22300VIC – Course in First Aid Management of Anaphylaxis

Learner Guide

What is anaphylaxis?

Most of us are allergic to something whether it be pets, pollen in the air or certain foods. Normally, our allergic reaction consists of mild discomfort and irritation and doesn't cause severe problems.

However, an increasing number of people suffer from a serious allergy known as anaphylaxis. This is a life threatening whole body allergic reaction. There can be a whole range of triggers such as peanuts, shellfish, latex etc

When the body detects this allergen, it reacts by releasing a large amount of inflammatory substances such as histamine.

These substances cause blood vessels throughout the body to widen, leading to a drop in blood pressure, and airways in the lungs to constrict and secrete mucus causing severe difficulty in breathing.

his often happens very quickly, possibly even seconds after coming into contact with the allergen. However the reaction can in rare cases be delayed up to 24 hours after the initial contact.

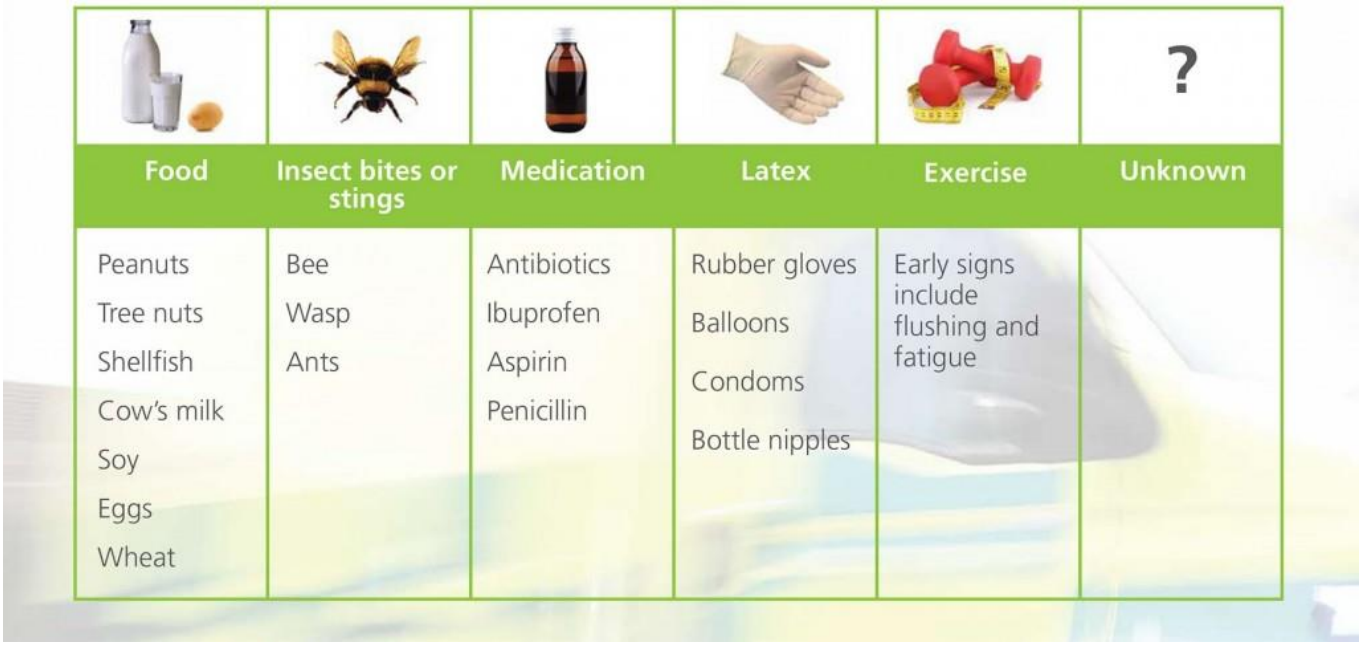
Anaphylaxis is an increasing problem, especially amongst children. It now affects approximately one in every fifty people.

People with other allergic conditions, such as asthma or the allergic skin condition atopic eczema, are most at risk of developing anaphylaxis.

Common triggers of Anaphylaxis

Most cases of Anaphylaxis involve a ‘trigger’. This is a substance which the body reacts too. Unfortunately many of these triggers are commonly used in everyday life.

Common triggers of Anaphylaxis include:



- Insect stings – bee, wasp or ants
- Food – peanuts, shellfish
- Medicines – antibiotics and painkillers
- Latex – rubber gloves, condoms

Sometimes, despite extensive testing, no trigger can be found for anaphylaxis, and the cause remains unknown. This is known as idiopathic anaphylaxis.

