

Frequently Asked Questions

FOODStats FAQ's on Adverse Reaction to Foods

1. What is an adverse reaction to a food?

An adverse food reaction is any symptom following the intake of a food. The symptom may be any perceptible change in how we feel and/or function.

A symptom may present, for example, as a rash, achy joints, or fatigue. Adverse food reactions are classified into three subgroups; toxic food reactions, psychological, and non-toxic. A toxic food reaction is commonly known as food poisoning, due to contaminants contained in the food. A psychological food reaction, or food aversion, is usually the result of a prior ill experience with the food, and is largely psychosomatic in nature. A non-toxic food reaction is further divided into immune-mediated and non-immune-mediated groups. Non-immune-mediated food reactions, include adverse reactions from food additives, pharmacological compounds that can mimic allergy inflammation, and food intolerance due to an inherent enzymatic defect, such as lactose intolerance.

PathLab Laboratory's FOODStats ELISA quantifies for immune-mediated adverse reactions to foods. Immune-mediated reactions are defined as food allergies.¹

2. What are food allergies?

A food allergy is an adverse food reaction for which an immunological basis is clearly defined. Immune-mediated adverse food reactions involve the production of antibodies to certain food antigens. These reactions depend on a person's sensitivity to some foods over others, which may occur for many reasons including genetic predisposition and current health status. Food allergies are classified as IgE-mediated and non-IgE mediated reactions.

3. What may promote a food allergy?

The underlying cause of food allergies varies from person to person. Possible causes may include improper oral tolerance, stress, antigenic overload, compromised digestion, imbalance in gut microflora, and poor immune function.

4. How may I get tested for food allergies?

A simple blood draw is all that is required to assess for food allergies. PathLab employs state of the art ELISA methodology for our FOODStats antibody analysis. ELISA stands for Enzyme-Linked Immunosorbent Assay. ELISA is a semi-quantitative screening tool for the detection of IgE and IgG antibodies in serum.

The ELISA assay that PathLab employs, consists of a multi-well plate coated with purified, lyophilized (powdered) food proteins of a specific concentration. The patient's serum sample is added to the ELISA plate, and antibody-food antigen binding is measured. Specifically, a standard enzyme conjugate is added to each well. This enzyme conjugate will identify any antibodies present in the serum that have reacted to and bound to the food proteins adhered to each well. This activity is detected through a color change and measured using an optical density reader. The color intensity in the wells correlates to the degree of antibody-food antigen complex formation. A dark colored well, as assessed spectrophotometrically, indicates a larger number of antibody-food antigen complexes.

Using ELISA technology, PathLab assesses a patient's serum for the presence of immediate and delayed reactions to food antigens, namely immunoglobulin E (IgE) and immunoglobulin G (IgG) respectively. Our inhalant allergy panels assess for IgE. Allergic reactions to foods and inhalants are characterized by enhanced allergen-specific immunoglobulin serum levels with activation of immune mediators of inflammation. Research indicates that food and inhalant allergies are implicated in a number of health problems. Through PathLab ELISA testing, we provide a useful tool with which an individual's sensitization to food and inhalant allergens can be assessed.

As an assurance of quality, PathLab test performance is monitored through three internal controls per run and all tests are carried out in complete duplicate. In other words, each serum sample is split to assure reproducibility in the results. We attest to reproducible and reliable results of each and every sample from day-to-day, and week-to-week through stringent in-house precision criteria. External proficiency testing, through the College of American Pathologists is carried out quarterly. Our goal is to take every measure to ensure a dependable and clinically relevant test.

PathLab takes pride in running each and every test in complete duplicate to provide you with the assurance of accuracy and consistency in your results.

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5. Do I have to eat or avoid certain foods prior to testing?

No. It is best to maintain your usual dietary habits, consuming a variety of foods when possible. It is strongly advised to avoid any food that may have potentially resulted in a previous adverse reaction or anaphylaxis. Secondary exposure to these foods may prove fatal.

6. Do I need to discontinue my medications prior to testing?

Anti-inflammatory and immunosuppressive medications such as prednisone and cyclosporine respectively, depress the immune system and may interfere with the test results. The suggested time period to abstain from these types of medications prior to testing ranges from **2 weeks to 6 months**, or until symptoms re-emerge.

