

A Comparison of Food Sensitivity Tests

A to Zinc Nutrition, LLC
Kari Collett, RDN, LDN, CLT

There are many tests on the market today that claim to be food sensitivity tests. They may also claim to be the gold standard, or better than all other food sensitivity tests. They have a wide range of price points, reporting methods, and expert support. They also make claims about their accuracy – which in most cases is true. But if they aren't truly measuring inflammation, the accuracy is irrelevant.

Let's begin by defining food sensitivity. In its broadest sense, it is an adverse food reaction. But there are various types of adverse food reactions:

- A **food intolerance** is a reaction that does not involve the immune system. An intolerance occurs when the digestive system lacks a digestive component to break food down such as in the case of lactose intolerance when missing the lactase enzyme. This can cause pain and discomfort in the form of gas, bloating, and/or diarrhea.
- A **food allergy** does involve the immune system, specifically when IgE antibodies are created in response to a food exposure. It triggers a release of histamine and other inflammatory mediators from mast cells. Response to the food trigger is usually rapid causing swelling, hives, or shortness of breath, and can be intense. In rare cases, an allergy response can lead to death.
- A **food sensitivity** does involve the immune system but not IgE antibodies. Instead, they occur when white blood cells react to a food or food chemical and release pro-inflammatory chemicals known as mediators into the bloodstream that cause symptoms throughout the body. The reactions are often delayed and dose dependent. Any food can cause a reaction in any person. There are two main pathways that a sensitivity can occur:
 - Type III reactions occur when IgG, IgM, or IgA antibodies bind to a food antigen and trigger blood cells to release mediators.
 - Type IV reactions occur when white blood cells are independently triggered to release mediators independent of antibodies. These are known as cell-mediated reactions. Type IV reactions can be delayed up to 3 days post food consumption.

Even though the term food sensitivity encompasses a variety of adverse food reactions, in our practice we use the term to refer exclusively to non-IgE mediated immune responses to food.

The best true food sensitivity blood test is one that measures both Type III and Type IV immune responses. Let's look at the tests that are available:

Name of Test	What does it measure?	How is the reaction measured?	What items are tested?	How accurate are the results?	How are the results reported?	How is it supported?	How are the results implemented?
MRT® (Mediator Release Test)	All Type III and Type IV mediators	Two types of technologies are used to measure changes in the solid-to-liquid ratio of the blood: flow cytometry and impedance technology. A lyophilized antigen (freeze-dried) version of food is put through the machine with the blood sample that measures a 3-dimensional degree of immune response with all mediators.	140 foods and 30 food chemicals	95% same day split-sample reproducibility rate	Bar graph reporting provides specific degree of reaction for each food	Registered Dietitian and Certified LEAP Therapist	Coaching through a personalized LEAP program and ImmunoCalm diet that starts with foods that are least inflammatory and phases in more inflammatory foods one at a time to measure tolerance
ALCAT (antigen leukocyte antibody test)	Leukocytes only of Type III and Type IV mediators	A lyophilized antigen (freeze-dried) version of food is put through a machine with a blood sample that measures a 2-dimensional degree of immune response with leukocytes.	357 items including foods, herbs, food chemicals, medications, and molds	Ranges from 79-95% sensitivity and specificity	General categories of acceptable, and mild, moderate, or severe intolerance	Free 30-minute interpretation session with a coach from the ALCAT company	Avoid severe intolerance foods and follow 3-day rotation diet for other foods
Dunwoody Labs	IgG, IgG4, and IgE + Complement; separate reports	ELISA technology (see below)	88 dietary items	No public data available	General categories of high, moderate, or low reactive	Unsupported	Follow a list of foods to eat, foods to rotate, and foods to eliminate
KMBO (Food Inflammation Test – FIT)	IgG + Complement via bloodspot	Unable to locate on website	132 foods and food chemicals	No public data available	Bar graph showing severe, high, moderate, low, or no reaction	Personalized 7-day meal plan	Unknown

Meridian Valley Lab	IgG and IgE via serum or bloodspot	Measures IgG(4) classification of IgG	189 foods and candida	No public data available	Bar graph showing low, moderate, and avoid categories. Results are grouped together so unknown if a person has a sensitivity or an allergy to a food	Unsupported	Follow list of foods to avoid and 4-day rotation plan for remaining foods
Alletess	IgG and IgA via serum or finger prick	ELISA technology (see below)	96 or 184 foods panel options	No public data available	Report not available on website	Dietitian on staff but unclear how it is used with testing	Unknown
EverlyWell	IgG via finger prick	Unable to locate on website	96 or 204 foods panel options	No public data available	Report showing normal, mild, moderate, and high reactive	Unsupported	Unknown
Pinnertest	IgG via finger prick	LDT (Lab Developed Test)	200 foods	No public data available	Emailed list of intolerances	Physician consultations available and charged separately	Eliminate highlighted foods in email report
Cyrex Labs	IgG, IgA, and IgM	Unable to locate on website	90 or 180 foods panel options	No public data available	Sample not available	Unknown	Unknown

