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Donald Simpson MD – Lab Director

Patient:	JOHN SMITH	**Birth:**	2000-01-01	**Accession:**	1234567
Patient #:	JS20000101	**Age:**	25 years	**Collection Date:**	2025-05-08 10:39 AM
Doctor:	CHARLES PEPPER	**Gender:**	Male	**Received Date:**	2025-05-12 04:21 PM

Method Overview

Studies demonstrate that certain foods and beverages can trigger immune and inflammatory responses. For each antigen and marker, reactivity values have been scientifically established to classify patient responses as follows:

IgE Response:

- A score of 0 indicates no allergy within Reference Intervals established by CLSI EPC28-A3c and is considered negative.
- Scores above the Reference Interval are considered Positive: from 1 – 6, with 1 being low reactivity and 6 being high.

IgG, IgG4, and C3b/d Responses:

We report responses as within normal limits (WNL), Moderate, or High:

- WNL: Below the response of 84th percentile[1]
- Moderate: Between 84-97.7 percentile
- High: Above 97.7% of the population

Eat 144 Lists

For patients experiencing milder symptoms- it is recommended to avoid foods listed in the red category. Foods in the yellow category may be consumed, rotated, or avoided based on the clinical judgment of the practitioner.

For patients with more severe symptoms- it is advisable to avoid foods from both the red and yellow categories.

Foods that require no restriction are listed in the green category.

Red List
Dairy
Casein, Cow's Milk(2)
Fish & Shellfish
Squid(3)
Fruit
Kiwi Fruit(1)
Grains
Gluten(4)
Wheat(4)

Yellow List
Fish & Shellfish
Crab(3)
Fruit
Citrus(1)
Meat
Beef Collagen Peptides(5)
Poultry
Chicken / Game Hen(6)
Egg White(6)
Tree Nuts

[1] "For example, a data point that falls at the 80th percentile has a value greater than 80 percent of the data points within the dataset" (Eldridge, 2024)

Yellow List
Walnut, Black
Vegetables
Cabbage(1)
Pepper, Bell(1)

Green List
Additives and Colorings
Blue: FD&C Blue 1, Red 40
Polysorbates and Polyethylene Glycols
Red: FD&C Red 40, Red 3
Beverages
Coffee
Tea, Black
Tea, Green
Dairy
Milk & Yogurt Cultures(2)
Milk, Cow(2)
Milk, Goat
Whey, Cow's Milk(2)
Fish & Shellfish
Catfish Swai & Tilapia
Clam(3)
Cod
Flounder
Halibut
Lobster(3)
Salmon
Sardine
Scallop(3)
Shrimp(3)
Tuna
Fruit
Apple(1)
Avocado
Banana
Blueberry
Cantaloupe
Cherry
Goji & Barberry

Green List
Grape
Mulberry, White & Red
Papaya
Peach(1)
Pear(1)
Pineapple
Pineapple Bromelain
Plum(1)
Pomegranate
Pomelo & Citron(1)
Strawberry(1)
Tomato(1)
Watermelon
Fungi or Mold
Aspergillus
Candida albicans
Mushroom
Mushroom Blend, Immune Supplement
Penicillium chrysogenum mold
Penicillium roqueforti
Yeast, Brewer's and Baker's
Grains
Barley(4)
Buckwheat
Common Millet
Flaxseed
Hominy, Grits, Corn Tortillas / Tamales
Oats
Quinoa
Rice
Rye(4)
Sorghum
Herbs, Spices, and Sweeteners
Cannabaceae: Hops & Hemp Leaf
Caraway, Coriander, Cilantro, Dill, Parsley
Chamomile, Echinacea, Tarragon, Wormwood
Cinnamon
Fennel, Anise seed / Black Licorice
Garlic

Patient Name: SMITH, JOHN
DOB: 2000-01-01
Accession: 1234567
Physician: PEPPER, CHARLES
Collection Date: 2025-04-25 10:39 AM

