PROCEDURE

Giving yourself an epinephrine shot

A self-administered epinephrine injection into the outer thigh to treat suspected anaphylaxis.

PURPOSE
Reverse a severe allergic reaction quickly

PROCEDURE TYPE
Therapeutic bedside intramuscular injection using an auto-injector

WHERE IT IS DONE
Wherever symptoms occur, followed by emergency medical care

ANAESTHESIA
None

HOW LONG IT TAKES
About 2 to 10 seconds, depending on device

PREPARATION
Keep your prescribed device available and learn its instructions

RECOVERY
Emergency assessment; do not drive yourself after anaphylaxis

MAIN RISKS
Racing heart, tremor, accidental hand or foot injection

RESULTS
Symptom response may begin within minutes

Overview

Epinephrine, also called adrenaline, is the first-line treatment for anaphylaxis. Anaphylaxis is a severe allergic reaction that can affect breathing, blood pressure, or several parts of the body at once.

An epinephrine auto-injector contains a measured dose of medicine. You press it firmly against the outer thigh, and the device delivers the medicine into the thigh muscle. Some devices provide spoken instructions.

Epinephrine narrows widened blood vessels, raises dangerously low blood pressure, reduces swelling, and helps open the airways. It works best when given promptly. Antihistamines like cetirizine or loratadine cannot replace it.

Using epinephrine does not end the emergency. Call emergency services after the injection because symptoms can continue or return.

Why the procedure is performed

You may be prescribed epinephrine if you are at risk of anaphylaxis. Possible triggers include foods, insect stings, medicines, latex, or other allergens. Sometimes the trigger is unknown.

Your allergy action plan should explain when to use your device. Warning signs may include:

Skin symptoms are common, but anaphylaxis can occur without hives.

Do not wait for every possible symptom to appear. If your action plan tells you to use epinephrine, use it promptly.

- Trouble breathing, wheezing, throat tightness, or a hoarse voice
- Swelling of the tongue or throat
- Faintness, collapse, confusion, or signs of very low blood pressure
- Rapidly developing symptoms in more than one body system, such as hives with vomiting or breathing trouble

Who should and should not have it

A self-administered epinephrine shot is intended for someone who has been prescribed an appropriate device and has signs covered by their emergency action plan. If you cannot inject yourself, another person can usually give the injection.

There is no absolute medical reason to withhold epinephrine during suspected life-threatening anaphylaxis. Pregnancy, heart disease, older age, and medicines such as beta blockers like metoprolol or propranolol may affect treatment or monitoring, but they are not reasons to delay needed epinephrine.

An injection may not be the right response for a mild, isolated symptom that is not progressing, such as a small patch of itchy skin with normal breathing and no other symptoms. Follow your individual action plan because early anaphylaxis can initially seem mild.

Do not inject epinephrine into a vein, the buttock, or your hands or feet. Do not use a device that has already fired. If the solution is discoloured, contains particles, or the device is damaged, use an undamaged in-date device when one is available. In an emergency, call emergency services for immediate guidance rather than delaying care.

How to prepare

Learn your device before an emergency happens. Auto-injectors are not all operated in the same way. The location of safety caps, required holding time, and spoken prompts can differ.

Your prescribing or treating facility's instructions take priority over the general information in this article.

Preparation includes:

Ask your healthcare team for a written allergy action plan. Medical identification jewellery may also help others understand what is happening.

- Read the instructions supplied with your exact device
- Practise with a needle-free trainer if one is provided
- Keep the device accessible rather than locked away
- Check its expiration date and viewing window regularly
- Store it according to its label, protected from damaging heat or light
- Carry the number of devices prescribed for you
- Make sure family, friends, school staff, or coworkers know where it is

What happens during the procedure

Follow your device instructions and action plan. The general process is:

Many auto-injectors can work through clothing, but check your device instructions. Avoid seams, pockets, or objects in the clothing.

Sit or lie safely while waiting for help. In general, avoid standing or walking suddenly. If breathing is difficult, you may be more comfortable sitting with your legs extended. If you are vomiting or unconscious but breathing, another person should place you on your side. Pregnant people are generally positioned on their left side.

If symptoms do not improve or return, a further dose may be needed. Use another prescribed device according to your action plan, the product instructions, or directions from emergency services.

- Remove the auto-injector from its carrier.
- Take off its safety cap or caps only when you are ready to inject.
- Place the correct end against the middle of your outer thigh at a right angle.

- Press firmly until the device activates, then hold it in place for the time stated in its instructions.
- Remove the device carefully, keeping your fingers away from the needle end.
- Call emergency services and say that epinephrine was used for suspected anaphylaxis.

