

ALLERGY REPORT

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ENVIRONMENTAL PANEL

The Allergen360 Environmental Panel detects IgE reactivity to environmental allergens that are inhaled or contacted. The higher the value the greater the potential risk of an allergic reaction. Additionally, the panel detects the immune reactivity from exposure to allergens and how immunoglobulins (IgG4) compete with IgE for binding sites on specific allergens. The detection of these exposure immunoglobulins (IgG4) can be used to establish baselines of hypersensitivity to specific allergen(s) as well be used as a tool to manage the clinical efficacy of immunotherapy for the neutralization of offending IgE species.

Environmental Allergy Reference Ranges

TYPE	VERY HIGH	HIGH	MODERATE	LOW	EQUIVOCAL/LOW	NEGATIVE
IgE	> 42.1	8.406 - 42.099	1.686 - 8.405	0.817 - 1.685	0.245 - 0.816	0 - 0.244
TYPE	VERY HIGH	HIGH	MODERATE	LOW	EQUIVOCAL/LOW	NEGATIVE
IgG4	> 42.1	8.406 - 42.099	1.686 - 8.405	0.817 - 1.685	0.245 - 0.816	0 - 0.244

Highlights

Type I hypersensitivity is an IgE mediated allergic reaction. Exposure to the allergen may be by ingestion, inhalation, injection or direct contact.

Type I Hypersensitivity

No Type I hypersensitivity reactions are detected

Environmental Allergy Results

ALLERGEN	IgE (ng/ml)	INTERPRETATION	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
DANDER					
Cat dander	0.000	NEGATIVE	0.000	NEGATIVE	
Dog dander	0.000	NEGATIVE	0.000	NEGATIVE	
Mouse dander	0.598	EQUIVOCAL/LOW	3.032	MODERATE	•
DUST MITES					
Blomia tropicalis	0.000	NEGATIVE	0.000	NEGATIVE	
D. farina	0.011	NEGATIVE	0.198	NEGATIVE	•
D. pteronyssinus	0.000	NEGATIVE	0.000	NEGATIVE	
GRASS					
Bahia grass	0.000	NEGATIVE	0.000	NEGATIVE	
Bermuda grass	0.000	NEGATIVE	0.000	NEGATIVE	
Johnson grass	0.000	NEGATIVE	0.000	NEGATIVE	
Perennial Rye grass	0.000	NEGATIVE	0.000	NEGATIVE	
Redtop/Bent grass	0.000	NEGATIVE	0.000	NEGATIVE	
Timothy grass	0.000	NEGATIVE	0.000	NEGATIVE	
INSECTS					
Cockroach	0.000	NEGATIVE	0.000	NEGATIVE	
MOLDS I					
Aspergillus fumigatus	0.000	NEGATIVE	0.000	NEGATIVE	
Cladosporium herbarum	0.003	NEGATIVE	0.000	NEGATIVE	
Mucor racemosus	0.000	NEGATIVE	0.000	NEGATIVE	

ALLERGEN	IgE (ng/ml)	INTERPRETATION	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Penicillium notatum	0.000	NEGATIVE	0.000	NEGATIVE	
MOLDS II					
Alternaria alternata	0.000	NEGATIVE	0.000	NEGATIVE	
Aureobasidium pullulans	0.000	NEGATIVE	0.031	NEGATIVE	•
TREES					
Acacia	0.000	NEGATIVE	0.000	NEGATIVE	
Alder	0.000	NEGATIVE	0.000	NEGATIVE	
Australian pine	0.000	NEGATIVE	0.490	EQUIVOCAL/LOW	•
Birch	0.000	NEGATIVE	0.000	NEGATIVE	
Cottonwood	0.000	NEGATIVE	0.031	NEGATIVE	•
Elm	0.000	NEGATIVE	0.000	NEGATIVE	
Eucalyptus	0.000	NEGATIVE	0.448	EQUIVOCAL/LOW	•
Maple leaf	0.000	NEGATIVE	0.000	NEGATIVE	
Maple/Box elder	0.000	NEGATIVE	0.000	NEGATIVE	
Mountain Cedar	0.118	NEGATIVE	1.282	LOW	•
Mulberry	0.000	NEGATIVE	0.000	NEGATIVE	
Oak	0.189	NEGATIVE	0.000	NEGATIVE	
Olive	0.000	NEGATIVE	0.865	LOW	•
Pecan/Hickory	0.000	NEGATIVE	0.031	NEGATIVE	•
Sycamore	0.000	NEGATIVE	0.573	EQUIVOCAL/LOW	•
Walnut	0.003	NEGATIVE	0.448	EQUIVOCAL/LOW	•
White ash	0.000	NEGATIVE	0.000	NEGATIVE	
WEEDS					
Common ragweed	0.000	NEGATIVE	0.000	NEGATIVE	
Mugwort	0.109	NEGATIVE	0.573	EQUIVOCAL/LOW	•
Nettle	0.000	NEGATIVE	0.907	LOW	•
Rough marsh elder	0.000	NEGATIVE	0.000	NEGATIVE	
Rough pigweed	0.000	NEGATIVE	0.000	NEGATIVE	
Russian Thistle	0.000	NEGATIVE	0.000	NEGATIVE	
Sheep sorrel	0.000	NEGATIVE	0.000	NEGATIVE	
Wall pellitory	0.011	NEGATIVE	0.000	NEGATIVE	

