

# Food Allergy Emergency? Anaphylaxis?

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# Do you know?

- What is food allergy?
- Is food allergy diagnosis increasing or not?
- Is food allergy like bee-sting allergy?
- Are all allergic reactions alike?
- What makes some reactions more dangerous than others?
- What is the best medical treatment?
- How should I position the patient?
- How important is the history?
- Do I need to transport?



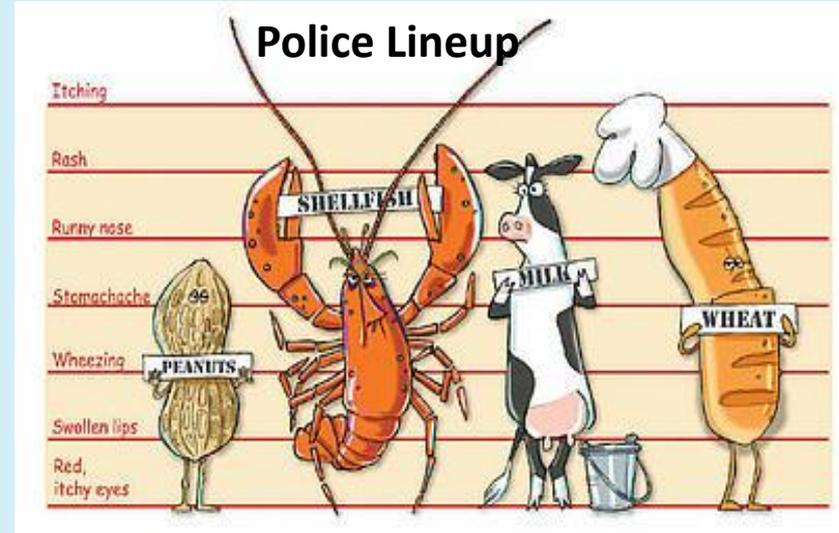
# Definitions

- **Adverse Food Reactions**: broad term, person eats food and they have an undesirable effect
  - **Food Allergy**: an adverse health effect arising from a **specific immune** response. It happens each time the food is eaten and the reaction can be life threatening



# Prevalence

- 1 in 13 children in the U.S. has a food allergy
- More than 15 million adults and children in the U.S.
- Worldwide 220-520 million people have food allergy
- Hospital admissions for food-induced anaphylaxis increased 106% from 1998-2012<sup>1</sup>



# Prevalence of Food Allergies in US

	Children	Adults	
Milk	2.2 – 3%	0.3%	← #1 in Americas and Middle East
Egg	0.8 – 1.5%	0.2%	← #1 in Australia and Asia
Peanut	0.6 – 2%	0.6%	← More common in Australia, Western Europe and USA
Tree nuts	0.4 – 1%	0.6%	
Fish	0.2 – 0.5%	0.4%	← More common in Asia
Shellfish	0.5 – 1.4%	2%	
Wheat	0.4%	0.3%	
Soy	0.4%	0.3%	