Green List
Ginger
Honey, Royal Jelly, Bee Venom
Pepper, Black
Rosemary, Sage, Salvia
Spearmint, Pennyroyal, Basil
Thyme, Marjoram, Oregano
Turmeric
Vanilla Bean
Legumes, Beans and Pulses
Bean, Common Dried Navy, Black, White, Kidney
Bean, Common Green
Bean, Lima
Bean, Lupini
Bean, Mung
Carob
Chick Pea
Fenugreek
Green Pea Protein Powder
Lentils
Mesquite Bean Flour
Pea, Green / English, Yellow
Peanut
Soybean
Meat
Beef(5)
Bovine Immunoglobulin(5)
Bovine Serum Albumin(5)
Goat Immunoglobulin(5)
Lamb
Porcine Thyroglobulin(5)
Pork(5)
Venison and Elk
Poultry
Chicken Serum Proteins(6)
Egg Yolk(6)
Turkey(6)
Seeds

Green List
Celery Seed
Chia Seed
Hemp Seed
Mustard
Poppy Seed
Pumpkin Seeds
Sesame
Sunflower Seed
Tree Nuts
Almond
Brazil Nut
Cashew Nut
Chocolate
Coconut
Hazelnut
Pecan
Pine Nuts
Pistachio
Vegetables
Asparagus
Broccoli
Carrot(1)
Cauliflower
Celery(1)
Corn(1)
Cucumber
Eggplant
Kale
Lettuce
Olive
Onion
Spinach
Squashes, Zucchini
Turnip & Radish
White Potato
Yam & Sweet Potato

The Enhanced Allergy/sensitivity Test (EAT144) assesses how 144 of the most commonly ingested foods, additives, and beverages trigger an immune and inflammatory response.

IgE (Immunoglobulin E):

In allergy and asthma, IgE antibodies cause type 1 hypersensitivity reactions that can occur within minutes to hours after exposure to food allergens, respiratory allergens, or insect venoms. During this response, the release of histamines and inflammatory cytokines contributes to symptoms. Symptoms can manifest as itching, sneezing, hives, coughing, difficulty breathing, and, in severe cases, life-threatening anaphylaxis.

IgG4 (Immunoglobulin G, subclass 4):

IgG4 is a subclass of IgG. IgG4 responses are generally protective, inhibiting IgE from releasing histamine, thereby mitigating the symptoms of IgE-mediated reactions. However, highly elevated levels of IgG4 are a marker of past allergy, and prolonged, repeated exposure can cause a host of symptoms and diseases related to the chronic inflammatory response.

IgG (Immunoglobulin G, subclasses 1-3):

IgG works with the adaptive immune system to bind and clear foreign materials from the body. High levels of IgG to specific foods are associated with food sensitivities or intolerances, with delayed inflammation reactions occurring 3-72 hours after ingestion. Inflammation can lead to chronic symptoms, including fatigue, irritable bowel, migraines, skin rashes, and joint aches.

C3b/d (Complement Components C3b and C3d):

C3b and C3d are vital components of the innate immune system, which is responsible for enhancing the ability to clear pathogens and damaged cells, promote inflammation, and attack a pathogen's cell membrane. Higher levels of C3b/d, along with IgG antibodies, can significantly amplify sensitivity reactions and cause various symptoms.

Antigen	IgE	IgG4	IgG	C3b/d
Additives and Colorings				
Blue: FD&C Blue 1, Red 40	(0) Negative	WNL	WNL	WNL
Polysorbates and Polyethylene Glycols	(0) Negative	WNL	WNL	WNL
Red: FD&C Red 40, Red 3	(0) Negative	WNL	WNL	WNL
Beverages				
Coffee	(0) Negative	WNL	WNL	WNL
Tea, Black	(0) Negative	WNL	WNL	WNL
Tea, Green	(0) Negative	WNL	WNL	WNL
Dairy				
Casein, Cow's Milk[(2)]	(1) Positive	WNL	WNL	WNL
Milk & Yogurt Cultures[(2)]	(0) Negative	WNL	WNL	WNL
Milk, Cow[(2)]	(0) Negative	WNL	WNL	WNL
Milk, Goat	(0) Negative	WNL	WNL	WNL
Whey, Cow's Milk[(2)]	(0) Negative	WNL	WNL	WNL
Fish & Shellfish				
Catfish Swai & Tilapia	(0) Negative	WNL	WNL	WNL
Clam[(3)]	(0) Negative	WNL	WNL	WNL
Cod	(0) Negative	WNL	WNL	WNL

