings

Reactions to insect stings can cause a large swelling at the site of the sting, but can sometimes lead to anaphylaxis.

[Read more about allergy insect stings.](#)

Latex

Latex allergy is an allergy to natural rubber latex which is used in medical equipment as well as many everyday products. It's most common in people who come into contact with it often. There are tests available to help reach a diagnosis.

[Read more about latex allergy.](#)

Other possible causes

Sometimes the cause of reactions is less obvious than the more common causes. Here are a few possibilities.

Lupin

The seeds from some varieties of lupin are milled to make flour, which is used in baked goods such as pastries, pies and pancakes, and in pasta. Lupin is not commonly used as an ingredient in the UK but is used more commonly in mainland Europe, where lupin allergy is more common. If you had a reaction after eating foods made with flour, this could be the cause, especially if you'd eaten baked goods imported from Europe. Lupin must be listed in the ingredients when present in pre-packed food.

[Read more about lupin allergy.](#)

Buckwheat

Buckwheat is not often used in the UK and allergy to buckwheat is rare, so it's easy to miss. Buckwheat does not have to be emphasised in ingredient lists, in bold for example, but it does have to be listed. Despite its name, buckwheat is unrelated to wheat. It's sometimes used in gluten-free foods, savoury pancakes and crepes, and Japanese noodles.

[Read more about buckwheat allergy.](#)

Flour contaminated by mites

Some people have had allergic reactions soon after eating foods made with wheat flour that has been contaminated with mites. This is known as oral mite anaphylaxis, or 'pancake syndrome'. It's most common in tropical and subtropical countries, but there have been cases in the UK. People have had reactions after eating flour or cereals such as pancake mix that have been stored in opened packets for some time at home. It can look like the cause was flour, rather than the mites.

The oleosins in sesame

Proteins called oleosins are the major cause of reactions in sesame seeds. They account for about a third of cases of sesame allergy. Because oleosins don't dissolve in water, they can't be identified by skin or blood tests. This means an allergy could mistakenly be classed as idiopathic when the true cause is sesame seeds. An oral food challenge test may be used for cases where sesame allergy is suspected but tests have come back negative.

[Learn more about sesame allergy.](#)

Exercise-induced anaphylaxis (EIA)



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This is a serious allergic reaction that is brought on by exercise. Sometimes there are other factors involved too, such as certain foods or cold weather. It's not common and needs to be diagnosed by an expert. If you've had allergy symptoms during or soon after exercise, ask your GP to refer you to an allergy clinic.

[Read more about exercise-induced anaphylaxis.](#)

Cold induced urticaria/anaphylaxis

Rarely, anaphylaxis can be caused by cold temperatures. This can be accompanied by a red raised rash known as hives or urticaria. People who have 'cold urticaria' will have a rash when their skin is exposed to cold air or water, such as unheated swimming pools or rain. If you've had a rash brought on by cold, it's possible that future reactions could lead to anaphylaxis, and sudden cold immersion such as diving should be avoided so ask your GP to refer you to an allergy clinic.

Alpha-gal allergy (delayed allergy to red meat)

Alpha-gal allergy is an unusual type of food allergy. It is an allergic reaction to a carbohydrate (sugar) known as alpha-gal which is found in the muscles of mammals. It usually starts when you are bitten by a tick which carries alpha-gal in its saliva, causing you to become 'sensitised'. Then if you eat red meat in future, you might have a reaction. It is unusual in the UK but there are some cases.

The symptoms of alpha-gal allergy are usually delayed, appearing two to eight hours after eating – unlike most other food allergies where symptoms usually start within minutes.

[Read more about alpha-gal allergy](#)

Polyethylene Glycol (PEG) allergy

PEGs, also known as macrogols or E1521, are chemicals that are widely used in processed foods, medicines, vaccines, cosmetics and household products. For example, in the coating of tablets, creams, some laxatives and bowel preparations, and the Pfizer BioNTech and the Moderna covid-19 vaccines.

PEG allergy is very rare, but your doctor may suspect it if you have had serious allergic reactions after taking medicines and the cause is unconfirmed. Or, if you have had repeated serious reactions to several different drugs or other products containing PEGs.

If you have idiopathic anaphylaxis, speak to an allergy specialist before having a vaccination.

[Read more about PEG allergy.](#)

When there is more than one trigger

A small number of people have anaphylaxis that only happens when two triggers are present at the same time. This makes getting a diagnosis difficult and the symptoms may be classed as idiopathic. Here are a few examples.

- **Food plus medicines** - a small number of people have had allergic reactions when they've taken medicines such as aspirin, ibuprofen or other non-steroidal anti-inflammatory drugs (NSAIDs) before eating a certain food such as wheat.
- **Food plus medicines and exercise** – as above, but this has been known to cause a more serious reaction.
- **Exercise plus other factors** – sometimes exercise only causes a reaction when there's another factor involved at the same time, such as a certain food, medicine, cold weather, or cereal mites that are sometimes present in opened packets of cereals such as flour. This can make it harder to spot the cause.
- **Exercise plus cold weather** - Some people have had allergic reactions caused by exercise in winter when the weather is cold. You will need to avoid exercising in cold temperatures if cold is one of your triggers.
- **Cereal mites plus exercise** - A small number of cases have been reported of people having serious reactions brought on by exercise after eating cereals from packets that had been open for many months, such as pancake mix or breakfast cereals. These were caused by live mites in the cereals in combination with exercise.

Diseases that look like anaphylaxis

A number of conditions can cause symptoms that look like the symptoms of anaphylaxis but are actually caused by something else. Your allergy specialist will consider these when making a diagnosis.

