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Anaphylaxis

Anaphylaxis is a severe allergic reaction that can be life threatening if not treated in time. It is usually caused by bad reactions to certain foods, medicines, or insect bites and stings. Knowing the signs and acting quickly when you see them can save lives.

If you have an allergy that can cause a bad reaction, you can use our information to talk to your doctor about ways to prevent serious problems.

What is anaphylaxis?

Allergies are common. For example, many people get symptoms such as sneezing, coughing, and itchy eyes from things like pollen (hay fever) and animal fur. And some people get a rash or temporary swelling from some medicines and foods.

But in some people the allergic reaction is much worse and can lead to life-threatening heart and breathing problems. This is called anaphylaxis.

The causes of anaphylaxis seem to differ depending on your age. For example, the most common cause in children is food allergies. But in adults the main cause is medicines, notably penicillin and non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen.

Common food allergies that can trigger anaphylaxis include:

- celery
- fish
- hens' eggs
- legumes (this includes peas and some types of beans)
- milk
- mustard
- nuts
- sesame
- shellfish, and
- soya.

It can be hard to predict and control the causes of allergic reactions. For example, with some triggers, such as nuts and shellfish, just a tiny amount can cause a severe reaction.

And sometimes it takes a combination of things to cause anaphylaxis. For example, a bad reaction can sometimes be triggered by:

- exercising. This can happen a little while after eating something you are allergic to. But it can also happen without eating the food that causes the problem
- a sudden change in the temperature around you.

As well as medicines and foods, severe allergic reactions can sometimes follow things like:

- contact with latex rubber, and
- stings from wasps, bees, ticks, and some types of spider and ant.

What are the symptoms?

The symptoms of anaphylaxis are similar to the symptoms of any allergic reaction, but they are much more severe and affect the whole body. These symptoms usually come on suddenly and can include:

- breathing problems caused by swelling in the throat and lungs
- a hoarse voice
- a rash, which can be itchy
- swelling of the lips, tongue, or throat
- swollen and watery eyes
- a runny nose
- dizziness, confusion, and possibly fainting
- nausea, vomiting, and diarrhoea, and
- stomach pain.

If you are treated in hospital for suspected anaphylaxis your doctor will check your medical records for any mention of allergies.

He or she will also ask you, or perhaps someone who came with you to hospital, about anything that might have caused a reaction: for example, what you have recently eaten, or whether you have taken any medicines or been stung by an insect.

Your reaction might have been caused by something that you already knew you were allergic to. Or the cause might have been something you didn't know about. Either way, it's important to find out so that you can try to prevent it happening again.

Your doctor might want to do some tests to find out what caused your reaction. But the tests will usually have to wait. The most important thing is that you get immediate treatment to combat the reaction.

If you do have tests, they might include:

- a blood test to check that you have had an allergic reaction, and
- skin tests to find out what caused the reaction.

Skin tests can be done with patches or with small needles. The idea is to touch or gently prick your skin with a tiny amount of things that are common causes of allergic reactions.

If exposure to a substance causes swelling or a rash in the area of the test, this is a good sign that you are allergic to it.

What treatments work?

People having a severe allergic reaction usually need emergency treatment that aims to do two things:

- reverse the effects of anaphylaxis, and
- help the heart and lungs to work properly.

Adrenaline (epinephrine)

You might have heard of adrenaline being used to treat anaphylaxis. Doctors usually call it by its medical name of **epinephrine**. It's a hormone produced in the body's adrenal glands. It helps in several ways, including by:

- reducing swelling
- tightening blood vessels so that your blood pressure doesn't fall too low, and
- making your heart beat faster. This combats one part of the allergic reaction, which is to make the heart slow down or stop.

The epinephrine is given as an injection into a muscle, and you might need to have several.

You will also need to stay in hospital for a few hours after having epinephrine injections. This is because the symptoms of anaphylaxis can sometimes come back a little while after you have the injections. This is called a **biphasic reaction**.

Your heart and lungs

Emergency treatment to keep your heart and lungs working might involve having a tube inserted through the throat and into the lungs so that air or oxygen can be given more easily.

To keep your heart working properly you might then be given intravenous (IV) fluids. This helps to make sure there is enough blood in your blood vessels to keep your heart working well.

Other treatments

As well as epinephrine, you might be given medications to help with other symptoms of anaphylaxis. These might include:

- inhaled medications to help you breathe more easily. These are some of the same medications that people with asthma use

- antihistamines. These are medicines commonly used to treat allergies. They can help relieve symptoms like itching and rash
- intravenous (IV) drugs to reduce swelling. These anti-inflammatory drugs are called corticosteroids.

Auto-injectors

When you leave hospital after treatment, your doctor should give you a prescription for two **epinephrine auto-injectors**. You might hear these called '**epi pens**', as they look a bit like pens.

Your doctor should explain how you use the auto-injectors and you should carry both of them with you at all times in case you have another episode of anaphylaxis.

If you have children with allergies who are risk of anaphylaxis, your doctor should prescribe the auto-injectors along with a personalised written emergency plan.

Treatment for people with heart disease

If you have heart disease, your medication might make it harder to treat an anaphylactic reaction, and the anaphylaxis might be more dangerous for you.

If you know you have a severe allergy, a specialist heart doctor (cardiologist) should review your medication carefully. You can still have adrenaline, but tell the doctors looking after you that you have heart disease. They might want to discuss your treatment with a specialist as soon as possible.

Treatments to help prevent more problems

After your emergency treatment, when you are safely stable, your doctor might suggest that you have a treatment called **immunotherapy**.

This involves gradually exposing you to slightly bigger amounts of the thing you are allergic to, so that your body can cope with any accidental exposure.

The amounts will still be very small, and you probably won't be cured of your allergy. But it could help stop you having such a severe reaction again.

This type of treatment has to be done by a trained specialist. You should never try to do it yourself.

What will happen?

The most important thing to do after you have emergency treatment is to identify the thing that you are allergic to and that caused the attack. This helps you avoid it in the future.

Depending on what you are allergic to, this might involve things like:

- carefully reading food labels
- asking restaurants to tell you clearly what certain dishes do and don't contain

- doing everything you can to avoid certain insect stings
- telling your dentist and doctor if you are allergic to latex, and of course
- always carrying your auto-injectors with you.