Antigen	IgE	IgG4	IgG	C3b/d
Crab[3]	(0) Negative	Moderate	WNL	WNL
Flounder	(0) Negative	WNL	WNL	WNL
Halibut	(0) Negative	WNL	WNL	WNL
Lobster[3]	(0) Negative	WNL	WNL	WNL
Salmon	(0) Negative	WNL	WNL	WNL
Sardine	(0) Negative	WNL	WNL	WNL
Scallop[3]	(0) Negative	WNL	WNL	WNL
Shrimp[3]	(0) Negative	WNL	WNL	WNL
Squid[3]	(0) Negative	High	WNL	WNL
Tuna	(0) Negative	WNL	WNL	WNL
Fruit				
Apple[1]	(0) Negative	WNL	WNL	WNL
Avocado	(0) Negative	WNL	WNL	WNL
Banana	(0) Negative	WNL	WNL	WNL
Blueberry	(0) Negative	WNL	WNL	WNL
Cantaloupe	(0) Negative	WNL	WNL	WNL
Cherry	(0) Negative	WNL	WNL	WNL
Citrus[1]	(0) Negative	Moderate	WNL	WNL
Goji & Barberry	(0) Negative	WNL	WNL	WNL
Grape	(0) Negative	WNL	WNL	WNL
Kiwi Fruit[1]	(0) Negative	WNL	WNL	High
Mulberry, White & Red	(0) Negative	WNL	WNL	WNL
Papaya	(0) Negative	WNL	WNL	WNL
Peach[1]	(0) Negative	WNL	WNL	WNL
Pear[1]	(0) Negative	WNL	WNL	WNL
Pineapple	(0) Negative	WNL	WNL	WNL
Pineapple Bromelain	(0) Negative	WNL	WNL	WNL
Plum[1]	(0) Negative	WNL	WNL	WNL
Pomegranate	(0) Negative	WNL	WNL	WNL
Pomelo & Citron[1]	(0) Negative	WNL	WNL	WNL
Strawberry[1]	(0) Negative	WNL	WNL	WNL
Tomato[1]	(0) Negative	WNL	WNL	WNL
Watermelon	(0) Negative	WNL	WNL	WNL
Fungi or Mold				
Aspergillus	(0) Negative	WNL	WNL	WNL
Candida albicans	(0) Negative	WNL	WNL	WNL
Mushroom	(0) Negative	WNL	WNL	WNL
Mushroom Blend, Immune Supplement	(0) Negative	WNL	WNL	WNL
Penicillium chrysogenum mold	(0) Negative	WNL	WNL	WNL

