

IgG Versus IgE

What is the Difference?

Many people exhibit chronic food sensitivity reactions to specific food antigens. Unlike the immediate effects of IgE-mediated allergy, IgG-mediated food sensitivity reactions may take several hours or days to appear.

Controlled removal of the problem foods from the diet will, in many cases, lead to rapid improvement in the patient's condition.

Differences between IgE-mediated food allergy and IgG-mediated food sensitivity

IgE	IgG
Immediate onset	Delayed onset
Easy to detect	Difficult to detect without specialised laboratory testing
Common in children, rare in adults	Most common form of food sensitivity reaction in both children & adults
Fixed allergies Usually permanent	Usually reversible
Involves 1 or 2 foods	Involves multiple foods
Offending food/s usually need to be avoided	May be possible to reintroduce some foods after a period of avoidance
Release of inflammatory mediators	Formation of circulating immune complexes
Symptoms affect skin, airway & digestive tract	Symptoms can affect any tissue, organ or body system

Type 1 (Immediate Onset) IgE-Mediated Food Allergy

IgE-mediated food reactions are immediate in onset and usually involve symptoms such as abdominal cramping, diarrhoea, skin rashes, hives, swelling, wheezing or the most extreme reaction, anaphylaxis. When provoked by a recognised food antigen, IgE antibodies promote mast cell degranulation and the release of histamine and other inflammatory mediators.

Type 3 (Delayed Onset) IgG-Mediated Food Sensitivity

IgG-mediated food reactions (also referred to as food sensitivity, food intolerance) are more subtle in their presentation, often occurring hours to days after exposure to food antigens. Unlike IgE-mediated food reactions,

IgG-mediated food reactions produce symptoms which are cumulative in nature. Instead of attaching to mast cells, like the IgE antibodies, IgG antibodies bind directly to food as it enters the bloodstream forming circulating immune complexes.

Delayed food reactions may affect any organ or tissue in the body. Common conditions where food sensitivity may play a significant role include abdominal bloating and fluid retention, inflammatory bowel disease, irritable bowel syndrome, migraine, depression, mood swings, asthma, skin conditions, and behavioural problems in children.

Clinical Applications for IgG Food Sensitivity Testing

It has been found that an increased IgG antibody level to foods, especially to egg white, orange, and a mixture of wheat and rice, is a positive predictor of increased IgE antibodies to inhalant allergens such as dust mite, cat and dog hair. Early testing for IgG food sensitivity in children may therefore identify children with an increased risk of developing future allergic disease.

An aggravation of neurological symptoms has been reported in autistic patients after the consumption of milk and wheat. On testing it was found that the level of IgG antibodies for casein and other milk proteins was significantly higher in this group than

those of the control group. Following a period of 8 weeks on an elimination diet, there was a marked improvement in behavioural symptoms.

In another study, patients with rheumatoid arthritis placed on a gluten-free diet showed a decrease in IgG serum levels which correlated with an improvement in symptoms of the disease in 40% of subjects, compared to a 4% improvement in the control group, over a one year period.

The IgG immunoglobulin has four subclasses: IgG-1, IgG-2, IgG-3 and IgG-4. Significant reactions are mediated by all four, so it is important to screen for all of them. Healthscope Functional Pathology tests for all four subclasses with its IgG ELISA Food sensitivity test.

Testing for IgG-mediated food reactions can be utilised in conjunction with a case history and other relevant test results, such as Intestinal Permeability, as an efficient and reliable method for diagnosing patients with adverse reactions to food/s. Sensitivity is identified by screening blood samples for IgG antibodies to a panel of foods. The most common reactions occur with cow's milk, eggs, beans, nuts and cereals.

References

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