Anaphylaxis and Epinephrine Auto-Injector

Lesson Length: 45 minutes

Guidance for the Instructor
To complete this lesson and meet the lesson objectives, you must:

- Welcome participants and explain the purpose of the course.
- Conduct lectures for Recognizing Anaphylaxis and Caring for Anaphylaxis.
- Show the video segment, “Assisting with an Epinephrine Auto-Injector.”
- Conduct the Epinephrine Auto-Injector skill practice session.
- Conduct the Lesson Wrap-Up.

Lesson Objectives
After completing this lesson, participants will be able to:

- Describe anaphylaxis.
- Differentiate between a mild allergic and a severe (anaphylactic) reaction.
- Apply the emergency action steps to an anaphylaxis emergency.
- Identify the steps for administering an epinephrine auto-injector.
- Describe how to store and maintain an epinephrine auto-injector.

Materials, Equipment and Supplies

- One auto-injector training device for every two participants
- Disposable non-latex gloves
- Anaphylaxis course presentation or streaming video segment

Instructor’s Note:
This module was developed to address the need for training in the use of an epinephrine auto-injector device. The instructor should emphasize during the module that:

- This information is provided as general guidance only.
- In the event of differing advice, actual instructions or protocols from a health care provider for a specific person or situation should take precedence over instruction in this module.
- The instructions within the course are based on the widely available EpiPen®. If you are using a different epinephrine injector device, be sure to follow that manufacturer’s instructions.
Topic: Introduction
Time: 5 Minutes

Welcome

INSTRUCTION: Discussion

- Introduce yourself and have participants introduce themselves.
- Review any facility policies and procedures.
- Tell participants that the purpose of this module is to give individuals the knowledge and skills necessary to recognize anaphylaxis and give care for a person in anaphylaxis until advanced EMS personnel arrive and take over. This module includes the demonstration and skill practice session of an epinephrine auto-injector device.

Health and Safety Precautions for the Course

INSTRUCTION: Discussion

REFERENCE: First Aid/CPR/AED Instructor's Manual, Appendix C

- Explain to participants that standard precautions will be followed during this training.
- Ask participants to privately inform you if they have any medical condition or disability that might affect course participation.

Topic: Recognizing Anaphylaxis
Time: 12 minutes

What Is Anaphylaxis?

INSTRUCTION: Lecture

VISUAL AID: Presentation Slides 6-8

- Anaphylaxis is a severe allergic reaction that can be life threatening.
- Anaphylaxis can be caused by things people come into contact with every day. A substance that is normally harmless to others but causes an allergic reaction in certain individuals is called an allergen.
- If a person with a severe allergy comes into contact with an allergen, the body releases an excess of certain internal chemicals. Those chemicals released in the body can lead to all sorts of problems, such as difficulty breathing, shock and even death.
- Common allergens associated with anaphylaxis (note: this list is not all-inclusive): foods, particularly eggs, milk, peanuts, fish and shellfish, soy, tree nuts and wheat; also, insect stings, latex and medications, such as penicillin.
- A reaction can happen within minutes after the exposure to an allergen, although reactions vary among individuals and may be delayed.
Signs and Symptoms of Anaphylaxis

INSTRUCTION: Lecture

VISUAL AID: Presentation Slides 9-13

- Before giving care, it is important to know the signs and symptoms and be able to differentiate between a mild allergic reaction and a severe reaction (anaphylaxis).
- Signs and symptoms of mild allergic reactions include hives or rash, itching, and in individuals with food allergies, gastrointestinal complaints, such as nausea.
- Anaphylaxis requires special care. Any of the following three scenarios should lead you to suspect anaphylaxis:
  - A specific combination of signs and symptoms. First, look for any skin symptom, such as hives, itchiness or a red or flushed face, or look for swollen lips. Then, check for trouble breathing or signs of shock, such as pale, cool and sweaty skin; lightheadedness; weakness; or anxiety.
  - When you suspect someone has come into contact with an allergen, look for at least two of the following signs and symptoms: a skin symptom or swollen lips; difficulty breathing; signs of shock; or nausea, vomiting or cramping.
  - If you know someone has come into contact with an allergen and shows any signs or symptoms of shock, you will need to provide care for anaphylaxis.
- If you suspect someone is having an allergic reaction, always watch them for signs and symptoms of anaphylaxis for at least 2 hours.
# Topic: Caring for Anaphylaxis

