Food Allergies
In Our Schools

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Perception by public: 20-25%

Reality: Infants/Children: 5.1% (as high as 8%)

- Food allergies overall have doubled in the US between 1997-2011.
- Peanut allergies in children have tripled from 1997 to 2008.

Why is there an increase in the prevalence of food allergies?

There are many theories but no concrete evidence.
Theories....

- **Hygiene Hypothesis** - overuse of antibiotics and disinfectants
- **Air pollutants** (bigger cities have higher childhood allergy rates)
- **Evolution of how foods are grown and produced** (crossbreeding of wheat and use of antibiotics in animals, more additives, genetically modified foods)
- **Sea Change** (delaying the introduction of foods to young children)
- Or are more people simply just getting tested?

Introducing Foods to Infants

- AAP recommendations (2000) advised delayed introduction of the following highly allergenic foods in infants at high risk for allergic disease to prevent the development of future allergy:
  - cow’s milk until age 1 year
  - egg until age 2 years
  - peanuts, tree nuts, and fish until age 3 years

Over the next decade, the incidence and prevalence of food allergies increased substantially.

- Re-evaluation of the 2000 recommendations.
- After careful review of the current literature, the AAP’s Committee on Nutrition and Section on Allergy and Immunology published an updated Clinical Report in January 2008.
- No convincing evidence for delaying the introduction of highly allergenic food.
- No specific guidelines on how and when to introduce the highly allergenic foods listed above were provided.
- Provided general guidelines and suggestions for providers.


Data now suggests the delayed introduction of solid foods may increase the risk of food allergy or eczema, and the early introduction of allergenic foods may prevent food allergy in infants/children.


Egg

- Recent studies show that it may be beneficial to introduce egg at an early age in smaller amounts in baked goods or in a cooked egg form (scrambled, hard-boiled, fried, or poached).
- Infants introduced to egg at 4 to 6 months of age had a significantly lower risk of egg allergy than infants introduced to egg after that time.
- First exposure to the cooked egg form at 4 to 6 months reduced the risk of egg allergy even further compared with first exposure to egg in baked goods.
Study of Jewish children in the United Kingdom found a 10-fold higher prevalence of peanut allergy than that of Jewish children in Israel, where Israeli infants consume peanut in higher quantities at an earlier age than infants in the United Kingdom who avoid peanuts.

Definition of Food Allergy

- **Food Intolerance** = An adverse reaction to a food
- **Food Allergy** = An immunologic reaction to a food

**Our focus is on those students who have severe, life-threatening food allergies**

What is our responsibility?

- USDA regulations require substitutions or modifications in school meals for children whose disabilities restrict their diet. A child with a disability must be provided substitutions in foods when that need is supported by a statement signed by a licensed physician.
- Generally, children with food allergies or intolerances do not have a disability....
- **HOWEVER**, when in the licensed physician’s assessment, food allergies may result in severe, life-threatening (anaphylactic) reactions, the child’s condition would meet the definition of “disability,” and the substitutions prescribed by the licensed physician must be made.
The “BIG 8” - Cause 90% of all reactions

- Any food protein can cause an allergic reaction.
  - Egg
  - Milk
  - Wheat
  - Soy
  - Peanuts
  - Tree Nuts
  - Fish
  - Shellfish
  - Sesame, red dye, chili powder, high fructose corn syrup

How much is TOO much?

- Varies from person to person.
- Varies from day to day
- Fatal reactions can be induced by as little as one milligram.

How much is 1 milligram?

- 1/1000 gram = 1 milligram
- 1 gram = 1000 milligrams
- 25 grams = 25000 milligrams
Allergic Reactions – Not Only By Eating the Food

- Touching the skin (although very rare)
  - Touching the food directly
  - Touching a contaminated surface
- Touching the lips (young children)
- Eye exposure
- Inhalation of vapors
- Exercise Induced Anaphylaxis

* Reactions by any way other than ingestion “SHOULD” be listed on the Food Allergy Action Plan.

