Using the Elimination Diet in Clinical Practice: Explanations and Case Studies

Kathleen O'Neil Smith, MD., FAARM

LIVE GDX

The views and opinions expressed herein are solely those of the presenter and do not necessarily represent those of Genova Diagnostics. Thus, Genova Diagnostics does not accept liability for consequences of any actions taken on the basis of the information provided.

GENOVA DIAGNOSTICS

Christine Stubbe, ND

Medical Education Specialist - Asheville

GENOVA DIAGNOSTICS

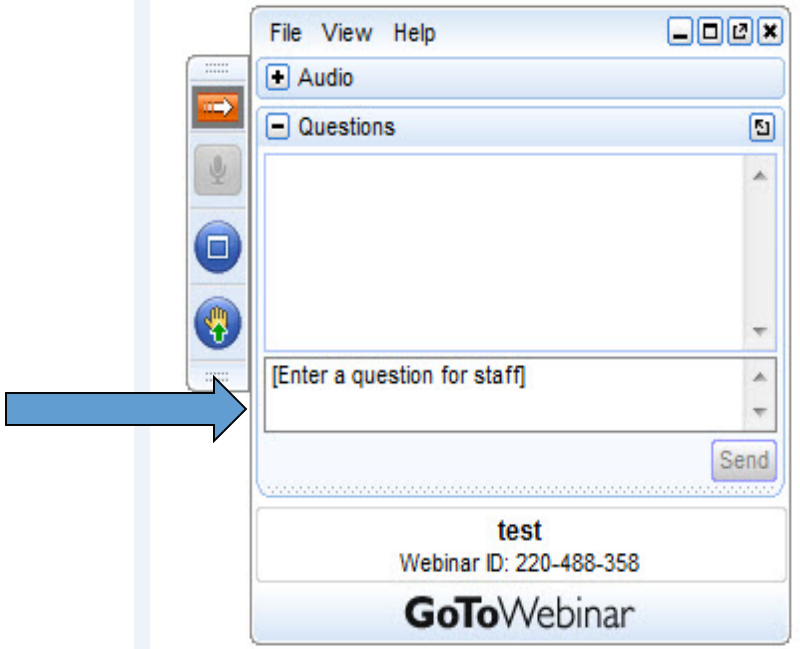
Kathleen O’Neil Smith, MD., FAARM

GENOVA DIAGNOSTICS

Technical Issues & Clinical Questions

Please type any technical issue or clinical question into either the “Chat” or “Questions” boxes, making sure to send them to “Organizer” at any time during the webinar.

We will be compiling your clinical questions and answering as many as we can the final 15 minutes of the webinar.

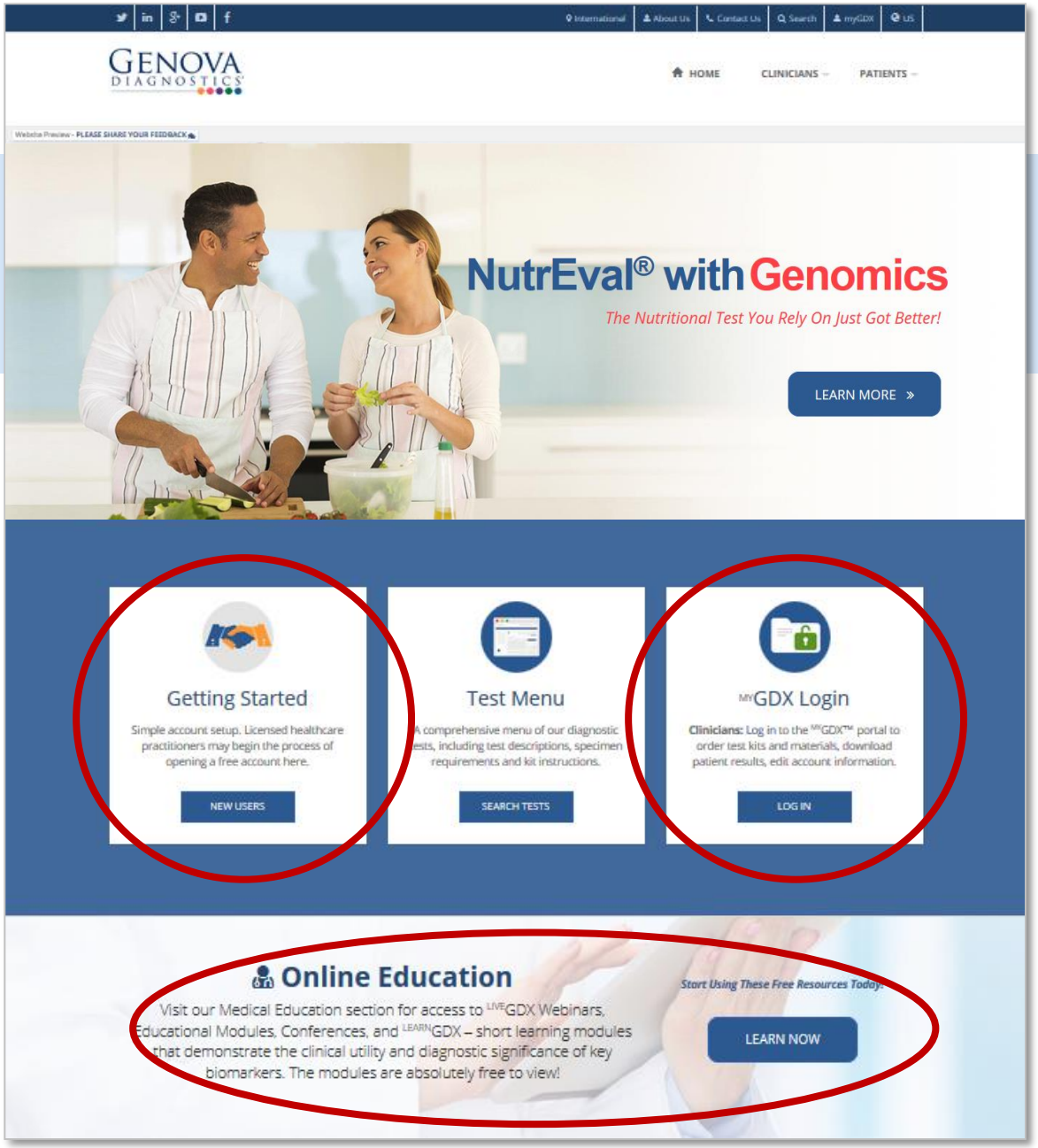


GENOVA DIAGNOSTICS

DISCLAIMER: *Please note that any and all emails provided may be used for follow up correspondence and/or for further communication.*

Need More Resources?

Ensure you have an account!



GENOVA DIAGNOSTICS

Using the Elimination Diet in Clinical Practice: Explanations and Case Studies

Kathleen O'Neil Smith, MD., FAARM

LIVE GDX

The views and opinions expressed herein are solely those of the presenter and do not necessarily represent those of Genova Diagnostics. Thus, Genova Diagnostics does not accept liability for consequences of any actions taken on the basis of the information provided.

GENOVA DIAGNOSTICS

Objectives

1. Become familiar with IgG mediated food testing and indications for ordering an IgG food test
2. Review case histories and discuss how to use elimination diets in clinical practice to help your patients with IBS, bloating, headache, fatigue, sleep disturbance, anxiety and other related conditions
3. Learn additional testing that assists the clinician in addressing GI health and healing

GENOVA DIAGNOSTICS

Medical maxim …

“Death begins in the colon.”

Practical application …

“When in doubt, treat the gut.”

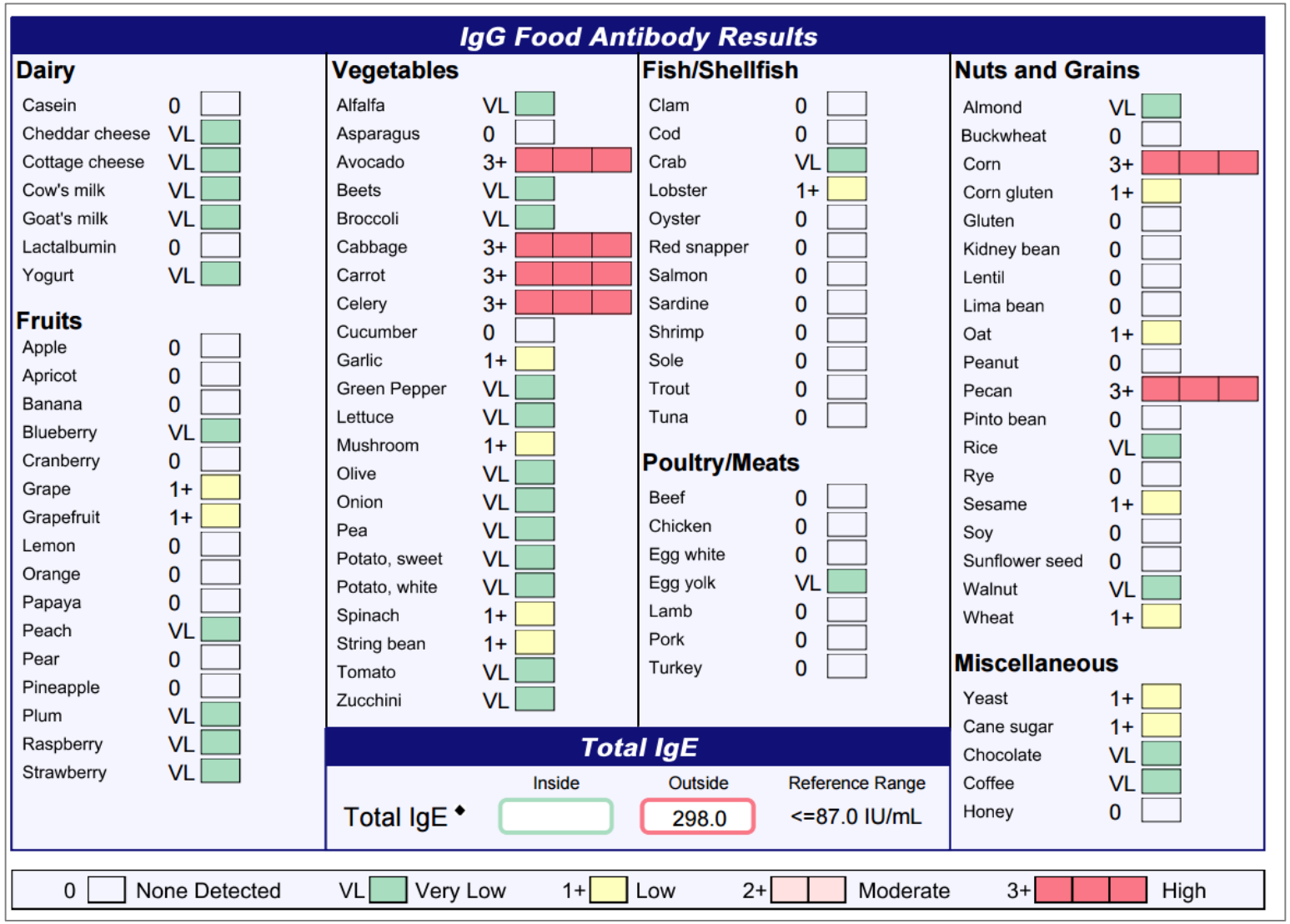
Why Use Food Antibody Assessment?

