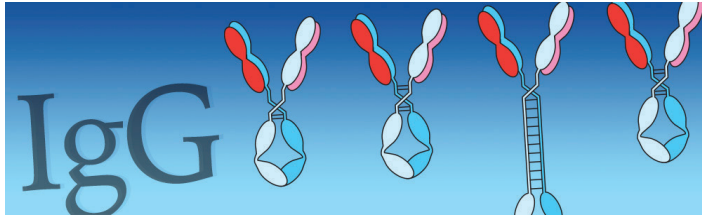


Evexia Diagnostics: Food Allergy and Food Sensitivity Testing

Options That Fits Your Needs

Reactions to food can be divided into two main categories based on their immunological response: immediate hypersensitivity involving immunoglobulin (IgE), which causes an immediate reaction, and delayed hypersensitivity (e.g., IgG, IgA) reactions. IgE and IgG immunoglobulins are the two main antibodies produced against food allergens. Immunoglobulin G (IgG) is one of the most abundant proteins in human serum, accounting for about 10-20% of plasma proteins and is one of the five major classes of immunoglobulins.



IgG antibodies can be divided into four subclasses named according to their decreasing abundance IgG1 (most), IgG2, IgG3, and IgG4 (least). Antibodies of the IgG class have two major effector functions: activation of complement and opsonization (i.e., the induction of phagocytosis). IgG1 antibodies are the initial IgG class responders to a new antigen. IgG2 and IgG3 are

generally not produced to food antigens. Once IgG1 binds to the antigen, an antibody-antigen complex is formed. Upon continued (i.e., chronic) exposure to an antigen, IgG1 antibody production will 'class switch' to IgG4.

- **IgE Reactions:** IgE immediate hypersensitivity reactions are often characterized by hives and throat swelling that may accompany anaphylaxis. Common foods that trigger IgE reactions include peanuts, shellfish, egg, dairy products, soy, tree nuts, wheat, and fish.
- **IgA Reactions:** IgA immunoglobulins are present in the mucosal membranes and increases in response to antigenic foods.
- **IgG Reactions:** An IgG reaction to food proteins suggests tolerance related to immune cell reaction. Repeated exposure, inflammation, and immune reactivity contribute to sensitivity and high IgG responses to food proteins.
- **Immune complex plus complement protein:** Food allergens can enter the bloodstream and stimulate the production of IgG. IgG antibodies are released into the bloodstream and bind to antigens that are soluble in the blood or deposited in the tissues and form immune complexes (IC). The IC (foreign protein plus IgG) can activate complement, which becomes linked to the IgG, ultimately forming IC-C3d (IC + complement). Tissue-associated IC activated complement can cause inflammation and symptoms associated with food sensitivities.

Although only a small portion of people have true food allergies, it is suspected that a large number of individuals suffer from undiagnosed food sensitivities. Food sensitivities can often be challenging to identify since they tend to produce a delayed response with symptoms occurring up to three days later. Testing can offer valuable clinical insight into a myriad of health issues and provide avenues for improved patient outcomes.

Description of Food Allergy/Sensitivity tests offered:

US BioTek: Food Allergy Panels



IgE (immunoglobulin E) allergic reactions, also known as type I hypersensitivity, are mediated by binding an allergen to an IgE antibody, which then binds to mast cells. When multiple IgE antibodies are bound, they form a complex that signals mast cells to release mediators that result in an allergic reaction.

This test can be ordered independently or bundled with any US BioTek IgG/IgG4/IgA food panels for more comprehensive information.

US BioTek runs all IgE panels on a sophisticated FDA-approved immunoassay analyzer that utilizes enzyme-amplified chemiluminescence technology. Chemiluminescence provides lower detection limits than conventional ELISA, making it particularly suitable for IgE detection, which can be hard to detect due to its short half-life compared to other immunoglobulins.

US BioTek: Food Sensitivity Panels

Food sensitivities are recognized to be correlated with many chronic health conditions such as IBS, eczema, fatigue, and others. However, with proper identification and the elimination of offending foods, many experience relief from their symptoms. US BioTek's IgG, IgG4, and IgA antibody assessment panels can serve as useful tools for identifying trigger foods in individuals.

US BioTek offers a comprehensive 208 food panel, as well as 144- and 96-food panels to assess IgG, IgG4, and IgA antibody response to common foods. Their 96-food panels are offered in five variations, including a general panel and specialized panels to identify allergens found in typical Asian, Japanese, Mexican, or Vegetarian diets.

KBMO: Food Inflammation Test (FIT test) Analytes

The FIT Test measures sensitivities for up to 176 different foods and additives spanning all major food groups. The FIT test improves sensitivity by measuring both IgG and immune-complex complement C3d (IC-C3d). The FIT is available in options that test 22 foods, 132 foods, or 176 foods. Zonulin can also be added to any of these test options.



