



CONNECTICUT STATE
DEPARTMENT OF EDUCATION

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Annual Epinephrine Training Program for Connecticut's Unlicensed School Personnel

Developed by the Connecticut State Departments of Education and Public Health
in consultation with the Connecticut School Nurse Advisory Council

Objectives

- Attendees will be able to:
 - Increase their knowledge about allergies to food and other allergens.
 - Describe the signs and symptoms of anaphylaxis.
 - Describe the emergency response to anaphylaxis.
 - Demonstrate the administration of emergency epinephrine auto-injectors.





Introduction

- Emergency First Aid: For students who experience allergic reactions was developed in response to Public Act 14-176, AN ACT CONCERNING THE STORAGE AND ADMINISTRATION OF EPINEPHRINE AT PUBLIC SCHOOLS.
- This Public Act required that not later than December 31, 2014, the Departments of Education and Public Health must jointly develop in consultation with the School Nurse Advisory Council, an annual training program for unlicensed personnel regarding emergency first aid to students who experience allergic reactions.





Cardiopulmonary Resuscitation (CPR)

- Any school personnel volunteering to be trained to administer epinephrine auto-injectors are required to receive annual instruction in CPR.
- See the accompanying sample outline on: *Annual Hands Only CPR and First Aid Training for Connecticut's Unlicensed School Personnel: Student Experiencing Anaphylaxis.*



First Aid

- Any school personnel volunteering to be trained to administer epinephrine auto-injectors are required to receive annual instruction in first aid.
- See the accompanying outline on: Annual Hands Only CPR and First Aid Training for Connecticut's Unlicensed School Personnel: Student Experiencing Anaphylaxis.



Overview of Allergies

- Allergies are an abnormal response by a person's immune system.
- People who have allergies have an immune system that reacts to a usually harmless substance in the environment.
- These substances (pollen, mold, certain foods, for example) are called allergens.





What is Anaphylaxis versus allergy?

- A potentially life-threatening medical condition occurring in allergic individuals after exposure to an allergen.
- The immune system responds to otherwise harmless substances in our diet or from the environment.
- Unlike less severe other allergic reactions, anaphylaxis can result in death.
- Reaction can begin within seconds, minutes or even longer.





What is a Food Allergy?

- Food allergy is an exaggerated response by the immune system to a food that the body mistakenly identifies as being harmful.
- Once the immune system decides that a particular food is harmful, it produces specific antibodies to that particular food.
- The next time the individual eats that food, the immune system releases moderate to massive amounts of chemicals, including histamine, to protect the body.
- These chemicals trigger a cascade of allergic symptoms that can affect the respiratory system, gastrointestinal tract, skin and cardiovascular system.