- The incidence of food sensitivities has increased dramatically over the years
- It is estimated that up to 20% of the population have adverse reactions to foods
- IgG food Ab testing screens for foods associated with patient symptoms
- Food elimination diets based on IgG testing have been found to improve patient outcomes by 25% more than elimination diets alone

Food Antibody Assessment

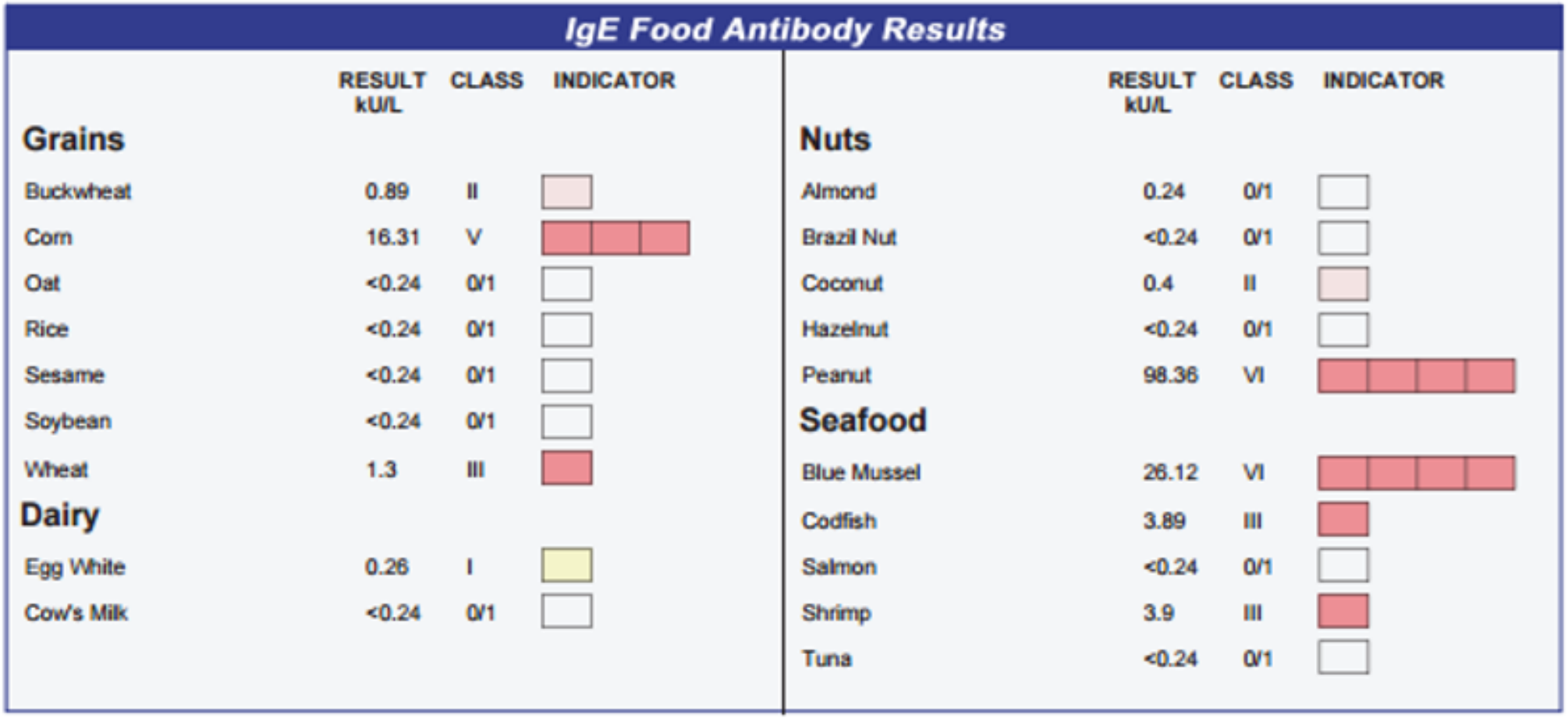
GENOVA DIAGNOSTICS

IgG (Total) Food Antibody Assessment



GENOVA DIAGNOSTICS

IgE Food Antibody Assessment



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	

	RESULT kU/L	CLASS	INDICATOR
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	III	
Tuna	<0.24	0/1	

GENOVA DIAGNOSTICS

Celiac Assessment

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	139.8	Sufficient	62.0-343.0 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	2.1	Negative	<=4 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	17.2	Negative	<=19 U/mL
Anti-Endomysial IgA (EMA IgA)	Not Detected		Not Detected
Anti-Gliadin IgA (AGA IgA)	21	Weak Positive	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	32	Strong Positve	<20 U/mL

GENOVA DIAGNOSTICS

Food Allergy Antibody Profiles

- An invaluable starting point for dietary interventions
- IgE mediated reactions
- Skin scratch testing
- IgG mediated reactions
- Assessment of relative IgG Ab levels to food via ELISA technology

IgE vs IgG Mediated Allergies/Sensitivities

IgE-Mediated Allergies

- Immediate onset, circulating t1/2 1-2 days, permanent
- Stimulates histamine response, includes foods, inhalants and molds
- Can occur from relatively few exposures to a food, or can be generated due to increased exposure to the food

IgG-Mediated Immune Response

- Delayed onset, circulating t1/2 of 21 days, temporary
- Stimulates histamine release and activates complement, includes foods, herbs, and spices
- Dependent on the frequency of exposure to the food

Clinical Pearl

- Testing Food Ab, IgE and IgG, is a component of understanding the total antigenic load related to food and environmental sensitivities which are associated with a wide range of medical conditions affecting virtually every part of the body!

- IgE Ab assessment offers quantitative IgE levels to the most common types of dietary allergens as well as for regional inhalants and molds

- IgG Ab assessment provides IgG Ab levels to 87 foods, and additional vegetables and spices

Understanding the Food Ab Report

- The report provides information on 2 types of allergic/immune responses to specific foods via IgG/IgE measurements

- The degree of clinical symptoms may not directly correlate with the level of circulating antibodies; e.g. a low concentration of IgG Ab may be associated with strong reactions, while a high concentration of IgG Ab can be present despite the absence of symptoms

IgG-Mediated Delayed Sensitivities…Can Be Difficult to Recognize

- Reactions occur hours or days after the particular food is eaten
- IgG response to a particular food may come and go in cycles, depending on whether the food is eaten or avoided
- Results from eating too much of a particular food, too frequently
- Symptoms and conditions that may be profoundly influenced by IgG-Mediated Immune Response to food:
  - Acne, ADD/ADHD, Anxiety, Asthma, Arthritis, Bloating, Celiac DX, Colitis, Ear Infections, Fatigue, Headache, IBS, Insomnia, Joint pain
- Can take 3-9 months for the Ab level to a particular food to decrease significantly

IgE-Mediated Classic Allergies…Immediate Response

- Occurs within minutes of eating the food, thus the reaction can usually be traced to the food…peanuts, shellfish, strawberries
- Once a food has caused an IgE response, it is considered an allergy for life. These foods need to be avoided permanently, even if IgE Ab levels are not elevated
- If there is a known IgE food allergy from previous testing and the food has been completely eliminated from the diet, results will be negative
  - This means that the food has been successfully eliminated form the diet
- IgE Ab levels to a particular food will drop significantly, within weeks, when the particular food is avoided. As soon as the food is consumed again, IgE Abs appear again

Factors to Be Considered That Impact Symptom Development and Severity:

- An individual's "total load" of metabolic and inflammatory stressors on the immune system
- The ability of the immune system to prevent symptoms
- The ability of the intestinal wall to act as an effective barrier to food antigens

The Immune System

An Important Consideration….