DIETARY PANEL

The Allergen360 Dietary Panel detects allergic reactivity and sensitivities to foods. It monitors the immune reactivity of human immunoglobulins (IgG4) that compete with IgE for binding sites on specific allergen(s). The IgE antibody response is the most commonly known food allergy response. This response usually occurs immediately and can create severe symptoms such as swelling, hives, itching, and in some cases - anaphylaxis. Even though IgE reactions are immediate, the allergic potential of food-based allergens can remain 1-2 days after ingestion, extending the presence of symptoms during this duration.

Dietary Allergy Reference Ranges

TYPE	VERY HIGH	HIGH	MODERATE	LOW	EQUIVOCAL/LOW	NEGATIVE	Type	Yes	No
IgE	> 42.1	8.406 - 42.099	1.686 - 8.405	0.817 - 1.685	0.245 - 0.816	0 - 0.244	C3D	•	
TYPE	VERY HIGH	HIGH	MODERATE	LOW	EQUIVOCAL/LOW	NEGATIVE			
IgG4	> 42.1	8.406 - 42.099	1.686 - 8.405	0.817 - 1.685	0.245 - 0.816	0 - 0.244			

Highlights

Type I hypersensitivity is an IgE mediated allergic reaction. Exposure to the allergen may be by ingestion, inhalation, injection or direct contact. Type III hypersensitivity occurs when there is an excess of antigen that activates complement (measured through C3D).

Type I Hypersensitivity

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Dill Seed	2.015	MODERATE		0.000	NEGATIVE	
English Walnut	1.900	MODERATE		0.000	NEGATIVE	
Pecan	2.746	MODERATE		0.465	EQUIVOCAL/LOW	

Foods containing allergens that may trigger Type I Hypersensitivity reactions.

Type III Hypersensitivity

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Cacao	0.000	NEGATIVE	•	0.000	NEGATIVE	
Trout	0.000	NEGATIVE	•	2.081	MODERATE	•

Dietary Allergy Results

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
FISH						
Codfish	0.000	NEGATIVE		0.000	NEGATIVE	
Halibut	0.000	NEGATIVE		0.000	NEGATIVE	
Salmon	0.000	NEGATIVE		0.000	NEGATIVE	
Trout	0.000	NEGATIVE	•	2.081	MODERATE	•
Tuna	0.000	NEGATIVE		0.000	NEGATIVE	
FRUITS						
Apple	0.728	EQUIVOCAL/LOW		1.291	LOW	•
Avocado	0.074	NEGATIVE		0.137	NEGATIVE	•
Banana	0.637	EQUIVOCAL/LOW		0.000	NEGATIVE	
Blueberry	0.000	NEGATIVE		0.000	NEGATIVE	