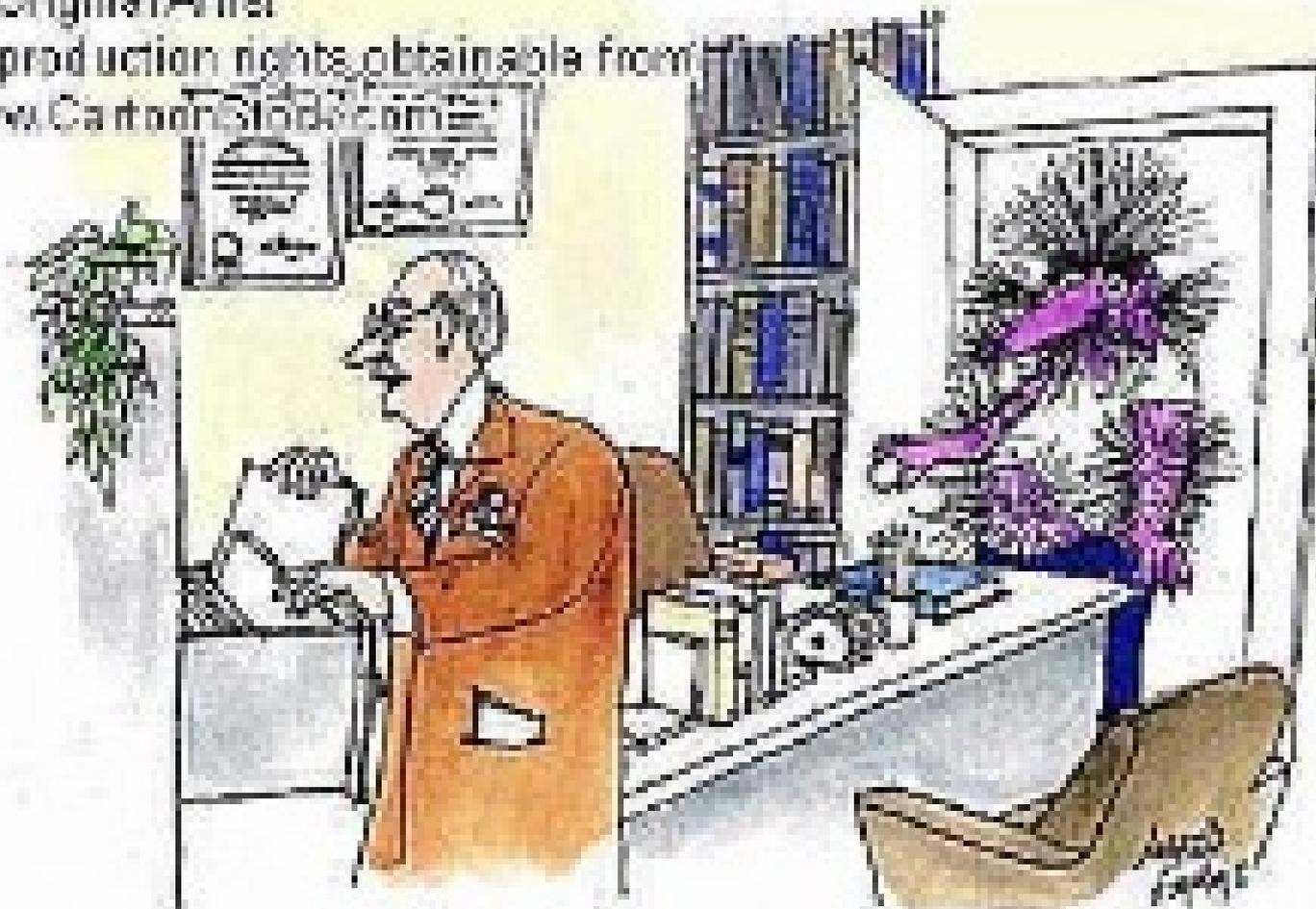
Food Allergies, cont'd

- In some people, symptoms appear in only one body system, while in others symptoms appear in several systems.
- Symptoms can range from mild to severe and may be life-threatening depending on the individual and type of exposure.
- An individual can have a life-threatening allergic reaction to any food, including fruits, vegetables and meats.
- Over 90% of allergic reactions are caused by the following foods:
 - Peanuts, tree nuts (walnuts, cashews, pecans, hazelnuts, almonds, etc.), milk, eggs, fish, shellfish, soy and wheat.



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"Hello, Mr. Busino. I understand you're suffering
from some drug side effects."





Symptoms

- An allergic reaction to food or other allergens can affect the following systems:
 - Skin;
 - gastrointestinal tract;
 - respiratory tract; and
 - cardiovascular (most serious cases).
- Reactions can range from mild to severe, including potentially life-threatening.
- Symptoms can appear within minutes to several hours after eating the food to which a person is allergic.





Mild Symptoms of Allergies

- Hives (reddish, swollen, itchy areas on the skin)
- Eczema (a persistent dry, itchy rash)
- Redness of the skin or around the eyes
- Itchy mouth, eyes or ear canal
- Nausea or vomiting
- Diarrhea
- Stomach pain
- Nasal congestion or a runny nose
- Sneezing
- Slight, dry cough
- Odd taste in mouth
- Uterine contractions
- Other





Severe Allergic Symptoms

- Swelling of the lips, tongue, and/or throat.
- Trouble swallowing.
- Shortness of breath or wheezing.
- Turning blue.
- Feeling faint, confused, weak, passing out.
- Loss of consciousness.
- Chest pain or tightness.