Antigen	IgE	IgG4	IgG	C3b/d
Penicillium roqueforti	(0) Negative	WNL	WNL	WNL
Yeast, Brewer's and Baker's	(0) Negative	WNL	WNL	WNL
Grains				
Barley[(4)]	(0) Negative	WNL	WNL	WNL
Buckwheat	(0) Negative	WNL	WNL	WNL
Common Millet	(0) Negative	WNL	WNL	WNL
Flaxseed	(0) Negative	WNL	WNL	WNL
Gluten[(4)]	(3) Positive	WNL	WNL	WNL
Hominy, Grits, Corn Tortillas / Tamales	(0) Negative	WNL	WNL	WNL
Oats	(0) Negative	WNL	WNL	WNL
Quinoa	(0) Negative	WNL	WNL	WNL
Rice	(0) Negative	WNL	WNL	WNL
Rye[(4)]	(0) Negative	WNL	WNL	WNL
Sorghum	(0) Negative	WNL	WNL	WNL
Wheat[(4)]	(1) Positive	Moderate	WNL	WNL
Herbs, Spices, and Sweeteners				
Cannabaceae: Hops & Hemp Leaf	(0) Negative	WNL	WNL	WNL
Caraway, Coriander, Cilantro, Dill, Parsley	(0) Negative	WNL	WNL	WNL
Chamomile, Echinacea, Tarragon, Wormwood	(0) Negative	WNL	WNL	WNL
Cinnamon	(0) Negative	WNL	WNL	WNL
Fennel, Anise seed / Black Licorice	(0) Negative	WNL	WNL	WNL
Garlic	(0) Negative	WNL	WNL	WNL
Ginger	(0) Negative	WNL	WNL	WNL
Honey, Royal Jelly, Bee Venom	(0) Negative	WNL	WNL	WNL
Pepper, Black	(0) Negative	WNL	WNL	WNL
Rosemary, Sage, Salvia	(0) Negative	WNL	WNL	WNL
Spearmint, Pennyroyal, Basil	(0) Negative	WNL	WNL	WNL
Thyme, Marjoram, Oregano	(0) Negative	WNL	WNL	WNL
Turmeric	(0) Negative	WNL	WNL	WNL
Vanilla Bean	(0) Negative	WNL	WNL	WNL
Legumes, Beans and Pulses				
Bean, Common Dried Navy, Black, White, Kidney	(0) Negative	WNL	WNL	WNL
Bean, Common Green	(0) Negative	WNL	WNL	WNL
Bean, Lima	(0) Negative	WNL	WNL	WNL
Bean, Lupini	(0) Negative	WNL	WNL	WNL
Bean, Mung	(0) Negative	WNL	WNL	WNL
Carob	(0) Negative	WNL	WNL	WNL
Chick Pea	(0) Negative	WNL	WNL	WNL
Fenugreek	(0) Negative	WNL	WNL	WNL
Green Pea Protein Powder	(0) Negative	WNL	WNL	WNL
Lentils	(0) Negative	WNL	WNL	WNL

Antigen	IgE	IgG4	IgG	C3b/d
Mesquite Bean Flour	(0) Negative	WNL	WNL	WNL
Pea, Green / English, Yellow	(0) Negative	WNL	WNL	WNL
Peanut	(0) Negative	WNL	WNL	WNL
Soybean	(0) Negative	WNL	WNL	WNL
Meat				
Beef[5]	(0) Negative	WNL	WNL	WNL
Beef Collagen Peptides[5]	(0) Negative	Moderate	WNL	WNL
Bovine Immunoglobulin[5]	(0) Negative	WNL	WNL	WNL
Bovine Serum Albumin[5]	(0) Negative	WNL	WNL	WNL
Goat Immunoglobulin[5]	(0) Negative	WNL	WNL	WNL
Lamb	(0) Negative	WNL	WNL	WNL
Porcine Thyroglobulin[5]	(0) Negative	WNL	WNL	WNL
Pork[5]	(0) Negative	WNL	WNL	WNL
Venison and Elk	(0) Negative	WNL	WNL	WNL
Poultry				
Chicken / Game Hen[6]	(0) Negative	Moderate	WNL	WNL
Chicken Serum Proteins[6]	(0) Negative	WNL	WNL	WNL
Egg White[6]	(0) Negative	WNL	Moderate	WNL
Egg Yolk[6]	(0) Negative	WNL	WNL	WNL
Turkey[6]	(0) Negative	WNL	WNL	WNL
Seeds				
Celery Seed	(0) Negative	WNL	WNL	WNL
Chia Seed	(0) Negative	WNL	WNL	WNL
Hemp Seed	(0) Negative	WNL	WNL	WNL
Mustard	(0) Negative	WNL	WNL	WNL
Poppy Seed	(0) Negative	WNL	WNL	WNL
Pumpkin Seeds	(0) Negative	WNL	WNL	WNL
Sesame	(0) Negative	WNL	WNL	WNL
Sunflower Seed	(0) Negative	WNL	WNL	WNL
Tree Nuts				
Almond	(0) Negative	WNL	WNL	WNL
Brazil Nut	(0) Negative	WNL	WNL	WNL
Cashew Nut	(0) Negative	WNL	WNL	WNL
Chocolate	(0) Negative	WNL	WNL	WNL
Coconut	(0) Negative	WNL	WNL	WNL
Hazelnut	(0) Negative	WNL	WNL	WNL
Pecan	(0) Negative	WNL	WNL	WNL
Pine Nuts	(0) Negative	WNL	WNL	WNL
Pistachio	(0) Negative	WNL	WNL	WNL

