How Food Sensitivities Cause Symptoms

Food and food-chemical sensitivities are complex immune, but non-IgE (non-allergic) mediated reactions involving multiple triggering mechanisms and multiple classes of leukocytes. Pathogenic reactions ultimately lead to release of proinflammatory and proalgesic mediators from associated white cells with resulting symptoms across a wide range of clinical conditions.

<u>Triggering</u> Mechanisms

- Food antigens
- Food chemicals
 - Haptens
 - Amines
 - Pharmacologic

Urticaria (chronic)

- Immune Complexes
 - IgG
 - IgM
- Lectins

Cellular Activation

- Lymphocytes
 - Sensitized T-cells
 - ◆ T-Cells
 - NK Cells
 - K Cells
- Eosinophils
- Basophils
- Monocytes
- Neutrophils

Mediator Release

- Cytokines
 - Interleukins
 - Chemokines
 - TNFs
 - Interferons
- Leukotrienes
- Histamine
- ◆ ECP, MPE, Amines
- Prostaglandins
- Others

Migraine Depression ADD/ADHD **Epilepsy** Autism Spectrum Disorder Otitis Media Eosinophilic Esophagitis **GERD** Fibromyalgia **Asthma** Arthritis (Inflammatory) Cyclic Vomiting Syndrome **Ulcerative Colitis** Metabolic Syndrome Crohn's Disease Irritable Bowel Syndrome Eosinophilic Gastroenteritis

Pathophysiologic Effects

- Inflammation
 - Subclinical
 - Clinical
- Tissue damage
- Pain receptor activation
- Smooth muscle contraction
- Edema
- Excess mucous
- Neurological
- Endocrine
- Increased gut permeability



Interstitial Cystitis

Atopic Dermatitis

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