

IgG Food Allergy Test with *Candida*



About IgG Food Testing

Immunoglobulin G (IgG) food testing is a useful guide for structuring elimination diets for patients with many chronic conditions. Individuals with neurological, gastrointestinal, movement, and behavioral disorders often suffer from IgG food sensitivities. People may continue to eat offending foods unaware of their potential adverse effects. Symptoms associated with food sensitivities may occur hours or days after the offending food was eaten because IgG food antibodies remain for a much longer time than traditional IgE antibodies. Elimination of IgG-positive foods may improve symptoms of irritable bowel syndrome, autism, AD(H)D, cystic fibrosis, rheumatoid arthritis, and epilepsy, according to numerous clinical studies.¹⁻⁸ The 93 foods tested for in the IgG Food Allergy Test w/ *Candida* include most classes of problem foods that can be eliminated from a patient's diet. The Great Plains Laboratory offers a comprehensive Western food panel as well as an Asian panel. The Asian panel includes specific foods common to Asian cuisine, such as certain spices and twice as many seafood items as the Western panel. Sampling requires at least 2 mL of serum or 3 dried blood spots.



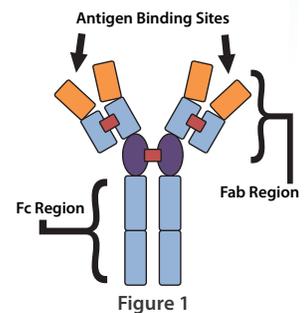
"I believe the Great Plains IgG Food Allergy Test is a phenomenal tool that I have implemented in my practice on a daily basis to help treat patients for a wide variety of symptoms like headaches, IBS, fatigue, abdominal pain, dermatitis, hair loss, joint pain, acne, thyroid disorders, and vitamin deficiencies. I believe I am a better physician due to this testing transforming my ability to properly diagnose and treat patients effectively."

– Bridget, M.D.

What is IgG?

IgG is the major antibody found in serum. IgG's are composed of two fragment antigen binding (Fab) regions that contain the antigen binding sites and the Fc region, which is responsible for most of the biologic activity of the antibodies (Figure 1). An antigen is a substance that causes the immune system to produce an antibody that specifically reacts with it. IgG-mediated reactions to food antigens may be delayed by several hours or days, whereas IgE food antibody reactions are quite immediate.

Human IgG is separated into four subclasses denoted IgG1, IgG2, IgG3, and IgG4.⁹ Each subclass varies in abundance and biological function. IgG1 and IgG3 are predominantly responsible for antibody protection against reinfection. IgG2 antibodies are opsonic (marking a pathogen for ingestion and destruction) and develop in response to carbohydrate polysaccharide antigens. IgG4 molecules function as skin-sensitizing immunoglobulins and are thought to block antibodies produced in response to chronic exposure to antigens.



Clinical Usefulness

The clinical usefulness of IgG food testing was illustrated in an early article published by an otolaryngologist who reported that the majority of his patients had substantial health improvements after eliminating foods found positive by IgG food allergy testing¹⁰. The study demonstrated a 71% success rate for all symptoms achieving at least a 75% relief. Of particular interest was the group of patients with chronic, disabling symptoms, unresponsive to other intensive treatments. Symptoms most commonly improved (75%-100%) on the elimination diets included asthma, coughing, ringing in the ears, chronic fatigue, headaches, gas, bloating, diarrhea, skin rash and itching, and nasal congestion. The most common IgG food allergies were to cow's milk, garlic, mustard, egg yolk, tea, and chocolate. A recent study reported that 93% of non-celiac, gluten-sensitive patients showed anti-gliadin IgG antibody disappearance after a six-month adherence to a gluten-free diet. The IgG disappearance was closely related to a significant improvement of both gastrointestinal and extra-intestinal symptoms.¹¹

Significance of Total IgG Versus IgG4

The goal of IgG-mediated food allergy testing is to identify foods that are capable of triggering a large number of adverse reactions. IgG1, IgG2, and IgG3 are all capable of causing inflammation. IgG1, IgG2, and IgG3 antibodies to food antigens form large immune complexes or lattices that activate complement proteins and increase inflammation. IgG4 antibodies that are present with food antigens will not usually trigger inflammation, though high levels of these antibodies does indicate the presence of immune reactions against food antigens.