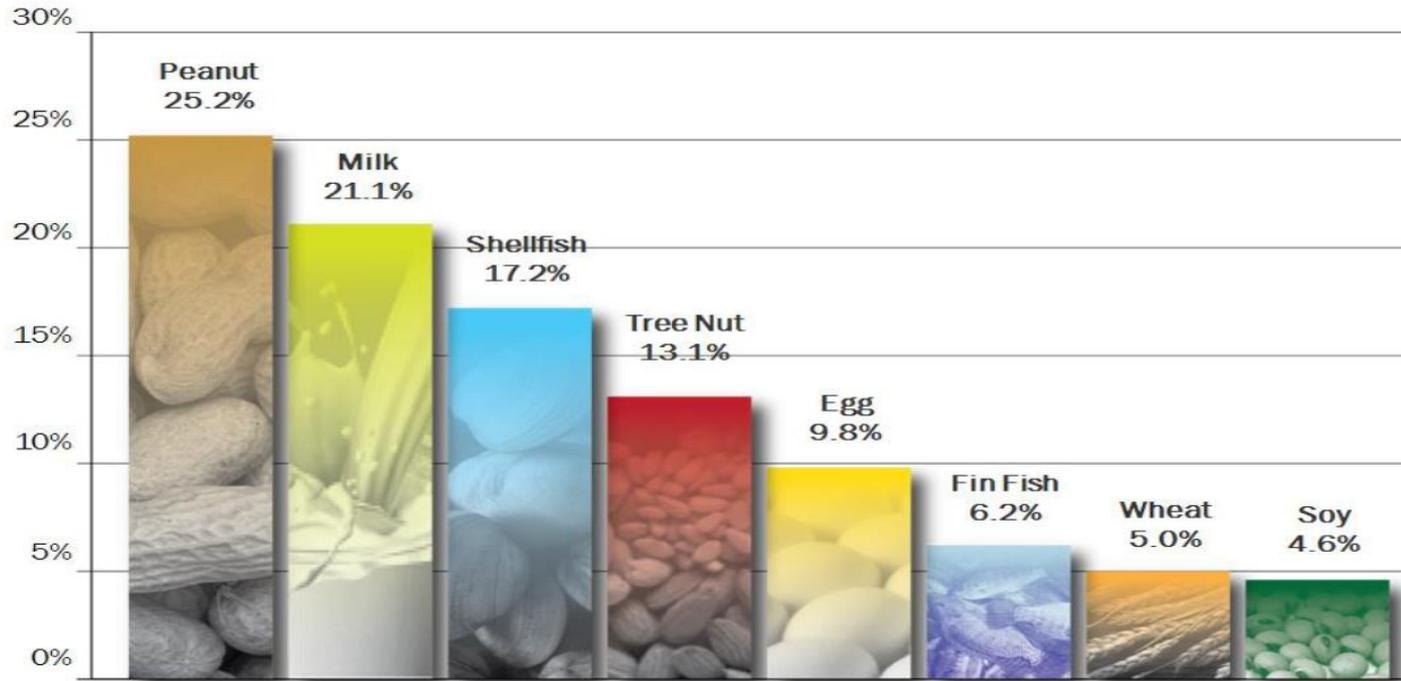
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Koplin JJ, et al. *Curr Opin Allergy Clin Immunol* 2015 Oct; 15:409-16.



# What are the most common food allergies?



Specific labeling required by FALCPA to these foods

# Why the increase in food allergy?

- Genetic make up?
- Public health changes?
- “Hygiene Hypothesis” - immune system is bored (vaccines, antibiotics, hygiene)
- Environmental exposures?
- Too much testing? Not real?
- Waiting too long to introduce foods?
- Changes during pregnancy and delivery?
- Vitamin D deficiency?



# Other conditions often called “food allergies”

## **Esophageal conditions**

- Kids or adults – similar conditions
- Inflammatory – don’t require epinephrine

## **Oral allergy syndrome**

- Mild and usually does not get worse or require epinephrine
- Raw fruits/vegetables (e.g. apples, carrots, kiwi, peaches, melons, tomatoes)
- Itchy lips, mouth, throat, ears; sometimes GI symptoms
- Cross-reactions with pollen from trees and grasses

