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MedNet21
Center for Continuing Medical Education

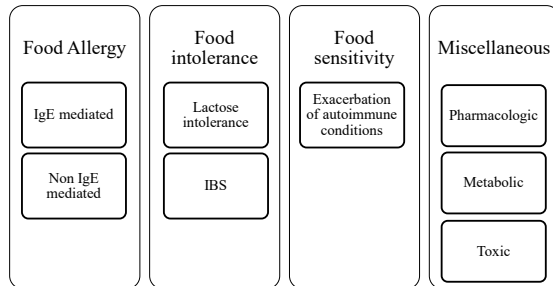
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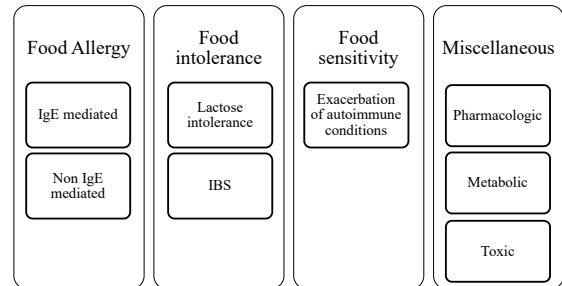
- Discuss the presentation and treatment of IgE mediated food allergy
- Review the exceptions to the typical presentation
- Discuss the relationship between atopic dermatitis and IgE mediated food allergy
- Discuss the presentation and treatment of non-IgE mediated food allergy



Adverse reactions to food



Adverse reactions to food



Food intolerance

Related to difficulty digesting certain foods

- Some studies have found improvement in IBS symptoms with gluten or dairy avoidance

Lactose Intolerance

- Lactase non persistence (rare in children < 5)
- Transient lactose malabsorption
- Developmental lactase deficiency

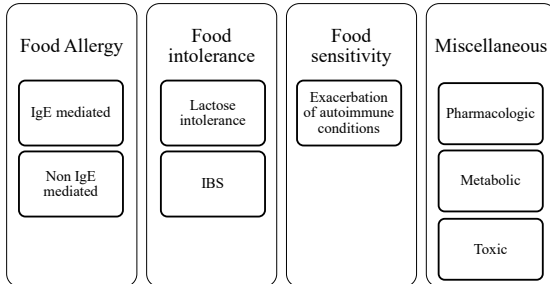
Other problems with milk...

Milk proctocolitis

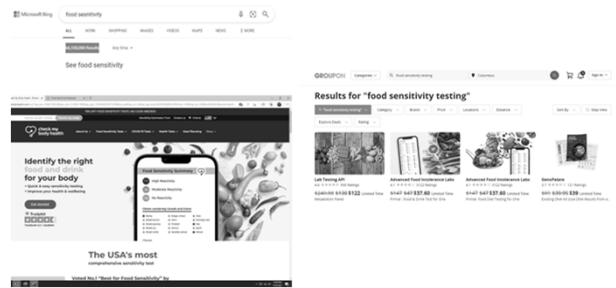
GERD

Constipation

Adverse reactions to food



Food sensitivity



Food sensitivity (cont.)

everlywell

Choose a Test Register Your Kit The Science Help Log In Cart (+1.888.525.2222)

Food Sensitivity Explained

What is food sensitivity?

We typically think of severe, rapid reactions when our bodies don't agree with the food we have consumed. Like anaphylaxis or severe allergic reactions, these adverse reactions can be life-threatening. Unlike common food allergies, these adverse reactions are delayed and are usually life-threatening.

But what many people don't know is that food sensitivities can affect our health and our mood. What's more, food sensitivities are largely undiagnosed. While they may be less scary than a food allergy, these imperious and highly individualized food sensitivities can still make us experience unpleasant and unwanted symptoms.

Luckily, with growing awareness and food sensitivity testing capabilities, it's easier to begin the process of identifying which foods may be connected to an unwanted symptom you are experiencing.

