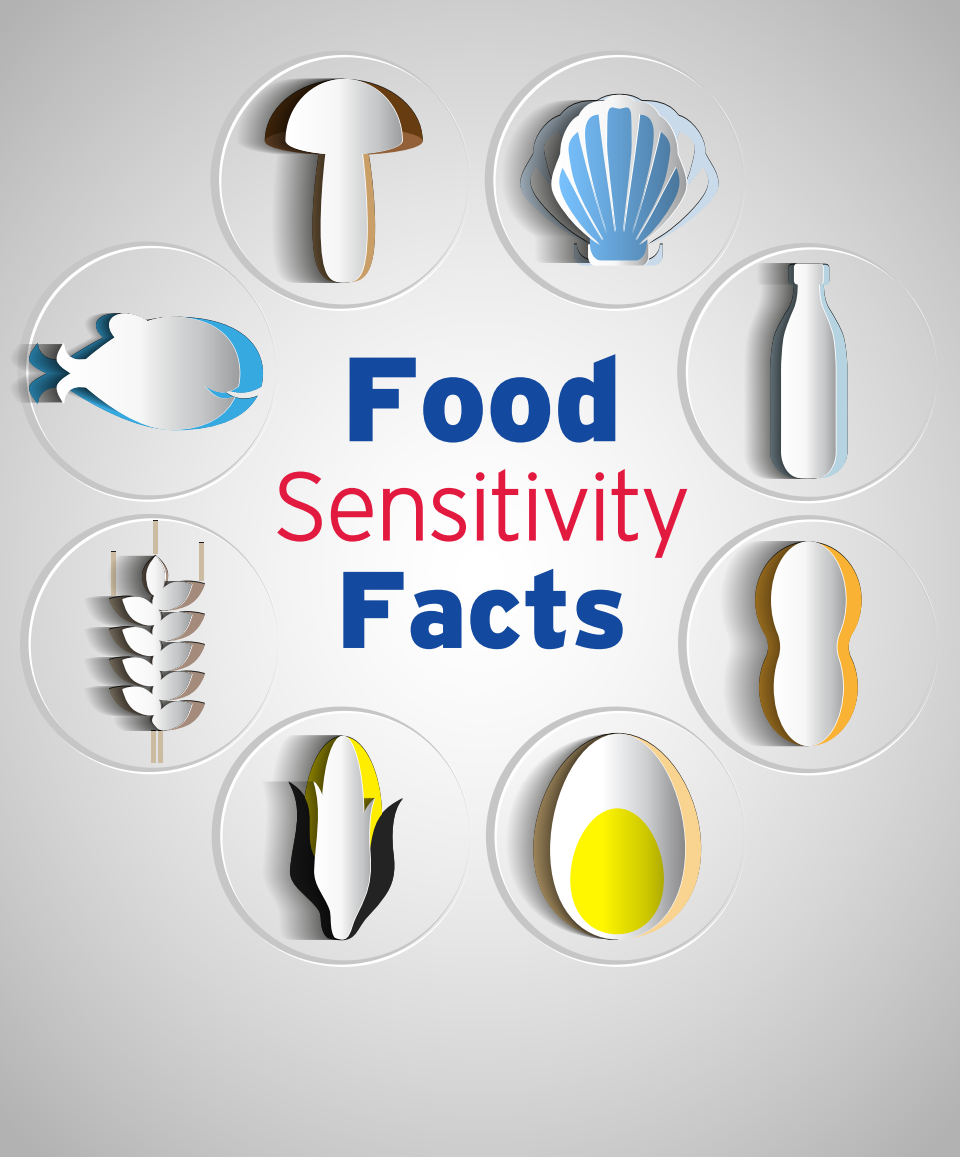


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FOOD SENSITIVITIES ARE NOT FOOD ALLERGIES

Food allergy is a potentially serious health condition triggered by the release of IgE antibodies to a specific food. Food allergy symptoms typically appear very soon after eating a problem food (e.g. peanuts).

