

Adrenaline for Treatment of Anaphylaxis

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Anaphylaxis is the most severe type of allergic reaction and should always be treated as a medical emergency. Anaphylaxis requires immediate treatment with adrenaline (epinephrine), which is injected into the outer mid-thigh muscle. Delayed treatment can result in fatal anaphylaxis.

Adrenaline is a natural hormone released by the body in response to stress. When injected, adrenaline rapidly reverses the effects of anaphylaxis by reducing throat swelling, opening the airways, and maintaining heart function and blood pressure.

Management of anaphylaxis

To manage anaphylaxis it is important to:

- Identify and avoid the cause where possible.
- Have an ASCIA Action Plan for Anaphylaxis and adrenaline injector close by (easily accessible) to treat if accidental exposure occurs.

ASCIA Action Plans for Anaphylaxis (emergency response plan) must be completed by a doctor and should be kept with the adrenaline injector as the plans include instructions on when and how to give an adrenaline injector.

Adrenaline injectors contain a single, fixed dose of adrenaline, and have been designed to be given by non-medical people, such as a friend, teacher, children's education/care worker, parent, passerby, or by the patient themselves (if they are not too unwell to do this).

Use of adrenaline in anaphylaxis assists the body's natural response

The body's natural response to anaphylaxis is to release adrenaline, a natural antidote to some of the chemicals released as part of a severe allergic reaction (anaphylaxis). Therefore, injected adrenaline assists the body's natural response.

As adrenaline is destroyed by enzymes in the stomach, it needs to be injected. It cannot be given by mouth, and inhaled adrenaline is ineffective.

Adrenaline injected into the outer mid-thigh muscle works rapidly to reduce throat swelling, open up the airways, and maintain heart function and blood pressure. It is the only medication available for the immediate treatment of anaphylaxis.

The potential risks of NOT giving adrenaline far outweigh the potential risks of giving adrenaline

If anaphylaxis is suspected, give the adrenaline injector, as not giving the adrenaline injector can be more harmful than giving it, even when it may not have been necessary. If in doubt, give the adrenaline injector.

Common side effects of adrenaline include increased heart rate, trembling and paleness. Therefore, someone may look unwell even after the adrenaline injector has been given.

Whilst needles may sometimes hurt, you have to remember why you are using it and that adrenaline can be life-saving.

Adrenaline should be injected into the outer mid-thigh muscle

Adrenaline is absorbed most rapidly when injected into the outer mid-thigh muscle. Injecting into the outer mid-thigh also makes it extremely unlikely that damage to any nerves or tendons will occur, or that it will be inadvertently injected into an artery or vein. It is also the least painful part of the body to give an injection.

Adrenaline injectors available in Australia and New Zealand

EpiPen® and Anapen® adrenaline injector devices are available on PBS authority prescription in Australia.

EpiPen® is also available in New Zealand (Pharmac listed since 1 February 2023).

There are three doses of adrenaline injectors:

- Adrenaline injectors (150 micrograms) are usually prescribed for children weighing 7.5-20kg (e.g. EpiPen® Jr or Anapen® 150).
- Adrenaline injectors (300 micrograms) are usually prescribed for children over 20kg and adults, including pregnant women (e.g. EpiPen® or Anapen® 300).
- Adrenaline injectors (300 or 500 micrograms) are usually prescribed for children or adults over 50kg, including pregnant women (e.g. EpiPen® or Anapen® 300 or Anapen® 500).

Each adrenaline injector contains a single fixed dose of adrenaline. It is designed to be used as a first aid device by people without any medical or nursing training. Instructions for adrenaline injectors are shown on the ASCIA Action Plans for Anaphylaxis that are available on the ASCIA website www.allergy.org.au/anaphylaxis

It is important to check that you have been given the ASCIA Action Plan which matches the device you have been prescribed.

If you or your child has been prescribed an adrenaline injector, it is important that you learn and practise how to use it, using a trainer device that does not contain adrenaline. It is recommended that you practise using the trainer device at least every three to four months.

Store adrenaline at room temperature

Adrenaline injectors should be stored in a cool dark place at room temperature, but NOT refrigerated as this can damage the injector mechanism. Whilst they should be kept out of the reach of small children, adrenaline injectors must be readily available when needed and not in a locked cupboard. The shelf life of adrenaline is normally one or two years from the date of supply. You need to regularly check the expiry date on the adrenaline injector.

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