[CHECK FOOD SENSITIVITY](#)



Food sensitivity

A food sensitivity is a different and less severe reaction to food than a food allergy. It is a physiological response of the immune system after exposure to food components. Unlike food allergies, food sensitivities are not life-threatening. They are often associated with chronic conditions like irritable bowel syndrome (IBS) and are usually diagnosed through a food sensitivity test. People who have food sensitivities may experience various symptoms that range from mild to severe, including bloating, gas, constipation, and diarrhea. Some people may also experience more severe symptoms like skin rashes, headaches, and fatigue.

[Food Sensitivity Explained \(everlywell.com\)](#)

Food sensitivity (cont.)

“...Food-specific IgG4 [indicates] a physiological response of the immune system after exposition to food components.... Therefore, testing of IgG4 to foods is considered as irrelevant”

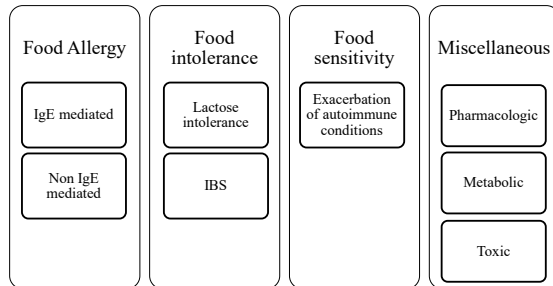
- *European Academy of Allergy and Clinical Immunology (EAACI); AAAAAI*

"the presence of specific IgG to food is a marker of exposure and tolerance to food... expected in normal, healthy adults and children"

- *Canadian Society of Allergy and Clinical Immunology (CSACI)*

Suppl 30 Allergy 2008; 63:793
 Book 362 J Allergy Clin Immunol 2010; 125:1410.
 Curr Allergy Asthma Clin Immunol 2012; 8:12

Adverse reactions to food



Irritant Contact Dermatitis

IgE-mediated food reactions

- Reproducible with each ingestion
- Acute onset within 1-2 hours of ingestion
- Duration expected to be < 12 hours
- Symptoms should not occur without ingestion
- Suspected foods should be common causes of food allergy

Nonallergic contact reactions

- May not occur with each ingestion
- Contact with the skin is a prerequisite
- Symptoms often resolve without treatment
- Can have a long list of suspected triggers
- Suspected foods often uncommon causes of food allergy, i.e. tomatoes, berries



Food Allergy

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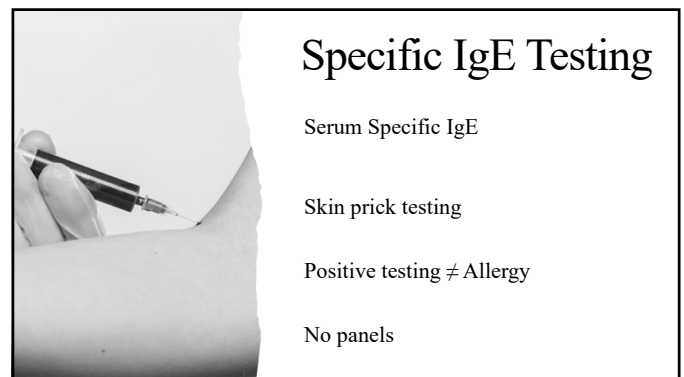
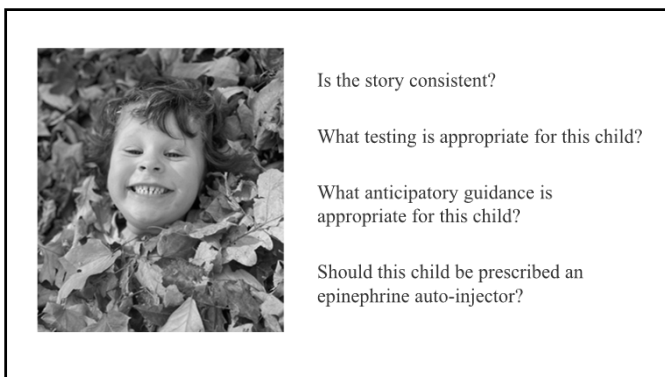
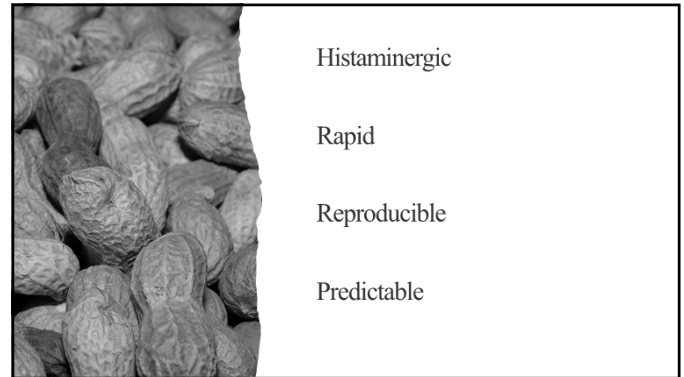
THE OHIO STATE UNIVERSITY
 NATIONWIDE CHILDREN'S HOSPITAL