**Time:** 23 Minutes

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<th>CHECK—CALL—CARE</th>
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<td><strong>INSTRUCTION:</strong> Lecture</td>
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<td><strong>VISUAL AID:</strong> Presentation Slides 14-19</td>
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- Follow the emergency action steps: **CHECK—CALL—CARE**.
- Check the scene. Use your senses (look, listen, smell) to gather information that will help you to determine:
  - Whether the scene is safe for you to enter
  - What happened to cause the emergency
  - How many people are involved
  - What condition the person is in
  - Whether anyone else is available to help

- **Check** the person for signs and symptoms of anaphylaxis, ask the person what happened (about exposure to known allergens), ask about a history of allergies and/or look for a medical ID bracelet. If safe, remove the person from contact with the allergen. For example, move the person away from bees.

- **Have Someone Call** 9-1-1 or the designated emergency number.
- If you are alone, help the person administer the medication and then call 9-1-1 or the designated emergency number.

- **Care** for anaphylaxis includes administration of epinephrine.
- You can help a person use an epinephrine auto-injector when:
  - The person has a previous diagnosis of anaphylaxis and has been prescribed an epinephrine auto-injector.
  - The person is having signs and symptoms of anaphylaxis.
  - The person requests the lay responder’s help to use an auto-injector.
  - State laws permit giving assistance.

- Encourage the person to sit down and lean forward to make breathing easier, if possible have the person lay down to reduce the risk of shock, and provide reassurance.

- In addition to epinephrine administration, the person will need additional medical care (monitoring and additional treatment).

- Help administer a second dose of epinephrine if the person is still having signs and symptoms 5 to 10 minutes after administering the first dose of epinephrine and emergency responders have not arrived.
What Is Epinephrine?

INSTRUCTION: Lecture

VISUAL AID: Presentation Slides 20-22

- Epinephrine is a medication that works in the body to counteract the internal chemicals that cause the anaphylactic reaction.
- People with severe allergies should carry an epinephrine auto-injector. An auto-injector is a device used to administer epinephrine. It is a spring-loaded syringe system containing a single dose of epinephrine, and it is available in adult and child doses (based on weight).
- Epinephrine auto-injectors are only available through a prescription.
- The prescription for an epinephrine auto-injector often comes with two devices because it may be necessary to administer a second dose.
- Be sure to inspect devices regularly for cloudiness of the solution, expiration or damage, which all could compromise the life-saving capabilities of the medication. Auto-injectors should be stored in a cool, dry location. Avoid prolonged contact with sunlight, excessive heat or cold temperatures.

Administering Epinephrine

INSTRUCTION: Lecture and Video

VISUAL AID: Presentation Slides 23-27

- Where state laws allow, some schools or organizations keep a stock epinephrine auto-injector for use in an anaphylaxis emergency. If using a stock epinephrine auto-injector:
  - Check for signs and symptoms of anaphylaxis.
  - Ensure that the person has been prescribed epinephrine in the past.
  - Determine the correct dose of epinephrine. Dose is based on the age and weight of the person. There are two auto-injectors available:
    - An auto-injector with a 0.15 mg dose of epinephrine for a child who weighs between 33 and 66 pounds
    - An auto-injector with a 0.3 mg dose of epinephrine for a child or adult who weighs more than 66 pounds
- Before administering epinephrine, determine if the person has already taken epinephrine. If so, a second dose should be administered ONLY when EMS personnel are delayed and if symptoms of anaphylaxis do not improve, or improve and then get worse again.
- Tell participants you are going to show them a video on administering an auto-injector. Show the “Assisting with an Epinephrine Auto-Injector” video segment.