Angioedema

Angioedema causes episodes of swelling due to a build-up of fluid anywhere on the body, for example around the lips, face (especially around the eyes), tongue or upper airway. In many cases, no cause can be found and the episodes stop happening after a few weeks or months. If they go on for a long time, the most common cause is a side effect of ACE inhibitors – drugs used to lower blood pressure. This side effect might not start for several months or even years after starting ACE inhibitors, so this cause can

sometimes be missed.

Many people with angioedema also have a red, raised rash known as hives or urticaria which can look like an allergic reaction.

Hereditary angioedema

This is a rare, inherited form of angioedema. It is not caused by an allergy. As well as visible swelling, it can also cause stomach cramps, abdominal pain, nausea and diarrhoea. Symptoms can happen after an 'injury' to a certain area, such as dental work, and the swelling tends to be painful and slow to develop. It can be diagnosed based on blood tests and the absence of other symptoms of anaphylaxis. It has specific treatments which work well, so it's important to get an accurate diagnosis.

Spontaneous urticaria

A red, raised rash known as urticaria or hives can appear without an allergic reaction. This is called spontaneous urticaria. 10-20% of people have it at some point in their lives. If it lasts for more than six weeks, it's known as chronic spontaneous urticaria ('chronic' means long term).

Up to half of people with spontaneous urticaria will also have angioedema (swelling) at the same time, but not the other symptoms of anaphylaxis.

Histamine poisoning

Histamine can sometimes be present in fish that has gone off, especially tuna and mackerel, and can cause similar symptoms to an allergy. This is called scombroid poisoning. Unlike an allergy which only affects a small number of people, it usually affects anyone who has eaten the food, although some people might be more susceptible than others.

Mastocytosis and Mast-Cell Activation Syndrome (MCAS)

This is a rare condition where too many mast cells, a type of immune cell, gather in the tissues of the body. These are the cells that release histamine and other chemicals that cause the symptoms of allergic reactions. The condition is diagnosed using a special blood test which should be offered to anyone who has unexplained anaphylaxis.

Histamine intolerance

Variations in genes from chemicals which degrade histamine can be associated with excessive sensitivity to histamine. Some foods contain small quantities of histamine or have histamine releasing effects. Some medications can cause histamine release. In the presence of a genetic variation this can produce allergy-like symptoms.

Preparing for your appointment

If you have had symptoms that you think might have been caused by an allergic reaction, note down what happened and start keeping a record of any further reactions.

Important points to note down are:

- where you were when you had the reaction.
- the time of day.
- what you ate or drank in the hours and minutes leading up to the reaction.
- whether you took any painkillers or other medications within a few hours before the reaction.
- whether you were taking a medication known to cause allergic reactions.
- your general state of health.
- whether you were particularly hot, cold or stressed.
- whether you had been exercising at the time of the reaction or just before.

These details can help to build a picture of the problem and, if you have more than one reaction, can help spot a common thread.

Other things to consider

- Do you think a food is responsible? If so, try to get a detailed list of the ingredients of any foods, sweets or snacks you ate in the hours before a reaction.
- If you think a takeaway or restaurant meal might have caused your reaction, getting a full list of ingredients can help your specialist find the cause.
- Have you considered latex as a possible cause? Itchy or swollen lips after attempting to blow-up a balloon is a common sign.
- Have you considered medications as a possible trigger?

Key messages

- If you have had symptoms you think were caused by an allergic reaction, visit your GP who can refer you to an allergy specialist if needed.
- If you have been told you have idiopathic anaphylaxis, this doesn't mean there is no trigger, but that the trigger can't be found.
- A diagnosis of idiopathic anaphylaxis should only be given after extensive investigation to try to find the cause.
- Keep a record of any reactions you have to see if there is a common thread.
- Sometimes the cause is internal, meaning your immune system has become more reactive. There are treatments to help with this.



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- There are various possible causes you and your specialist can look into, such as lupin flour, latex, buckwheat, and exercising in cold temperatures.
- There are a number of conditions that cause symptoms similar to allergic reactions, which your specialist will try to rule out.
- If you are prescribed adrenaline to use in an emergency, keep two devices with you **at all times**.

Feedback

Please help us to improve our information resources by sending us your feedback at: -

<https://www.anaphylaxis.org.uk/information-resources-feedback/>

Sources

All the information we produce is evidence based or follows expert opinion and is checked by our clinical and research reviewers. If you wish to know the sources we used in producing any of our information products, please contact info@anaphylaxis.org.uk and we will gladly supply details.

Reviewer

The content of this factsheet has been peer-reviewed by Professor John Warner, Professor of Paediatrics at Imperial College London.

Disclosures

We are not aware of any conflicts of interest in relation to the review of this factsheet.

Disclaimer

The information provided in this factsheet is given in good faith. Every effort is taken to ensure accuracy. All patients are different, and specific cases need specific advice. There is no substitute for good medical advice provided by a medical professional.

About Anaphylaxis UK

Anaphylaxis UK is the only UK-wide charity solely focused on supporting people at risk of serious, life-threatening allergic reactions. We provide information and support to people living with allergies through our free national helpline. We also fundraise to

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achieve our ultimate aim, to create a safer environment for all people at risk of serious allergies. Visit our website www.anaphylaxis.org.uk and follow us to keep up-to-date with our latest news. We're on Facebook @anaphylaxisUK, LinkedIn, Instagram @anaphylaxisUK, Twitter @AnaphylaxisUK and you can find our podcast [here](#).