## ***Lactose Intolerance***

- Lacking digestive enzyme
- Discomfort not danger

## ***Celiac Disease***

- Destructive, autoimmune process
- Malabsorption

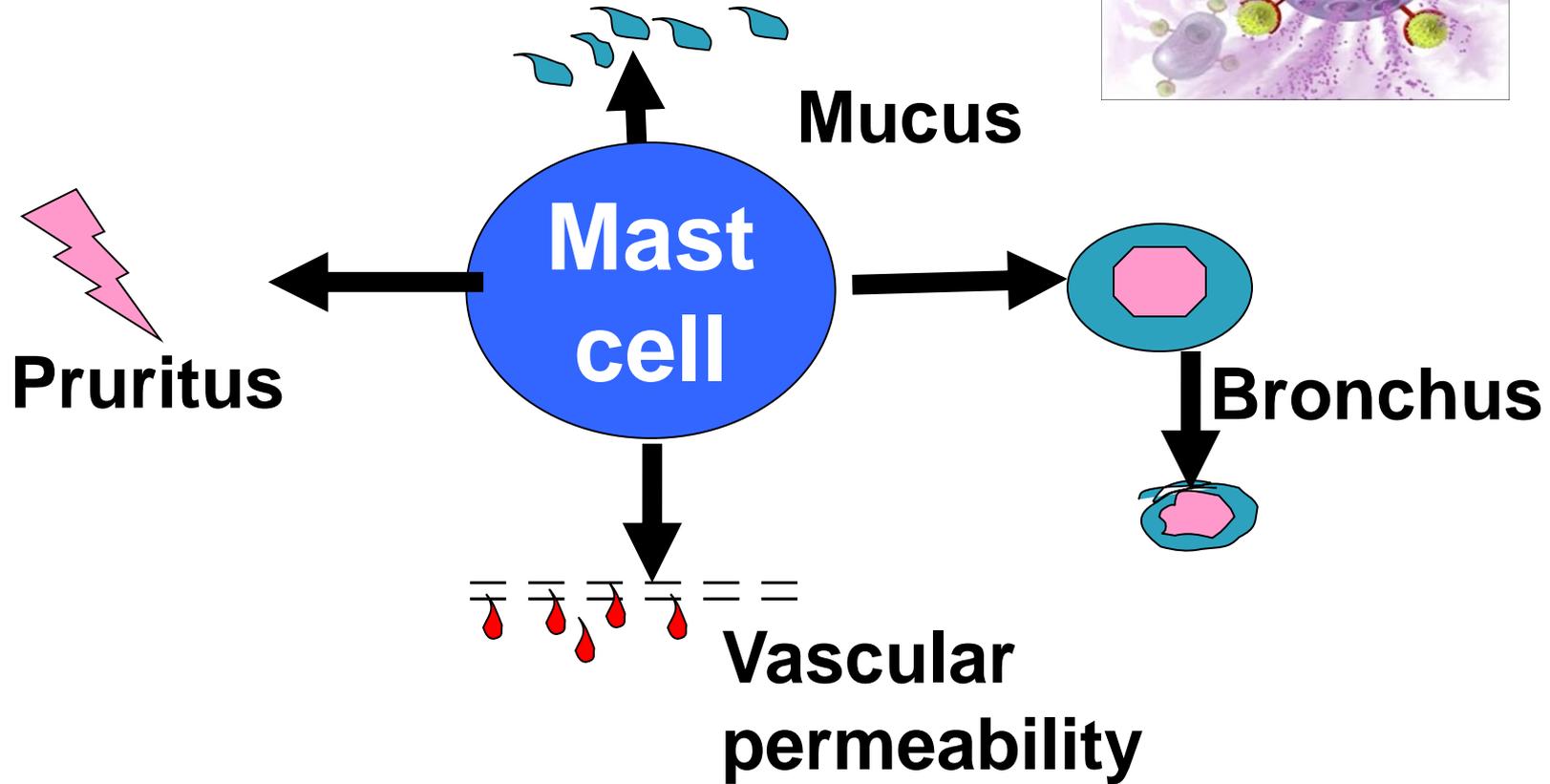
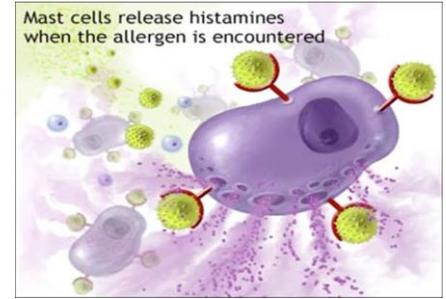
## ***Gluten Intolerance***

- New diagnostic category
- Symptoms without tissue destruction



<b>Body System</b>	<b>Signs &amp; Symptoms</b>
Skin	rash
Mucous membranes	severe runny nose, saliva, swelling
Respiratory	wheeze, rapid cough, choking/gagging, swelling
Gastrointestinal	vomiting, pain
Cardiovascular	“weak”, passing out, swelling