INSTRUCTION: Practice

VISUAL AID: Presentation Slide 28

- Explain to participants that they are going to practice administration using an epinephrine auto-injector training device.
- Have participants choose a partner. One person will be the responder and the other the conscious person experiencing anaphylaxis.
- Have responders put on gloves.
- Tell participants not to strike their partner too hard with the training device.
- Guide participants through the skill.
- Have participants trade places, so all participants have an opportunity to be the responder.
Lesson Wrap-Up
Time: 5 Minutes

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<th>INSTRUCTION: Discussion</th>
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<td>Review key concepts. Ask participants:</td>
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**What is anaphylaxis?**
*Anaphylaxis is a severe allergic reaction that can be life threatening.*

**What symptoms suggest a mild reaction?**
*Signs and symptoms of mild allergic reactions include hives or rash, itching, and in individuals with food allergies, gastrointestinal complaints, such as nausea.*

**What would lead you to suspect anaphylaxis?**
- *A skin symptom or swollen lips + trouble breathing or signs and symptoms of shock = anaphylaxis.*
- *Suspected exposure + any 2 signs or symptoms = anaphylaxis.*
- *Known exposure + any sign or symptom of shock = anaphylaxis.*

**How should you respond to an anaphylaxis emergency?**
*Check the scene for safety. Check the person for signs and symptoms. If you suspect anaphylaxis, call or have someone else call 9-1-1. Then, assist the person with administering epinephrine.*

**Summarize the skills steps for using an epinephrine auto-injector.**
*See skill chart for complete steps.*

**Where should you store an epinephrine auto-injector?**
*Auto-injectors should be stored in a cool, dry location. Avoid prolonged contact with sunlight, excessive heat or cold temperatures.*

Tell participants:
You may take advantage of an offer for a free EpiPen® (epinephrine) Auto-Injector training device from Mylan Specialty, L.P. To request your complimentary training device, go to [https://www.epipen.com/en/resources/order-a-training-device](https://www.epipen.com/en/resources/order-a-training-device) or call toll free (866) 367-2678 and, when prompted, provide your name, mailing address, telephone number and quantity of training devices. You can expect to receive your training device(s) within 7 to 10 business days. The American Red Cross does not provide endorsements and assumes no responsibility for the products, services or communications offered by Mylan Specialty, L.P.
## Administering an Epinephrine Auto-Injector

After checking the scene and person and calling 9-1-1 or the local emergency number, check the auto-injector:

- Remove the auto-injector from its carrier tube or package, if applicable. Confirm it is prescribed for this person, if applicable.
- Check the expiration date of the auto-injector. If it has expired, do not use the auto-injector.
- If the medication is visible, confirm the liquid is clear and not cloudy. If it is cloudy, do not use it.

*Note: Put on gloves. These instructions are based on the EpiPen®. If you are using a different device, follow the manufacturer's instructions.*

### IF THE PERSON IS UNABLE TO SELF-ADMINISTER THE AUTO-INJECTOR, AND IF STATE REGULATIONS ALLOW:

1. Locate the outside middle of one thigh to use as an injection site.  
   *Note: If injecting through clothing, check that there are no obstructions at the injection site (such as the seam of pants, keys, cell phone).*

2. Grasp the auto-injector firmly in your fist, and pull off the safety cap with your other hand.  
   *Note: Hold the auto-injector with the orange needle end pointing down; pull straight up on the blue safety cap without bending or twisting it.*  
   *Note: Never put your thumb, fingers or hand over the ends.*

3. Hold the auto-injector (needle end) near the person’s outer thigh at a 90-degree angle (perpendicular) to the thigh.

4. Quickly and firmly push the tip straight into the outer thigh. You will hear a click indicating that the spring mechanism has been triggered.

5. Hold the auto-injector firmly in place for 10 seconds to deliver the medication.

6. Remove the auto-injector from the thigh and massage (or have the person massage) the injection area with gloved hands for 10 seconds.

7. Encourage the person to sit down and lean forward to make breathing easier, if possible have the person lay down to reduce the risk of shock, and provide reassurance.

8. Handle the auto-injector carefully, placing it in a safe container. Give it to EMS personnel when they arrive so the discharged device can be properly disposed.

9. After administering the injection, monitor the person’s response:
   - Continue to reassure the person.
   - Ask the person how he or she feels.
   - Check the person’s breathing.

   *Administer a second dose if EMS personnel are delayed and if symptoms of anaphylaxis do not improve, or improve and then get worse again.*