Anaphylaxis Education: Awareness Avoidance, Recognition, and Response

A Presentation for School Staff
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The learners will be able to adopt the knowledge and skills to feel confident in fulfilling their responsibilities of providing a safe learning environment and implementing an Emergency Action Plan for a student with a life-threatening allergy.
Learner Objectives

- Define Anaphylaxis
- List causes of anaphylaxis
- List common foods that can cause an anaphylaxis reaction
- Describe avoidance prevention measures associated with the causes of anaphylaxis
Describe their individual role and responsibilities to provide avoidance prevention measures for students with life-threatening allergies

Describe allergy symptoms that may require immediate emergency treatment
Learner Objectives cont.

- Demonstrate the ability to implement the emergency action plan for a student with a life-threatening allergy, including the administration of an epinephrine auto-injector and contacting emergency medical services.
AWARENESS of Anaphylaxis

Definition:

- Anaphylaxis is defined as a serious allergic reaction that is rapid in onset and may cause death.
Anaphylaxis can affect two or more systems in the body at the same time.

Anaphylactic reaction can occur within a few seconds to minutes to hours after exposure to an allergen.

Anaphylactic reaction can re-occur up to four hours after treatment.
Anaphylaxis is a medical emergency that requires medical treatment and follow up with a healthcare provider specializing in allergies.
AWARENESS of Anaphylaxis

Causes:
- foods
- insect stings
- latex
- medications
AWARENESS of Anaphylaxis

**Food Allergy:** Any food can trigger an anaphylactic reaction in the body. The top eight most common foods are peanuts, tree nuts (walnut, cashew, pecan etc.), shellfish, fish, milk, wheat and soy.

- Children often outgrow allergies to eggs, milk and soy
- Allergies to peanuts, tree nuts, fish and shellfish continue into adulthood
Food is the leading cause of anaphylaxis in children. Children who have asthma and food allergies are at a greater risk for anaphylaxis and may often react more quickly requiring aggressive and prompt treatment.
Insect Sting Allergy: An allergy to the venom of a stinging or biting insect including bees, hornets, yellow jackets, wasps and fire ants.

There is a greater risk of anaphylactic reaction if there are multiple stings at one time or repeated stings in the same season.

Immunotherapy is known to be effective in the protection against insect sting allergic reaction.
AWARENESS of Anaphylaxis

Latex Allergy:
Natural rubber products that can include but are not limited to:
- latex gloves, balloons, balls and gym equipment, and medical supplies.

There are two types of allergic reactions to latex:
- contact dermatitis which is a rash that can occur 12-36 hours after contact with a latex product
- immediate allergic reaction, which can lead to anaphylaxis.

Latex can become airborne, can be inhaled and come in contact with the nose or eyes and cause allergy symptoms.
Awareness of Anaphylaxis

Latex Allergy cont:

Students who have spina bifida, congenital urinary problems or have been exposed to many medical and/or surgical procedures seem to have a higher prevalence of developing an immediate allergic reaction.

Cross reactivity allergy: students who are allergic to latex may have an allergic reaction to certain foods with the same allergenic protein as latex: bananas, kiwi fruit, avocados and European chestnuts.
Awareness of Anaphylaxis

Causes:

Exercise and temperature variations of heat and cold have been documented to trigger an anaphylactic response in the body.

Some anaphylactic responses have no known cause.
AVOIDANCE of Anaphylaxis

- Prevention of exposure to an allergen is the key in avoidance of anaphylaxis.
- The classroom is the most common area where students in school have been reported to experience an allergic reaction.
- It is important to know what actions to take to avoid student exposure to an allergen.
AVOIDANCE of Anaphylaxis

Food:

- Avoidance of the food allergen is the key to preventing an allergic reaction.
- Persons who have experienced an anaphylactic reaction to a food must strictly avoid that food.
AVOIDANCE of Anaphylaxis

Food Avoidance Measures:

- **WASHING HANDS BEFORE AND AFTER EATING** – students and staff (Hand sanitizers are not effective in removing food allergens and dirt.)
- Clean surfaces and areas (cafeteria and classroom) per school district procedures to ensure allergen safe zones
- Use of separate utensils for food preparation
- Promote nonfood awards/celebrations, school projects, and fundraising efforts
- Establish a school rule to prevent food sharing during the school day
The majority of anaphylactic reactions in school are due to accidental exposure to a food allergen.
AVOIDANCE of Anaphylaxis

Insect:

Avoidance of insects is recommended for persons at risk for anaphylaxis
AVOIDANCE of Anaphylaxis

Insect Avoidance Measures:

- Make sure garbage is stored in securely covered containers away from eating, studying and play areas
- Avoid eating outside during high insect activity
- Report insect nests noted on or near school grounds so they can be removed
AVOIDANCE of Anaphylaxis

Latex:

Avoidance is recommended for persons at risk for anaphylaxis. Latex reactions vary from person to person; each student at risk should be evaluated by a healthcare provider, specializing in allergies.
AVOIDANCE of Anaphylaxis

Latex Avoidance Measures:

- Promote nonlatex awards/celebrations, school projects, and fundraising efforts
- Ensure that balls, gym equipment, medical gloves and supplies, etc. are latex free
AVOIDANCE of Anaphylaxis

Prevention efforts to avoid exposure to allergens need to include:
special attention to train substitute or guest teachers (student/guest teachers, interns),
hidden ingredients in art, science and other classroom projects,
buses or other modes of transportation for field trips, before and after school hours,
school sponsored events and after school programs.
AVOIDANCE of Anaphylaxis

Roles and Responsibilities of
Classroom Teachers/Specialists/Para-Professionals/Coaches/After-School Staff
Lunchroom/Playground Assistants
School Nutrition Services
School Custodial Services
School Transportation Services
AVOIDANCE of Anaphylaxis

It is important to remember your responsibility to all students and to avoid endangering, isolating, stigmatizing, or harassing students with life-threatening allergies.
AVOIDANCE of Anaphylaxis

Laws:

The Americans with Disabilities Act (ADA) of 1990
http://www.eeoc.gov/policy/ada.html

Section 504 of the Rehabilitation Act of 1973. (FAPE)
AVOIDANCE of Anaphylaxis

IMPORTANT:

NO STUDENT WITH AN ALLERGY SHOULD BE LEFT IN THE CARE OF AN UNTRAINED STAFF PERSON OR VOLUNTEER.
RECOGNITION of Anaphylaxis symptoms

What happens?

- In an allergic reaction the body over reacts to a normally harmless substance, the immune system sends out the antibody known as Immunoglobulin E or IgE which triggers the release of histamines and other chemicals that cause the symptoms of the allergic reaction.
RECOGNITION of Anaphylaxis symptoms

Signs & Symptoms:

Skin

- Hives, skin rashes or flushing
- Itching/tingling/swelling of the lips, mouth, tongue, throat
- Nasal congestion or itchiness, runny nose, sneezing
- Itchy, teary, puffy eyes
RECOGNITION of Anaphylaxis symptoms

Breathing

- Chest tightness, shortness of breath, wheezing or whistling sound
- Change in voice, hoarseness or choking
- Repetitive throat clearing
RECOGNITION of Anaphylaxis symptoms

**Stomach**
- Nausea, vomiting, dry heaves
- Abdominal cramps, or diarrhea

**Circulation**
- Dizziness, fainting, loss of consciousness
- Flushed or pale skin
- Cyanosis (bluish circle around lips and mouth)
RECOGNITION of Anaphylaxis symptoms

Mental/Psychological

- Changes in the level of awareness
- A sense of impending doom, crying, anxiety
- Denial of symptoms or severity
RECOGNITION of Anaphylaxis symptoms

Symptoms can range from mild to severe and can quickly become life threatening.

There is no way to know how serious a reaction will become, so it is important to treat every reaction quickly.
RESPONSE to Anaphylaxis

Implementation of emergency action plan:

In order to implement a child’s emergency action plan, a staff person needs to know the symptoms of anaphylaxis, how to give the epinephrine auto-injector and other necessary medication, and how to activate emergency medical services (911).
RESPONSE to Anaphylaxis

TREATMENT

Epinephrine is the ONLY medication that can reverse severe anaphylactic symptoms. If a child is exhibiting signs of a life-threatening allergic reaction, epinephrine must be given immediately and the Emergency Medical Services (EMS) 911 called for transport. There should be no delay in the administration of epinephrine.
RESPONSE to Anaphylaxis

All students will require the help of others, regardless of whether they are capable of epinephrine self-administration.

The severity of the reaction may hamper their attempt to self-inject. Adult supervision is mandatory.
RESPONSE to Anaphylaxis

EpiPen Injection

Procedure:
Remove the EpiPen device from its protective container
RESPONSE to Anaphylaxis

EpiPen Injection Procedure:
Pull off gray safety cap from the fatter end of the device (this “arms” the unit ready for use).
RESPONSE to Anaphylaxis

EpiPen Injection

Procedure:
Place black tip on outer thigh. The EpiPen is designed so it can be injected through clothing. *Hold* the EpiPen in your fist with clenched fingers wrapped around it.

Adapted with permission from ESD114 SNC Program
RESPONSE to Anaphylaxis

EpiPen Injection

Procedure:
Push EpiPen auto-Injector against thigh until unit activates (until a loud "click" is heard) and then hold in place 10 seconds.
RESPONSE to Anaphylaxis

EpiPen Injection

Procedure:

*Remove* the pen from the thigh; be careful with the needle that will now be projecting from the EpiPen when you dispose of the device.
RESPONSE to Anaphylaxis

EpiPen Injection

Procedure:

*Massage* the injection site to increase epinephrine absorption. There may be some slight bleeding at the injection site. (Apply firm pressure with a cloth, tissue, clean handkerchief or bandage.)
RESPONSE to Anaphylaxis

EpiPen Injection Procedure:
- Replace EpiPen into original container with exposed needle pointing downward into container.
- Assist student to lying position
- Call 911 and stay with the student until EMS arrives:
  - Record the time that the EpiPen was given on the Emergency Action Plan and give EMS a thorough report.
  - Give EMS the used EpiPen and the Emergency Action Plan.