Reactions may include a condition called anaphylaxis, which can be life-threatening; hives (red swollen patches on skin); breathing difficulties and other symptoms. Although it is possible to measure IgE antibodies in the blood, having IgE antibodies to a particular food shows a reaction is likely, but doesn't reveal how serious the reaction might be.[1] The scientific term for an IgE reaction is Type I Hypersensitivity.

Food sensitivity typically takes months to develop and is triggered by IgG antibodies. The release of IgG antibodies to specific foods is considered normal, as is the formation of antigen-antibody complexes (which form when a food antigen meets an IgG antibody and they bind together).[2]

Cells called macrophages typically remove these complexes; however, when many antigen-antibody complexes are present, macrophages may not be able to remove them all. The complexes that are left behind deposit in tissue and release substances that promote inflammation.[3]

Inflammation is much more likely to occur if the reactive food remains a regular part of the diet since more immune complexes will form, and in turn may trigger inflammation and contribute to a variety of symptoms.



Comparing IgE and IgG

	IgE	IgG
What causes symptoms?	Mast cells 'recognize' the food allergen and release histamine and other substances that may cause hives, difficulty breathing, low blood pressure and anaphylaxis.	An immune complex forms between food antigen and IgG antibody. Complexes that are not removed by macrophages deposit in tissue, causing inflammation.
How quickly do symptoms appear?	Symptoms appear quickly, usually within minutes of eating the food allergen.	Symptoms are slow to appear, and it may be months before they are apparent.
How long do symptoms last?	Symptoms usually last no more than a few hours.	Inflammation caused by IgG reactions can persist for weeks or months.
Which foods trigger reactions?	Any food could potentially trigger a food allergy.	Food sensitivities are usually caused by foods eaten regularly, because regular consumption means more immune complexes will be formed.
What amount of food triggers a reaction?	Even a small amount of food can trigger a food allergy.	Eating more of a reactive food means more immune complexes will be formed
Can dietary responses point out food trigger?	People often know which food triggered the allergy.	People are usually are not aware of the foods they have sensitivities to.
How long can symptoms persist?	Food allergies can last a lifetime, or may go away spontaneously.	Symptoms may continue for several months after the reactive food has been eliminated from the diet. Once symptoms clear, it is sometimes possible to add the reactive food back into the diet on an occasional basis.

Adapted from Mullin et. al.[4]

FOOD SENSITIVITIES ARE REAL

Food sensitivity is not a disease, but may play a role in causing disease or worsening certain symptoms. Food sensitivities begin with the immune system and eventually cause inflammation. Here's how:

- The immune system makes five major antibodies, which are known by different letters: G, E, A, M and D. The G type, called IgG, is the most common. Of all antibodies found in blood, 80% are IgG. Food sensitivities are an IgG antibody reaction.
- The reason IgG antibodies are produced to certain foods is not well understood, but allergists consider it "normal and natural".[2] In contrast, IgG antibodies produced to other non-food antigens may result in serious health conditions like Lupus, Farmer's lung, and serum sickness.[3]
- When an IgG antibody meets a molecule of its food antigen in the blood, it creates an antigen-antibody complex, also called an immune complex.
- Most IgG immune complexes can be safely removed by cells called macrophages.
- Having many IgG antibodies to a food that is eaten regularly leads to the formation of immune complexes. Having an excess of immune complexes may mean macrophages fail to remove some of the immune complexes. The immune complexes left behind deposit in tissue and trigger inflammation.[2,3] This is called Type III hypersensitivity.

IgG reactions, or Type III hypersensitivities, are well known in medicine, but there is some controversy as to whether immune complexes formed between IgG and food antigens can cause symptoms. Allergists agree that complexes to food are formed; but not all allergists agree that IgG antibody-food complexes have the potential to cause inflammation. There is, however, a growing body of evidence that suggests IgG food sensitivities do play a role in creating inflammation and contribute to symptoms of a variety of diseases.