4 year old with new food allergy concern

One week ago, he took a bite of a candy bar that had peanuts and spit it out telling his mother that his mouth was 'spicy'

Ate peanut at 6 months of age without any reaction





Downsides to testing ?

High false positive rate

Impact on nutrition

Family anxiety

Oral food challenges (OFC)



Wait 1-2 hours

Definitive answer regarding allergy status

Positive and Negative OFC lead to improvement in QoL

Karen IM Poller Allergy Immune 2018

Natural History of IgE Mediated Food Allergy



Thoughts about the history?

Is it anaphylaxis?

Video demonstration – Epinephrine Autoinjectors



Intranasal Epinephrine – Demonstration



Food Allergy

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NATIONWIDE MEDICAL CENTER

Food allergy treatment

Traditional Management

Oral Immunotherapy

Omalizumab

Food allergy treatment

Traditional Management

Oral Immunotherapy

Omalizumab

Traditional Management



Confirm
Diagnosis



Allergen
avoidance



Epinephrine
and
emergency
action plans



Manage the
psychosocial
implications



Nutritional
Counseling



Monitor for
resolution

Food allergy treatment

Traditional Management

Oral Immunotherapy

Xolair

Food allergies could soon become a thing of the past – here's why

Allergic reactions to foods are a growing, potentially life-threatening problem. The good news is we can turn this around, says Karl Nadeau.



HEALTH | COMMENT | 10 March 2021

Philadelphia

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**Got Food Allergies?
Discover a New Treatment
that Can Reverse Life-
Threatening Reactions**

July 15, 2021 / Allergies

**Could There Be a Cure for
Peanut Allergies in
Children?**

New treatment offers hope for outgrowing
the life-threatening condition

HEALTH

**How Close Are We To A Cure For Food
Allergies?**

After years of little to no movement, science is on the cusp of big
advancements in the treatment of food allergies, raising hope that a cure
could be on the horizon.

Food allergies could soon become a thing of the past – here's why
 Allergic reactions to foods are a growing, potentially life-threatening problem. The good news is we can turn this around, says Karl Radde.
 By Karl Radde
 HEALTH | COMMENT | 10 March 2021

Oral Immunotherapy

Could There Be a Cure for Children?
 New treatment offers hope for outgrowing the life-threatening condition

Got Food Allergies? Discover a New Treatment that Can Reverse Life-Threatening Reactions

How Close Are We To A Cure For Food Allergies?
 After years of little to no movement, science is on the cusp of big advancements in the treatment of food allergies, raising hope that a cure could be on the horizon.

Oral Immunotherapy (OIT)

A method of modulating the immune system by repeated exposure to small and increasing amounts of antigen

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graph BT
    A[Higher threshold dose] --> B[Desensitization]
    B --> C[Sustained unresponsiveness]
    C --> D[Tolerance]
  
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Does OIT work?