Living with Anaphylaxis

The following short video highlights the difficulties of living with life threatening allergies.

https://youtu.be/278WDuAaV3Q

Signs and Symptoms

Early recognition of anaphylaxis is critical. The reaction can develop over seconds to minutes and quickly become life threatening.

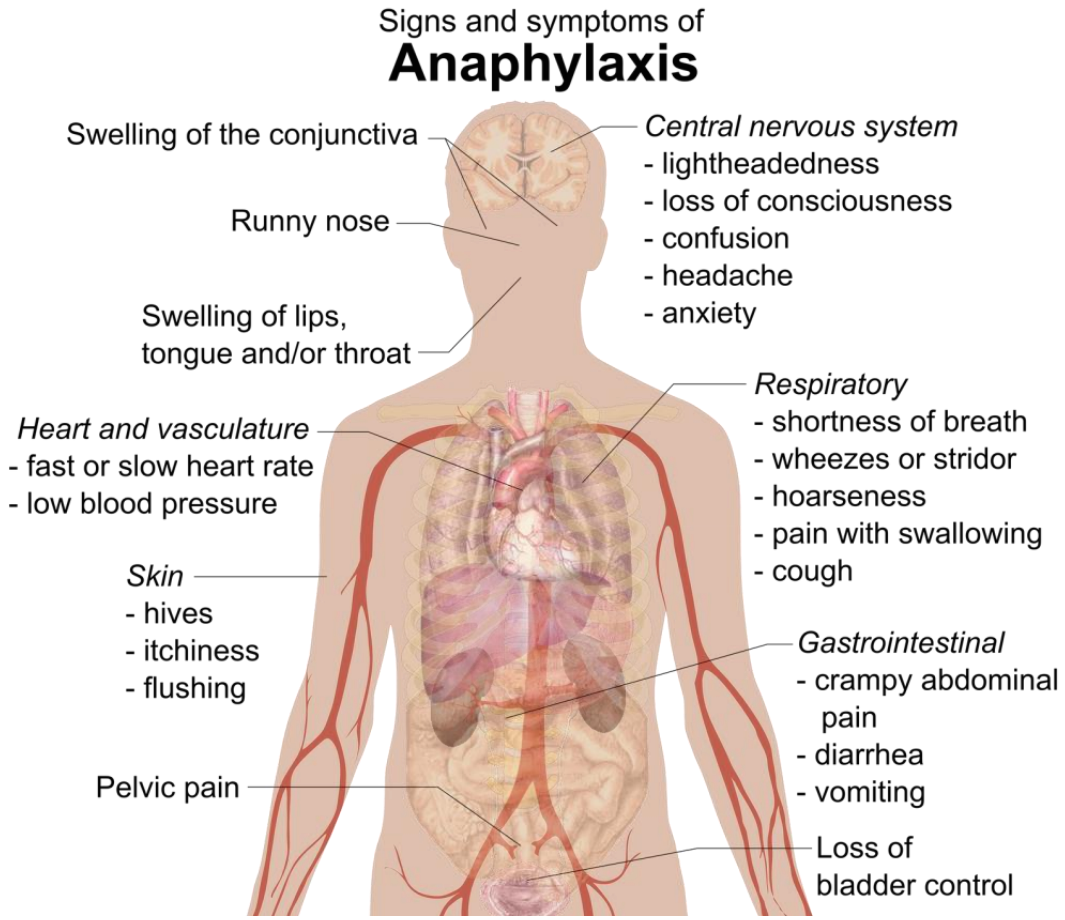
First of all, the person may tell you that they are allergic to something. Otherwise they may wear a bracelet around their wrist/neck/ankle with details of the nature and severity of their allergy.

The following are signs & symptoms of anaphylaxis. Each reaction will be different, and a person may not display all of these signs.

- **Difficulty in breathing & speaking**
- **Generalised rash and swelling over the whole body**
- **Swollen tongue/lips/face (see photo)**
- **Feeling faint/dizzy possibly leading to collapse**
- **Nausea and vomiting**
- **Signs of shock – pale/cold/clammy/weak pulse**

The difficulty in breathing is caused by constriction of the person's airway. In addition, they can suffer a severe drop in blood pressure leading to them feeling faint and possibly collapsing.

The following image demonstrates how anaphylaxis is a 'whole body' reaction and involves multiple organ systems:



Basic first aid steps

Once you suspect Anaphylaxis it is important to act as quickly as possible. The reaction may become life threatening within a matter of minutes.

Step 1: Phone for emergency medical help

Call for emergency medical help as soon as possible if you suspect an anaphylactic reaction. Do not delay calling for help to see if symptoms worsen.

When calling for help, ensure you clearly communicate your location and that the casualty has suspected anaphylaxis.