Recovery and what to expect afterward

The injection may cause a brief sting or soreness in your thigh. A racing or pounding heartbeat, shakiness, sweating, headache, paleness, or anxiety-like feelings can occur as epinephrine takes effect.

Once you are medically stable, you can usually eat and drink normally unless the emergency team advises otherwise.

Rest and avoid strenuous activity until you have been assessed. Anaphylaxis symptoms can return after seeming to improve, so emergency clinicians may monitor you. The length of observation is based on the severity of the reaction, your response, and whether you needed additional epinephrine.

Do not drive yourself after using epinephrine. Call emergency services rather than asking someone simply to drive you, because treatment may be needed on the way.

Return to work, school, exercise, or other usual activities only after you have recovered and received appropriate medical advice. Many people need the rest of the day away from normal activities.

Risks and possible complications

Epinephrine commonly causes temporary effects such as a fast heartbeat, trembling, headache, sweating, nausea, dizziness, or a feeling of nervousness. These effects must be weighed against the danger of untreated anaphylaxis.

More serious heart rhythm or blood pressure problems can occur, particularly in people with heart disease or when too much epinephrine is given. Correct auto-injector use reduces dosing mistakes.

Accidentally injecting a finger, thumb, hand, or foot can reduce blood flow to that area. This needs urgent medical assessment. Keep fingers away from both ends of the device because the needle location may not be obvious.

Moving during injection can cause a cut or needle injury. A child's leg should be held firmly by

another person during the injection.

Results and follow up

Breathing, swelling, faintness, or other symptoms may begin to improve within minutes. Improvement does not guarantee that the reaction is over. Symptoms can persist or return, and further treatment may be required.

There is no laboratory result from the injection itself. Emergency clinicians judge the result by checking your symptoms, breathing, pulse, blood pressure, oxygen level, and response to treatment.

After recovery, arrange routine follow-up with your usual healthcare team or an allergy specialist. Follow-up may include identifying the likely trigger, reviewing avoidance measures, updating your action plan, and checking your injection technique.

Replace every used device promptly. Also replace devices that have expired, been damaged, or have solution that no longer looks as described in the product instructions.

Alternatives

There is no equally effective over-the-counter substitute for epinephrine during anaphylaxis.

Antihistamines may reduce itching or hives, but they do not reliably treat throat swelling, breathing problems, or low blood pressure. Taking one instead of epinephrine can delay essential treatment.

An inhaled bronchodilator, sometimes called a rescue inhaler like albuterol or ipratropium , may help wheezing. It does not treat throat swelling, shock, or the full allergic reaction, so it is an add-on rather than a replacement.

A prescribed epinephrine nasal spray may be an option for some people. It avoids a needle, but eligibility and repeat-use directions are product-specific. Emergency assessment is still needed after use.

Emergency professionals can give epinephrine by injection. Waiting for them rather than using your prescribed device trades away valuable treatment time. Drawing epinephrine from a vial with a syringe carries a greater risk of dose and preparation errors and is generally reserved for trained healthcare settings.

When to call your healthcare team

Emergency: Use your prescribed epinephrine and call emergency services immediately for suspected anaphylaxis. Also seek emergency help if symptoms worsen, return, or do not improve after the first injection.

Get urgent medical care after an accidental injection into a finger, hand, foot, or another unintended area. Seek help for severe chest pain, collapse, or a very abnormal heartbeat after the injection.

Routine follow-up: Contact your healthcare team after the emergency to replace used devices and review what happened. Arrange a routine appointment if your device is nearing expiration, its solution looks abnormal, you are unsure how to use it, or your allergy risks have changed.

Common questions

Will I be asleep for the injection?

No. No anaesthetic or sedation is needed. An auto-injector is designed for immediate use while you are awake, although another person can give it if you cannot.

Can I drive myself to the hospital afterward?

No. Call emergency services. Anaphylaxis can worsen suddenly, and epinephrine may cause dizziness, shaking, or a racing heartbeat.

How painful is an epinephrine shot?

Most people feel a brief sting or pressure in the thigh. During a severe reaction, the injection discomfort is usually less important than treating the reaction promptly.

When will I know whether it worked?

Symptoms may start improving within minutes. Even if you feel better, you still need emergency assessment because symptoms may continue or return.

Can I inject it through my clothes?

Many auto-injectors can be used through clothing. Follow your device instructions and avoid thick seams or objects in pockets.

Where exactly do I inject it?

Use the middle of the outer thigh. Do not inject into your hands, feet, buttock, or a vein.

Sources

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