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Cantaloupe	0.000	NEGATIVE		0.868	LOW	●
Cherry	0.329	EQUIVOCAL/LOW		0.000	NEGATIVE	
Coconut	0.000	NEGATIVE		0.000	NEGATIVE	
Cucumber	0.000	NEGATIVE		0.000	NEGATIVE	
Grapefruit	0.000	NEGATIVE		0.753	EQUIVOCAL/LOW	●
Grapes	0.000	NEGATIVE		0.000	NEGATIVE	
Green Olive	0.228	NEGATIVE		0.000	NEGATIVE	
Green Pepper	0.000	NEGATIVE		0.000	NEGATIVE	
Honeydew Melon	0.000	NEGATIVE		0.000	NEGATIVE	
Lemon	0.000	NEGATIVE		0.000	NEGATIVE	
Lime	0.651	EQUIVOCAL/LOW		0.483	EQUIVOCAL/LOW	
Orange	0.176	NEGATIVE		0.253	EQUIVOCAL/LOW	●
Peach	0.844	LOW		0.000	NEGATIVE	
Pear	0.000	NEGATIVE		0.000	NEGATIVE	
Pineapple	0.113	NEGATIVE		0.000	NEGATIVE	
Plum	0.000	NEGATIVE		0.000	NEGATIVE	
Squash Mix	0.000	NEGATIVE		0.022	NEGATIVE	●
Strawberry	0.000	NEGATIVE		0.000	NEGATIVE	
Tomato	0.022	NEGATIVE		0.000	NEGATIVE	
Watermelon	0.000	NEGATIVE		0.000	NEGATIVE	
FUNGI						
Aspergillus Mix	0.000	NEGATIVE		0.000	NEGATIVE	
Brewers Yeast	0.000	NEGATIVE		0.000	NEGATIVE	
Candida	0.000	NEGATIVE		0.000	NEGATIVE	
Mushroom	0.000	NEGATIVE		0.000	NEGATIVE	
GRAINS, GRASSES						
Barley	0.000	NEGATIVE		0.000	NEGATIVE	
Corn	0.022	NEGATIVE		0.000	NEGATIVE	
Gluten	0.000	NEGATIVE		0.000	NEGATIVE	
Oat	1.631	LOW		1.312	LOW	
Rice	0.000	NEGATIVE		0.000	NEGATIVE	
Rye	0.000	NEGATIVE		0.000	NEGATIVE	
Wheat	0.176	NEGATIVE		0.000	NEGATIVE	
HERBS, SPICES, SEASONINGS						
Basil	0.000	NEGATIVE		0.000	NEGATIVE	
Black Pepper	0.000	NEGATIVE		1.927	MODERATE	●
Cinnamon	0.000	NEGATIVE		0.000	NEGATIVE	
Dill Seed	2.015	MODERATE		0.000	NEGATIVE	
Garlic	0.000	NEGATIVE		0.000	NEGATIVE	
Mustard	0.000	NEGATIVE		0.000	NEGATIVE	
Oregano	0.000	NEGATIVE		0.000	NEGATIVE	
Tea	0.000	NEGATIVE		0.000	NEGATIVE	

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Vanilla	0.000	NEGATIVE		0.000	NEGATIVE	
LEGUMES, BEANS						
Kidney/Pinto Bean	0.438	EQUIVOCAL/LOW		0.119	NEGATIVE	
Lima Bean	0.000	NEGATIVE		1.465	LOW	•
Navy Bean	0.368	EQUIVOCAL/LOW		2.560	MODERATE	•
Peanut	0.000	NEGATIVE		0.000	NEGATIVE	
Soybean	0.000	NEGATIVE		0.000	NEGATIVE	
MEATS, DAIRY						
Beef	0.000	NEGATIVE		0.000	NEGATIVE	
Casein	0.137	NEGATIVE		0.906	LOW	•
Cow Milk	0.060	NEGATIVE		1.599	LOW	•
Goat's Milk	0.000	NEGATIVE		0.000	NEGATIVE	
Pork	0.000	NEGATIVE		0.000	NEGATIVE	
POULTRY						
Chicken	0.000	NEGATIVE		0.000	NEGATIVE	
Egg White	0.483	EQUIVOCAL/LOW		0.060	NEGATIVE	
Egg Yolk	0.000	NEGATIVE		1.773	MODERATE	•
Turkey	0.000	NEGATIVE		0.000	NEGATIVE	
SEEDS, NUTS						
Almond	0.000	NEGATIVE		0.000	NEGATIVE	
Cacao	0.000	NEGATIVE	•	0.000	NEGATIVE	
Coffee	0.000	NEGATIVE		1.658	LOW	•
Cottonseed	0.000	NEGATIVE		2.350	MODERATE	•
English Walnut	1.900	MODERATE		0.000	NEGATIVE	
Pecan	2.746	MODERATE		0.465	EQUIVOCAL/LOW	
Sesame	0.000	NEGATIVE		0.000	NEGATIVE	
Sunflower Seed	0.000	NEGATIVE		0.000	NEGATIVE	
SHELLFISH						
Clam	0.099	NEGATIVE		0.176	NEGATIVE	•
Crab	0.000	NEGATIVE		0.000	NEGATIVE	
Lobster	0.000	NEGATIVE		0.000	NEGATIVE	
Scallops	0.000	NEGATIVE		0.000	NEGATIVE	
Shrimp	0.368	EQUIVOCAL/LOW		0.000	NEGATIVE	
VEGETABLES						
Asparagus	0.000	NEGATIVE		0.000	NEGATIVE	
Broccoli	0.000	NEGATIVE		0.000	NEGATIVE	
Cabbage	0.459	EQUIVOCAL/LOW		0.000	NEGATIVE	
Carrot	0.000	NEGATIVE		0.214	NEGATIVE	•
Celery	0.000	NEGATIVE		0.000	NEGATIVE	
Green Bean	0.000	NEGATIVE		0.000	NEGATIVE	
Green Pea	0.000	NEGATIVE		0.000	NEGATIVE	
Lettuce	0.000	NEGATIVE		0.000	NEGATIVE	