- When there is an elevated IgG for a food, but no symptoms to that food…
  - your body may be able to neutralize the reaction before symptoms occur... concept of Total Antigenic Load

The Immune System

- Consider hidden sources of the reactive food in medications
- Example: some calcium supplements are derived from oyster shell which causes a positive antigenic response even though you don't eat oysters
- It is important to check ingredient labels on foods to identify hidden sources of common food allergens…wheat, soybean, egg, milk

The Immune System

- IgG-mediated food responses can be delayed by hours to days, and thus it can be difficult to ascribe symptoms to a particular food
- Sometimes eating an allergenic food can even temporarily make the patient feel better before making him/her feel worse; this makes it even more challenging to identify the source

The Immune System

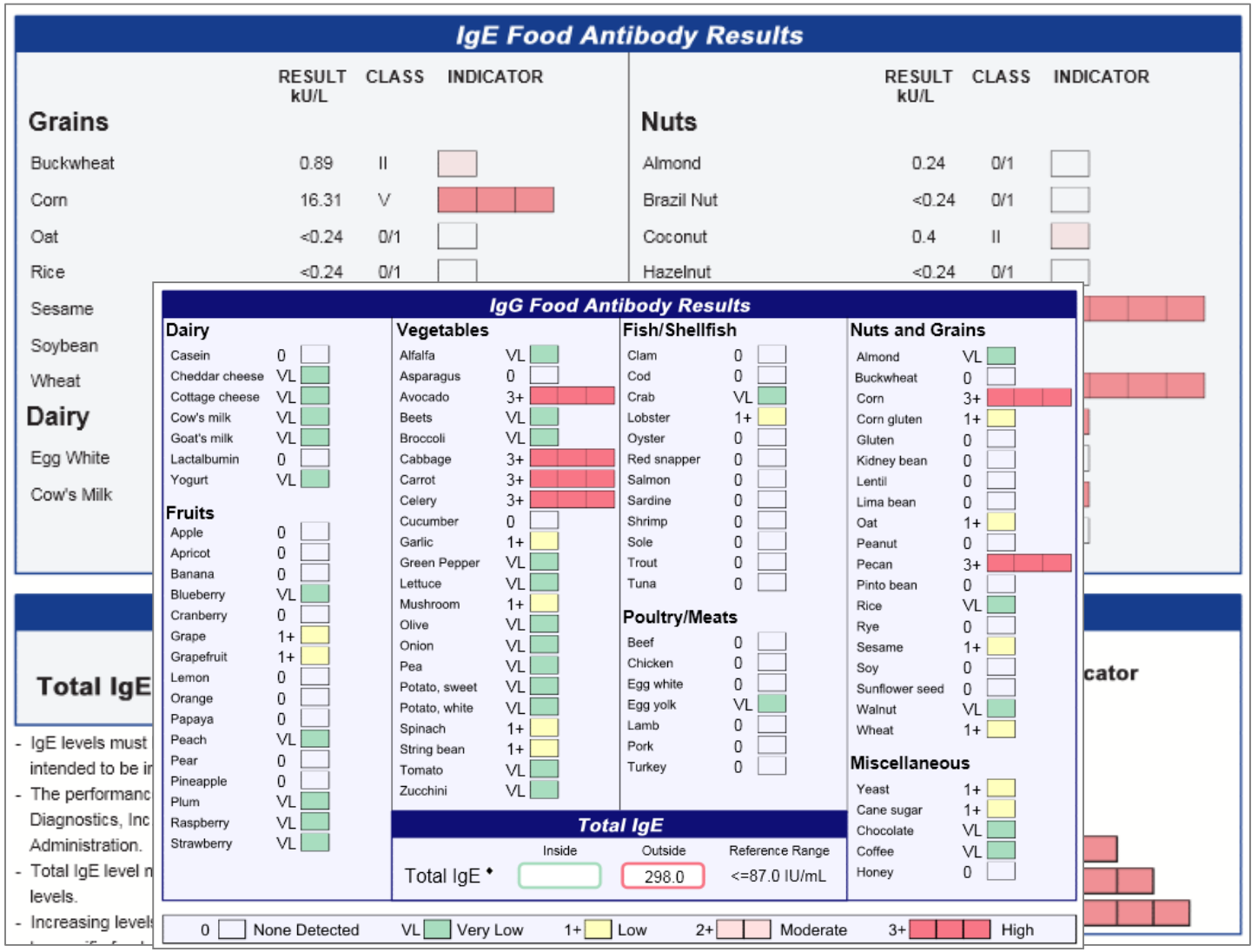
- What if…

  …the test shows LOW IgG Ab levels to a food which elicits a noticeable symptom?

- The immune system may be weak or suppressed and unable to produce AB
- The food may have been eliminated for a while
- The symptom may be to an additive (food coloring) or contaminant (mold), that accompany the food
- A food related symptom may not be mediated by IgE or IgG Ab but by a non-immune mediated reaction…e.g., lactase deficiency, MSG

Immune Panels: IgE and IgG Food Antibody Assessments

- IgE food allergies and IgG food sensitivities can cause a multitude of symptoms
- When offending foods are removed from the diet, symptoms may resolve



GENOVA DIAGNOSTICS

IgE and IgG Food Antibody Assessments -Treatment Options

- IgE- mediated food allergies:
  - Permanent removal of that food from the diet
- IgG- mediated food sensitivities:
  - Eliminate the food(s) for 3-6 months, then reintroduce
  - 4- Day rotation diet to minimize exposure to sensitivities
- Quercetin, vitamin C, fish oils decrease inflammation

Immune Diagnostics: Celiac and Gluten Sensitivity

- Testing for Celiac Disease is usually part of the conventional workup for a patient with IBS symptoms

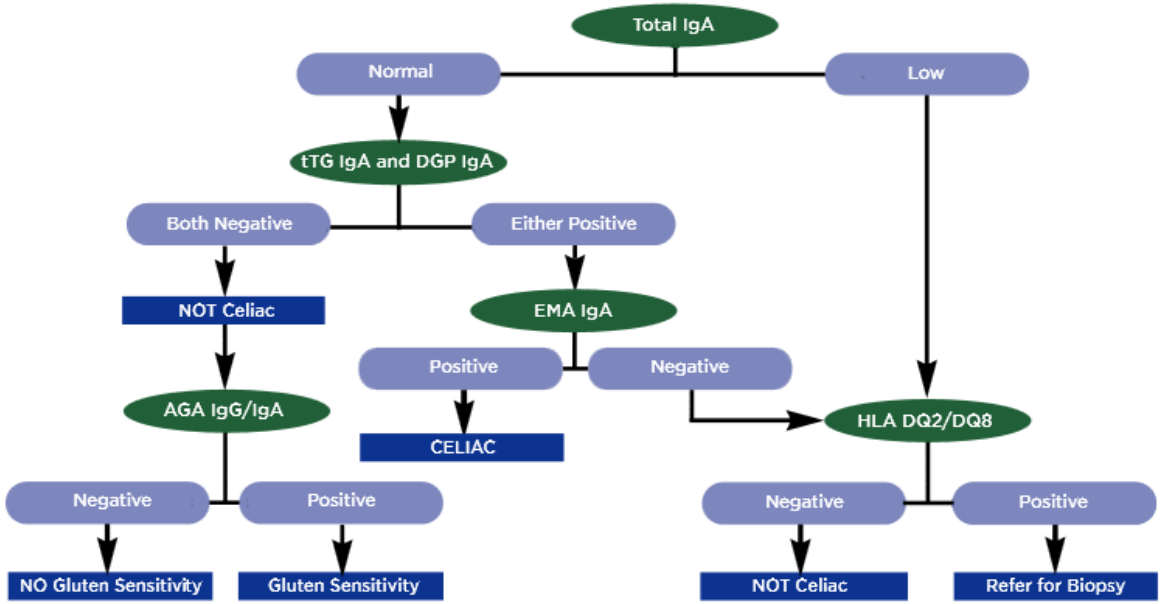
- Treatment may involve eliminating gluten from the diet

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	139.8	Sufficient	62.0-343.0 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	2.1	Negative	<=4 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	17.2	Negative	<=19 U/mL
Anti-Endomysial IgA (EMA IgA)	Not Detected		Not Detected
Anti-Gliadin IgA (AGA IgA)	21	Weak Positive	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	32	Strong Positive	<20 U/mL

Interpretation

Patient results are consistent with Gluten Sensitivity.