US BioTek-KBMO FIT Grid

	IgE	IgG1 – IgG3, IgG4*	Whole IgG*	IgA	IC-C3d***
US BioTek Food Allergy Test	X				
US BioTek food Sensitivity Test		X		X	
Food Inflammation Test (FIT)			X		X

* IgG1-IgG3 will return results as a group; whereas, IgG4 will result separately when ordered.

** IgG1- IgG4 will return results as a group.

*** IC-C3d = immune complex plus complement protein Cd



US BioTek/KBMO Food Test Comparison Grid 2

US BioTek -208 Food Sensitivity Panel

- DAIRY**
- ▶ Blue Cheese*
- Casein
- ▶ Cheddar Cheese*
- ▶ Cottage Cheese*
- Cow's Milk
- Goat's Milk
- ▶ Mozzarella Cheese*
- Sheep's Milk
- ▶ Swiss Cheese*
- Whey
- ▶ Yogurt*
- FISH/SHELLFISH**
- Anchovy
- Bass
- ▶ Carp*
- ▶ Catfish*
- Clam
- Cod
- Crab
- ▶ Eel*
- Flounder
- Halibut
- ▶ Herring*
- Lobster
- Mackerel
- ▶ Mussel*
- ▶ Octopus*
- Oyster
- ▶ Perch*
- ▶ Pike*
- Red Snapper
- Salmon
- Sardine
- Scallop
- ▶ Sea Urchin*
- Shrimp
- ▶ Sole*
- Squid
- Swordfish
- ▶ Tilapia*
- Trout
- Tuna
- GRAINS/LEGUMES/ NUTS**
- ▶ Adzuki Bean / Red Bean*
- Almond
- Amaranth
- Barley
- ▶ Black-Eyed Pea*
- Bran*
- Brazil Nut
- ▶ Brown Rice*
- Buckwheat
- ▶ Canola Seed*
- Cashew Nut
- ▶ Chestnut*
- Chia Seed
- Chickpea
- Coconut
- ▶ Cola Nut / Kola*
- Corn
- ▶ Gingko Nut*
- Gliadin
- ▶ Gluten*
- Green Bean
- Green Pea
- Hazelnut
- Kidney Bean
- Lentil
- ▶ Lima Bean*
- Macadamia Nut
- ▶ Malt*
- Millet
- ▶ Mung Bean*
- Navy Bean / White
- Oat
- Peanut
- Pecan
- Pine Nut
- Pinto Bean
- Pistachio Nut
- ▶ Poppy Seed*
- Quinoa
- Rye
- ▶ Safflower Seed*
- Sorghum
- Soybean
- ▶ Spelt
- Teff*
- Walnut
- White Rice
- FRUITS**
- Apple
- Apricot
- Banana
- ▶ Blackberry*
- Blueberry
- Cantaloupe
- Cherry
- Cranberry
- ▶ Date*
- Fig
- Gogiberry
- Grapefruit
- Grape
- ▶ Guava*
- Honeydew
- ▶ Jackfruit*
- Kiwi
- Lemon
- Lime
- Mango
- Olive
- Orange
- Papaya
- Peach
- Pear
- ▶ Persimmon*
- Pineapple
- Plum
- Raspberry
- Strawberry
- ▶ Tangerine*
- Watermelon
- MEAT/POULTRY**
- Beef
- ▶ Buffalo*
- Chicken
- Duck
- ▶ Goose*
- Lamb
- Pork
- ▶ Rabbit*
- Turkey
- Venison
- EGG**
- Chicken Egg White
- Chicken Egg Yolk
- ▶ Duck Egg Whole*
- MISC./HERBS/SPICES**
- Baker's / Brewer's Yeast
- Basil
- ▶ Bay Leaf*
- Black Pepper
- Black Tea
- Button Mushroom
- Cane Sugar
- Chili Pepper
- Cinnamon
- Clove
- Cocoa Bean (Chocolate)
- Coffee
- ▶ Coriander*
- ▶ Curry Powder*
- Dill
- ▶ Fennel Seed*
- Flax Seed
- Ginger
- ▶ Ginseng*
- ▶ Green Tea*
- Hemp
- Honey
- Hops
- ▶ Licorice*
- Mustard
- Oregano
- Paprika
- Parsley
- Peppermint
- Rosemary
- ▶ Sage*
- Sesame Seed
- ▶ Shiitake Mushroom*
- Stevia
- Sunflower Seed
- ▶ Tarragon*
- Thyme*
- Turmeric
- Vanilla
- VEGETABLES**
- Artichoke
- Asparagus
- Avocado
- ▶ Bamboo Shoot*
- Beets
- Broccoli / Brussel Sprouts
- ▶ Burdock Root*
- Cabbage
- Carrot
- Cauliflower
- Celery
- Cucumber
- Eggplant
- Garlic
- Green Bell Pepper
- ▶ Horseradish*
- Kale
- ▶ Kelp*
- ▶ Leek*
- Lettuce
- ▶ Lotus Root*
- ▶ Okra*
- Onion
- Pumpkin
- ▶ Radish / Daikon*
- ▶ Rhubarb*
- Spinach
- Squash
- Sweet Potato
- Tomato
- ▶ Turnip*
- ▶ Wasabi*
- White Potato
- Zucchini Squash
- CANDIDA SCREEN**
- Candida Albicans

