

# Life Threatening Allergies in the School Setting: Annual Faculty Review

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# Objectives

- Develop an understanding of allergies
- Understand “Allergy Aware/Sensitive” schools
- Develop an understanding of anaphylactic process
  - Learn how to administer an EpiPen
  - Learn common EpiPen mistakes

# Allergy Information

- The beginning of each school year is one of the most dangerous times for an anaphylactic reaction .
- When possible, plans should be developed before child starts school.
- Many school-age children with life-threatening allergies (LTA) still require supervision and help in avoiding the allergen.

# Allergy Info cont...

- Food allergy is a growing food safety concern and creates a challenge for our schools
- Approximately 6 percent of school-aged children have a significant food allergy and may be at risk for anaphylaxis
- Currently, there are no medications that cure food allergy.

## Allergy Info cont...

- **Strict avoidance of the allergen ... only way to prevent allergic reactions.**
- **Deaths have occurred in schools because of delays in recognizing symptoms and not responding promptly.**
  - **Plans that focus on allergy education, awareness, avoidance and immediate treatment of allergic reactions are critical to saving lives.**

# Allergy Sensitive Schools

- Impossible to ensure "allergy free" schools.
- Imposing a ban creates a false sense of security and serious liability issues.
  - Current approach is to promote "Allergy Aware/Sensitive" settings that reduce the chance of contact with life-threatening allergens.

# Massachusetts Department of Public Health

- Regulations provide for the administration of Epi-Pens by non-medical personnel who have been properly trained.

# Allergies

- Treatment of serious allergic reactions and anaphylaxis is the same whether caused by food, insect sting, latex or is exercise induced.



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# Eight That Aren't Great

- *Eight foods are responsible for most reactions.*
- *Remember ANY food can cause a serious allergic reaction.*
- Peanut
- Tree nut (walnut, cashew, pecan, hazelnut, almond)
- Milk
- Egg
- Fish
- Shellfish
- Soy
- Wheat



# What Is Anaphylaxis?

- A potentially life-threatening medical condition occurring in allergic individuals after exposure to an allergen.

# Anaphylactic Process

## Immune system:

- identifies an allergen/protein.
- starts chain of inflammatory reactions in:
  - the skin
  - the respiratory system
  - the gastrointestinal tract
  - the cardiovascular system.
- When symptoms are widespread and systemic, the reaction is termed "anaphylaxis."

# Symptoms By System

## ANAPHYLAXIS

SKIN:  
Swelling  
Hives  
Rash  
Itching

RESPIRATORY:  
Runny Nose  
Wheezing  
Short of breath  
Throat tight  
Can't swallow  
Voice change

GASTRO-  
INTESTINAL:  
Itchy Tongue  
Itchy throat  
Vomiting  
Abdominal pain  
Diarrhea

CARDIO-  
VASCULAR:  
Irreg. heartbeat  
Flushed  
Pale skin  
Blue lips/mouth  
Fainting  
Dizzy

OTHER:  
Sense of  
impending  
Doom  
Anxiety  
Itchy, watery, red  
eyes

## Acronym: "B.I.N.D."

- *IS THE CHILD IN A "BIND?"*

- **B** = breathing is difficult, throat or chest is tight.
- **I** = itchy lips, hives, swelling.
- **N** = nausea, vomiting.
- **D** = dizzy, unsteady, confused.

# Recognizing Symptoms

- **More common:**
  - **Respiratory symptoms**
  - **GI symptoms (abdominal pain, nausea or vomiting)**
- **Anaphylaxis may occur in the absence symptoms such as itching and hives.**

# Severity of Symptoms

- All symptoms can become life-threatening
- Severity of symptoms can quickly change

# Biphasic Reaction

- When the initial symptoms are followed by a second wave of symptoms two to four hours later and possibly longer.
- Approx 30% of cases

# Anaphylaxis Management

- Recognize student
- Know symptoms
- Administer EpiPen quickly
- Transport to emergency department **THEN** call parents

## In Their Own Words...

- Children have unique ways of describing their experiences and perceptions, including allergic reactions. Precious time is lost when adults do not immediately recognize that a reaction is occurring or don't understand what the children might be telling them.

# In Their Own Words...

- In addition, know that sometimes children, especially very young ones, will put their hands in their mouths, or pull or scratch at their tongues, in response to a reaction. Children's voices may change (i.e., become hoarse or squeaky), and they may slur their words.

## In Their Own Words...

- Food's too spicy.
- Tongue is hot or burning.
- Something's poking my tongue.
- Tongue/mouth is tingling or burning.
- Tongue/mouth itches.
- Tongue feels like there is hair on it.
- Mouth feels funny.
- Frog in my throat.
- Something stuck in my throat.
- Tongue feels full or heavy
- Lips feel tight.
- There are bugs in my ears.
- Throat feels thick.
- There's a bump on the back of my tongue

# Treatment

- Symptoms indicating need for EpiPen:
  - rapidly developing hives
  - difficulty breathing or wheezing
  - swelling of the tongue or face
- If in doubt... give epinephrine!

# Epinephrine... EpiPen

- An injectable medication
- Treatment of choice for anaphylactic reactions.
- Works quickly to reverse symptoms.
  - No contraindications to the use of epinephrine for a potentially

LTA

# Epinephrine cont...

- Constricts blood vessels
- Relaxes smooth muscles in lungs to improve breathing
  - Stimulates heart beat
- Reverses hives and swelling
- Effects last 10-15 minutes

# EpiPen

- Disposable drug delivery system for epinephrine.
- Spring-activated, concealed needle.
- Designed for self-administration in acute emergencies.
- Dose based on body weight.