Genova Diagnostics	IgG 4 via serum or blood spot	ELISA technology (see below)	30 foods with blood spot; 90 foods with serum	No public data available	Report with negative and 1-5 classifications (1-2 mild, 3-4 moderate, 5+ severe)	Unknown	Elimination Diet Guide
ELISA (enzyme-linked immunosorbent assay)/ACT (Advanced Cell Test)	LRA (Lymphocyte Response Assay)	Blood is centrifuged to isolate lymphocytes and plasma. Mixture is then placed in a well with the antigen and then evaluated by hand using a light microscope. Lymphocyte activation is defined as a symmetrical increase in the volume of the outer layer surrounding the cell.	504 antigens including foods, food chemicals, molds, dander, medications, and herbs	No public data available	Reporting depends on what is measured using the ELISA technology	Unknown	Unknown
Cytotoxic Testing	White blood cells	Blood centrifuged to separate white blood cells that are then mixed with plasma, water, and dried food antigens and examined under a microscope. After 2 hours, the number of dead cells indicates the degree of sensitivity.	186 foods	73% same day split-sample reproducibility rate	Unknown	Unknown	Unknown
EDS (Electrodermal Screening)	Electric current	An electric current is passed through the body using 2 pieces of equipment usually handheld probes, one held by the patient and the other placed on acupuncture points. The machine reading	Wide variety of items	Inconsistent split-sample reproducibility	Report of scans showing items in or out of range with various body systems	Practitioner directed on things to avoid or supplements to take	Repeat testing

		the current shows a drop in the current if something is considered toxic.					
Applied Kinesiology (Muscle Testing)	Muscle strength	A patient holds a vial of a substance and the practitioner pushes on the extended arm of the patient to measure resistance. If the arm weakens, it is believed the body doesn't tolerate that substance.	Wide variety of items	33% reproducibility rate; subject to practitioner interpretation	Not reported	Practitioner directed on things to avoid or supplements to take	Repeat testing

In summary, the presence of IgG antibodies does not always represent an inflammatory response; IgG is a “tag” associated with the various foods we eat and functions as a marker of memory. Therefore, the more we eat of any food, the more tags we have for that food. If the food with many tags is truly inflammatory, a person may see some benefit from removing that food. But if it does not produce an inflammatory response, removing the food may be of no benefit or even harmful as a result of an over restrictive diet.

IgG testing is accurate and every company that uses IgG testing will tell you of its accuracy; however, IgG testing has been thoroughly researched and many associations have released statements that it should not be used for the detection of food sensitivities. There are so many IgG tests available because they are not patented and relatively cheap for the provider (but not always for the consumer).

Remember, cheaper is not always better; and expensive is not always better. Some practitioners charge thousands of dollars for IgG testing and offer little to no dietary support.

Regardless of which testing and protocol you use, food sensitivity testing results should never be interpreted as a list of foods to avoid forever. The protocol that accompanies the results should include a customized diet that quickly reduces inflammation followed by food introductions and symptom monitoring.

MRT® and ALCAT are the only tests that measure the release of mediators, which are the immune markers responsible for food sensitivity symptoms. MRT® however, uses updated technology and the LEAP protocol to accurately pinpoint foods that are problematic for the immune system, but also which foods support the immune system and heal the gut. This doesn't mean that other tests can't provide you with some useful information, but MRT/LEAP will give you the most actionable results and best personalized therapeutic diet.

To date, no peer reviewed studies have been published confirming the validity of the MRT[®], its methods are backed by science. Part of evidence-based practice is defined by the experience of the patient and the experience of the practitioner. The MRT[®] test has been in use for more than 30 years and has helped thousands of people recover from multiple chronic pain and illness conditions.

Disclosure: Kari Collett, owner of A to Zinc Nutrition, LLC is a Registered Dietitian and Certified LEAP Therapist. She has no financial relationship with Oxford Biomedical Technologies (MRT[®]), nor any of the other labs listed. She uses MRT[®] and LEAP, combined with other functional nutrition applications, in her private practice to help most of her patients achieve 25-75% improvement in symptoms in just 10 days.