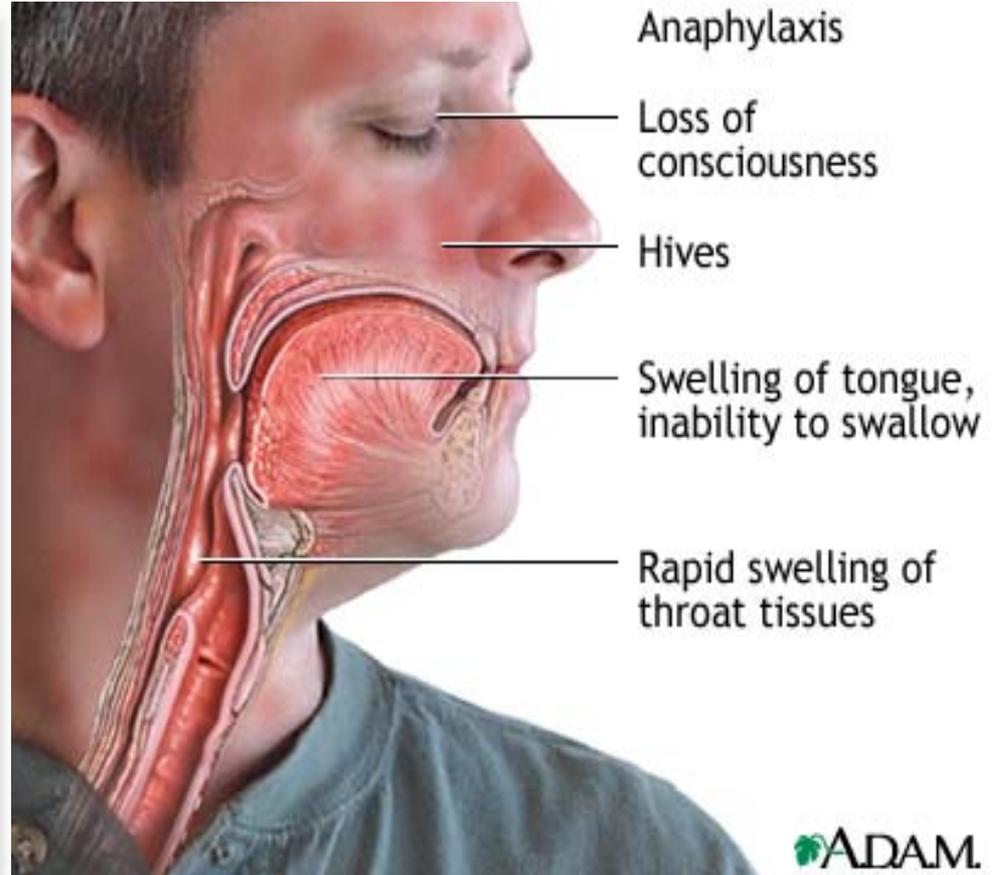
Other

- Sense of Impending Doom
- Anxiety





Anaphylaxis



Anaphylaxis

Common causes include:

- Food (e.g., milk, eggs, peanuts, tree nuts, sesame seeds, wheat, soy, fish, shellfish)
- Food additives (e.g., sulfites in dried fruit, wine, pickles)
- Insect Venom (e.g., bee, wasp or ant stings)
- Medication or Vaccines
- Latex
- Other



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Responding to the student with Anaphylaxis

- Anaphylaxis usually is an immediate reaction, occurring within minutes of exposure, although onset may occur one to two hours after ingestion of or exposure to an allergen.
- The initial symptoms may be followed by a second wave of symptoms two to four hours later and possibly longer.
- Children experiencing anaphylaxis should be observed in a hospital emergency department for a minimum of four to six hours or longer after initial symptoms subside, to monitor for signs or symptoms of a secondary reaction.