Is there a TREATMENT?

- **STRICT AVOIDANCE** of the food.
  - Reading EVERY label.
  - Constant vigilance.
  - Just one little bite can hurt or kill.

Food Allergen Labeling and Consumer Protection Act (FALCPA)- January 2006

- FALCPA was passed into law.
- Requires that the presence of a major food allergen be declared in ingredient list. (Big 8)
  - the word “Contains” followed by the name of the major food allergen – for example, “Contains milk, wheat” – or
  - a parenthetical statement in the list of ingredients – for example, “albumin (egg)”
FALCPA

- Easier to read labels
- New questions and concerns
  - “Manufactured in a facility with ______.”
  - “May contain ______.”
- These statements are not required to be included
- These statements are too often over used

A 2007 study in the *Journal of Allergy and Clinical Immunology* found that peanut protein was detected in 10% (20/200) of total food products bearing advisory statements. (July, 2007)
Accidental Exposures

- MISLABELING OF PRODUCTS
- HIDDEN INGREDIENTS ("Natural Flavoring")
- CROSS CONTAMINATION
  - At the factory
  - In shipping
  - At the store
  - In preparation
  - On the table
  - Shared Utensils
  - Reused Cooking Oil
  - Unclean Work Surfaces

What's all the Fuss?

- Up to 15 million Americans have food allergies.
- Food allergies affect 1 in every 13 children (under 18 years of age) in the U.S. That's roughly two in every classroom.
- 25% of all reactions occur in school settings
- 79% of school reactions occur in the classroom
- 25% of 1st time peanut reactions occur in school
- Every 3 minutes, a food allergy reaction send someone to the ER.

** An 8 year old Evansville boy died from peanut anaphylaxis in 2008. **
What do you need to know?

› Identify the students with food allergies
  ◦ Understand their allergy and its severity
› Understand the symptoms of a reaction
› Know how to react!

- Have an up-to-date FAAP (yearly)
- Fortunately, many children out grow their food allergy (egg, milk, soy but not usually peanut and treenut)
3 Rs of An Allergic Emergency Plan

- Recognize symptoms early
- React quickly
- Review what caused the reaction

What is Anaphylaxis?

- An immediate life-threatening reaction involving several parts of the body.
- It is caused by rapid response from the immune system
- IgE antibodies (the allergy antibody) cause specific cells to release powerful chemicals (histamines) that can overwhelm normal body function.
Symptoms typically begin within minutes up to 2 hours after ingestion. Sometimes symptoms build slowly, other times the onset may be sudden.

Sensitivity to food may be variable:
- Trace amounts may or may not be tolerated
- What is tolerated once may not be tolerated again

Ingestion, contact and inhalation exposures may trigger varying reactions.

**Anaphylaxis**

- Swelling of the conjunctiva
- Runny nose
- Swelling of lips, tongue and/or throat
- Heart and vasculature:
  - Fast or slow heart rate
  - Low blood pressure
- Skin:
  - Rashes
  - Itching
  - Flushing
- Pelvic pain
- Central nervous system:
  - Headache
  - Anxiety
- Respiratory:
  - Shortness of breath
  - Wheezing or stridor
  - Hoarseness
  - Pain with swallowing
  - Cough
- Gastrointestinal:
  - Crampy abdominal pain
  - Diarrhea
  - Vomiting
- Other:
  - Loss of bladder control
  - Loss of bowel function
  - Loss of bowel movement

**ANAPHYLACTIC REACTION**

- Antigen
- Plasma cell
- IgE
- B-cell
- Mast cell
- Histamine

**Signs and symptoms of Anaphylaxis**
Basics

- Anaphylaxis is generally considered involvement of any **TWO** organ systems (skin, gut, lungs/nose, heart)
  - Hives and wheezing, vomiting and lip swelling, dizziness and shortness of breath
  - This is Anaphylaxis = This means give Epinephrine

- If a single organ system is involved then you may try antihistamines first if indicated on FAAP.
  - Hives, tingling lips
  - Check the Food Allergy Action Plan

- Uncertain of which to do? Give Epinephrine!

