

# FOOD ALLERGY & SENSITIVITY TESTING



**US BioTek**  
LABORATORIES

## IT'S TIME FOR A POSITIVE CHANGE!

One of life's many pleasures is eating, and we have so many delicious and tantalizing foods from which to choose. Yet some foods may induce our body to react negatively and promote undue inflammation and damage. Identifying and eliminating these foods from our diet can be a simple step toward better health.

## WHAT ARE ALLERGIES?

Millions and millions of people are affected by food allergies. Normally our immune system protects us against any "non-self" threat, like viruses & dangerous bacteria, and at the same time is tolerant of food, which of course is also non-self. Food allergies are the result of our immune system becoming imbalanced, irritated, and upregulated, causing it to attack our food as if it were a threat. This can lead to potentially harmful effects, as well as placing an unnecessary burden on our body's systems.

What are Food Allergies? The European Academy of Allergy and Clinical Immunology (EAACI) defines a Food Allergy as an immune system mediated, clinically evident reaction to foods. These immune reactions may involve our IgA, IgE, IgG, and IgM antibodies and are classified as either being IgE-mediated or non-IgE-mediated reactions. IgG and IgA antibodies, as well as immune complex formation, may be important players in the non-IgE mediated reactions.

Antibodies play an integral role in immune-mediated reactions. Each of these Y-shaped proteins, produced by cells of our immune system, is specific for each food allergen encountered. As part of our defense, these antibodies mediate significant inflammatory processes in efforts to neutralize and eliminate the allergen from the body. Allergic symptoms are the direct results of this process.

Typically, an IgE-mediated reaction, also called a Type I Immediate Onset Hypersensitivity Reaction, occurs within a very short period of time after exposure. Hives, swelling, acute gastrointestinal distress, oral allergy syndrome, or an acute asthma attack are common presentations of this type of reaction. Because the onset of the reaction is generally sudden, the relationship between the inciting food and the symptoms are usually self-evident.

The onset of symptoms associated with non-IgE-mediated reactions, on the other hand, are often delayed by hours or even days after exposure to the allergen. For this reason, these types of reactions are often referred to as Delayed Onset Hypersensitivity Reactions. These delayed reactions may involve antibodies other than IgE, such as IgG or IgA, and be associated with the formation of allergen-antibody immune complexes. By forming an immune complex with the allergen, the allergen is tagged for removal by the immune system, and a whole cascade of pro-inflammatory, excitatory, and potentially damaging biochemical events are set in motion.

Non-IgE-mediated immune reactions are likely underappreciated as far as their clinical relevance. In part perhaps, because the symptoms of delayed-type reactions may be ongoing and often are without a clear onset or endpoint, making it difficult to make the association with the inciting food.



Many of the signs and symptoms correlated with IgA and IgG antibodies to foods have been associated with celiac/ gluten sensitivity, as this is one of the more extensively studied conditions. A specific increase in serum IgA to wheat gliadin for example, has been demonstrated in many diseases affecting the gut mucosa such as celiac disease, Crohn's disease, ulcerative colitis, as well as rheumatoid arthritis, atopic dermatitis, gluten ataxia, nephropathies, and alcoholic and non alcoholic liver cirrhosis. Food specific-IgG has also been implicated in irritable bowel syndrome, bronchial asthma, rheumatoid arthritis, early atherosclerosis and obesity, to name a few. The nature of these food reactions is not entirely determined. Common threads, however, to these varied conditions virtually always include inflammation and immune dysregulation.

# WHY DO ALLERGIES DEVELOP?

A great majority of our immune system resides in the lining of our gastrointestinal tract. In fact, the GALT (Gut Associated Lymphoid Tissue) is regarded as our largest immune organ, and is there to protect us from non-self & potentially harmful agents we are exposed to, yet remain tolerant to the foods we eat.

Normally the GALT is elegantly controlled; able to discern the appropriateness of its actions towards foreign agents that may be harmful to the body (e.g., virus, bacteria) vs. foreign agents that are benign (e.g., food). Under this distinction healthy individuals do not mount an immune response against our food and antibody production is appropriately kept downregulated. This active state of immune "inattention" is regarded as being the normal healthy mode and may be referred to as Oral Tolerance.

When this state of tolerance is compromised - perhaps via a combination of dietary excesses or deficiencies, toxic environmental factors, or antibiotic use (which can upset the balance of microbes in our G.I. tract) - a cascade of immunologic events may ensue, wherein our GALT upregulates and begins to attack that which we dearly need - our food! This attack is often accomplished through the production of food-antigen specific antibodies in a generally chronic pro-inflammatory metabolic milieu.

This loss of discernment by our GALT to distinguish between friend or foe can have far reaching consequences, ranging from food allergies, fatigue and weight gain, to "brain fog", migraines, and celiac disease. This state of chronic inflammation may induce the development of a wide range of debilitating and degenerative conditions.

Increased gut permeability has also been implicated in playing a central role in the pathogenesis of a number of chronic inflammatory conditions, and it seems clear that these inflammation-induced changes in permeability can both cause the disease processes and be a consequence of them. Abnormal gut barrier function may involve genetic factors which lead to the inappropriate exposure of food antigens to the underlying GALT, triggering an immune response with the release of pro-inflammatory mediators that in turn promote both gut and brain barrier dysfunction.