7. What is the difference between IgE-mediated and non-IgE-mediated food allergies?

IgE-mediated food allergies involve the production of IgE antibodies to certain foods that usually occurs immediately after the ingestion of the suspect food. These are defined as immediate food allergies because symptoms generally manifest within 2-3 hours after consumption of the culpable food. A late phase response peaks at about 12-24 hours post contact and may last up to 48 hours.

This classical food reaction occurs when IgE antibodies, bound to specific immune cells (mast cells), recognize and bind to the allergic food. This interaction triggers the release of chemical compounds, histamine and others, from the IgE-bound cell. These compounds cause much of the discomfort associated with allergy including stomach cramping, diarrhea, skin rash, swelling, and anaphylaxis. The culpable food and resulting symptoms are unique to the individual affected.

Non-IgE-mediated food allergies involve antibodies other than IgE, namely IgG. Symptoms of an IgG-dependent food reaction may occur hours to days following the ingestion of the suspect food, and are therefore defined as delayed food reactions. In particular, IgG antibodies may bind to food antigens and form complexes in the circulation. These complexes may deposit in various tissues and trigger inflammatory reactions.

8. What is an anaphylactic food reaction?

An anaphylactic reaction to an ingested food is a life-threatening condition that causes swelling and constriction of the airways. It is an IgE-mediated hypersensitivity reaction and occurs immediately after the ingestion of the culpable food. This condition requires immediate medical attention.

9. In the past, I have had an anaphylactic reaction to shrimp, which sent me to the hospital for medication. How come my FOODStats report from PathLab does not show elevated IgE levels to shrimp?

IgE antibodies live actively in blood circulation for about 1-2 days, with a residual activity on mast cells for about 2 weeks. Generally speaking, unless the blood sample for the FOODStats ELISA is drawn within this time frame from which the culpable food has been consumed, IgE antibody levels will not be elevated in blood circulation and hence will not show up elevated on the FOODStats report. This, however, does not mean that an anaphylactic food reaction will not re-occur at a future time. Once one has had an anaphylactic food reaction, it is strongly advised to abstain from the suspect food since a second exposure may prove fatal.

10. I know I have an immediate reaction to certain fruits and tuna. My ears become hot and red and I feel a burning sensation on my tongue and at the back of my throat whenever I eat these foods. How come my FOODStats report does not show elevated IgE antibodies to these foods?

Many different foods contain chemical compounds, histamine, serotonin, or other chemicals, which are also mediators normally released by an IgE-related reaction. Tuna, for example, contains histamine and citrus fruits contain octopamine. These compounds are defined as amines and may mimic allergy inflammation independent of antibody production. Headaches, diarrhea, and rash are other symptoms known to result from endogenous food substances.

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11. What do elevated IgE antibodies to foods mean on my FOODStats report?

Elevated IgE antibodies indicates an immediate immune-mediated allergic reaction to certain foods tested. This may manifest as a variety of symptoms. Symptoms may last for a few hours to days after omitting the culpable food from the diet.

12. What do elevated IgG antibodies to certain foods mean on my FOODStats report?

Elevated IgG antibodies indicate a delayed immune-mediated reaction to certain foods tested. This may manifest as a variety of symptoms. Because ill effects are not felt right away after intake of the suspect food, pinpointing symptoms to specific foods may prove challenging. Generally speaking, symptoms may manifest anywhere from 2-72 hours after consumption of the culpable food. IgG antibodies live actively in circulation for about 21 days with a residual activity on mast cells for about 2-3 months. Symptoms may therefore persist for weeks to months after omitting the culpable food from the diet.

13. I know I have a delayed food reaction to corn, but I have not eaten corn for the past year. How come my FOODStats report shows elevated IgG for corn?

Corn and corn-derived food products may be hidden in a variety of unsuspecting foods or products that we use daily. Corn products may be found in cleaning solutions, carpeting and perfumes. Cornstarch in particular, is often used to dust the lines where some toilet paper products are made. In addition, movie theaters may expose the individual to air-borne corn protein from the popping corn.

