IgG Food Antibodies
IMMUNOLOGY

GENOVA DIAGNOSTICS EUROPE

46-50 Coombe Road
New Malden
Surrey KT3 4QF

63 Zillicoa Street
Asheville, NC 28801

Patient: **SAMPLE PATIENT**
DOB:
Sex:
MRN:

1001 IgG Food Antibodies Profile - Serum
Methodology: EIA and Chemiluminescent

IgG Food Antibody Results

Dairy

Casein	VL
Cheddar cheese	VL
Cottage cheese	VL
Cow's milk	1+
Goat's milk	0
Lactalbumin	VL
Yogurt	1+

Fruits

Apple	0
Apricot	0
Banana	0
Blueberry	0
Cranberry	0
Grape	VL
Grapefruit	0
Lemon	0
Orange	0
Papaya	0
Peach	VL
Pear	0
Pineapple	1+
Plum	0
Raspberry	0
Strawberry	0

Vegetables

Alfalfa	0
Asparagus	VL
Avocado	0
Beets	0
Broccoli	VL
Cabbage	0
Carrot	0
Celery	0
Cucumber	0
Garlic	1+
Green Pepper	0
Lettuce	0
Mushroom	0
Olive	0
Onion	0
Pea	0
Potato, sweet	0
Potato, white	VL
Spinach	VL
String bean	VL
Tomato	VL
Zucchini	0

Fish/Shellfish

Clam	0
Cod	0
Crab	0
Lobster	0
Oyster	0
Red snapper	0
Salmon	0
Sardine	0
Shrimp	0
Sole	0
Trout	0
Tuna	0

Poultry/Meats

Beef	0
Chicken	0
Egg white	0
Egg yolk	0
Lamb	0
Pork	0
Turkey	0

Nuts and Grains

Almond	VL
Buckwheat	VL
Corn	0
Corn gluten	1+
Gluten	3+
Kidney bean	VL
Lentil	0
Lima bean	VL
Oat	0
Peanut	0
Pecan	0
Pinto bean	0
Rice	VL
Rye	0
Sesame	3+
Soy	VL
Sunflower seed	3+
Walnut	VL
Wheat	3+

Miscellaneous

Yeast	VL
Cane sugar	VL
Chocolate	VL
Coffee	3+

Total IgE

	Inside	Outside	Reference Range
Total IgE ◆	9.2		<=87.0 IU/mL

0 None Detected VL Very Low 1+ Low 2+ Moderate 3+ High

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- Total IgE level may have clinical significance regardless of specific antibody levels.
- Increasing levels of antibody detected suggest an increasing probability of clinical reactivity to specific foods.
- The Elimination Diet commentary is specific to IgG results only. Allergens inducing an IgE response should be completely avoided.

Laboratory Comments

Summary of IgG Test Results

Reactive / Non-Reactive Foods

3+ High

Coffee	Gluten	Sesame	Sunflower seed
Wheat			

1+ Low

Corn gluten	Cow's milk	Garlic	Pineapple
Yogurt			

VL Very Low

Almond	Asparagus	Broccoli	Buckwheat
Cane sugar	Casein	Cheddar cheese	Chocolate
Cottage cheese	Grape	Kidney bean	Lactalbumin
Lima bean	Peach	Potato, white	Rice
Soy	Spinach	String bean	Tomato
Walnut	Yeast		

0 None Detected

Alfalfa	Apple	Apricot	Avocado
Banana	Beef	Beets	Blueberry
Cabbage	Carrot	Celery	Chicken
Clam	Cod	Corn	Crab
Cranberry	Cucumber	Egg white	Egg yolk
Goat's milk	Grapefruit	Green pepper	Lamb
Lemon	Lentil	Lettuce	Lobster
Mushroom	Oat	Olive	Onion
Orange	Oyster	Papaya	Pea
Peanut	Pear	Pecan	Pinto bean
Plum	Pork	Potato, sweet	Raspberry
Red Snapper	Rye	Salmon	Sardine
Shrimp	Sole	Strawberry	Trout
Tuna	Turkey	Zucchini	

Commentary

Overview

Immunoglobulin G (IgG) antibodies that elicit an immune response to food are in a class distinct from Immunoglobulin E (IgE) food allergy reactions. IgG-mediated food responses are described as delayed hypersensitivity reactions and have been associated in the peer-reviewed literature with an array of common clinical conditions including migraine, obesity, asthma, autoimmune diseases, and irritable bowel syndrome.