Antigen	IgE	IgG4	IgG	C3b/d
Walnut, Black	(0) Negative	WNL	Moderate	WNL
Vegetables				
Asparagus	(0) Negative	WNL	WNL	WNL
Broccoli	(0) Negative	WNL	WNL	WNL
Cabbage(1)	(0) Negative	WNL	WNL	Moderate
Carrot(1)	(0) Negative	WNL	WNL	WNL
Cauliflower	(0) Negative	WNL	WNL	WNL
Celery(1)	(0) Negative	WNL	WNL	WNL
Corn(1)	(0) Negative	WNL	WNL	WNL
Cucumber	(0) Negative	WNL	WNL	WNL
Eggplant	(0) Negative	WNL	WNL	WNL
Kale	(0) Negative	WNL	WNL	WNL
Lettuce	(0) Negative	WNL	WNL	WNL
Olive	(0) Negative	WNL	WNL	WNL
Onion	(0) Negative	WNL	WNL	WNL
Pepper, Bell(1)	(0) Negative	WNL	WNL	Moderate
Spinach	(0) Negative	WNL	WNL	WNL
Squashes, Zucchini	(0) Negative	WNL	WNL	WNL
Turnip & Radish	(0) Negative	WNL	WNL	WNL
White Potato	(0) Negative	WNL	WNL	WNL
Yam & Sweet Potato	(0) Negative	WNL	WNL	WNL

(1) For these foods marked with a **(1)**, we measure the recombinant proteins as well as the whole food to ensure there are no false negatives reported.

(2) For more detailed information, see the **Dairy** section in **Guide for Result Interpretation**.

(3) For more detailed information, see the **Fish and Shellfish** section in **Guide for Result Interpretation**.

(4) For more detailed information, see the **Grains**, section in **Guide for Result Interpretation**.

(5) For more detailed information, see the **Meat**, section in **Guide for Result Interpretation**.

(6) For more detailed information, see the **Poultry**, section in **Guide for Result Interpretation**.

(7) There are possible cross-reactions with chicken albumin and egg yolk and chicken. In primary "true" poultry meat allergy, which is relatively rare, Gal d 7-10 muscle proteins and hemoglobin are implicated. In the more common secondary poultry meat allergy, also called bird-egg syndrome, cross-sensitization to Gal d 5 / serum albumin / alpha-livetin, which is present in all poultry meat, serum, and egg yolks, is responsible for the reaction. It is partially inactivated by thorough cooking**. An early reference for Gal d 5:** Szépfalusi Z, Ebner C, Pandjaitan R, Orlicek F, Scheiner O, Boltz-Nitulescu G, Kraft D, Ebner H. Egg yolk alpha-livetin (chicken serum albumin) is a cross-reactive allergen in the bird-egg syndrome. J Allergy Clin Immunol. 1994 May;93(5):932-42. doi: 10.1016/0091-6749(94)90388-3. PMID: 8182236. A second egg yolk antigen, Gal d 6 / YGP42 / vitellin, is found only in yolks, is not correlated with meat, and is not inactivated by heating: Gal d 6 Is the Second Allergen Characterized by Egg Yolk Alvaro Amo, Rosa Rodríguez-Pérez, Juan Blanco, Julian Villota, Sonsoles Juste, Ignacio Moneo, and María Luisa Caballero Journal of Agricultural and Food Chemistry 2010 58 (12), 7453-7457 DOI: 10.1021/jf101403h **A more recent review of the matter:** Wanniang, N., Codreanu-Morel, F., Kuehn, A. et al. Poultry Meat allergy: a Review of Allergens and Clinical Phenotypes. Curr Treat Options Allergy 9, 187–203 (2022). https://doi.org/10.1007/s40521-022-00309-2

Guide for Result Interpretation

Some foods contain multiple antigens, and the same antigen may exist across different foods.

