Anaphylaxis: the facts

Anaphylaxis (pronounced ana-fil-ax-is) is a serious whole-body allergic reaction. It can occur when someone is exposed to something they are allergic to (known as an allergen). Reactions usually begin within minutes and rapidly progress but can occur up to 2-3 hours later.

Anaphylaxis is potentially life-threatening, and always requires an immediate emergency response.

If you or your child have had anaphylaxis, this factsheet will help you understand more about the condition: what anaphylaxis is, what causes it, the treatment and what to do in an emergency.

If you have experienced an allergic reaction in the past, you may be at risk of anaphylaxis even if you have not had anaphylaxis before. We advise that you see your GP – they can refer you to an allergy clinic if needed.

What causes anaphylaxis?

The common causes of anaphylaxis include foods such as peanuts, tree nuts, milk, eggs, shellfish, fish and sesame seeds, although many other foods have also been known to trigger anaphylaxis. Some people can react to even tiny amounts of the food.

Non-food causes include wasp or bee stings, natural latex (rubber), and certain drugs such as antibiotics. In some people exercise can trigger a serious allergic reaction – either on its own or in combination with other factors such as food or drugs (for example, aspirin).

Sometimes the cause of the reaction is not found. This is called “idiopathic anaphylaxis” (cause unknown). Read our Idiopathic Anaphylaxis factsheet for more information.

https://www.anaphylaxis.org.uk/factsheets/

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What are the symptoms of anaphylaxis?

Most healthcare professionals consider an allergic reaction to be anaphylaxis when it involves difficulty in 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	Breathing	Consciousness/Circulation
• persistent cough • vocal changes (hoarse voice) • difficulty in swallowing • swollen tongue	• difficult or noisy breathing • wheezing (like an asthma attack)	• feeling light-headed or faint • clammy skin • confusion • unresponsive/unconscious (due to a drop in blood pressure)

If there is a dramatic fall in blood pressure, the person may become weak and floppy and may have a sense of something terrible happening. This may lead to collapse, unconsciousness and – on rare occasions – death.

In addition to the ABC symptoms listed above, the following less-serious symptoms may occur:

- widespread flushing of the skin
- rash (known as hives or urticaria)
- swelling of the skin (known as angioedema) anywhere on the body (for example, lips, face).
- abdominal (stomach) pain, feeling sick and vomiting

These symptoms can also occur on their own. In the absence of the ABC symptoms listed above, the allergic reaction is likely to be less serious, but you should watch carefully in case ABC symptoms develop.

Why does anaphylaxis occur?

An allergic reaction (including anaphylaxis) occurs when the body's immune system wrongly identifies a food or substance as a threat. When this happens, the body releases chemicals, such as histamine, in response. It is the release of these chemicals that causes the allergic symptoms.

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What is the treatment for anaphylaxis?

Adrenaline auto-injectors (AAIs) are prescribed for people at risk of anaphylaxis. Adrenaline is also known as epinephrine, which is its international name.

Because anaphylaxis can happen very rapidly, AAIs must be readily available. It is important you carry two, in-date, AAIs with you at all times. Use your AAI if you have any of the ABC symptoms of anaphylaxis above. If in doubt, give adrenaline. A second dose should be given after 5 minutes if symptoms do not improve.

After an AAI is used, someone must dial 999 immediately, even if there is improvement. Symptoms may return after a short period and more than one injection may be required. The emergency service operator must be told the person is suffering from anaphylaxis.

If the person's condition worsens after making the first 999 call, a second call to the emergency services should be made to make sure an ambulance is on its way.

Read our Adrenaline factsheet for further information about adrenaline and AAIs.
https://www.anaphylaxis.org.uk/factsheets/

What should I do if I'm worried that my allergy may be serious?

See your GP as soon as possible, even if you are unsure about how serious your allergy is. Your GP can refer you to an allergy clinic for further investigation and allergy testing. Your GP can find allergy clinic information by visiting the British Society for Allergy and Clinical Immunology (BSACI) website: https://www.bsaci.org/find-a-clinic/index.htm

For information, a guideline has been issued by the National Institute for Health and Care Excellence (NICE), covering assessment and referral for anaphylaxis. Read the guideline here:
https://www.nice.org.uk/guidance/cg134

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What will an allergy clinic do?