# What happens in allergic reaction?



Mild symptoms

Moderate symptoms

Severe symptoms

Anaphylaxis

Death



# Hives or Welts



# Small airways tighten

Image credit: Guy Hilton Asthma Trust



# Airway swelling

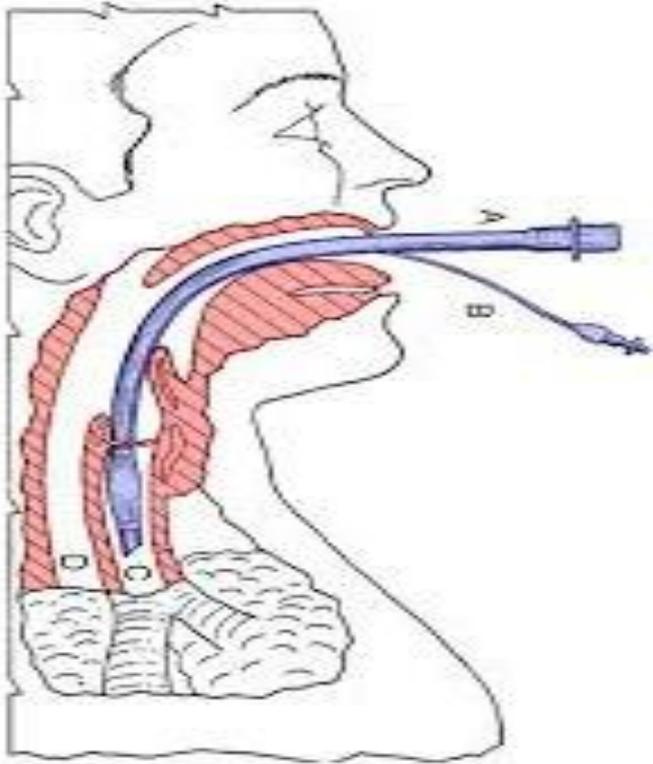
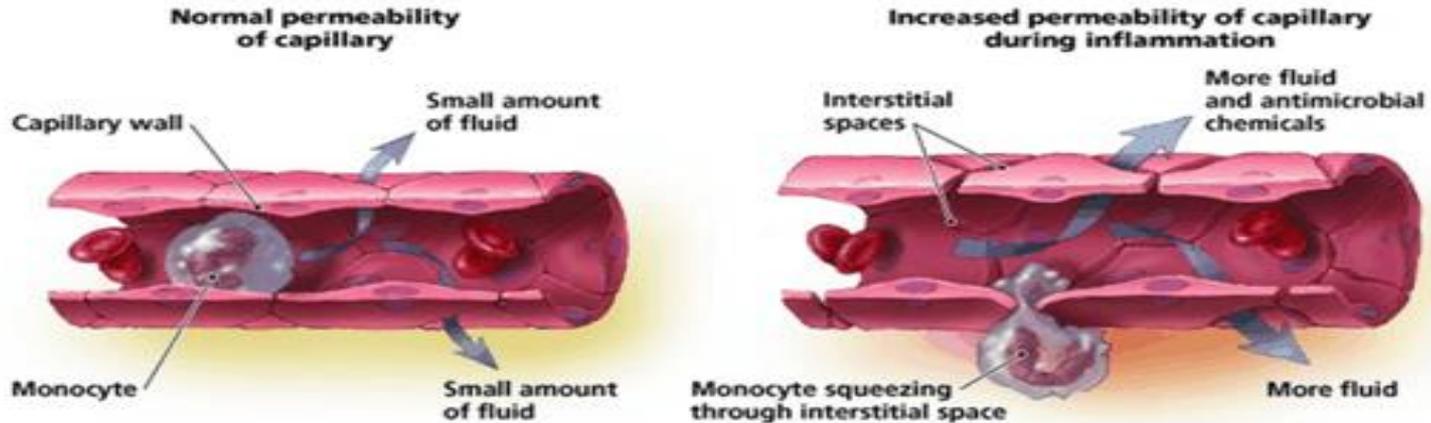


Image credit: ACAAI Slide show 2012

# Leaky blood vessels

Image credit: excellentpatientcare.com



# Circulation

BP drop

Pale

Confused

Weak

Generalized swelling  
and redness



Image source: Wikipedia

# Sick? Not Sick? ABCs

## A and B

Work of breathing (snoring, head bobbing, etc)

No wheeze could mean no air movement

Loud, boisterous crying baby can be good!

Pulse ox – late change in kids

Airway signs

## Circulation

Red or pale

Puffy

Weak

Low BP



**Tone**

**Interactiveness**

**Consolability**

**Look / gaze**

**Speech / cry**

# Epinephrine

- What is it?
- How does it work?
- When do I give it?

# Epinephrine

- Alpha tightens blood vessels
- Beta loosens small airways (albuterol effect)

Give it.....