Adapted with permission from ESD114 SNC Program
RESPONSE to Anaphylaxis

Antihistamines:
Antihistamines, such as Benadryl, are often used to further improve the recovery of a person with anaphylaxis. Antihistamines may be administered with epinephrine but never instead of epinephrine because they cannot reverse many of the symptoms of anaphylaxis, such as a drop in blood pressure. (AAAAAI, 2009)
RESPONSE to Anaphylaxis

Asthma medications:
Asthma medications, such as bronchodilators, should never be given in place of epinephrine to treat an anaphylactic reaction, although they may be helpful for asthma symptoms in addition to epinephrine. (AAAAI, 2009)
RESPONSE to Anaphylaxis

Emergency Action Plan
Student Name
Allergy to:
Previous reaction: signs & symptoms, when
Location of emergency medication
List of symptoms by system
Medication orders
RESPONSE to Anaphylaxis

Emergency Action Plan

- GIVE MEDICATION AS ORDERED. AN ADULT IS TO STAY WITH STUDENT AT ALL TIMES.
- CALL 911 IMMEDIATELY. EMS must be called WHENEVER epinephrine is administered.
- DO NOT HESITATE to administer epinephrine and to call 911 even if the parents cannot be reached.
RESPONSE to Anaphylaxis

- An adult trained in CPR is to stay with student – monitor and begin CPR as necessary.
- Call the School Nurse or Health Services Main Office
- Student should remain with a staff member trained in CPR at the location where symptoms began until EMS arrives.
- Notify the administrator and parent/guardian.
- Dispose of used Epi-Pen® in “sharps” container or give to EMS along with a copy of the Action Plan.
REVIEW Anaphylaxis

Recognition:

- **Skin**: Swelling of face, lips, eyes; flushing; itching, hives, rash
- **Airway**: swelling, change in voice, hoarseness, repetitive throat clearing
- **Breathing**: rapid breathing, wheeze, fatigue, cyanosis, confusion
- **Circulation**: pale, clammy, lightheadedness, faintness, drowsiness, loss of consciousness, collapse
Response:

- Give Epinephrine auto-injector
- Assist student to lying position
- Call 911
- Call School Nurse or follow your schools communication plan
- Stay with student
- Administer CPR if needed
There is a natural reluctance to wait to administer epinephrine until symptoms worsen and you are sure the student is experiencing an anaphylactic reaction.

There is the same reluctance to call 911.
ANAPHYLAXIS: Awareness, Avoidance, Recognition, and Response

Many fatalities occur because the epinephrine was not administered in a timely manner.

Practicing implementation of the EAP can be the most effective strategy to overcome the tendency to delay and to decrease the likelihood of a student fatality.
ANAPHYLAXIS: Awareness, Avoidance, Recognition, and Response

RESOURCES:
American Academy of Allergy, Asthma and Immunology http://www.aaaai.org
Asthma Allergy Foundation of America http://aaafa.org
Food Allergy and Anaphylaxis Network http://www.foodallergy.org
World Allergy Organization http://www.worldallergy.org
ANAPHYLAXIS: Awareness, Avoidance, Recognition, and Response

RESOURCES:
Guidelines for the Care of Students with Anaphylaxis (2009)
Guidelines for the Care of Students with Life-threatening Allergies (2008)
Office of the Superintendent of Public Instruction
http://www.k12.wa.us/HealthServices/resources.aspx
Case Study Elementary Anaphylaxis- Peanut Allergy

- Aaron is a seven year old student with severe peanut allergy and asthma. Aaron has been diagnosed with a peanut allergy and asthma since he was three years old. Aaron can not eat any product containing peanuts and has a life threatening anaphylactic response if he is exposed to peanuts or peanut containing foods. An epinephrine auto-injector must be available in the event that Aaron is exposed to peanuts.

- Aaron complains of continued asthma symptoms even after using a rescue medication inhaler. You know Aaron has a life-threatening allergy to peanuts and it has been 30 minutes since the students’ finished eating lunch. You suspect Aaron may have been exposed to peanut butter at lunch.
Case Study High School Anaphylaxis- Tree Nut Allergy

- A high school foreign language teacher has one student (Michael) who has a life-threatening food allergy. The teacher develops a strategy to incorporate a student learning experience with foods (student potluck) of the region without exposing Michael to potential life-threatening allergens. On the day of the potluck Michael is exposed to a life-threatening allergen and is having an allergic reaction during class.