IgE Food-Specific Antibody Testing

- The E class of circulating immunoglobulins constituting long-term memory of antigenic exposures
- Antigen-antibody complexes trigger atopic (and anaphylactic) allergic reactions

IF FOOD-SPECIFIC IgE ELEVATIONS

- Causes:
  - » Exposure to antigenic food components that are not bound by IgG antibodies results in detection by antigen-presenting cells, stimulation of a specific clone of B-cells that have long-lasting ability to produce IgE antibodies to the food
  - » Re-exposure can result in the formation of IgE-antigen complexes that initiate the atopic response, including the release of histamine and other vasoactive amines from mast cells
  - » Immediate production of symptoms frequently alerts the patient to the offending food, producing automatic food avoidance to prevent symptom recurrence
- Symptoms:
  - » Rhinitis, conjunctivitis, bronchoconstriction, urticaria, atopic eczema, vomiting, diarrhea, anaphylaxis
- Treatments:
  - » Food elimination, desensitization therapies
  - » Anaphylaxis:
    - Subcutaneous or intramuscular epinephrine and intravenous fluids with adjunctive airway protection, antihistamines, steroids and beta agonists

Characteristics of IgE and IgG-Mediated Reactions to Food

IgE Mediated	IgG Mediated
Incidence is relatively low	Incidence is relatively high
Result from infrequent exposure	Result from frequent exposure
Very predictable short term symptoms	Chronic, variable symptoms
Offending food is usually obvious	Offending food frequently not suspected
Basophil/mast cell triggered anaphylaxis	Immune complex trigger
Histamine/leukotriene release	Inflammatory response
Patient aware of offending food	Patient rarely aware of offending food
Antibody persistent for years	Antibody declines within one month
In vitro testing for serum IgE for confirmation	In vitro testing for serum IgG_4 shows food offenders and extent of gut permeability
Treatment: Permanent food avoidance and immunotherapy	**Treatment:** Eliminate then rotate food(s), heal gut, improve digestion