- **EARLY**
- Reverses early stages of
  - Vessel leaking
  - Asthma tightening
- Doesn't work well after patient is sicker



# What else?

## Medications

- **Epinephrine**
- Can also give Albuterol if prescribed
- Can give antihistamine (though not the primary treatment)
- Can repeat in 5 minutes if not improving
- O2 and IVF

## Supine

- Blood pressure drop can be deadly
- NPO

## 911

- **Transport to ED**
- Detailed history – all phases

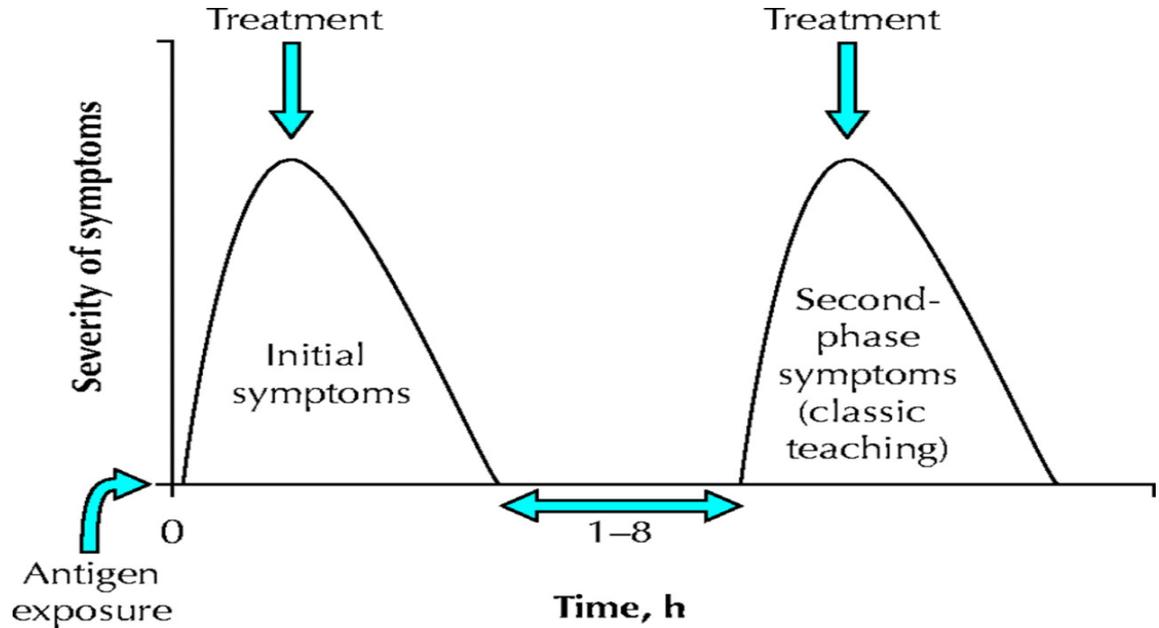


## *Ask.....*

- Symptoms/signs before epinephrine was given?
  - If child now appears normal, is this a result of effective epinephrine use?
- Previous asthma history?
  - Poorly controlled asthma increases death risk
- Previous reactions?
  - Previous mild reaction does not indicate likelihood of another mild reaction
  - Previous severe reaction does indicate risk of severe reaction again

# Patterns of Anaphylaxis

- Immediate
- Biphasic
- Protracted
- Delayed



# More facts

- Fatal food –induced anaphylaxis can occur sometimes without skin manifestations
- Some cases only occur if exercise follows ingestion of causal food

# Check your knowledge

- Is all food allergy the same?
- What is a term for severe allergic reaction?
- What body changes happen in severe allergic reaction?
- What is the most important treatment for severe reaction?
- When should I give the treatment?
- How do a position the patient?
- Do I have to transport?

# Common Side Effects from Epinephrine



Paleness (100%)

Shaky (80%)

Anxiety (70%)

Fast heart rate (50%)

Headache (20%)

Nausea (20%)



# Shock



- Maintenance of the airway and oxygenation
  - 100% O<sub>2</sub>
  - ET tube or cricoidotomy
- **Epinephrine**- can be given IM if reasonable perfusion(1:1000, 0.01 ml/kg to max of 0.5 ml)
  - if hypotensive or hypo perfused can be IV or IO (1:10,000 solution, 10 ug/kg[0.1ml/kg] over 1-2 minutes
  - follow by 0.1ug/kg/min which can be titrated up to 1.0ug/kg/min

# Great Resources

**FARE** Food Allergy Research and Education

[www.foodallergy.org](http://www.foodallergy.org)

**FASGOT** Food Allergy Support Group of the  
Tidewater

[www.fasgot.com](http://www.fasgot.com)

**AAAAI** American Academy of Allergy, Asthma, and  
Immunology

[www.aaaai.org](http://www.aaaai.org)

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