## EpiPen cont...

- The parent/guardian provides properly labeled EpiPen to the school for the student.
- The school nurse may also have a stock/school supplied EpiPen.

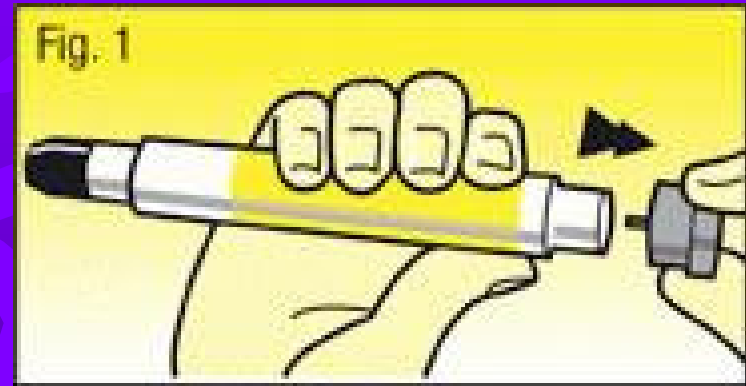
# Anaphylaxis and EpiPen Training

## Awareness Training:

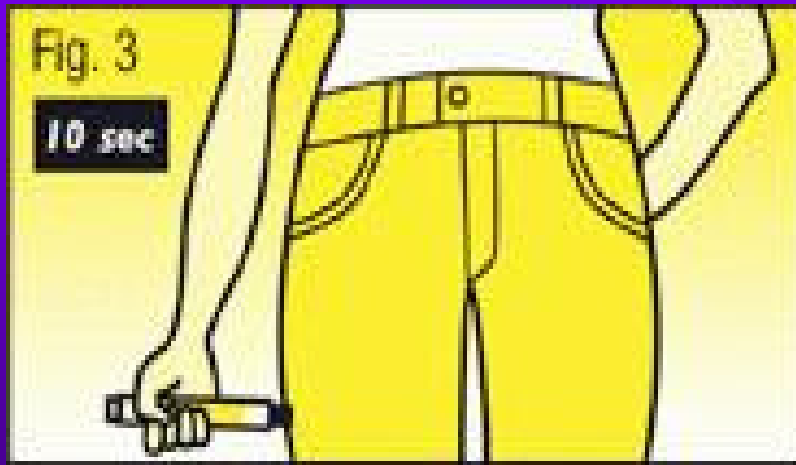
- Offered to everyone in the building
- Includes signs and symptoms to be aware of
- How to administer an EpiPen

# EpiPen: Directions for Use

- Hold in dominant hand
- Remove the *grey cap* from end of device.
- NB: This "arms the unit" ready for use
- *Hold* EpiPen about 6" from outer thigh in your clenched fist *Black tip* pointing towards outer thigh.



## Directions for Use cont...



- “Swing and jab” *black tip* against outer thigh until a loud “click” is heard. (indicates device has been activated.)
- Hold in place for 10-15 seconds (count “1 elephant, 2 elephants...”) while epinephrine is injected under pressure.
- NB: GO through clothing if necessary.

## Directions cont...

- **Massage the injection area for 10 seconds**
- **DISPOSE** of the used EpiPen carefully into a sharps container, or hand to ambulance officers when they arrive.
- **Be sure to inform the EMTs as to the time of EpiPen administration.**

# EpiPen Don'ts

- **DON'T:**
  - Use EpiPen® to practice administration
  - Remove grey safety cap until ready to use
  - Place fingers over the black tip
  - Attempt to inject into vein or buttocks
  - Inject into hands/feet, as epinephrine causes local vasoconstriction
  - Leave patient until paramedics arrive.

# EpiPen Mistakes

- Holding the wrong end and injecting the thumb (blue line) is painful and not very effective.
- Unless the grey cap is removed (blue line), the EpiPen will NOT work, no matter how hard you push ...

## EpiPen Mistakes cont...

- Pressing the white end very hard (blue line), assuming there is a "button" at the white end. There is not!
- Unless pressure is exerted at the black end, the EpiPen will not work. By all means rest the thumb on the white end, but you must exert pressure on the black tip into the thigh as well.

# Self Carry/Self Administer

1. Health Care Provider Order
2. Parent Permission
3. Student Agreement
4. School Nurse Assessment

# Individual Health Plan

- Required by law for all students when the parent and prescribing medical professional inform the school in writing that the student may possess the epinephrine.
- Plan must be written 'at the start of each school year, or at the time a student enrolls in school, whichever is first.'

# Summary

- **Students must have access to EpiPens during the instructional day.**
- **Staff must be trained to recognize signs and symptoms and provide care.**
  - **Students must have an IHP.**
- **Communication and information sharing between parents and care providers is critical.**

## In Closing...

- An anaphylactic attack is not just a single dramatic event but an avalanche in a series of allergic calamities that stretch out over time.
- It takes only 1 to 2 minutes for a mild allergic reaction to escalate to anaphylaxis.
- **Be Aware... Be Alert!**

# References

- American Academy of Allergy, Asthma and Immunology, *Anaphylaxis in Schools and Other Child-Care Settings*, available at [http://www.aaaai.org/media/resources/academy\\_statements/position\\_statements/ps34.asp](http://www.aaaai.org/media/resources/academy_statements/position_statements/ps34.asp)
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- Massachusetts Department of Public Health: School Health Unit
- National Association of School Nurses (Issue Brief), *School Nurse Role in Education, School Meals Program*, available at <http://www.nasn.org/briefs/2003briefmeal.htm>
- *School Guidelines for Managing Students with Food Allergies*, available at <http://www.foodallergy.org/school.html>
- <http://www.epipen.com/>