Fatal Anaphylaxis

- Fatal and near-fatal anaphylactic reactions are sometimes associated with not using epinephrine auto-injector or delaying the use of epinephrine treatment.
- When in doubt, it is better to give the epinephrine auto-injector and then immediately call the Emergency Medical System for an ambulance (911).
- Fatalities are more likely to occur when epinephrine administration is withheld.





Summary of Anaphylaxis

- The severity and rapid onset of anaphylaxis emphasizes the need for an effective emergency plan that includes:
 - early recognition of the symptoms of anaphylaxis;
 - immediate administration of an epinephrine auto-injector; and
 - Call 911
 - Facilitate prompt transfer of the student by the emergency medical system to the closest hospital.



What to communicate to EMS?

- Suspected allergen;
- Signs and symptoms observed;
- When epinephrine auto-injector was given to the student;
- Student has no known history of anaphylaxis; and
- Student's response to epinephrine administration.



Signs and Symptoms of Anaphylaxis: Skin

Classic Symptoms:

- Swelling of any body part.
- Multiple hives or severe rash on any part of body.
- Obstructive swelling (mouth or tongue).

Other Symptoms:

- Itching of any body part.
- Itchy lips.
- Other





Signs and Symptoms of Anaphylaxis: Respiratory (lung)

- Persistent cough.
- Wheezing, difficulty breathing, shortness of breath.
- Throat tightness or closing.
- Itching in the throat.
- Difficulty swallowing.
- Difficulty breathing, shortness of breath.
- Change in voice (hoarseness).





Signs and Symptoms of Anaphylaxis: Gastrointestinal (mouth, stomach, intestines)

- Itchy tongue, mouth and/or throat
- Vomiting
- Stomach cramps
- Abdominal pain
- Nausea
- Diarrhea
- Other





Signs and Symptoms of Anaphylaxis: Cardiovascular (heart and blood)

- Heartbeat irregularities.
- Flushed or pale skin.
- Coughing, cyanotic (bluish) lips and mouth area.
- Fainting or loss of consciousness.
- Dizziness, change in mental status.
- Shock.
- Other.



Signs and Symptoms of Anaphylaxis: Other

- Sense of impending doom
- Anxiety
- Itchy, red, watery eyes.



Prevention and Risk-reduction Strategies





Prevention and risk-reduction strategies

- There is no cure for food or other allergies.
- Strict avoidance of the food or other allergens is the only way to prevent a reaction.
- However, since it is not always easy or possible to avoid certain foods, staff in schools should develop plans to deal with allergic reactions, including anaphylaxis.
- Early and quick recognition and treatment of allergic reactions that may lead to anaphylaxis can prevent serious health problems or death.





Prevention Measures

- Each school district should consider district-wide preventative measures regarding allergic reactions.
- Suggested measures include:
 - establishing effective sanitation and cleaning measures;
 - promoting good hand-washing practices following eating to prevent cross-contact;





Prevention Measures

- enforcing safe practices among students, such as prohibiting meal/snack swapping or sharing, utensil sharing among students and prohibiting eating on school transportation;
- options for allergen-free zones such as the classroom, lunch tables or cafeteria zone to decrease exposure to allergens;
- options for food-free common areas (such as libraries, music and art rooms);





Prevention Measures, cont'd

- developing common practices for alerting and assigning substitute staff for school nurses and teachers;
- providing supervision in the cafeteria and on school grounds by school staff trained in recognizing adverse symptoms of food allergies;
- planning for school celebrations (such as, birthdays, school parties and holiday events) which may include alternatives to food for celebrations and provisions for allergy-free foods for celebrations;





Prevention Measures, cont'd

- planning for school emergencies (such as, fire drills and lockdowns); and
- adhering to Occupational Safety and Health Administration (OSHA) and Universal Precautions Guidelines for disposal of epinephrine auto-injectors after use.





