



**OVERVIEW**

Anaphylaxis is a severe, often life-threatening, allergic reaction that affects multiple body systems. The most dangerous symptoms are breathing difficulties and a drop in blood pressure (shock).

An anaphylactic reaction can be caused by any number of allergens to include peanuts, tree nuts, seafood, egg and milk products. Over 3 million people in North America suffer from a nut or peanut allergy.

People with uncontrolled asthma and a food allergy seem to have an increased risk of developing a more severe allergic reaction.

**SIGNS & SYMPTOMS**

Anaphylactic signs and symptoms do not appear in any particular order and no two reactions are the same (although each successive reaction can get worse).

Signs & Symptoms	Treatment
<ul style="list-style-type: none"><li>• Generalized itching</li><li>• Blotchy, raised, red bumps on the skin (hives)</li><li>• Wheezing, difficulty breathing</li><li>• Swelling – including throat, tongue and face</li><li>• Dizziness, light headedness</li><li>• Stomach cramps, vomiting, diarrhea</li><li>• Decreased LOC or unconsciousness</li></ul>	<ul style="list-style-type: none"><li>• Scene assessment and history - determine the cause and need for medication</li><li>• EMS activated</li><li>• Complete the primary survey (ABC's)</li><li>• Patient assisted to self-administer medication</li><li>• If the history is known, the rescuer can administer an epinephrine auto-injector to a patient with a decreasing LOC</li><li>• Monitor vital signs</li></ul>

**MEDICATION**

Epinephrine – alternately named adrenaline – is a hormone produced naturally in the body and is released in times of stress. An injection of epinephrine helps to reverse the effects of an anaphylactic reaction. Epinephrine can increase the heart rate, constrict blood vessels (increase blood pressure), and open airways (making breathing easier).

It is important to note that there are now three brands of epinephrine auto-injectors on the market, the EpiPen, the Twinject and the Allerject. All epinephrine auto-injectors come in two different dosage strengths.

- ▶ The smaller dose delivers 0.15 mg of epinephrine and is intended for patients who weigh 15 to 30 kg (33-66 pounds).
- ▶ The larger dose delivers 0.3 mg of epinephrine and is intended for patients who weigh 30 kg (66 pounds) or more.

## Principles of Epinephrine Auto-Injector Use

Before administering any epinephrine auto-injector:

- ▶ Determine the history to ensure that the patient is having an anaphylactic reaction.
- ▶ Activate EMS.
  - The effects of epinephrine wear off 10 to 20 minutes after injection. **ALL** individuals receiving epinephrine must immediately be transported to hospital.
- ▶ Only use the patient's epinephrine auto-injector to treat the anaphylactic reaction.
- ▶ Follow the directions on the epinephrine auto-injector.
  - **DO NOT** use the auto-injector regardless of the expiry date if the epinephrine solution is discoloured and/or has a precipitate.
  - Remove any protective caps or covers.
  - **DO NOT** touch the end of the auto-injector once the protective cap is removed.
  - Firmly press (do not stab) the auto-injector into the thigh and hold for 10 seconds. Do not inject epinephrine into any other muscle group (to include the buttocks).
  - Place the used auto-injector into a Sharps container.
  - Do not apply ice to the injection site.
- ▶ Monitor ABCs closely as the patient can experience tachycardia (rapid heart rate), palpitations (pounding heartbeat), pallor (paleness), dizziness, weakness, tremors (trembling), headache, throbbing, restlessness, anxiety and fear.
  - Often a patient will be directed by their doctor to take *Benadryl* (or another antihistamine) after their epinephrine injection. You can **assist** the patient in taking additional medication as directed by their physician.

## HOW TO USE THE EPIPEN

The EpiPen is the most common epinephrine auto-injector on the market. Once it has been determined that the patient requires a dose of epinephrine, the user will:



1. Check the condition of the solution in the window.
2. Remove the blue safety cap from the EpiPen®.
3. Do not place thumb on either end of the EpiPen.
4. Press the orange tip of the pen into **outer thigh** until there is a "click".
5. Hold the pen in place for 10 seconds
6. Massage injection site for quick dispersal of medication.
7. The orange tip will click down on cover the exposed needle. Put the needle into a sharps container.