Dairy

- If **"Casein, Cow's Milk"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Milk, Cow",** and **"Milk & Yogurt Cultures"** because milk products contain casein.
- If **"Milk & Yogurt Cultures"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Lacto-fermented vegetables"** due to similar microorganisms in Lacto-fermented foods.
- If **"Milk, Cow"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Milk & Yogurt Cultures"** because yogurt and other cultured milk products contain milk.
- If **"Whey, Cow's Milk"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Milk, Cow"** and **"Milk & Yogurt Cultures"** because milk products contain whey proteins.

Fish and Shellfish

- If **"Clam"**, **"Scallop"** or **"Squid"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Mollusk Shellfish (clams, oysters, mussels, scallops, squid, octopus, snails)"** because these shellfish contain similar allergenic proteins, including tropomyosin.
- If **"Crab"**, **"Lobster"**, or **"Shrimp"** show reactivity, then the practitioner may recommend that the patient also avoid **"Crustacean Shellfish (crab, lobster, crayfish, shrimp, prawn)"** because these shellfish contain similar allergenic proteins, including tropomyosin.

Grains

- If **"Gluten"** shows reactivity, then the practitioner may recommend that the patient also avoid "**Gluten / Seitan / Wheat Meat"**, **"Wheat"**, **"Barley"**, and **"Rye"** as these three grains contain significant levels of gluten.

Meat

- If **"Beef Collagen Peptides"**, **"Bovine Immunoglobulin"**, or **"Bovine Serum Albumin"** show reactivity, then the practitioner may recommend that the patient also avoid **"Beef"** as beef contains these antigens.
- If **"Goat Immunoglobulin"** shows reactivity, then the patient should also avoid **"Goat"** because goat meat contains immunoglobulin.
- If **"Porcine Thyroglobulin"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Pork"** because **"Porcine Thyroglobulin"** carries high levels of a major pork allergen.

Poultry

- If **"Egg White"** or **"Egg Yolk"** shows reactivity, then the practitioner may recommend that the patient also avoid **"Eggs"** because eggs are composed of both.

Environmental

Environmental responses help highlight allergies that may mimic or exacerbate other conditions.

Antigen	IgE
Animals	
Canine Albumin	(0) Negative
Canine Dander	(0) Negative
Cockroach, Mixed	(0) Negative
Dust Mites	(0) Negative
Feline Albumin	(0) Negative
Feline Dander	(1) Positive
Miscellaneous	
Latex	(0) Negative
Pollen	
Birch, White	(0) Negative
Mugwort, Common	(0) Negative
Ragweed, Giant	(0) Negative
Timothy & Orchard Grass	(0) Negative

Animals

We provide these because allergic reactions to home environment allergens can often be mistaken for dietary triggers.

- Cat and dog albumin reactions may be simply pet allergies, or cross-reactions to all meat and dairy.
- Dust mite allergies strongly correlate with cross-reactions to crustacean shellfish.

Pollen

We provide several pollen results because reactions to these specific pollens highly correlate with other allergies, such as Oral Allergy Syndromes (OAS) or Pollen-Food Syndrome (PFS).

The list of specific foods is extensive. Please Reference:

- https://foodallergycanada.ca/wp-content/uploads/OAS-PFAS-chart-2022.pdf
- https://www.aaaai.org/Aaaai/media/Media-Library-PDFs/Tools%20for%20the%20Public/Conditions%20Library/Library%20-%20Allergies/OAS-table_revised.pdf
- https://www.allergyuk.org/wp-content/uploads/2022/03/Oral-Allergy-Syndrome-v5.pdf