FOOD	IgE (ng/ml)	INTERPRETATION	C3D	IgG4 (ng/ml)	INTERPRETATION	BLOCKING
Onion	0.000	NEGATIVE		0.000	NEGATIVE	
Spinach	0.000	NEGATIVE		0.022	NEGATIVE	•
Sweet Potato	0.000	NEGATIVE		0.000	NEGATIVE	
White Potato	0.000	NEGATIVE		0.000	NEGATIVE	

DIETARY RECOMMENDATIONS

Patients have reported success with elimination diets. There are many types of elimination diets. Listed below are the two most common for reference.

The first type of elimination diet focuses on foods with high or moderate reactivity first. It is only after those foods are eliminated for several weeks (3 weeks) that they begin to introduce one food back into their diet at a time. If physical symptoms return after re-introduction then an individual has identified a food that they are intolerant to and can choose to avoid it. It's good to wait 3 days before moving onto the next food. Simply repeat the process until all of the high or moderate reactivity foods have been reintroduced. Some individuals find that their greatest source of unwanted symptoms is with low reactivity foods. If symptoms persist after high and moderate reactivity foods have been evaluated, it may be necessary to repeat this process for low reactivity foods.

The second type of elimination diet requires removal of ALL food with any amount of reactivity (1, 2, or 3) for 30 days. When one begins to reintroduce foods, it is a slow process that begins with the class 1 foods first followed by classes 2 and 3. The process of reintroduction for each food is the same. Foods are introduced one at a time over a 4-day period. On day #1, eat as much of the food added back as desired. On days #2-4 do not eat that food again but pay close attention to any symptoms. If there are no symptoms after day 4, then start the process over again with the next food. While this type of diet may seem tedious, it can be very accurate at pinpointing which foods are causing the most symptoms.

Figuring out which foods are problematic for you is the ultimate goal. Elimination diets, such as the ones explained above, are the best way to determine which foods that your IgG reacts to are the ones causing the negative symptoms you experience.

FOODS TO AVOID			NO LIMITATION		
Cacao	Dill Seed	English Walnut	Almond	Apple	Asparagus
Pecan	Trout		Aspergillus Mix	Avocado	Banana
			Barley	Basil	Beef
			Black Pepper	Blueberry	Brewers Yeast
			Broccoli	Cabbage	Candida
			Cantaloupe	Carrot	Casein
			Celery	Cherry	Chicken
			Cinnamon	Clam	Coconut
			Codfish	Coffee	Corn
			Cottonseed	Cow Milk	Crab
			Cucumber	Egg White	Egg Yolk
			Garlic	Gluten	Goat's Milk
			Grapefruit	Grapes	Green Bean
			Green Olive	Green Pea	Green Pepper
			Halibut	Honeydew Melon	Kidney/Pinto Bean
			Lemon	Lettuce	Lima Bean
			Lime	Lobster	Mushroom
			Mustard	Navy Bean	Oat
			Onion	Orange	Oregano
			Peach	Peanut	Pear
			Pineapple	Plum	Pork
			Rice	Rye	Salmon
			Scallops	Sesame	Shrimp
			Soybean	Spinach	Squash Mix
			Strawberry	Sunflower Seed	Sweet Potato
			Tea	Tomato	Tuna
			Turkey	Vanilla	Watermelon
			Wheat	White Potato	

CROSS REACTIVITY

For individuals who have removed a food from their diet for more than 12-24 months and have a reactivity above low, hidden sources of that food should be considered (often found in vitamins, supplements, and food sauces or marinades) or a cross-reactivity from an environmental source should be considered.