Reducing the Risk of Exposure to Food Allergens

- Recommendations from the CDC include strategies for the:
 - Classroom;
 - Cafeteria;
 - Transportation;
 - School or ECE Program Events (Field Trips, Activities Before or After School); and
 - Physical Education and Recess.
 - (See Handout)



Emergency Management and Administration of Epinephrine: Demonstration





What is an Epinephrine Auto-Injector?

- A disposable drug delivery system that contains the proper dose of epinephrine and is used to treat anaphylaxis.
- It is supplied as a spring-loaded syringe that can be easily transported.
- The disposable system is designed to treat a single anaphylactic episode and must be properly discarded (in compliance with applicable state and federal laws) after its use.





Anaphylaxis/EpiPen: How to respond

- Administer epinephrine via an epinephrine auto-injector.
- Call 911 and request a paramedic.
- Remain with the student until emergency responders arrive.
- Stay calm.
- Notify parent(s)/guardian(s).





Steps in the Emergency Use of an Epinephrine Auto-Injector

Demonstration technique!



EpiPen

One-step, flip-top carrying case

Designed for single-handed opening.

The next generation EpiPen Auto-Injector enhances ease-of-use for emergency treatment.

Ergonomically designed grip

Allows for a firm grip & improves ease of handling.

Brightly colored orange tip

Aids in quick identification of needle end.



Blue safety-release cap

Designed to prevent unintentional activation.

Easy-to-read, illustrated instructions

Allows for rapid recognition of product usage instructions.

Built-in needle protection

The only epinephrine auto-injector that protects against needle exposure before and after use.

EpiPen

DIRECTIONS FOR USE

REMOVE AUTO-INJECTOR FROM CARRIER TUBE BEFORE USE.
NEVER PUT THUMB, FINGERS OR HAND OVER ORANGE TIP.
NEVER PRESS OR PUSH ORANGE TIP WITH THUMB, FINGERS OR HAND.
THE NEEDLE COMES OUT OF ORANGE TIP. DO NOT REMOVE BLUE SAFETY RELEASE UNTIL READY TO USE.
DO NOT USE IF SOLUTION IS DISCOLORED.
DO NOT PLACE PATIENT INSERT OR ANY OTHER FOREIGN OBJECTS IN CARRIER WITH AUTO-INJECTOR, AS THIS MAY PREVENT YOU FROM REMOVING THE AUTO-INJECTOR FOR USE.



TO REMOVE AUTO-INJECTOR FROM THE CARRIER TUBE:



1. Flip open the yellow cap of the EpiPen[®] or the green cap of the EpiPen[®] Jr Auto-Injector carrier tube.



2. Remove the EpiPen[®] or EpiPen[®] Jr Auto-Injector by tipping and sliding it out of the carrier tube.

TO USE AUTO-INJECTOR:

1. Grasp unit with the orange tip pointing downward.
2. Form fist around the unit (orange tip down).



3. With your other hand, pull off the blue safety release.



4. Hold orange tip near outer thigh.

DO NOT INJECT INTO BUTTOCK.



5. Swing and **firmly push** against outer thigh until it clicks so that unit is perpendicular (at 90° angle) to the thigh.

(Auto-injector is designed to work through clothing.)

6. Hold **firmly against thigh** for approximately 10 seconds to deliver drug. (The injection is now complete. The window on auto-injector will be obscured.)



7. Remove unit from thigh (the orange needle cover will extend to cover needle) and massage injection area for 10 seconds.

8. Call 911 and seek immediate medical attention.
9. Take the used auto-injector with you to the hospital emergency room.

Note: Most of the liquid (about 85%) stays in the auto-injector and cannot be reused. However, you have received the correct dose of the medication if the orange needle tip is extended and the window is obscured. Trainer label has blue background color. Blue background labeled trainer contains no needle and no drug.



Follow-up and reporting procedures

- Emergency medical care must be obtained immediately after the administration of epinephrine.
- Provide the EMR team with the used epinephrine injector.
- Follow-up diagnosis and care by medical professionals is important for recovery. A delayed or secondary reaction may occur.