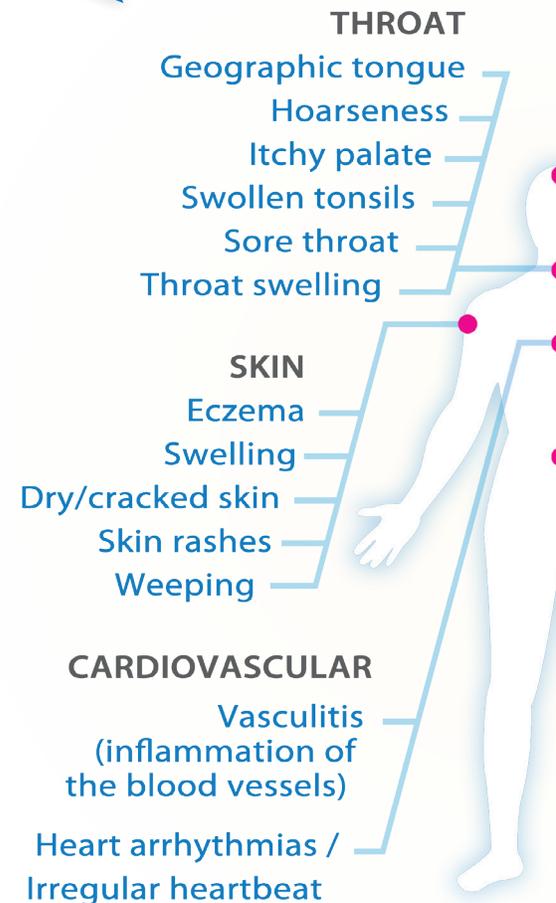
While most laboratories only provide a measurement of IgG4 molecules, The Great Plains Laboratory provides a measurement of total IgG antibodies to various food-based antigens and *Candida*, a genus of yeast native to the GI tract. Testing for only IgG4 antibodies limits the ability of the clinician to identify those foods that may be causing significant clinical reactions in their patients. IgG4 antibodies usually represent less than 6% of the total IgG antibodies. The importance of measuring all subtypes of IgG antibodies is highlighted in an article by Kemeny et al.¹² They found that IgG1 antibodies to gluten were elevated in all 20 patients with celiac disease but none of the patients had elevated IgG4 antibodies to gluten.

IgG and *Candida* Connection

The Great Plains Laboratory is the only lab that tests for *Candida albicans* (a microscopic fungal organism and pathogenic yeast) as part of IgG food testing. High levels of IgG antibodies to *Candida* have been found in patients who reported many symptoms of yeast overgrowth. *Candida* problems are caused when the benign yeast form of *Candida albicans* mutates to its fungal form and produces a buildup of toxins in the body. *Candida* can overgrow areas of the intestinal mucosa resulting in numerous symptoms, including creating microscopic holes in the lining of the intestines, leading to what is commonly known as "leaky gut" syndrome. If *Candida albicans* proteins enter the blood, an inflammatory immune system response may be triggered. A wide range of disorders have been linked to *Candida* overgrowth including autism, multiple sclerosis, depression, chronic fatigue, fibromyalgia, migraines, and irritable bowel syndrome. Immunocompromised patients with cancer or AIDS can have life-threatening complications if *Candida* enters the bloodstream, resulting in systemic candidiasis. Use of antibiotics, oral contraceptives, chemotherapy, anti-inflammatory steroids, and diets high in sugar and starch increase susceptibility to *Candida* overgrowth. Research has revealed a relationship between health of the gastrointestinal tract and overall well-being. Imbalance between good and bad bacteria (dysbiosis) has been shown to worsen behavior disorders, hyperactivity, aggression, and cause fatigue. Evidence is mounting that dysbiosis impairs the immune system and contributes to food allergies, digestive disorders, nutritional deficiencies, and cognitive dysfunction. Using the IgG Food Allergy Test with *Candida* will help identify food allergies and *Candida* sensitivity that may be creating a variety of problems for patients. Physicians may then recommend elimination of the identified foods and supplementation with various natural products that control *Candida* overgrowth and assist with healing of the gut. Depending on the levels of *Candida* and the severity of a patient's symptoms, further testing may be recommended, including a Comprehensive Stool Test or Organic Acids Test.