IgG Testing: Factors to Consider
IgG testing can be very useful in screening foods that a person is eating on a regular basis and which may be causing adverse reactions. However, it is possible to have adverse reactions to foods with low or non-detected levels of IgG. Because the IgG profile measures exposure of the immune system to food antigens, performing this test on a patient who is not consuming a particular food or who is taking a drug with known ability to suppress immune function (i.e. steroids) may result in the test not showing a positive reaction, potentially leading to a false negative result for the particular food. Be advised that if the patient is already on an elimination diet due to known food reactions, a negative result on an IgG food antibody profile does not necessarily mean that they can freely eat the food without experiencing symptoms.

IgG Results Interpretation
The amount of IgG antibodies is measured using a semi-quantitative ELISA assay procedure. The relative degrees of IgG present for each food are reported using a semi-quantitative level; None Detected (0), VL (very low), Low (1+), Moderate (2+) or High (3+). The degree of reactivity may not correlate with the severity of patient's response, therefore clinical correlation is advised as it can help direct treatment.

Clinical Management of Reactive IgG Foods: Elimination Diet
The purpose of an elimination diet is to pinpoint symptom-triggering foods that may be the root cause of and/or perpetuating chronic health issues. This diet is specific to food sensitivities that elicit an Immunoglobulin G (IgG) response and not those defined as classic (IgE-mediated) food allergy reactions. An elimination diet is a strategic process which depends on the oversight of the healthcare provider to ensure that a patient's nutritional requirements - macronutrient, micronutrient, and caloric needs - are adequate.

Four-Phases of an Elimination Diet

PHASE 1 – PREPARATION
A patient's clinical presentation and the IgG Food Antibody Assessment results typically determine which food(s) to temporarily remove from the diet. The average time frame for an elimination diet is 1 to 3 months. It is optimal to work with the patient to determine a start and end date for the elimination diet. Patient guidance around preparation ahead of the start date is important to ensure success. These include: (1) encouraging the patient to remove offending foods from the home and adjust grocery shopping accordingly; (2) providing the patient with resources that advance meal preparation, such as recipe books or reputable websites. Directing the patient to record foods consumed, date of consumption/elimination, and any notable changes in symptoms in a food journal can help track the progress of the diet.

Commentary

PHASE 2 – ELIMINATION

It is important to ensure the patient avoids those foods which resulted in a demonstrable reaction, either in whole food forms or as ingredients in other prepared foods to gain the greatest benefit. For patients unable to eliminate all reactive foods from their diet, focusing on the foods that elicited a stronger reaction (i.e.: 2+ and 3+) may be considered for an elimination diet. Practitioners may also encourage elimination of a complete food group when the patient shows reactivity to all foods tested within that group.

PHASE 3 – REINTRODUCTION

The reintroduction of eliminated foods is done one food at a time while monitoring for any adverse reaction. The patient should consume the test food several times throughout the day for several days. If symptoms occur with reintroduction, the patient should be instructed to remove that food once again and to evaluate whether the symptoms diminish over the next few days following elimination. Signs which may indicate an IgG food reaction include the following: headache, itching, bloating, fatigue, diarrhea or constipation, and indigestion. If the food does not cause symptoms during the reintroduction phase, it can be added back into the diet. The patient should continue this process with each food eliminated.

CAUTION: *All patients warrant counseling related to signs and management of immediate hypersensitivity reactions prior to food reintroduction following an elimination diet. If reintroduction of a food causes an immediate allergic reaction (i.e. swelling of face, mouth, tongue, etc.; wheezing, rash/hives, or other allergic symptoms), it is imperative that the patient be treated as soon as possible. Following resolution of the immediate hypersensitivity reaction, the patient should be instructed to completely avoid consumption of that food.*

PHASE 4 – LONG TERM MANAGEMENT

An elimination diet based on food sensitivity testing is part of a comprehensive approach to overall gastrointestinal health. Based on the test results and the complete clinical presentation of the patient, a long-term plan is usually developed utilizing the results of the reintroduction phase. Clinicians may also consider assessing and treating intestinal permeability, as gut barrier integrity is important for proper immune responses to foods. Nutrients that have been found to support intestinal barrier and decrease potential inflammation are glutamine, vitamin A, vitamin D, essential fatty acids (Omega-3), probiotics, and butyrate. Botanicals that can also be considered to assist with intestinal health are slippery elm, deglycyrrhizinated licorice (DGL), Aloe vera extract, and marshmallow root.