It is therefore important for the individual to read and understand food labels. Unfortunately some labels are inaccurate, misleading or incomplete, and it is essential to contact the manufacturer when in doubt.

14. My FOODStats report showed elevated antibody levels to banana of which I never eat, how come?

Banana is a very common ingredient found in many fruit shakes, smoothies, and baked goods. With a suspect reaction to banana, do consider a possible cross-reaction to natural rubber latex. Sensitization to latex has extensive cross-reactivity with certain foods, particularly banana, which may lead to clinical allergic reactions. Natural rubber latex is a common ingredient found in many products including balloons, appliance cords, hearing aids, swimwear, condoms, rubber bands, and medical and dental supplies such as masks, gloves, syringes, catheters and bandages.

15. What other types of cross-reactivities can occur?

Cross-reactivity is an important consideration in allergy assessment. When the immune system mounts a response to a protein of similar moiety to a known allergen, adverse reactions may occur. This is especially evident between pollen, fruits and vegetables.

16. Does reactivity to gluten mean I have celiac disease?

A definitive diagnosis of celiac disease is through a tissue sample taken from the small intestine where pathological damage is observed. An antibody response to gluten does not diagnose celiac disease, but may warrant further investigation.

17. Can I have withdrawal symptoms from one of my reactive foods?

Yes. Believe it or not, we easily become addicted to the foods we are reactive to! As with any addiction when we avoid the trigger we may develop withdrawal symptoms. Withdrawal symptoms are those that make us feel "lousy" and may include throat congestion, stuffy nose, diarrhea, fatigue, irritability, headaches, malaise, and increased appetite. Withdrawal symptoms should not be confused with other possible disorders, and it is advised to consult your practitioner about your specific symptoms. Keep in mind that withdrawal symptoms attributed to a food reaction are transient in nature.

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18. What do I do with the results of my FOODStats?

Treatment for food sensitivities is simple. It is suggested to identify and eliminate reactive foods, and implement a rotation-style diet. Two simple measures that may have profound effects on one's health. Realize that elevated antibody levels due to food reactions may suggest a compromised gut mucosal integrity.

The mucosal immune system, the Gut Associated Lymphoid Tissue (GALT), plays an integral part in systemic immunity and health. GALT is the largest immune organ of the body and represents our first line of defense against foreign invaders. The quality of our mucosal immunity is influenced by our genetics, dietary and lifestyle habits, and microbial colonization. Manipulation of these factors may offer interesting possibilities for the prevention of chronic conditions.

19. How long do I need to be on a special diet guideline before I start seeing results?

Since IgE antibodies live in circulation for only a couple of days, IgE-related symptoms may improve over a short amount of time. If your test results show a strong IgG component, symptom improvement may take longer. With judicious treatment and dietary modifications retesting is recommended in 3 months to reassess.

20. Are the antibody assessment panels suitable for infants?

At birth, the immune system is not fully developed. Most of the antibodies in infants are acquired from the mother, transferred via the placenta before birth. A physiologic hypogammaglobulinemia is present by age 2 to 6 months, which usually resolves after 6 months as the infant starts to produce its own antibodies. Normal levels may not be reached to about 12 to 36 months. This is more common among premature infants who may be profoundly hypogammaglobulinemic. Antibodies transferred through the breast milk during feeding may reflect the mother's diet and dietary sensitivities.

Physician: ADL
 Patient: 2731688
 Accession #: 200828967
 Age: 9
 Sex: F
 Collected: 2008-06-30 Received: 2008-07-07 Completed: 2008-07-10 CLIA #: 50D0965661

IgG 

Dairy *Bovine-derived unless specified*

	No Reaction	Low	Moderate	High
Casein				
Cow's Milk				
Whey				
Yogurt				

Spices

	No Reaction	Low	Moderate	High
Chili, Cayenne				
Curry Powder				
Ginger				
Mustard				
Pepper, Black				
Vanilla				
Woo-hsiang Powder				

Misc

	No Reaction	Low	Moderate	High
Baker's Yeast				
Brewer's Yeast				
Cocoa Bean				
Coffee Bean				
Honey				
Woo-long Tea				