Effective in achieving desensitization (60-90% patients)

Few studies show sustained unresponsiveness

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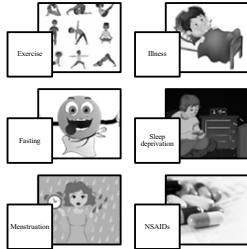
graph BT
    A[Higher eliciting dose] --> B[Desensitization]
    B --> C[Sustained unresponsiveness]
    C --> D[Tolerance]
  
```

Kim EH Allergy 2020

Adverse events during peanut OIT

	Active group	Placebo group
Patient withdrawal due to adverse effects	11.6%	2.4%
Risk of allergic reaction	12% patients in clinic 14% of patients at home 23% total patients	10% risk of accidental reaction
Epinephrine administration	14%	6.5%
Biopsy proven Eosinophilic Esophagitis	~2-3%	43-56 of 100,000 children and adults
GI symptoms	- 14% episodic vomiting > 2 hours after dose - 6% GI symptoms that improved with dose reduction	<small> Vickery B NEJM 2016, Mansfield LE Allergy Asthma Proc 2013 Wasserman RJ J Allergy Clin Immunol Pract 2014, Nadeau S Pediatr Allergy Immunol 2016, Wasserman RJ J Allergy Clin Immunol Pract 2019 </small>

Precautions during OIT



- Take dose one hour after eating a meal
- Do not up dose while sick
- Do not up dose during menstrual cycle
- Do not exercise or perform increased activity within 2 hours of a dose
- Avoid NSAID
- Avoid sleep deprivation

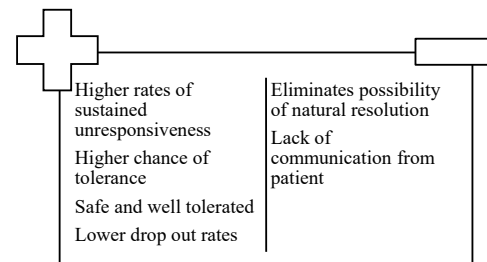
Ideal candidates for OIT

- Patients with significant quality of life impairment and social restriction that has not improved with education
- Patients with very low threshold doses that need higher levels of vigilance
- Patients with poor impulse control that are prone to accidental reactions

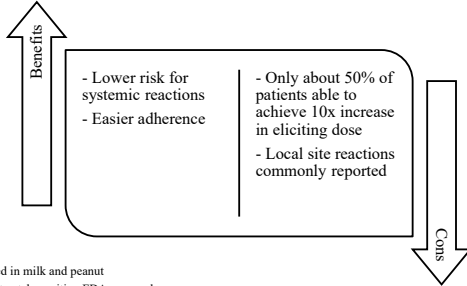
Ideal candidates for OIT

- Patients with significant quality of life impairment and social restriction that has not improved with education
- Patients with very low threshold doses that need higher levels of vigilance
- Patients with poor impulse control that are prone to accidental reactions
- Infants and toddlers with newly diagnosed peanut, tree nut or sesame allergy

Early Peanut OIT



Epi-cutaneous immunotherapy



Studied in milk and peanut
Peanut patch awaiting FDA approval

Sampson HA JAMA 2017

Food allergy treatment

Traditional Management

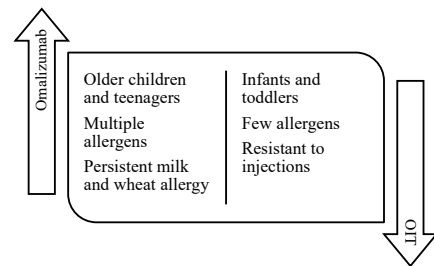
Oral Immunotherapy

Omalizumab

Omalizumab

- Monoclonal anti-IgE
- Can increase threshold dose
- Should be used in conjunction with avoidance
- May be combined with OIT
- May lead to cautious dietary expansion

Omalizumab vs OIT



Sampson HA JAMA 2017

Allergic considerations for children with Atopic Dermatitis

Can we prevent food allergy development?

Can allergies be making the eczema worse?

Food sensitization in AD

Sensitization in atopic dermatitis

- Six times higher in patients with AD than healthy controls
- Lower association with clinical reactivity in patients with AD