For additional information on the elimination diet and how to better understand your results, please download the "Elimination Diet Handout" from our website at https://www.gdx.net/elimination-diet-handout.pdf.

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1000 IgE Food Antibodies Profile - Serum

Methodology: Chemiluminescent

IgE Food Antibody Results

	RESULT kU/L	CLASS	INDICATOR
Grains			
Buckwheat	0.89	II	
Corn	16.31	V	
Oat	<0.24	0/1	
Rice	<0.24	0/1	
Sesame	<0.24	0/1	
Soybean	<0.24	0/1	
Wheat	1.3	III	
Dairy			
Egg white	0.26	I	
Cow's milk	<0.24	0/1	
Nuts			
Almond	0.24	0/1	
Brazil nut	<0.24	0/1	
Coconut	0.4	II	
Hazelnut	<0.24	0/1	
Peanut	98.36	VI	
Seafood			
Blue mussel	26.12	VI	
Codfish	3.89	III	
Salmon	<0.24	0/1	
Shrimp	3.9	IV	
Tuna	<0.24	0/1	

Total IgE

	Inside	Outside	Reference Range
Total IgE		139.1	<=87.0 IU/mL

- IgE levels must be used in conjunction with the clinical picture and are not intended to be independently diagnostic.
- The performance characteristics of all assays have been verified by Genova Diagnostics, Inc.
- All assays are cleared by the U.S. Food and Drug Administration.
- Total IgE level may have clinical significance regardless of specific antibody levels.
- Increasing levels of antibody detected suggest an increasing clinical reactivity to specific foods.

Key

Class	kU/L	Levels of Specific IgE	Indicator
0/1	<=0.24	Undetectable or Equivocal	
I	0.25 - 0.39	Low	
II	0.4 - 1.29	Moderate	
III	1.3 - 3.89	High	
IV	3.9 - 14.99	Very High	
V	15 - 24.99	Very High	
VI	>=25	Very High	

Laboratory Comments

IgE Inhalants
IMMUNOLOGY

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1014 IgE Inhalant Profile - Serum
Methodology: Chemiluminescent

IgE Antibody Levels

INHALANT	RESULT kU/L	CLASS	INDICATOR
Trees			
Alder	<0.24	0/1	
Birch	<0.24	0/1	
Elm	0.24	0/1	
Maple	<0.24	0/1	
Oak	1.0	II	
Olive	<0.24	0/1	
Walnut	<0.24	0/1	
Grasses			
June Grass (Kentucky Blue)	<0.24	0/1	
Orchard Grass	1.45	III	
Perennial Rye Grass	<0.24	0/1	
Timothy Grass	<0.24	0/1	
Sweet Vernal Grass	<0.24	0/1	
Weeds			
Common Ragweed	4.56	IV	
Dandelion	<0.24	0/1	
English Plantain	<0.24	0/1	
Lamb's quarters	<0.24	0/1	
Nettle	<0.24	0/1	
Russian Thistle	<0.24	0/1	
Moulds			
Mould Generic	2.0	III	
Misc.			
Cat dander	100.0	VI	
Cockroach	<0.24	0/1	
Dog dander	8.83	IV	
Mite - D. farinae	0.24	0/1	
Mite - D. microceras	0.24	0/1	
Mite - D. pteronyssinus	0.56	II	

Lab Comments

Total IgE

	Inside	Outside	Reference Range
Total IgE		140.2	<=87.0 IU/mL

Key

Class	kU/L	Levels of Specific IgE	Indicator
0/1	<=0.24	Undetectable or Equivocal	
I	0.25 - 0.39	Low	
II	0.4 - 1.29	Moderate	
III	1.3 - 3.89	High	
IV	3.9 - 14.99	Very High	
V	15 - 24.99	Very High	
VI	>=25	Very High	

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1005 IgG Spice Profile - Serum
Methodology: EIA and Chemiluminescent