EFFECTS OF FOOD SENSITIVITIES

Food sensitivity is an evolving area of research and new studies on the role of IgG in food reactions are released every year. The following conditions have shown improvement in patient symptoms when IgG reactive foods were removed:



IRRITABLE BOWEL SYNDROME

STUDY #1: In a 2005 study, 150 people suffering from irritable bowel syndrome (IBS) volunteered to find out whether food sensitivity testing could play a role in relieving IBS symptoms. After completing a food sensitivity test, patients were given a diet to follow. Some received the 'true' diet – based on their actual results, while others received a 'sham' diet, which did not eliminate any of the reactive foods. Neither the patients nor their doctors knew which diet the patient was following. Only after three months had passed did researchers and participants learn which diet was assigned to which patient. The researchers found that patients who followed the 'true' diet saw noticeable improvement in their IBS symptoms compared to the patients who had been assigned the 'sham' diet.[5]

OTHER STUDIES: More recent studies have also shown improvement in symptoms of irritable bowel syndrome when IgG reactive foods were removed from the diet of IBS sufferers.[6,7,8,9,10]



MIGRAINE HEADACHES

Several small studies have shown that removing IgG reactive foods from the diet helps reduce the frequency of migraine headaches and decreases the need for headache relief medications.[7,11,12]

WEIGHT

STUDY #1: In 2008, diabetes researchers found that obese children had more IgG antibodies to foods than children of normal weight. Obese children also had more C-reactive protein (CRP), which is a good indicator of inflammation in the body. In other words, they found a strong connection between IgG food antibodies and inflammation, which fits with what we know about Type III hypersensitivity reactions like food sensitivities.[13]

STUDY #2: Over one hundred men and women who wanted to lose weight participated in an IgG food sensitivity study. After receiving their IgG food sensitivity test results, the participants voluntarily stopped eating their reactive foods. They answered a series of health questions at the 30, 60 and 90 day marks, and measurements (weight, hip and waist size) were taken.
The results showed that individuals who stopped eating IgG reactive foods for 90 days lost an average of 1 pound per week, 3 inches from the hips, and 1.5 inches from the waist, plus they felt better physically, mentally, and emotionally. Improvement in social functioning and general health was also seen. The foods most commonly removed were: Brewer's yeast, Baker's yeast, wheat, cow's milk and eggs.[14]

LARGE STUDY SHOWS FOOD SENSITIVITY TEST RESULTS CAN LEAD TO SYMPTOM RELIEF

The British Allergy Foundation (known as Allergy UK) commissioned a study of patients who had recently received an IgG food sensitivity test (within the previous 3 months). The goal of the study was to find out whether removing reactive foods from the diet improved patients' symptoms. The results were published in Nutrition & Food Science in 2007.[19] Of the over 5000 patients included, 70% rigorously followed the results and eliminated all their reactive foods.

Patients who successfully removed reactive foods from their diets saw improvement in a variety of symptoms, most within 3 weeks. Symptom improvement was shown to be directly related to the removal of the reactive foods as symptoms returned when the reactive foods were reintroduced into the diet.

76%
saw significant symptom improvement

68%
saw benefit within three weeks

92%
had symptoms return when reactive food added back to diet

Symptom relief varied by body system, with digestive symptoms like irritable bowel syndrome and psychological symptoms like anxiety and depression, showing the greatest improvement when reactive foods were removed.

Digestion	Lungs	Neurology	Skin	Joints	Mind
					
80%	**72%**	**78%**	**76%**	**64%**	**81%**
reported moderate to high benefit	reported moderate to high benefit	reported moderate to high benefit	reported moderate to high benefit	reported moderate to high benefit	reported moderate to high benefit

(Source: Hardman G, Hart G. NFS. 2007;37(1):16-23)

This study showed that patients who removed reactive foods from their diets experienced noticeable improvement in symptoms. The fact that symptoms returned when the reactive foods were reintroduced into the diet in is further evidence that these foods contributed to symptoms. The authors conclude that food sensitivity testing is a useful tool for identifying the cause of certain symptoms.