KBMO -176 Food Inflammation Test

- DAIRY**
- Casein
- Cow's Milk
- Goat's Milk
- Egg Yolk
- Egg White
- Sheep's Milk
- Whey
- FISH**
- Anchovy
- Codfish
- Flounder
- Halibut
- Mackerel
- Sardine
- Salmon
- Sea Bass
- Snapper
- Swordfish
- Trout
- Tuna
- SHELLFISH**
- Clam
- Crab
- Lobster
- Oyster
- Scallops
- Shrimp
- Squid
- GRAINS**
- Amaranth
- Barley
- Buckwheat
- Gliadin
- Millet
- Oat
- Quinoa
- Rice
- Rye
- Sorghum
- Spelt
- Wheat, Gluten
- Wheat, Whole
- NUT**
- Almond
- Brazil nut
- Cashew
- Coconut
- English Walnut
- Hazelnut
- Macadamia Nut
- Peanut
- Pecan
- Pine Nut
- Pistachio Nut
- BEAN**
- ▶ Black Bean**
- Cocoa
- Coffee
- Green Bean
- Kidney Bean
- Lentils
- Navy Bean
- Pinto Bean
- Soybean
- FRUITS**
- ▶ Acai Berry**
- Apple
- Apricot
- Avocado
- Banana
- Blueberry
- Cantaloupe/ Rockmelon
- Cherry
- Cranberry
- Eggplant
- Fig
- Goji Berry
- Grape, White Seedless
- Grapefruit
- Kiwi
- Honeydew Melon
- Lemon
- Lime
- Mango
- ▶ Monk Fruit**
- Olive, Green
- Onion, White
- Orange
- Papaya
- Peach
- Pear
- Pineapple
- Plum
- ▶ Pomegranate**
- Raspberry
- Strawberry
- Watermelon
- MEAT/POULTRY**
- Beef
- ▶ Bacon**
- Chicken
- Duck
- Lamb
- Pork
- Turkey
- Venison
- ADDITIVES**
- ▶ Aspartame**
- ▶ Benzoic Acid*
- ▶ BHA*
- ▶ MSG**
- ▶ Polysorbate 80**
- ▶ Red #3**
- ▶ Red #40**
- ▶ Saccharin**
- Stevia
- ▶ Yellow #6**
- MISC.**
- ▶ Agave**
- Canola Oil
- ▶ Coconut Oil**
- Hemp Protein (CBD)
- Honey
- ▶ Maple Syrup**
- Mushroom
- ▶ Spirulina**
- Sugarcane
- ▶ Tapioca**
- Tea, Black
- ▶ Vinegar*
- ▶ Wine, Red**
- HERBS/SPICES**
- Basil
- Cinnamon
- Cloves
- ▶ Cumin**
- Garlic
- Ginger
- Hops
- Mustard
- Oregano
- Paprika
- Pepper, Black
- Pepper, Chili
- Peppermint
- Rosemary
- Turmeric
- Vanilla
- SEEDS**
- Chia Seed
- Dill Seed
- Flax Seed
- Hemp Seed
- Sesame Seed
- Sunflower Seed
- VEGETABLES**
- Artichoke
- ▶ Arugula**
- Asparagus
- Beets
- Broccoli
- Brussel Sprouts
- ▶ Butternut Squash**
- Cabbage
- ▶ Carob**
- Carrot
- Cauliflower
- Celery
- ▶ Cilantro**
- ▶ Collard Greens**
- Corn
- Cucumber
- Kale
- Lettuce
- Parsley
- Pea, Chick
- Pea, Green
- Pepper, Green
- Potato, Sweet
- Potato, White
- Pumpkin
- Spinach
- Summer Squash
- Tomato
- Zucchini
- MICROBES**
- Candida
- Yeast, Baker's
- Yeast, Brewer's

▶/* This food is not tested by the FIT 176 test

▶/** This food is not tested by the US BioTek Food Sensitivity 208 Test