IgG Spice Antibody Results

Allspice	0	Curry	0	Oregano	0
Basil	VL	Dill	0	Paprika	VL
Bayleaf	VL	Fennel	1+	Parsley	0
Black Pepper	1+	Ginger	1+	Peppermint	0
Cayenne	VL	Horseradish	VL	Rosemary	0
Cinnamon	VL	Marjoram	1+	Sage	VL
Cloves	VL	Mustard	0	Thyme	VL
Cumin	2+	Nutmeg	0	Vanilla	3+

Total IgE

	Inside	Outside	Reference Range
Total IgE ◆	3.5		<=87.0 IU/mL

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- Increasing levels of antibody detected suggest an increasing probability of clinical reactivity to specific foods.

- Total IgE level may have clinical significance regardless of specific antibody levels.

0 None Detected | VL Very Low | 1+ Low | 2+ Moderate | 3+ High

Lab Comments

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Patient: **SAMPLE PATIENT**
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1004 IgE Moulds Profile - Serum

Methodology: Chemiluminescent

IgE Mould Antibody Results

INHALANT	RESULT kU/L	CLASS	INDICATOR
Aspergillus fumigatus	<0.24	0/1	
Alternaria tenuis (Alternaria alternata)	1.66	III	
Candida albicans	0.98	II	
Cladosporium herbarum	<0.24	0/1	
Curvularia lunata	<0.24	0/1	
Epicoccum purpurascens	<0.24	0/1	
Fusarium moniliforme	<0.24	0/1	
Helminthosporium halodes	<0.24	0/1	
Mucor racemosus	<0.24	0/1	
Penicillium notatum	<0.24	0/1	
Phoma betae	0.29	I	
Pityrosporum orbiculare	2.46	III	
Rhizopus nigricans	<0.24	0/1	
Stemphylium botryosum	<0.24	0/1	
Trichoderma viride	<0.24	0/1	

Key

Class	kU/L	Levels of Specific IgE	Indicator
0/1	<=0.24	Undetectable or Equivocal	
I	0.25 - 0.39	Low	
II	0.4 - 1.29	Moderate	
III	1.3 - 3.89	High	
IV	3.9 - 14.99	Very High	
V	15 - 24.99	Very High	
VI	>=25	Very High	

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Total IgE

	Inside	Outside	Reference Range
Total IgE		197.0	<=87.0 IU/mL

Lab Comments

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Patient: **SAMPLE PATIENT**
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1002 IgG Vegetarian Food Profile - Serum

Methodology: EIA and Chemiluminescent

IgG Vegetable Food Results

Artichoke	0	Garbanzo	1+	Parmesan cheese	VL
Bean sprout	VL	Filbert	0	Pistachio	0
Cantaloupe	0	Kamut	0	Safflower	0
Cashew	VL	Millet	0	Triticale	0
Cherry	0	Mung bean	0	Watermelon	1+
Coconut	0	Navy bean	0	Wheat bran	3+
Flax seed	3+	Oat bran	1+	Wild rice	0

Total IgE

	Inside	Outside	Reference Range
Total IgE ◆		176.0	<=87.0 IU/mL

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- Increasing levels of antibody detected suggest an increasing probability of clinical reactivity to specific foods.

- Total IgE level may have clinical significance regardless of specific antibody levels.

0 None Detected VL Very Low 1+ Low 2+ Moderate 3+ High

Laboratory Comments

GENOVA DIAGNOSTICS
63 Zillicoa Street
Asheville, NC 28801

Coeliac Profile

Patient: **SAMPLE PATIENT**
DOB:
Sex:
MRN:

Coeliac Profile - Serum
Methodology: FEIA, Immunoturbidometric and IFA (when EMA IgA testing is performed)

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	128	Sufficient	98-591 mg/dL
Anti-Tissue Transglutaminase IgG (tTG IgG)	13.8	Positive	<=6.9 U/ml
Anti-Deamidated Gliadin IgG (DGP IgG)	9.1	Equivocal	<=6.9 U/ml
Anti-Tissue Transglutaminase IgA (tTG IgA)	51.0	Positive	<=6.9 U/ml
Anti-Deamidated Gliadin IgA (DGP IgA)	37.4	Positive	<=6.9 U/ml
Anti-Endomysial IgA (EMA IgA)		Detected	Not Detected

Interpretation