

Accidental Epinephrine Injections

Epinephrine auto-injectors are widely used to treat severe allergic reactions or anaphylaxis. The device is a single-use system containing a spring-loaded needle which will release 0.15mg or 0.3mg epinephrine when pushed swiftly and firmly against the skin (preferably against the outer thigh). The needle comes out of the black tip of the injector and can pose a threat to accidental injection. The most commonly reported area for accidental injection is the finger or thumb.



Although accidental injection can be a scary experience, most patients will be asymptomatic or have minor symptoms requiring no treatment at all. Some experience loss of circulation or numbness to the hand or finger but are expected to spontaneously and fully recover, usually within two hours. These patients should be examined for evidence of poor perfusion to the affected area, such as, pain, pallor, paresthesias, prolonged capillary refill, or a cool temperature. If no symptoms are present, the patient may be treated on site or discharged from the ED. Warm soaks and topical nitroglycerin are options for mild to moderate symptoms although it is unknown as to whether these treatments are beneficial or if symptoms would spontaneously resolve on their own. For major symptoms, phentolamine, an alpha blocker, is a treatment option to produce peripheral vasodilation. Diluted phentolamine mesylate 1.5mg in 1 milliliter of lidocaine 2% should be injected subcutaneously into the site until the area becomes pink. More than one injection (possibly two or three) may be necessary to completely restore perfusion to the affected site. Although rarely needed, this is the preferred treatment for severe cases of accidental injection and usually takes five minutes to an hour for complete reperfusion and recovery to occur.

The best way to prevent accidental injection is proper education and device training of all patients! It is also a good idea to have an extra epinephrine auto-injector in case an accident like this does occur.

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DID YOU KNOW THAT... Confusion between cardiac and anaphylactic epinephrine dosing can be life threatening?

The recommended dose for anaphylaxis is epinephrine 0.3 to 0.5mg (1:1,000) IM. For anaphylaxis symptoms refractory to IM doses, 0.1mg (1:10,000) IV is used. In the case of cardiac arrest, 1mg (1:10,000) IV push is used. Giving the cardiac dose in error has resulted in left ventricular dysfunction, arrhythmias, and cardiomyopathy. Mistakes can be avoided by clearly labeling epinephrine syringes as "anaphylaxis use only" or "cardiac arrest use only."



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