More information and training videos are available at [www.epipen.ca](http://www.epipen.ca)

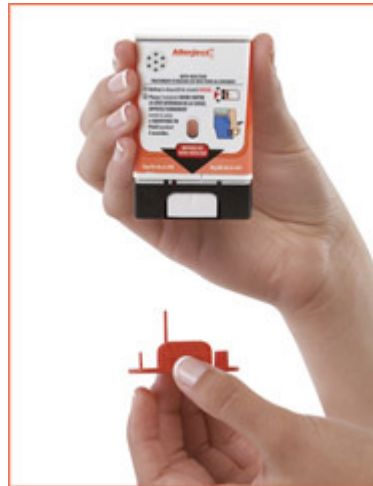
## HOW TO USE THE ALLERJECT

The Allerject™ contains an electronic voice instruction system to help guide users through each step of the injection and is available in either English or French. Once it has been determined that the patient requires a dose of epinephrine, the user will:

1. Pull the Allerject™ from the outer case and check the condition of the solution in the window.
  - ▶ If you are not ready to use the Allerject, put it back in the outer case.
2. Pull off the red safety guard
  - ▶ To reduce the chance of an accidental injection, do not touch the black base of the auto-injector.
  - ▶ The red safety guard is meant to be tight. **Pull firmly to remove.**
3. Place black end against the middle of the outer thigh and press firmly.
  - ▶ Hold in place for five seconds.
  - ▶ The Allerject™ makes a distinct sound (click and hiss) when you press it against the leg. This is normal and indicates that the Allerject™ is working correctly.
  - ▶ Massage injection site for quick dispersal of medication.



**STEP 1**



**STEP 2**



**STEP 3**

More information and training videos are available at [www.allerject.ca](http://www.allerject.ca)

## HOW TO USE THE TWINJECT

Twinject is the only available auto-injector that provides 2 doses of epinephrine in 1 device. The first dose is administered using the auto-injector. The second dose, if needed, is administered via a pre-filled syringe located inside the barrel of the device.

- ▶ 1 out of every 3 reactions will require a second dose of epinephrine within 10 minutes of the first dose. There is no way to predict how severe a reaction will be and for this reason, more patients who suffer from severe allergies are starting to carry the Twinject epinephrine auto injector.

The following steps outline the administration of the Twinject auto injector:

### Stuck by a Needle?

Although the NLS program trains candidates on how to safely handle an exposed auto-inject needle and encourages the use of a Sharps container, accidents can still occur. In the event that a rescuer has been "stuck by a needle"...

1. Allow the wound to bleed freely
2. Obtain the name, contact information and medical history of the patient
3. If applicable, notify the supervisor and follow workplace exposure procedures
4. Wash wound with soap and water
5. Get to a hospital within 2 hours

For more information, contact WorkSafe BC at 1-888-621-7233

1. Check the condition of the solution in the window.
2. Remove the **GREEN** safety caps labeled 1 and 2 from the Twinject.



3. Do **NOT** place thumb on either end of the Twinject, the **RED** tip on the Twinject is an auto-injector and is very sensitive.
4. Press the RED tip against the **outer thigh** and hold the pen in place for 10 seconds.
5. Massage injection site for quick dispersal of medication.
6. **Firmly grasp the RED tip of the injector (beware of the exposed needle) and unscrew the base from the RED tip.**
7. Monitor the patient's ABCs and their overall condition. **If there is no significant improvement within 10 minutes**, administer the second syringe dose.

8. Grab the **BLUE** plastic to pull syringe out of barrel – Do **NOT** touch the needle (note that the same needle is used to administer the second dose).



9. Slide **YELLOW** collar off the plunger. Do **NOT** pull up on plunger while removing the **YELLOW** collar.

10. Put the needle into the **outer thigh** of the leg opposite to the first injection.
11. Push plunger down all the way. Do **NOT** push on the plunger to put the syringe into the thigh; you will force all of the epinephrine out of the syringe.
12. Dispose the needle safely in a biohazard sharps container. If no sharps container is available, place it inside of the Twinject carrying case.

More information and training videos are available at [www.twinject.ca](http://www.twinject.ca)