IgG and You

How Could IgG Food Allergies be Affecting You?⁹



The Benefits of Testing

- Helps determine if food reactions are contributing to physical or mental symptoms, and much more quickly than eliminating and then reintroducing each suspect food one-by-one over a period of time
- Removal of highly reactive foods from the diet is a non-invasive, therapy that often mitigates a patient's symptoms
- Research and clinical studies suggest food allergies identified by IgG testing can be major contributing factors to many chronic health conditions
- Eliminating all identified food allergens after testing can reduce stress on the immune system, decrease inflammation (helping to heal "leaky gut"), resolve food cravings, and reduce the potential for eating disorders

NEUROLOGICAL

- ADHD
- Behavioral problems
- Chronic fatigue
- Depression
- Forgetfulness
- Insomnia
- Migraines

GASTROINTESTINAL

- Abdominal pain
- Bloating
- Crohn's Disease
- Celiac Disease
- Irritable Bowel
- Weight gain / obesity
- Burping
- Flatulence
- Constipation

Reliability of Test Results

At The Great Plains Laboratory, IgG food test results are obtained using an ELISA (Enzyme Linked Immunosorbent Assay), which is performed both manually and with robotic automation. Several different methods of quality control are used to ensure the accuracy and reliability of our IgG ELISA analysis. Once test results are available for review, our QA team carefully verifies that quality control measures are within instrument and assay specifications.

Significance of Test Results

High IgG antibody levels have frequently been found in children with diabetes mellitus, Crohn's disease, celiac disease, and in those considered to be obese.^{6,9,11} IgG food test results are often used to develop food antibody-guided exclusion/elimination diets. The implementation of such diets has been shown to alleviate symptoms associated with non-celiac gluten sensitivity,^{11,13} and food sensitivity-induced atopic conditions,¹⁴ reduce the frequency of migraine headaches,^{1,2} decrease the occurrence of diarrhea, decrease failure-to-thrive among children with cystic fibrosis,¹⁵ reduce symptoms of irritable bowel syndrome,³⁻⁵ improve rectal compliance,³ decrease stool frequency in Crohn's disease,⁶ prevent seizures and hyperkinetic behavior in children with epilepsy,⁷ and ameliorate kidney function in glomerulonephritis.¹⁶ Food exclusion diets also hold promise for the improvement of behaviors associated with attention-deficit hyperactivity disorder.⁸

Analyte List

Almond	Cabbage	Crab	Halibut	Orange	Pumpkin	Sweet Potato
Apple	<i>Candida albicans</i>	Cranberry	Hazelnut	Orotic	Radish	Tomato
Apricot	Cane Sugar	Egg White	Honey	Papaya	Rice	Tuna
Asparagus	Carrot	Egg Yolk	Kidney Bean	Pea	Rye	Turkey
Avocado	Casein	Eggplant	Lamb	Peach	Salmon	Walnut
Baker's Yeast	Cashews	Flax	Lemon	Peanut	Sardinec	Watermelon
Banana	Celery	Garbanzo Beans	Lentil	Pear	Sesame	Wheat
Barley	Cheese	Garlic	Lettuce	Pecan	Shrimp	Wheat Gluten
Beef	Chicken	Gliadin	Lima bean	Pineapple	Sorghum	Whey
Beet	Cocoa	Goat's Milk Cheese	Lobster	Pinto Bean	Soybean	Yogurt
Blueberry	Coconut	Grape	Milk	Pistachio	Spinach	
Brewer's Yeast	Cod fish	Grapefruit	Millet	Plum (Prune)	Strawberry	
Broccoli	Coffee	Green Bean	Oat	Pork	Succinic	
Buckwheat	Corn	Green Pepper	Onion	Potato	Sunflower	





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Requisition #: Physician Name:
Patient Name: Date of Collection:
Patient Age: Time of Collection:
Sex: Print Date:

Comprehensive IgG Food Allergy Test + C. albicans, S. cerevisiae (94)

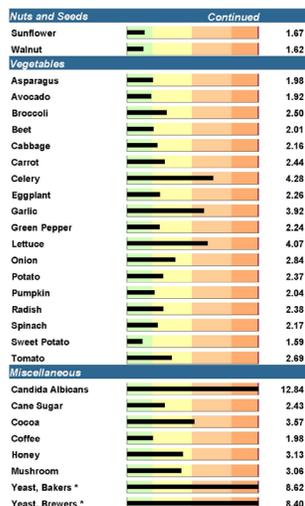


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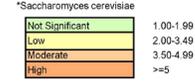
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Reactivity Summary		
High	Egg White	Candida Albicans
	Milk	Yeast, Brewers *
	Whey	Casein
	Cheese	Beef
	Lemon	Goat Cheese
		Strawberry
		Sorghum
Moderate	Craberry	Wheat
	Wheat Gluten	Celery
	Grapefruit	Lettuce
	Garlic	Rye
	Peanut	Barley
	Cocoa	Corn
Low	Pinto Bean	Green Bean
	Buckwheat	Honey
	Chicken	Salmon
	Onion	Tomato
	Watermelon	Apple
	Pineapple	Pecan
	Blueberry	Carrot
	Banana	Radish
	Eggplant	Turkey
	Green Pepper	Flax
	Cabbage	Cashews
	Grape	Pumpkin
		Beef



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