Step 2: Locate & use autoinjector

People who are known to have anaphylactic reactions may be carrying a device known as an autoinjector. They have a variety of different brand names including EpiPen, Jext and Emerade.

An autoinjector is a spring loaded syringe which allows the person to inject themselves with a lifesaving dose of adrenaline / epinephrine. It should be administered as soon as an anaphylactic reaction is suspected – do not wait!

Step 3: Monitor and reassure until help arrives

Monitor the person and provide reassurance until further medical help arrives.

Step 4: Be prepared to resuscitate

Severe Anaphylactic reactions can become life threatening in a matter of minutes. You should be prepared to perform Cardiopulmonary Resuscitation (CPR) if the casualty becomes unconscious and stops breathing.

How adrenaline / epinephrine helps

The initial treatment of Anaphylaxis involves administering Adrenaline / Epinephrine as soon as possible.

Note: Adrenaline and Epinephrine are the same thing. Epinephrine ('Epi') is the American name for Adrenaline.

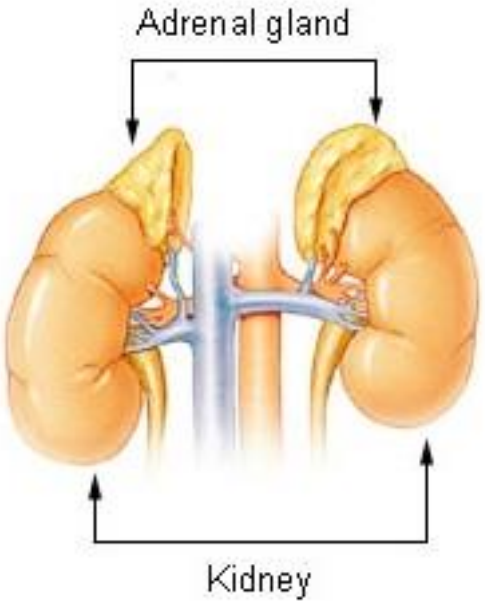
What is Adrenaline / Epinephrine?

Adrenaline is produced by the adrenal glands which sit above the kidneys. It plays a role in the fight or flight response.

This reaction causes air passages to dilate to provide the muscles with the oxygen they need to either fight danger or flee. Adrenaline also triggers the blood vessels to contract to re-direct blood toward major muscle groups, including the heart and lungs.

The body's ability to feel pain also decreases as a result of adrenaline, which is why you can continue running from or fighting danger even when injured.

How does this help in anaphylaxis?



Adrenaline has three main effects which help combat anaphylaxis:

It causes constriction, or tightening, of the blood vessels, which decreases swelling and also helps to increase blood pressure.

It increases the heart's contraction and heart rate, which can help to prevent or reverse cardiovascular collapse.

Adrenaline relaxes the muscles around the airways in the lungs, helping the airways to open up.

Adrenaline / Epinephrine autoinjectors

There are a variety of autoinjectors on the market. Although they all carry the same drug (adrenaline / epinephrine) they may operate in slightly different ways. Patients and their families should all be trained in how to operate autoinjectors.

The recommended site for injection for all autoinjectors is the side of the thigh. The drug is injected into muscle and not into a vein.

Autoinjectors require a prescription from a healthcare professional.

Training devices are available from the manufactures. These devices do not contain the needle or drug and can be used to practice the technique.

Here are instructional videos on how to use the three most common types of autoinjector: EpiPen, Jext and Emerade.

EpiPen **https://youtu.be/uSu6-R-6Cms**

Jext **https://youtu.be/3dm8kleUUXo**

Emerade **https://youtu.be/G7PUsftg9ls**

Insect stings

Not all insect stings result in Anaphylaxis. Most stings cause minor irritation and pain. Insect stings are incredibly common however so we have included a unit on them for this course.

It's estimated around 1 in 100 people will experience an allergic reaction after a wasp or bee sting, but only a small number of these people will go on to develop severe anaphylaxis.

First aid treatment for an insect sting

1**) Watch for any signs of Anaphylaxis** – things to watch out for include difficulty in breathing, severe swelling and redness over the whole body. If you suspect they are having an allergic reaction then call an ambulance immediately.

2) **If the 'stinger' is still visible in the skin then try to remove it.** It's best to try to brush the stinger away using a credit card / fingernail rather than using tweezers

3) **Cool the area using an ice pack** / bag of frozen peas / cold compress. This will help reduce the swelling and the pain.

If you are concerned at all about the sting then seek medical attention. If you suspect someone may be having a severe allergic reaction then you should call an ambulance immediately. Be wary of stings to the mouth / tongue as these can obstruct a person's breathing, always seek medical attention.