Prevalence

- Ranges from 30-80%

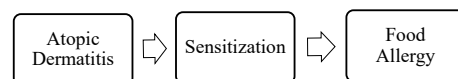
Tsai et al. J Allergy Clin Immunol 2016 Feb; 137(4): 1071-1077

Food sensitization in AD (cont.)

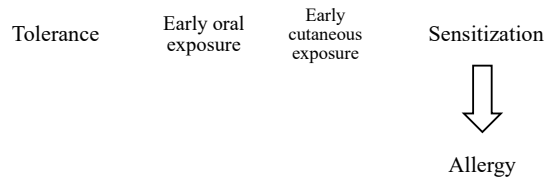
Not Food Allergy

Tsai et al. J Allergy Clin Immunol 2016 Feb; 137(4): 1071-1077

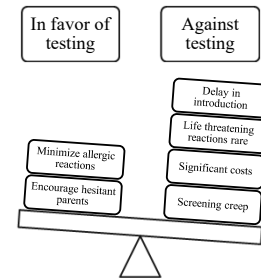
What came first?



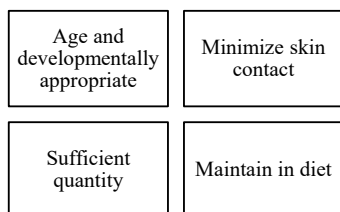
Dual Exposure Hypothesis



Do I need to test before introducing?



How should I introduce peanut

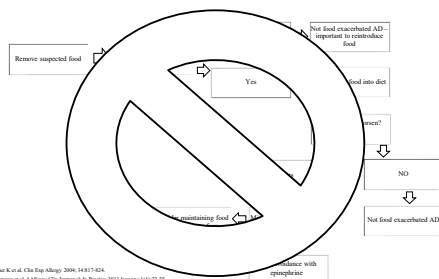


Allergic considerations for children with Atopic Dermatitis

Can we prevent food allergy development?

Can allergies be making the eczema worse?

Approach to food exacerbated AD (cont.)



Complications of food exacerbated AD

Patients with food triggered AD can develop immediate reactions after prolonged elimination

Main risk factor for developing an IgE mediated food allergy is avoidance of the food



Chong et al. J Allergy Clin Immunol Pract 2016; 4(2):229-236.
Flanagan AL. Allergy. 2006; 61(12):170-174.



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Case



55 yo man

Tells you that he keeps waking up at night with itching, hives, and difficulty breathing

Is it a food allergy?

What is Alpha-gal?



Limitations in Epidemiology

Helminths appear to also be able to sensitize to alpha-gal

Evidence of high rates of alpha-gal sensitization without symptoms

Rates of sensitization in asymptomatic children from Ecuador (32%) and Kenya (54%)

US military recruits

Denmark

University of Virginia

Risks of
Unnecessary
Avoidance



Nutritional



Anxiety



Social Withdrawal

Medications and Alpha-gal

Cetuximab and Infliximab

- Less of a concern for newer biologics
- Chinese Hamster Ovary derivation

Heparin

- Less than 5% risk

Carrageenan, Magnesium stearate

- Case reports

Case

6 month old male, mother is starting to solid foods
Mother generally breast feeds

She reports that on the two occasions that she has attempted formula, he has had vomiting

Is it a food allergy?



Vomiting started 3 hours after the formula

The vomiting was dramatic and recurrent, also had diarrhea

Mother reports that she almost called 911 because he seemed lethargic, but then he started nursing and seemed better



Food Allergy?

It is occurring reproducibly

BUT

Mainly GI symptoms?

Is three hours too delayed?



Non- IgE Mediated Food Allergy

Allergic Proctocolitis

Food Protein Induced Enterocolitis Syndrome (FPIES)

Chronic FPIES

Intermittent vomiting
Chronic watery diarrhea
Dehydration
Weight loss
Failure to thrive

**Acute FPIES**

- Repeated vomiting 2-6 hours after ingestion
- Diarrhea only after ingestion
- Hypotension
- Hypothermia
- Dehydration



Non IgE Mediated Food Allergy

Management

Prognosis