Follow-up and reporting procedures, cont'd.

- Medical supervision is needed for at least four hours after an episode of anaphylaxis.
- Emergency administration of epinephrine with a cartridge injector must be reported immediately to the school nurse, administrator, school medical advisor and the student's parent or guardian.





Follow-up and reporting procedures, cont'd.

- Follow your school district's policy and procedures for documentation and reporting.
- Documentation shall be:
 - completed and maintained for individual students on forms provided by the school district;
 - submitted to the school nurse at the earliest possible time but not later than the next school day;
 - completed for every student who receives emergency epinephrine first aid treatment for life-threatening allergies.



Monitoring Effectiveness of School District Plan and Procedures

- Ensure periodic assessments of the effectiveness of the school district plan and procedure. Assessments should occur:
 - at least annually with the school district team;
 - after each emergency event involving the administration of medication to determine the effectiveness of the process, why the incident occurred, what worked and did not work in the district plan and procedures; and
 - include medically-accurate, research-based practices in the annual review of the plan and procedures.





Handling, Storage and Disposal

- Handling, storage and disposal of epinephrine maintained for the purposes of emergency first aid shall be in accordance with your school district's policy and procedures.





Confidentiality

- When determining whether personally identifiable information from student health records maintained by the educational agency or institution may be disclosed, school officials at institutions subject to FERPA should refer to FERPA and its requirements.
- Family Educational Rights to Privacy Act (**FERPA**)



Applicable Laws

- **Public Act 14-176, AN ACT CONCERNING THE STORAGE AND ADMINISTRATION OF EPINEPHRINE AT PUBLIC SCHOOLS**
<http://www.cga.ct.gov/2014/act/pa/pdf/2014PA-00176-R00HB-05521-PA.pdf>
- **State of Connecticut Regulations - Administration of Medications by School Personnel and Administration of Medication During Before- and After-School Programs and School Readiness Programs**
http://www.sde.ct.gov/sde/lib/sde/PDF/deps/student/health/Medication_Administration_Regs.pdf





Activity: Food for Thought

- Where did the emergency take place?
 - Cafeteria
 - Gym
 - Playground
- What happened?
 - Bee sting
- When did it happen?
- When was the last time the student ate?
- Did the student try a new food?
- How severe are the symptoms?





Be Prepared!

- What is your school district's policy regarding emergency epinephrine by unlicensed school personnel to students?
- Do you have a medical emergency plan/policy?
- Where are the emergency epinephrine auto-injectors stored?
- Who is in charge or responds when the school nurse is absent or unavailable?



Questions?



References

- Administration of Epinephrine Auto-injectors.
California Department of Education
<http://www.cde.ca.gov/ls/he/hn/epiadmin.asp>
- Reducing the Risk of Exposure to Food Allergens:
Recommendations from the Centers for Disease
Control and Prevention (CDC)
<http://www.foodallergy.org/document.doc?id=285>
- Managing Food Allergies at School
<http://www.foodallergy.org/managing-food-allergies/at-school>
- Keeping Children with Food Allergies Safe at School
(CDC)
<http://www.foodallergy.org/document.doc?id=315>



References, cont'd

- CSDE's Guidelines for Managing Life-Threatening Food Allergies in Connecticut Schools (Includes Guidelines for Managing Glycogen Storage Disease)
<http://www.sde.ct.gov/sde/cwp/view.asp?a=2663&q=334632>
- Voluntary Guidelines for Managing Food Allergies In Schools and Early Care and Education Programs located on the CDC's Food Allergy Research and Education
<http://www.foodallergy.org/document.doc?id=249>



References, cont'd.

- What is a Food Allergy? (CDC's Food Allergy in School <http://www.cdc.gov/healthyyouth/foodallergies/>)
- NASN. Anaphylaxis Planning Algorithm <https://www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis/AnaphylaxisPlanningAlgorithm>