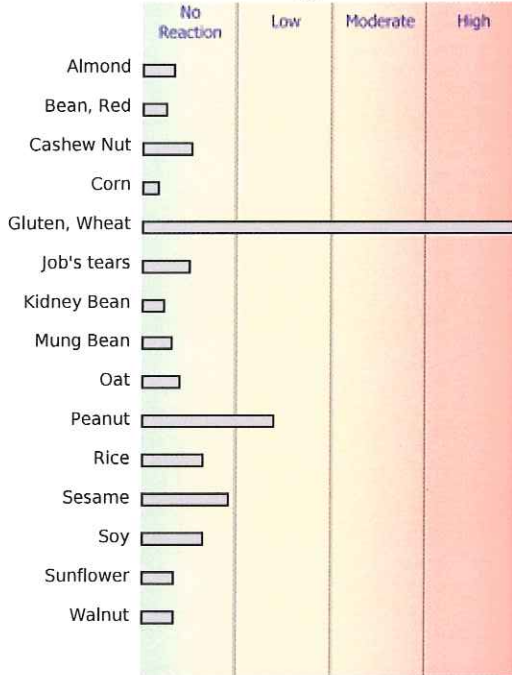
Vegetables

	No Reaction	Low	Moderate	High
Asparagus				
Bamboo shoots				
Bitter Gourd				
Broccoli				
Cabbage				
Carrot				
Cauliflower				
Celery				
Cucumber				
Eggplant				
Garlic				
Green Pepper				
Kelp				
Leeks				
Lettuce				
Mushroom				
Olive, ripe				
Onion				
Radish				
Spinach				
Sweet Potato				
Taro				
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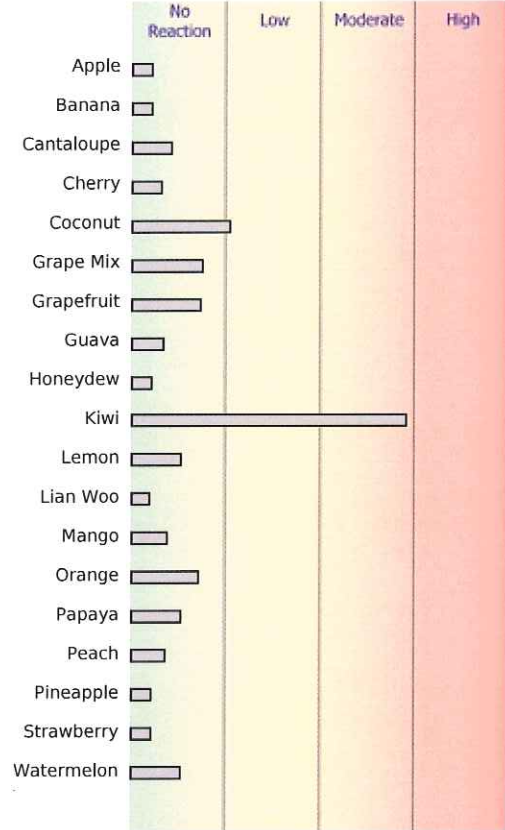
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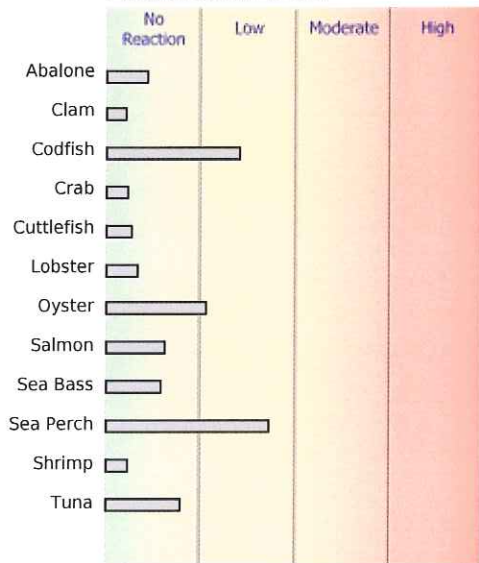
Grains/Legumes/Nuts



Fruits



Fish/SeaFood



Meat/Fowl