When the protein of one food or substance (A) looks so similar to another (B), you may see an elevated IgG reactivity for B but it is really measuring the IgG reactivity level for A.

ENVIRONMENTAL ALLERGENS	MAY CROSS REACT WITH
All grasses	Legumes, beans, peas, apple, carrots, celery, grains, cottonseed
Ragweed, weeds	Melon, lettuce, banana, milk, egg, mint, chamomile
Mugwort, sage	Celery, coriander, chamomile, nightshade family of plants
Marsh Elder	Wheat
Amaranth	Pork
Birch tree, alder tree	Hazelnut, apple, carrot, celery, orange, potato, beef, yeast, soy
Cedar	Milk, mint
Elm	Chestnut, egg, apple
Oak	Corn, banana
Pecan	Lettuce
Poison Ivy, oak, or sumac	Pork, black pepper
Pigweed	Pork
Molds and fungal spores	Yeast, mushrooms, aged (hard) cheese, coffee
Latex	Banana, papaya, kiwi, avocado, peanut, fig, melon, walnut, chestnut, pistachio, peach, pineapple, pear
Dust mites	Shellfish, mollusks (clams, scallops), crustaceans

UNDERSTANDING THE RESULTS

IgE

The IgE antibody response is the most commonly known food allergy response. This response usually occurs immediately and can create severe symptoms such as swelling, hives, itching, and - in some cases - anaphylaxis. IgE reactions stimulate the release of histamine in the body. The results of IgE may indicate if a patient has a Type I hypersensitivity (or immediate hypersensitivity) which is an allergic reaction provoked by exposure to an allergen (environmental or food). The presence of allergy related symptoms confirms IgE allergy.

IgG4 and Blocking Potential

IgG4, which is a subclass of IgG, is a distinct antibody in the immune system. IgG4 total antibody is important in relation to IgE because this antibody acts as a blocking agent for an IgE reaction. When the IgG4 reaction is greater than the IgE reaction for a particular antigen, IgG4 may block the IgE antibodies from binding to the receptor sites and releasing histamine, thereby reducing the severity of the symptoms associated with the IgE reaction. This is referred to as the Blocking Potential. Higher IgG4 improves the odds of neutralization IgE reactivity and preventing allergen specific adverse reactions from occurring. The blocking potential value to specific allergens must be used in conjunction with the patient symptoms. Furthermore, IgG4 may also be used to manage the clinical efficacy of immunotherapy for the neutralization of IgE reactions.

C3D Complement

C3D is a complement antigen and an activator of our complement cascade system. Reaction to the specified food will worsen if C3D activation is present. The C3 protein attaches to the antigen and amplifies the IgG response, increasing the inflammatory potential of IgG titer. The results of C3D may determine Type III hypersensitivity when there is accumulation of immune complexes (antigen-antibody complexes) that have not been adequately cleared by innate immune cells, giving rise to an inflammatory response.

IgG Food Intolerances or Sensitivities

Confusion about dietary allergy and dietary intolerance can cause misinterpretation. A food intolerance or sensitivity is different than an immediately life-threatening food allergy. Immunoglobulin G (IgG) antibody, the most abundant circulating antibodies in our immune system, can cause a delayed immune reaction and they are never life threatening. IgG reactivities may play a role in food sensitivities. Studies suggest that an IgG immune response may contribute to headaches, joint pain, eczema, and other chronic conditions. Note: reactivity does not always correlate with symptoms, but it can serve as a tool to guide an elimination diet. Misunderstanding food allergy and food intolerance may lead to unnecessary dietary restriction.

Note: The performance characteristics of all assays have been verified by Signal Diagnostics. Results are not intended to be used as the sole means for clinical diagnosis.

Allergen360 Disclaimer

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