

Myth: Prior Episodes Predict Future Reactions

REALITY:

- **No predictable pattern**
- **Severity depends on:**
 - **Sensitivity of the individual**
 - **Dose of the allergen**

Anaphylaxis Fatalities

- **Estimated 500–1000 deaths annually**
- **1% risk**
- **Risk factors:**
 - **Failure to administer epinephrine immediately**
 - **Beta blocker, ?ACEI therapy**
 - **Asthma**
 - **Cardiac disease**
 - **Rapid IV allergen**

Food-induced Anaphylaxis: Incidence

- **35%–55% of anaphylaxis is caused by food allergy**
- **6%–8% of children have food allergy**
- **1%–2% of adults have food allergy**
- **Incidence is increasing**
- **Accidental food exposures are common and unpredictable**

Food-induced Anaphylaxis: Common Triggers

- **Children and adults (usually not outgrown):**
 - **Peanuts**
 - **Tree nuts**
 - **Shellfish**
 - **Fish**
- **Additional triggers in children (commonly outgrown):**
 - **Milk**
 - **Egg**
 - **Soy**
 - **Wheat**

Food-induced Anaphylaxis: Common Symptoms

- **Oropharynx: Oral pruritus, swelling of lips and tongue, throat tightening**
- **GI: Crampy abdominal pain, nausea, vomiting, diarrhea**
- **Cutaneous: Urticaria, angioedema**
- **Respiratory: Shortness of breath, stridor, cough, wheezing**

Food-induced Anaphylaxis: Fatal Reactions

- **Fatal reactions are on the rise**
 - ~150 deaths per year
 - Usually caused by a known allergy
- **Patients at risk:**
 - Peanut and tree nut allergy
 - Asthma
 - Prior anaphylaxis
 - Failure to treat promptly w/epinephrine
- **Many cases exhibit biphasic reaction**

Fatal Food-induced Anaphylaxis

(Bock SA, et al. *JACI* 2001;107:191–193)

- **32 cases of fatal anaphylaxis**
- **Adolescents or young adults**
- **Peanuts, tree nuts caused >90% of Rxn**
- **20 of 21 with complete history had asthma**
- **Most did not have epinephrine available**

Venom-induced Anaphylaxis: Incidence

- **0.5%–5% (13 million) Americans are sensitive to one or more insect venoms**
- **Incidence is underestimated**
- **Incidence increasing due to fire ants and Africanized bees**
- **Incidence rising due to more outdoor activities**
- **At least 40–100 deaths per year**

Venom-induced Anaphylaxis: Common Culprits

- **Hymenoptera**
 - **Bees**
 - **Wasps**
 - **Yellow jackets**
 - **Hornets**
 - **Fire ants**
- **Geographical**
 - **Honeybees, yellow jackets most common in East, Midwest, and West regions of US**
 - **Wasps, fire ants most common in Southwest and Gulf Coast**

Venom-induced Reactions: Common Symptoms

- **Normal: Local pain, erythema, mild swelling**
- **Large local: Extended swelling, erythema**
- **Anaphylaxis: Usual onset within 15–20 minutes**
 - **Cutaneous: urticaria, flushing, angioedema**
 - **Respiratory: dyspnea, stridor**
 - **Cardiovascular: hypotension, dizziness, loss of consciousness**
- **30%–60% of patients will experience a systemic reaction with subsequent stings**

Latex-induced Anaphylaxis: Incidence

- **1%–6% of US population (up to 16 million) affected**
- **8%–17% incidence among health care workers**
- **Repeated exposure leads to a higher risk**
- **Incidence has increased since mid 1980s**
 - **Latex gloves, especially powdered gloves**

Latex-induced Anaphylaxis: Triggers

- **Proteins in natural rubber latex**
- **Component of ~40,000 commonly used items**
 - Rubber bands
 - Elastic (undergarments)
 - Hospital and dental equipment
- **Latex-dipped products are biggest culprits**
 - Balloons, gloves, bandages, hot water bottles

Reactions to Latex

- **Irritant contact dermatitis**
 - Dry, itchy, irritated hands
- **Allergic contact dermatitis**
 - Delayed hypersensitivity
- **Latex allergy**
 - Immediate hypersensitivity
 - Sx: hives, itching, sneezing, rhinitis, dyspnea, cough, wheezing
 - Greatest risk with mucosal contact

Latex-induced Anaphylaxis: Prevention

I. AVOIDANCE

- Use latex-free products
- Alert employer/health care providers, schools about need for latex-free products and equipment
- Wear MedicAlert[®] bracelet
- Awareness of cross-sensitivity with foods:
 - Banana
 - Avocado
 - Chestnuts
 - Kiwi
 - Stone fruit
 - Others

Treatment of Anaphylaxis

- **Additional measures may include**
 - **Corticosteroids**
 - **Supplemental O₂; airway maintenance**
 - **IV fluids, vasopressor therapy**
 - **Repeat epinephrine if Sx persist or increase after 10-15 minutes**
 - **Repeat antihistamine ± H₂ blocker if Sx persist**
 - **Observe for a minimum 4 hours**
 - **Arrange follow-up care, provide EpiPen[®] Rx and education**

Myth: Epinephrine is Dangerous

REALITY:

- Risks of anaphylaxis far outweigh risks of epinephrine administration
- Minimal cardiovascular effects in children (Simons et al, 1998)
- Caution when administering epinephrine in elderly patients or those with known cardiac disease