GENOVA DIAGNOSTICS

Celiac and Gluten Sensitivity - Treatment Options

- **Celiac:** Permanent removal of gluten from diet

- **Gluten Sensitivity:** Eliminate gluten for 3-6 months, then reintroduce and monitor for symptoms

GENOVA DIAGNOSTICS

Case Studies

GENOVA DIAGNOSTICS

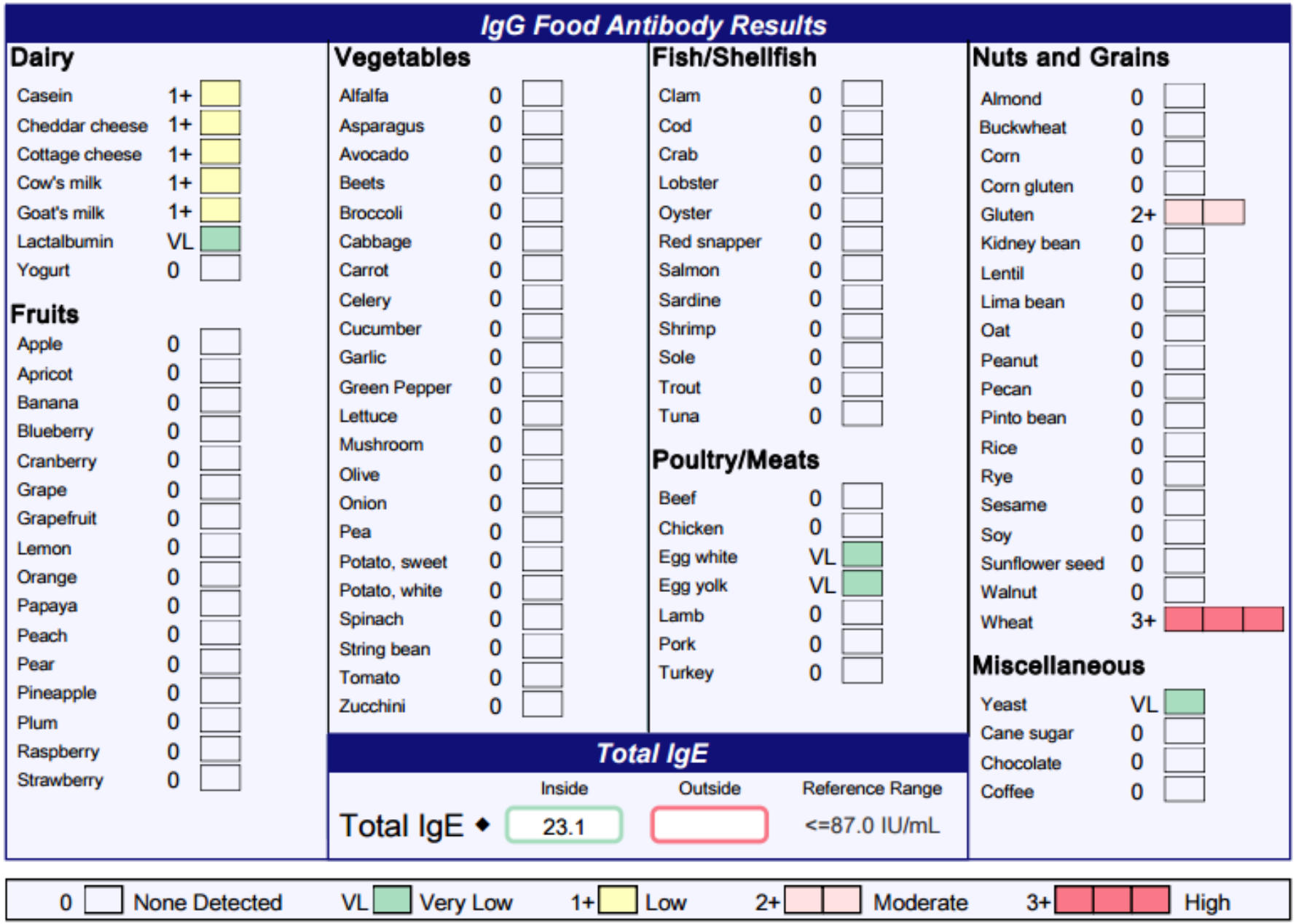
Case #1 19 yo Male: Sophomore in College

Chief Complaint

- Anxiety, fatigue, stomach aches only with food; if don't eat, no stomach ache, headaches and allergies (new this year)

Meds:

- Albuterol MDI prn
- Adderall ER prn when at school; N.B. Adderall IR increases anxiety
- Zyrtec 2-3x/wk
- Advil
- Marijuana most days (decreases anxiety)



GENOVA DIAGNOSTICS

IgG Vegetable Food Results

Artichoke	0	Garbonzo	VL	Parmesan cheese	1+
Bean sprout	VL	Filbert	VL	Pistachio	0
Cantaloupe	0	Kamut	2+	Safflower	VL
Cashew	VL	Millet	VL	Triticale	VL
Cherry	0	Mung bean	VL	Watermelon	VL
Coconut	0	Navy bean	0	Wheat bran	3+
Flax seed	VL	Oat bran	1+	Wild rice	VL

IgG Spice Antibody Results

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

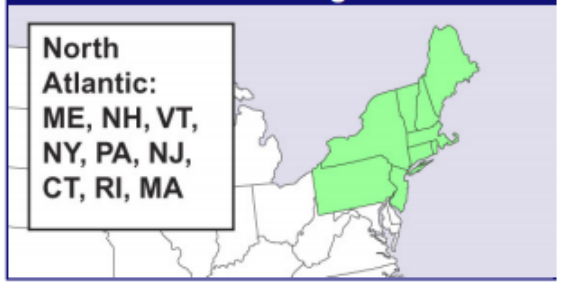
GENOVA DIAGNOSTICS

IgE Antibody Levels

INHALANT	RESULT kU/L	CLASS	INDICATOR
Trees			
Elm	<0.24	0/1	
Maple	<0.24	0/1	
Oak	<0.24	0/1	
Birch	<0.24	0/1	
Grasses			
Bermuda Grass	<0.24	0/1	
Johnson Grass	<0.24	0/1	
Timothy Grass	<0.24	0/1	
Weeds			
Lamb's quarters	<0.24	0/1	
Common Ragweed	<0.24	0/1	
Molds			
Mold Generic	<0.24	0/1	
Misc.			
Cat dander	<0.24	0/1	
Cockroach	<0.24	0/1	
Dog dander	<0.24	0/1	
Mite - D. farinae	17.9	V	
Mite - D. microceras	20.7	V	
Mite - D. pteronyssinus	11.9	IV	

Lab Comments

Inhalant Region



Total IgE

	Inside	Outside	Reference Range
Total IgE	23.1		<=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	

GENOVA DIAGNOSTICS

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	121	Sufficient	68-514 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	<1.2	Negative	<4.0 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	3	Negative	<20 U/mL
Anti-Gliadin IgA (AGA IgA)	27	Weak Positive	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	81	Strong Positive	<20 U/mL

Case #1: 19 yo Male: Follow-up

Treatment:

- Lifestyle: Mite covers, remove dust collectors
- Eliminate wheat, gluten, and dairy x 3mo

Rx Protocol:

- Mito/ ATP cocktail, B5-B6, Omega's and D3

1 MONTH F/U:

- Improved fatigue 8/10—>6/10
- Improved stomach aches 10/10 –> 2/10
- Improved headaches–> resolved
- Anxiety continues when under stress

GENOVA DIAGNOSTICS

Case #2 19 yo Female: College Freshman

Chief Compliant:

- “Inconsistent energy/ wired and tired, afternoon fatigue, hives, crave sugar but it’s horrible for me, chronic acne—on antibiotics, and bloat around face.”

Meds:

- Antihistamine prn
- OCP
- Fish Oil
- Probiotic
- Vitamin D3
- B complex
- MTHF

GENOVA DIAGNOSTICS

IgG Food Antibody Results

Dairy

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

Fruits

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

Vegetables

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

Fish/Shellfish

Clam	VL
Cod	1+
Crab	0
Lobster	0
Oyster	0
Red snapper	VL
Salmon	0
Sardine	0
Shrimp	0
Sole	1+
Trout	0
Tuna	VL

Poultry/Meats

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

Nuts and Grains

Almond	3+
Buckwheat	0
Corn	0
Corn gluten	0
Gluten	VL
Kidney bean	0
Lentil	0
Lima bean	0
Oat	0
Peanut	3+
Pecan	0
Pinto bean	0
Rice	0
Rye	0
Sesame	VL
Soy	1+
Sunflower seed	0
Walnut	VL
Wheat	2+

Miscellaneous

Yeast	VL
Cane sugar	0
Chocolate	0
Coffee	0

Total IgE

	Inside	Outside	Reference Range
Total IgE ◆		144.0	<=87.0 IU/mL

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

GENOVA DIAGNOSTICS

IgE Food Antibody Results

	RESULT kU/L	CLASS	INDICATOR
Grains			
Buckwheat	<0.24	0/1	
Corn	<0.24	0/1	
Oat	<0.24	0/1	
Rice	<0.24	0/1	
Sesame	<0.24	0/1	
Soybean	<0.24	0/1	
Wheat	<0.24	0/1	
Dairy			
Egg white	<0.24	0/1	
Cow's milk	<0.24	0/1	

	RESULT kU/L	CLASS	INDICATOR
Nuts			
Almond	<0.24	0/1	
Brazil nut	<0.24	0/1	
Coconut	<0.24	0/1	
Hazelnut	<0.24	0/1	
Peanut	<0.24	0/1	
Seafood			
Blue mussel	<0.24	0/1	
Codfish	<0.24	0/1	
Salmon	<0.24	0/1	
Shrimp	<0.24	0/1	
Tuna	<0.24	0/1	

Total IgE

	Inside	Outside	Reference Range
Total IgE		144.0	<=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	

GENOVA DIAGNOSTICS

IgG Vegetable Food Results

Artichoke	0	Garbonzo	1+	Parmesan cheese	VL
Bean sprout	0	Filbert	0	Pistachio	3+
Cantaloupe	0	Kamut	0	Safflower	0
Cashew	2+	Millet	0	Triticale	0
Cherry	0	Mung bean	0	Watermelon	0
Coconut	0	Navy bean	0	Wheat bran	VL
Flax seed	0	Oat bran	0	Wild rice	0