Published research also shows the benefits of removing IgG-reactive foods for several other health conditions. They include: functional dyspepsia (indigestion)[8], Crohn's disease (a serious type of inflammatory bowel disease),[15] and Sjögren's syndrome,[16] an immune disease.

Antibodies to yeast (Brewer's yeast, Baker's yeast, candida) may also play a role in inflammation and disease.[17] And, high levels of IgG antibodies to foods have been found in individuals with bipolar disorder[18] and in obese children.[13]

FOOD REACTIONS MAY HAVE MANY DIFFERENT CAUSES

Food sensitivities and food allergies are immune responses to food, but not all reactions to food are caused by the immune system. A good example is lactose intolerance, which causes bloating and discomfort after drinking milk or eating dairy foods. Lactose intolerance is due to a lack of lactase, the enzyme that breaks down lactose sugar in milk, not an immune reaction.

Digestive symptoms may occur when poorly digested carbohydrates (foods called FODMAPs) ferment in the gut.[20] Fruit, beans, and wheat are examples of foods that are FODMAPs.

And finally, certain foods have naturally occurring chemicals that some people react to. For example, some foods are high in histamine, a chemical that promotes inflammation. People who are highly sensitive to histamine are more likely to experience problems after eating these foods.[21]

Therefore, when a normal IgG result is reported for a food that usually causes someone symptoms, it is unlikely he or she has a food sensitivity. It could be an IgE food allergy, which does not always show elevated IgG levels; or it could be a non-immune reaction like an intolerance, FODMAP, or reaction to naturally occurring chemicals as described above.

FOOD SENSITIVITY TESTING IS MISUNDERSTOOD

Food sensitivity is an immune process that leads to inflammation, which may contribute to symptoms of disease. However, food sensitivity is not a disease. As a result, some healthcare professionals may be unclear on the purpose of food sensitivity testing. Further misunderstandings may arise from the following:

- IgG food reactions are sometimes confused with IgE food allergies. The term allergy is used exclusively for IgE food reactions, which are typically diagnosed by allergy specialists. Referring to food sensitivity as an IgG food allergy is incorrect, since no such condition exists. Only when someone has an IgE reaction to foods should the term food allergy be used. An IgG reaction to food should be called food sensitivity.
- One subtype of IgG antibodies helps protect against IgE food allergies. As a consequence, many allergists see IgG reactions as something positive, because this one IgG subtype may help protect against serious food allergies. However, this subtype behaves differently than the other IgG antibody subtypes. The majority of IgG antibodies (95%) form complexes with antigens (like food) that trigger inflammation, and provide no benefit against IgE food reactions. [22]



- Allergists know that making IgG antibodies to some foods is normal, but may not agree that IgG-food antigen immune complexes have the potential to cause inflammation.

- Food sensitivities develop slowly, so there is rarely an obvious link between eating a food and the appearance of symptoms. This makes IgG food reactions very different from food allergies, where reactions are usually seen right away. To some dietitians and allergists, it can seem like patients are removing foods unnecessarily, which is why it is important to work with health professionals like naturopathic doctors to ensure foods are removed appropriately and that the right nutrients are included in the diet.

SUMMARY

Food sensitivities are very different from food allergies. The symptoms associated with food sensitivities develop slowly over time as IgG antibody-food antigen immune complexes deposit in various parts of the body and trigger inflammatory reactions. Depending on where the immune complexes deposit, inflammation can contribute to a variety of different health conditions.

Numerous studies in peer-reviewed journals have shown the health benefits of removing IgG reactive foods, particularly for Irritable Bowel Syndrome,[6,7,8,9,10] migraine headaches,[11,12] and weight management.[13,14,23] There is good evidence that most patients experience improvement in symptoms when IgG reactive foods are removed from the diet.[19]

Rocky Mountain Analytical remains committed to meeting the needs of healthcare professionals and patients for an accredited, reputable, industry-leading Canadian laboratory for food sensitivity testing.

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