# IN A NUTSHELL, WITH FOOD ALLERGIES WE HAVE:

## **IgE** - Mediated Immediate Onset Hypersensitivity Allergic Reactions

IgE antibodies are the main player here. Typically, allergic reactions occur within moments to a few hours after contact with the inciting food. Dangerous, even life-threatening anaphylactic reactions, such as those to peanuts or shellfish are examples. Specific-IgE antibodies may be elevated in diseases like allergic asthma, oral allergy syndrome, and atopic dermatitis.

## **Non-IgE** - Mediated Delayed Onset Hypersensitivity Allergic Reactions

These types of allergic reactions involve antibodies other than IgE (i.e. IgG and IgA) and may form circulating immune complexes. Many of the symptoms associated with these types of reactions often go unrecognized as having a food-responsive component and therefore might possibly be missed or misdiagnosed. Reaction time can vary considerably due in part to the persistence of the reaction once initiated.

# POSSIBLE DISORDERS THAT MAY BE ASSOCIATED WITH FOOD ALLERGIES

## **SKIN**

- Atopic Dermatitis, Eczema, Dermatitis Herpetiformis, Urticaria and Angioedema

## **DIGESTIVE SYSTEM**

- Oral Allergy Syndrome, Celiac Disease, Irritable Bowel Syndrome, Food Sensitive Enteropathy/Colitis and Eosinophilic Gastroenteritis

## **RESPIRATORY SYSTEM**

- Cough & Wheezing, including Asthma

## **HEAD AND NECK**

- Migraines, Meniere's Disease, Earaches, and Chronic Otitis Media

## **MUSCLES AND JOINTS**

- Arthritis

## **GENERAL**

- Low Energy, Irritability, Anxiety, Poor Sleep, and Failure to Thrive in Children

# ARE THE FOODS YOU EAT MAKING YOU SICK?

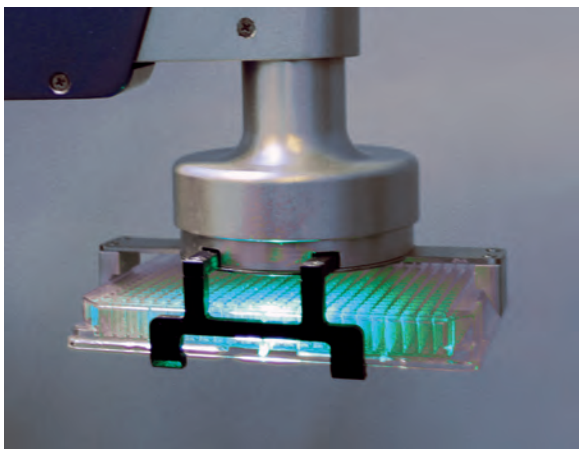
We've all heard the familiar saying you are what you eat. But did you know that maintaining a healthy body involves more than just a healthy diet? When our immune system is stressed or threatened certain foods can trigger processes that can strain even a strong body, and if continued over time, can potentially contribute to the development of many debilitating conditions.

## WHAT CAN I DO?

US BioTek Laboratories can help you discover which foods in your diet may be a source of more harm than good. Just a simple finger stick, to collect a few drops of whole blood, is enough to identify elevated food and antigen-specific IgA, IgG, and IgG4 antibodies. A full blood draw through venipuncture can be used to identify IgE antibodies in addition to IgA and IgG.

US BioTek Laboratories employs fully automated robotic ELISA systems to ensure precise, accurate, and reproducible detection of food-specific antibodies.

Under the guidance of your physician, test results may provide a targeted approach to a trial dietary elimination protocol. Test results are only part of a comprehensive health evaluation. Treatment decisions are the responsibility of your physician with a focus on all aspects of your health.



# THE US BIOTEK LABORATORIES ADVANTAGE



US BioTek Laboratories has set a new standard for identifying serum antigen-specific IgA, IgE, IgG, and IgG4 antibodies specific to foods, inhalants, candida (also IgM), and celiac markers. Incorporating the latest laboratory science with advanced automation and a dedicated research team, we've become the laboratory of choice for these services.

Identification of food-specific IgE antibodies is an FDA accepted diagnostic procedure in the assessment of The finding of food-specific IgA or IgG antibodies in our blood is not an FDA-recognized diagnostic indicator of allergy. Specific IgA, IgG, or IgG4 identification has been utilized in research settings to assess and investigate hypersensitivity reactions involving the formation of immune complexes. References are available upon request.

These statements have not been evaluated by the U.S. Food and Drug Administration (FDA).

## OTHER TESTING SERVICES

- Specific IgA, IgE, IgG, and IgG4 Antibody Panels for Common Indoor and Outdoor Inhalants
- Candida Antibodies & Antigen Panel
- Celiac Antibody Panel
- Comprehensive Urinary Metabolic Profile
- Environmental Pollutants Profile

US BioTek Laboratories has developed and determined the performance characteristics of this test. This test has not been cleared or approved by the U.S. Food and Drug Administration (FDA). US BioTek makes no claims as to the diagnostic or therapeutic use of its tests or other informational materials. US BioTek's test results and other information do not constitute medical advice, are provided for educational purposes only, and are not a substitute for professional medical advice. US BioTek is not responsible or liable for misuse or misinterpretation of the information provided, or any diagnoses or healthcare changes initiated by a patient or a healthcare practitioner based on the content of US BioTek's informational materials.



16020 Linden Ave N,  
Shoreline, WA 98133 USA  
P: 1.206.365.1256  
Toll-Free: 1.877.318.8728

[USBioTek.com](http://USBioTek.com)