IgG Spice Antibody Results

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

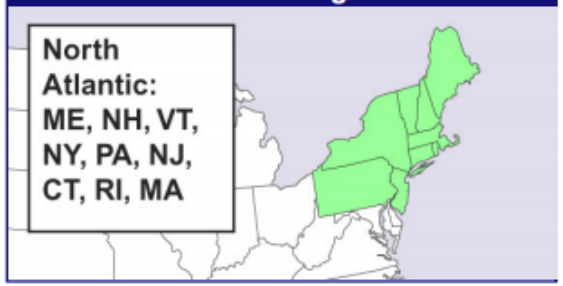
GENOVA DIAGNOSTICS

IgE Antibody Levels

INHALANT	RESULT kU/L	CLASS	INDICATOR
Trees			
Elm	<0.24	0/1	
Maple	<0.24	0/1	
Oak	<0.24	0/1	
Birch	1.62	III	
Grasses			
Bermuda Grass	<0.24	0/1	
Johnson Grass	<0.24	0/1	
Timothy Grass	2.54	III	
Weeds			
Lamb's quarters	<0.24	0/1	
Common Ragweed	<0.24	0/1	
Molds			
Mold Generic	<0.24	0/1	
Misc.			
Cat dander	<0.24	0/1	
Cockroach	<0.24	0/1	
Dog dander	<0.24	0/1	
Mite - D. farinae	11.7	IV	
Mite - D. microceras	17.0	V	
Mite - D. pteronyssinus	12.3	IV	

Lab Comments

Inhalant Region



Total IgE

	Inside	Outside	Reference Range
Total IgE		144.0	<=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	

GENOVA DIAGNOSTICS

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	202	Sufficient	69-446 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	<1.2	Negative	<4.0 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	9	Negative	<20 U/mL
Anti-Gliadin IgA (AGA IgA)	15	Negative	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	23	Weak Positive	<20 U/mL

Interpretation

Patient results are consistent with Possible Gluten Sensitivity. Clinical correlation advised.

Case #2 19yo Female: Follow-up

Treatment

- Lifestyle:
- Mite precautions
- Elimination Diet : Peanuts, Almonds, Pistachio, Cashew, Wheat and Gluten

- Note: recent concussion during soccer with headaches and memory c/o .. goal to decrease total load to immune system

Rx Protocol: Continue

- Antihistamine prn
- OCP
- Fish Oil
- Probiotic
- D3
- B complex
- MTHF

GENOVA DIAGNOSTICS

Case #3 44 yo Female: Office Worker

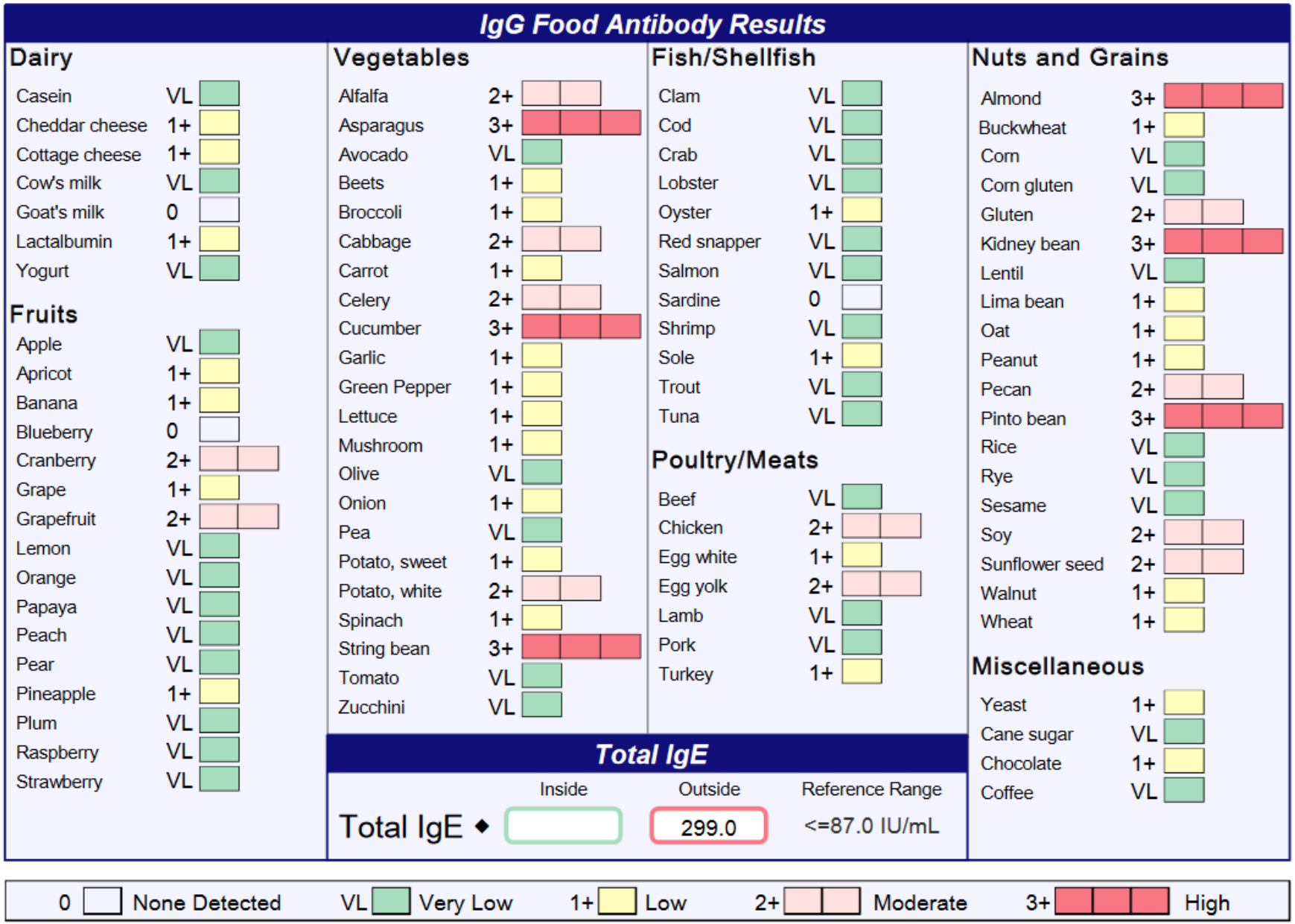
Chief Complaint:

- “hard time being productive, staying focused, getting job done; poor sleep quality, bloating. My thyroid test results may be normal, but I still feel so tired; I wake up tired and I’m tired all day long; energy 1/10”

Meds:

- Synthroid

GENOVA DIAGNOSTICS



GENOVA DIAGNOSTICS

Celiac and Gluten Sensitivity

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	118	Sufficient	69-446 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	<1.2	Negative	<4.0 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	5	Negative	<20 U/mL
Anti-Gliadin IgA (AGA IgA)	10	Negative	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	50	Strong Positive	<20 U/mL

Interpretation

Patient results are consistent with Possible Gluten Sensitivity. Clinical correlation advised.

GENOVA DIAGNOSTICS

Nutrition Evaluation

Malabsorption and Dysbiosis Markers

Malabsorption Markers		Reference Range
Indoleacetic Acid (IAA)	1.2	<= 4.2
Phenylacetic Acid (PAA)	0.13	<= 0.12
Bacterial Dysbiosis Markers		
Dihydroxyphenylpropionic Acid (DHPPA)	7.9	<= 5.3
3-Hydroxyphenylacetic Acid	9.6	<= 8.1
4-Hydroxyphenylacetic Acid	13	<= 29
Benzoic Acid	0.10	<= 0.05
Hippuric Acid	<dl	<= 603

Cellular Energy & Mitochondrial Metabolites

Carbohydrate Metabolism		Reference Range
Lactic Acid	13.4	1.9-19.8
Pyruvic Acid	25	7-32
β-OH-Butyric Acid (BHBA)	1.4	<= 2.8
Energy Metabolism		
Citric Acid	114	40-520
Cis-Aconitic Acid	9	10-36
Isocitric Acid	22	22-65
α-Ketoglutaric Acid (AKG)	22	4-52
Succinic Acid	1.9	0.4-4.6
Malic Acid	2.7	<= 3.0
β-OH-β-Methylglutaric Acid (HMG)	6	<= 15
Fatty Acid Metabolism		
Adipic Acid	0.8	<= 2.8
Suberic Acid	0.8	<= 2.1

Vitamin D

	Inside Range	Outside Range	Reference Range
25 - OH Vitamin D ◆		24	50-100 ng/mL

GENOVA DIAGNOSTICS

Case #3 44 yo Female: Treatment

Lifestyle:

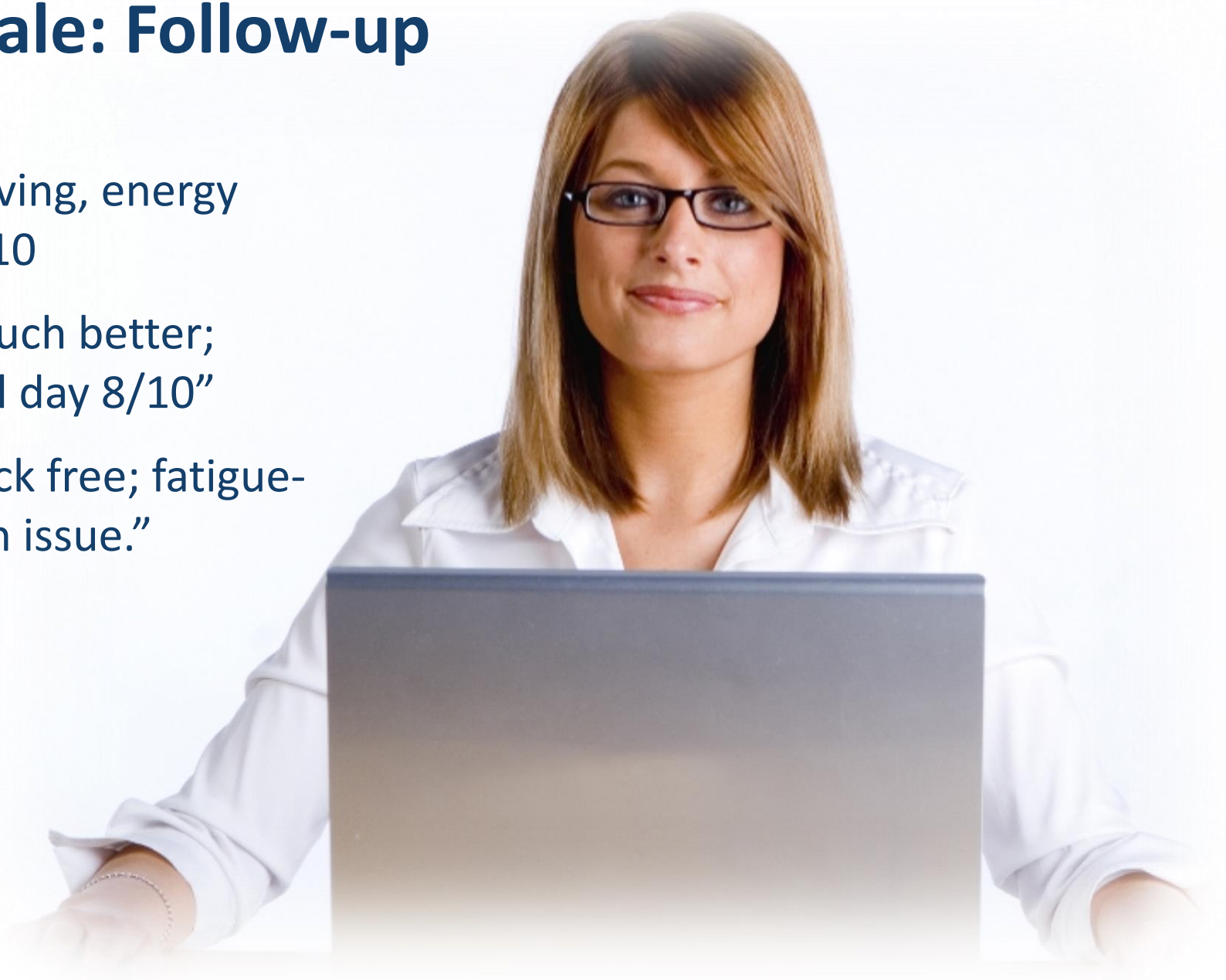
- Elimination diet and Eliminate Gluten
- Meditation

Rx Protocol:

- TT: DHEA 1 mg/ Pregnenolone gtt; Multivit 3 caps /d
- Mito cocktail, D3, B12, Probiotic 50 billion cfu/day, w/ food

Case #3 44 yo Female: Follow-up

- **3 Wk F/U:** bloating improving, energy and sleep improving 5-6/10
- **6 Wk F/U**:" sleeping so much better; good consistent energy all day 8/10"
- **12 Wk and 12mo F/U:** "sick free; fatigue- a thing of past; abd not an issue."



GENOVA DIAGNOSTICS

Case #4 67 yo Female: Artist, Avid Hiker

Chief Complaint:

- "Colitis exacerbation.. mucus, diarrhea
- Usually Asacol prn… now 6/day & VSL 4/day,
  - and it's not getting better; "Arthritic syndrome feeling seized up', exhausted, chronic headache and my sinus symptoms are bad"

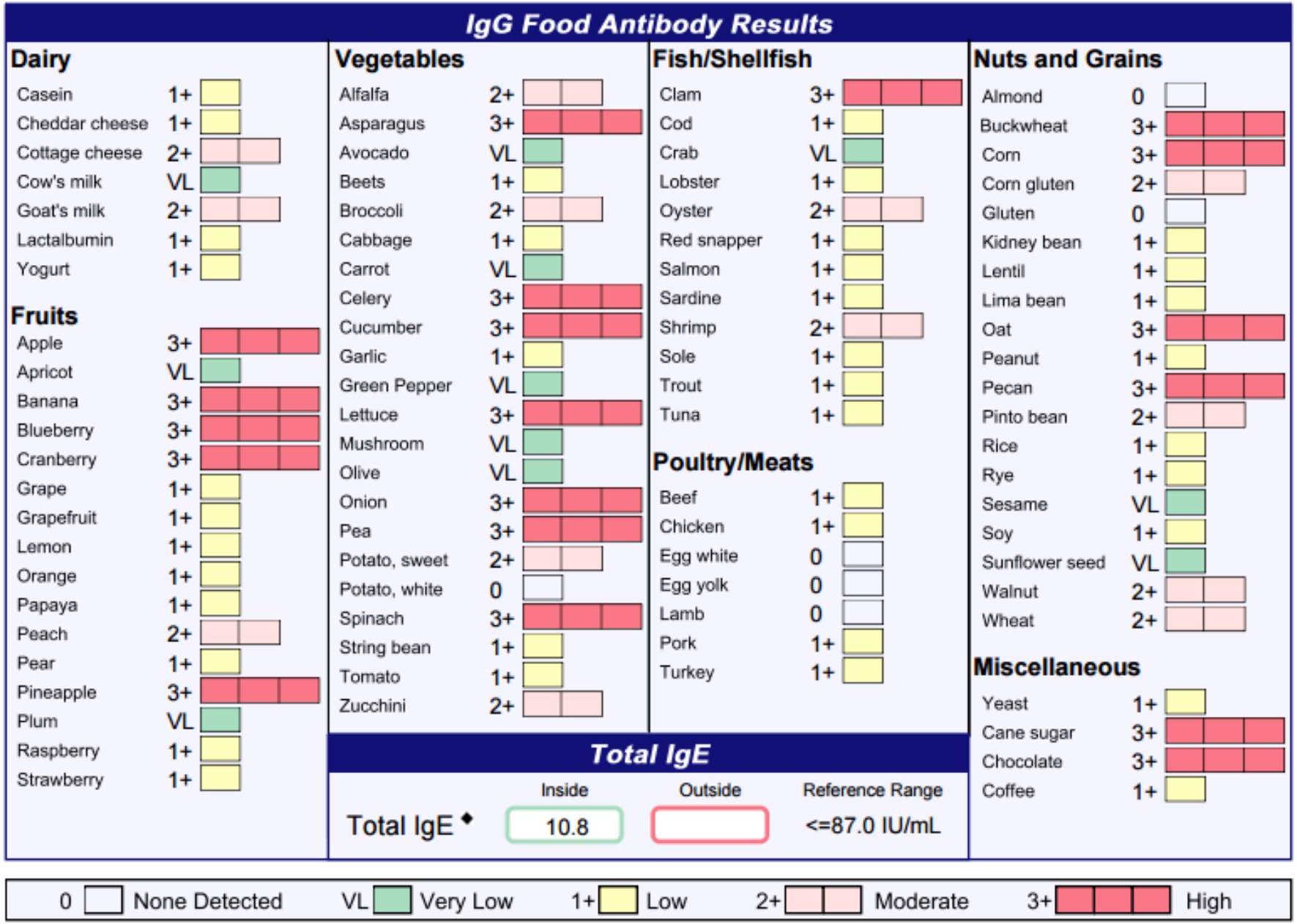
Meds:

- Asacol, T4, BIHST, Crestor

Supplements:

- too many to list

GENOVA DIAGNOSTICS



GENOVA DIAGNOSTICS

IgG Vegetable Food Results

Artichoke	1+	Garbonzo	3+	Parmesan cheese	1+
Bean sprout	3+	Filbert	VL	Pistachio	3+
Cantaloupe	1+	Kamut	VL	Safflower	VL
Cashew	1+	Millet	VL	Triticale	2+
Cherry	VL	Mung bean	1+	Watermelon	1+
Coconut	3+	Navy bean	1+	Wheat bran	3+
Flax seed	3+	Oat bran	3+	Wild rice	2+

IgG Spice Antibody Results

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

GENOVA DIAGNOSTICS

Immunologic Markers

Analyte	Result		Reference Range
Anti-Tissue Transglutaminase IgA	<1.23		<=3.99 U/mL
Anti-Tissue Transglutaminase IgG	2.51		<=5.99 U/mL
Total IgA	148.6	Sufficient	85.0-532.0 mg/dL
Anti-Gliadin Antibody IgA	<1.23		<=4.99 U/mL
Anti-Gliadin Antibody IgG	<1.23		<=9.99 U/mL

Case #4 67 yo Female: Treatment

Lifestyle:

- Elemental diet f/b GI repair program
- Adrenal Support
- Immune system support with peptides to stimulate T and B cell lines

GENOVA DIAGNOSTICS

Case #4 67 yo Female: Follow-up

1 month F/U:

Colitis improving→ Asacol 6-2/d

Energy 1-2/10 → 6-7/10

2 month F/U:

Colitis → Asacol prn

Energy 8/10…"I cleaned my house from top to bottom!"
Not 'seized up' anymore, Haven't had any headaches

Case # 5 63 yo Male: Optometrist

Chief Complaint;

- “ED and fatigue”

PMH:

- UC s/p colectomy, Prostate Ca s/p prostatectomy, OSA, Afib, Rosacea

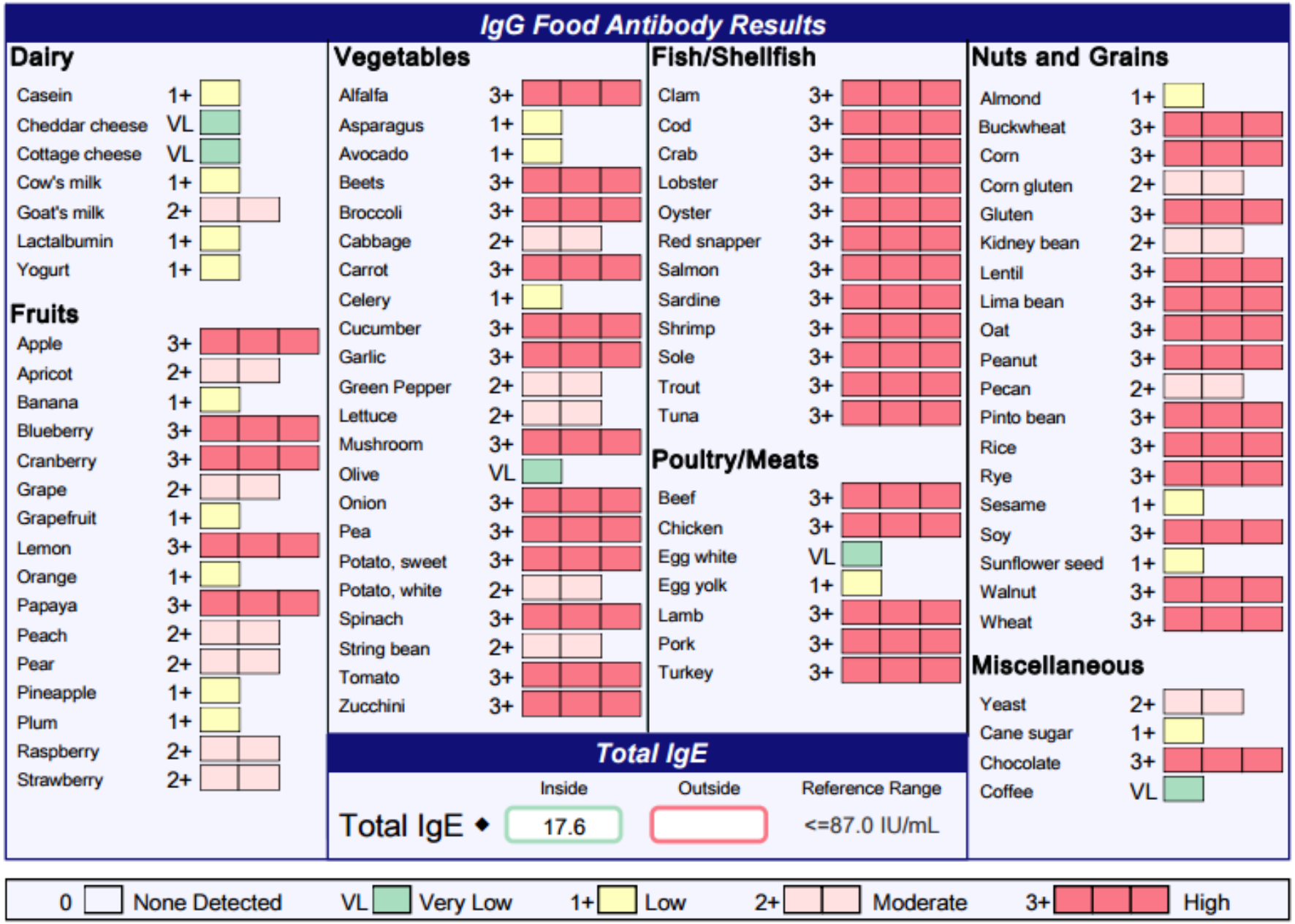
Meds:

- Metformin, T4, T3, ASA , B Blocker,
- Testosterone, Anastrazole, CPAP

Supplements:

- too many to list (Life Extension)

GENOVA DIAGNOSTICS



GENOVA DIAGNOSTICS

IgG Vegetable Food Results

Artichoke	2+	Garbonzo	3+	Parmesan cheese	VL
Bean sprout	3+	Filbert	1+	Pistachio	2+
Cantaloupe	1+	Kamut	3+	Safflower	3+
Cashew	3+	Millet	2+	Triticale	3+
Cherry	3+	Mung bean	1+	Watermelon	3+
Coconut	3+	Navy bean	2+	Wheat bran	3+
Flax seed	3+	Oat bran	3+	Wild rice	3+

IgG Spice Antibody Results

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

GENOVA DIAGNOSTICS

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	263	Sufficient	98-591 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	<1.2	Negative	<4.0 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	7	Negative	<20 U/mL
Anti-Gliadin IgA (AGA IgA)	5	Negative	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	1	Negative	<20 U/mL

Case # 5 63 yo Male: Treatment & Follow-up

- Very upset about results of Food Ab test
- Reports entirely asymptomatic
- Per MD (me☺) extensive skin rash, and c/o fatigue
- Decides to do the Metagenics 10 d Detox
- Post Detox he reintroduced foods, gradually based on likes/dislikes
- IgG- mediated food sensitivities:
  - 4- Day rotation diet to minimize exposure to sensitivities

GENOVA DIAGNOSTICS

Case #6 17 yo Female: Senior in High School

Chief Complaint:

- .. “s/p ER visit for anaphylaxis after eating steak meal”
- Referred to Allergy
- Chronic hives, urticaria, inconsistent energy, terrible sleep”

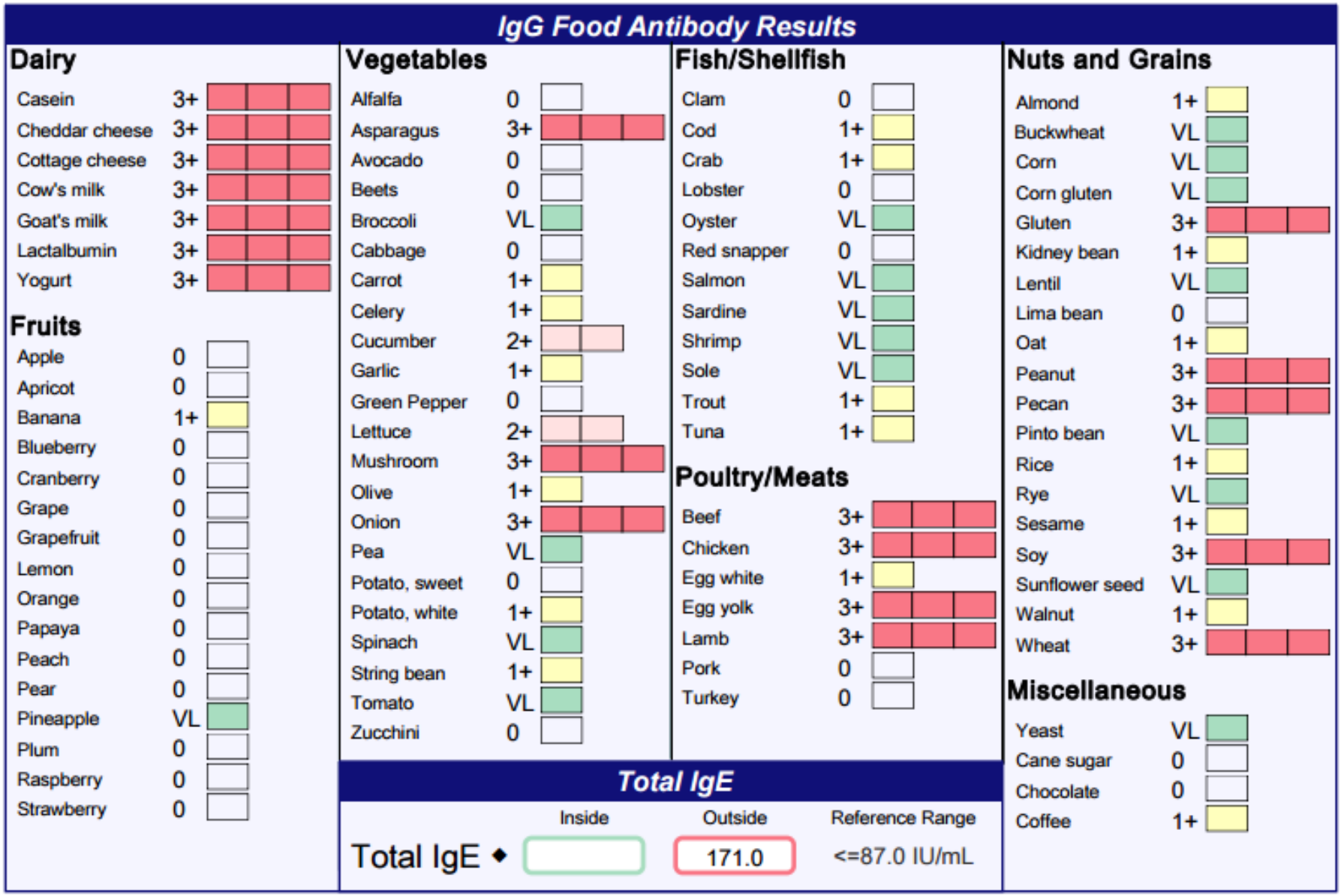
Meds:

- EpiPen prn

Supplements:

- none

GENOVA DIAGNOSTICS



GENOVA DIAGNOSTICS

IgE Food Antibody Results

	RESULT kU/L	CLASS	INDICATOR
Grains			
Buckwheat	<0.24	0/1	
Corn	<0.24	0/1	
Oat	<0.24	0/1	
Rice	<0.24	0/1	
Sesame	<0.24	0/1	
Soybean	<0.24	0/1	
Wheat	<0.24	0/1	
Dairy			
Egg white	<0.24	0/1	
Cow's milk	<0.24	0/1	
Nuts			
Almond	<0.24	0/1	
Brazil nut	<0.24	0/1	
Coconut	<0.24	0/1	
Hazelnut	<0.24	0/1	
Peanut	<0.24	0/1	
Seafood			
Blue mussel	0.43	II	
Codfish	<0.24	0/1	
Salmon	<0.24	0/1	
Shrimp	0.65	II	
Tuna	<0.24	0/1	

Total IgE

	Inside	Outside	Reference Range
Total IgE		171.0	<=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	

GENOVA DIAGNOSTICS

Immunologic Markers

Biomarker	Result		Reference Range
Total IgA	129	Sufficient	62-343 mg/dL
Anti-Tissue Transglutaminase IgA (tTG IgA)	<1.2	Negative	<4.0 U/mL
Anti-Deamidated Gliadin IgA (DGP IgA)	2	Negative	<20 U/mL
Anti-Gliadin IgA (AGA IgA)	8	Negative	<20 U/mL
Anti-Gliadin IgG (AGA IgG)	78	Strong Positive	<20 U/mL

Interpretation

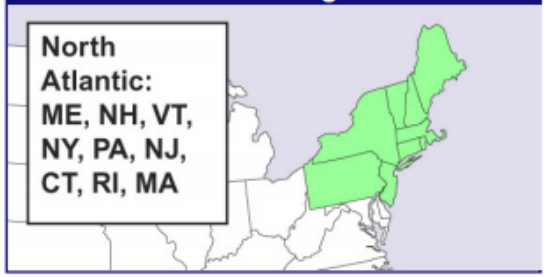
Patient results are consistent with Possible Gluten Sensitivity. Clinical correlation advised.

IgE Antibody Levels

INHALANT	RESULT kU/L	CLASS	INDICATOR
Trees			
Elm	0.39	I	
Maple	0.29	I	
Oak	<0.24	0/1	
Birch	<0.24	0/1	
Grasses			
Bermuda Grass	<0.24	0/1	
Johnson Grass	<0.24	0/1	
Timothy Grass	<0.24	0/1	
Weeds			
Lamb's quarters	<0.24	0/1	
Common Ragweed	<0.24	0/1	
Molds			
Mold Generic	<0.24	0/1	
Misc.			
Cat dander	<0.24	0/1	
Cockroach	0.49	II	
Dog dander	<0.24	0/1	
Mite - D. farinae	36.0	VI	
Mite - D. microceras	48.3	VI	
Mite - D. pteronyssinus	46.5	VI	

Lab Comments

Inhalant Region



Total IgE

	Inside	Outside	Reference Range
Total IgE		171.0	<=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	

GENOVA DIAGNOSTICS

Case #6 17 yo Female: Treatment

- Pt was unaware of IgE Allergy to shrimp and mussel; She had surf and turf (shrimp) when experienced anaphylaxis…
- IgE- mediated food allergies: permanent removal of that food from the diet
- IgG- mediated food sensitivities:
  - Eliminate the food(s) for 3-6 months, then reintroduce
  - 4- Day rotation diet to minimize exposure to sensitivities

GENOVA DIAGNOSTICS

Case #6 17 yo Female: : Follow Up

- **1 month:** Overall feeling better…
  - Less hives, better energy; sleep same
- **2 month:** Overall the same as at 1 month

GENOVA DIAGNOSTICS

Moderator:
Christine Stubbe, ND

Presenter:
Kathleen O'Neil Smith, MD., FAARM

Explore

WWW.GDX.NET

for more information and educational resources, including…

LEARN **GDX –** Brief video modules

LIVE **GDX –** Previous webinar recordings

GI University – Focused learning modules

Conferences – Schedule of events we attend

Test Menu – Detailed test profile information

MY **GDX –** Order materials and get results

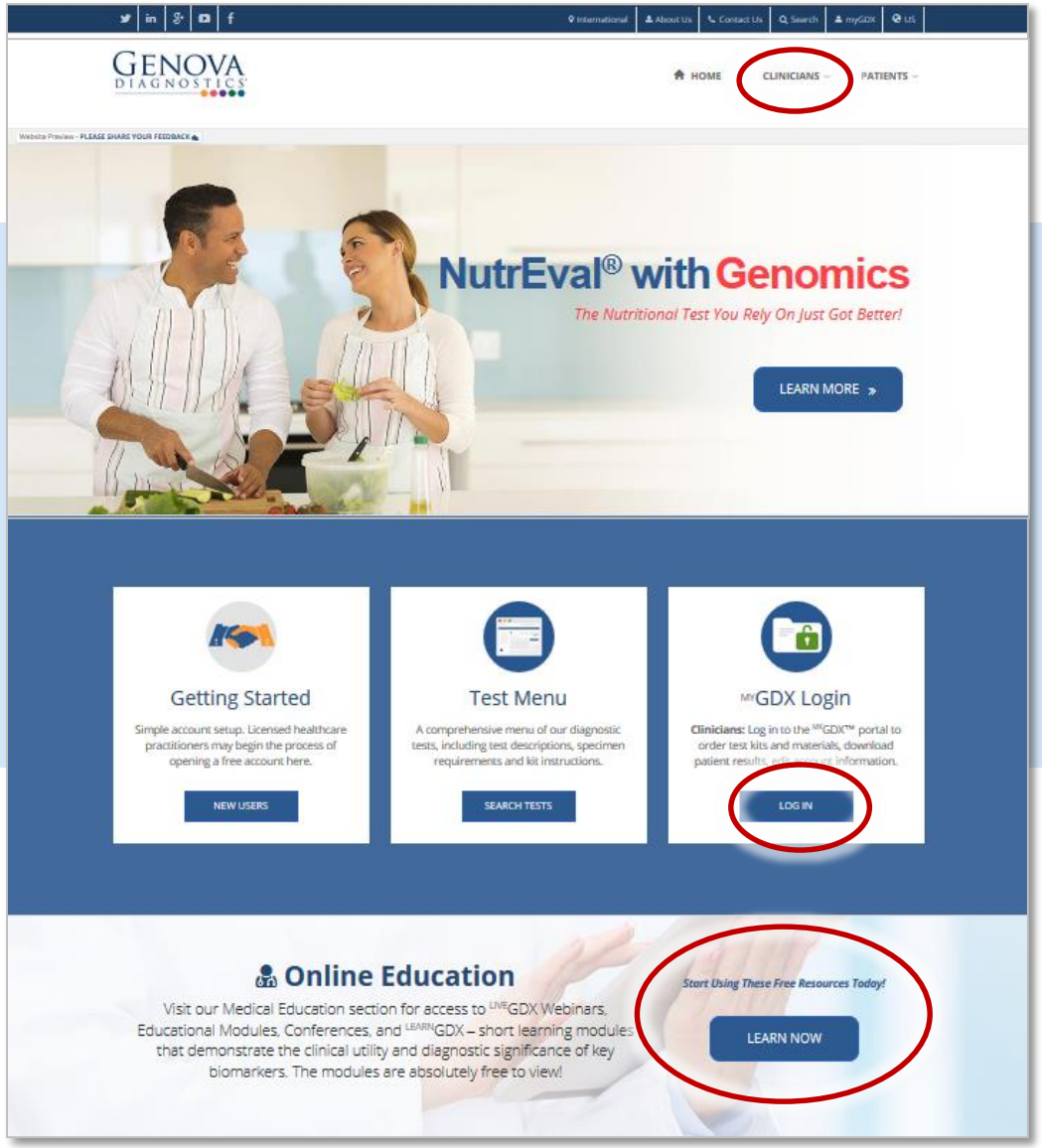
Questions?

GENOVA DIAGNOSTICS

Additional Education Materials:

WWW.GDX.NET

Sample Reports,
Support Guides,
Kit Instructions, FAQs,
Payment Options, and
much more!



GENOVA DIAGNOSTICS

Additional Questions?

US Client Services: 800-522-4762

UK Client Services: 020.8336.7750

Please schedule a complimentary appointment with one of our Medical Education Specialists for questions related to:

- Diagnostic profiles featured in this webinar
- How Genova's profiles might support patients in your clinical practice
- Review a profile that has already been completed on one of your patients

We look forward to hearing from you!

GENOVA DIAGNOSTICS

Upcoming LIVE GDX Webinar Topics

November 2016

- Sequential Stool Testing to Monitor Progress in Patients with Rheumatoid Arthritis
    - Susan Blum, MD

Register for upcoming LIVE GDX Webinars online at **WWW.GDX.NET**

The views and opinions expressed herein are solely those of the presenter and do not necessarily represent those of Genova Diagnostics. Thus, Genova Diagnostics does not accept liability for consequences of any actions taken on the basis of the information provided.

Using the Elimination Diet in Clinical Practice: Explanations and Case Studies

Kathleen O'Neil Smith, MD., FAARM

LIVE GDX

The views and opinions expressed herein are solely those of the presenter and do not necessarily represent those of Genova Diagnostics. Thus, Genova Diagnostics does not accept liability for consequences of any actions taken on the basis of the information provided.

GENOVA DIAGNOSTICS