Common Food Allergy Symptoms

Children with food allergies might communicate their symptoms in the following ways:

- It feels like something is poking my tongue.
- My tongue (or mouth) is tingling (or burning).
- My tongue (or mouth) itches.
- My tongue feels like there is hair on it.
- My mouth feels funny.
- There's a frog in my throat; there's something stuck in my throat.
- My tongue feels full (or heavy).
- My lips feel tight.
- It feels like there are bugs in there (to describe itchy ears).
- It (my throat) feels thick.
- It feels like a bump is on the back of my tongue (throat).

Hives and Swelling

Hives are common but not always present in anaphylaxis
Why do people die of anaphylaxis?

- The difference between fatal and near-fatal events?
  - How quickly medication was given
  - How quickly professional medical help became available
  - Don’t be afraid to treat these children
- Treat early and move them quickly to appropriate medical supervision
- Adrenaline in the schools—federal law states children may carry with permission
  - School owned adrenaline- Make sure your school participates
    (www.epipen4schools.com)

How To Treat Anaphylaxis

Epinephrine, or adrenaline, is the medication of choice for handling an anaphylactic reaction.

How to Use an EpiPen®

How to Hold
- Form a fist around the center of the unit
- Pull off blue activation cap

How to Use
- Hold orange tip near outer thigh (always apply to thigh)

Count to 10
- Inject into outer thigh.
- Hold in place and count to 10
In food allergic people, ingestion of questionable food followed by mild symptoms may be the start of something serious.

Keep a high level of suspicion and always check the Food Allergy Action Plan.

Because keeping students safe is a team approach, there should be no finger pointing if a bad outcome occurs.

Every accident is an opportunity to learn!
Are you feeling OVERWHELMED?

Now, imagine how the parents of these children feel every day...

Parental Goals
- Keep their child safe
- Form a partnership
- Help the child have as normal a school and childhood experience as possible

School Goals
- Keep students safe
- Form a partnership
- Provide safe learning environment
- Address teasing/bullying

Coordinated Approach

Effective Management of Food Allergies

School Nurse’s Office Nutrition Dept

Child with Food Allergy and Parent

Allergist or Licensed Physician
The Emotional Impact of Living with Food Allergies

- Children can feel...
  - Angry
  - Sad
  - Left out
  - Embarrassed
  - Different
  - Scared
  - Bullied

Children are learning about food allergies at such a young age now. Most food allergy students have very supportive friends.

The Emotional Impact of Living with Food Allergies

Vigilance with Food Allergies

- **Vigilance**
  - Reading labels
  - Carrying epinephrine
  - Having a food allergy plan

- **Hyper Vigilance**
  - Not wanting to go to school
  - Fear of eating away from home
  - Fear of eating any new foods
  - Obsessive/compulsive behavior
  - Panic behavior

Practical Suggestions

- **Before School Meeting:**
  - Easier to do before school begins than on the first day,
  - Individualize avoidance strategies
  - Go over emergency plan
  - Involve school nurse, parent, homeroom teachers, cafeteria staff
Practical Suggestions

- Have a plan for:
  - Who receives copies of FAAP
  - Field trips
  - Parties
  - PTA functions
  - Foods sold in school to students
  - Substitute teachers
  - Cleaning lunch tables
  - Snacks/treats
  - Food rewards
  - Class pets
  - Class projects/art class
  - After school activities
  - Bus
  - Storage location of epinephrine injections

We’re All In This Together!

- Education is key to managing food-allergic children
- Remember there is no cure
- Oral Immunotherapy: Not a cure but a desensitization
- Learn from mistakes, avoid repeating them
- No blaming
- There’s no such thing as asking too many questions