The clinic will take a detailed history of previous reactions and other allergic conditions you or your child may have, such as asthma, eczema or hay fever. Allergy tests, such as skin prick tests and blood tests, can also provide valuable information. Together, this can help predict the likelihood that a specific food or substance will cause an allergic reaction. They do not predict how serious a reaction might be, but your reaction history can help the doctor decide whether to prescribe AAIs.

Occasionally a "food challenge" may be offered to confirm a diagnosis of allergy to a specific food or to rule out food allergy. The person will be asked to eat small amounts of the suspect allergen, gradually increasing the amount. Such tests should only be done in an allergy clinic under controlled conditions.

Similarly, a challenge, under carefully supervised conditions, may be needed if you have a suspected allergy to a prescribed drug. This is because the tests currently available may not provide a reliable diagnosis.

What increases the risk of anaphylaxis?

There are times when you may be at an increased risk of anaphylaxis. These include:

- if you have asthma that is poorly controlled
- if you are suffering from an infection, or have recently had one
- if you exercise just before or just after exposure to the allergen
- during times of emotional stress
- if you have been drinking alcohol

If you are allergic to a food, the amount eaten may also be important – for many people, the more of the food allergen they eat, the higher the risk of anaphylaxis. The way the allergen in the food is prepared and the degree of cooking is also important. For some foods, cooking can reduce the risk of reaction, while for others, the opposite is true.

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What can I do to protect myself?

1. If you have asthma as well as allergies, make sure your asthma is well-managed – regular asthma reviews will help with this.
2. If you have been prescribed AAIs, make sure you carry them with you at all times and know how to use them. You should practise regularly with a trainer device. You can order trainer devices for free directly from your AAI manufacturer's website.
3. Think ahead. Write out an emergency allergy action plan and make sure those around you know how and when to administer your AAI. The BSACI has allergy action plans for children, available to download from its website. https://www.bsaci.org/professional-resources/resources/paediatric-allergy-action-plans/

What should I do in an emergency?

1. Use your AAI immediately if you have any signs of anaphylaxis. If in doubt, use your AAI.
2. Straight after using your AAI, dial 999 and say anaphylaxis ("ana-fil-axis").
3. Lie down and raise your legs.
4. If you are struggling to breathe, sit up but don't change position suddenly. Lie down again as soon as you can.
5. Stay lying down even if you are feeling better.
6. Use your second AAI if symptoms haven't improved after 5 minutes.

Biphasic anaphylaxis

If you have anaphylaxis, you will need to be observed in hospital after you have recovered. This is because in around 1 in 25 cases, a second "wave" of symptoms can develop. This is referred to as a biphasic reaction. Around half of biphasic reactions occur within 6-12 hours of the initial reaction. Biphasic reactions are less common with food-induced reactions compared to other, non-food triggers.

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Does the risk of anaphylaxis get less over time?

There is no evidence that the risk of anaphylaxis gets less over time; however, some people will outgrow their allergies. This is more common in young children, particularly those allergic to cow's milk, egg and wheat.

What is mastocytosis?

In most cases of anaphylaxis there is a trigger, such as a food, drug or insect sting. However, anaphylaxis can also occur in people who have a very rare condition called mastocytosis.

Mastocytosis is caused by too many "mast cells" gathering in the tissues of the body. These are the main cells that release histamine and other chemicals that cause the symptoms of allergic reactions. If you have this condition, it's important that your doctor identifies mastocytosis as the cause of your symptoms. For further information visit: http://www.nhs.uk/conditions/Mastocytosis/Pages/Introduction.aspx

Key messages

- If you suspect you have an allergy, see your GP.
- If you are prescribed AAIs, carry two with you at all times.
- Use your AAI as soon as you notice any signs of anaphylaxis – make sure you know what the signs are so you can act quickly.
- Make sure you know how to use your AAI and get a trainer device from the manufacturer to practise.
- Do your research. If the allergen that affects you is a food, read food labels very carefully every time and ask direct questions wherever food is served.

Feedback

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

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

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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 Dr Paul Turner, Reader in Paediatric Allergy and Clinical Immunology at the National Heart & Lung Institute, 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 and local support groups. We also campaign and fundraise to 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 @anaphylaxixUK, LinkedIn, Instagram @anaphylaxisUK, Twitter @AnaphylaxisUK and YouTube.

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