

IgG₄ Tests

Frequently Asked Questions

General remark

Food intolerance (non-IgE mediated adverse reaction to foods) is a topic not well researched so far. Many of the scientific concepts presented are therefore based on our current understanding of food allergies and other disorders in which IgE and IgG₄ play a role.

What is the scope of the IgG₄ test?

The IgG₄ test is intended to allow an accelerated identification of foods a patient is reactive to, based on his/her immune reaction to food extracts. IgG₄ is a marker indicating an ongoing immune reaction to the foods tested. IgG₄ testing is not intended to be used for allergy testing, while overlaps to allergies are to be expected. Nor is IgG₄ testing a tool to determine food intolerances due to enzymatic deficiencies, such as lactose intolerance or diamine oxidase deficiency, or resorption issues, as in fructose intolerance. IgG₄ testing shall allow you to have a better idea of where to start with dietary measures, and its findings should be verified by rotation diet plans or food elimination/reintroduction procedures.

I have an elevated IgG₄ for a specific food, but I have no physiologic reaction if I eat it.

Please keep in mind that antibody tests, and skin prick tests used in allergy, only determine sensitization. This term basically describes that your immune system has been trained to recognize the allergen in question. For many food allergens/antigens the correlation between degree of sensitization and physiologic reaction is limited and can be age or population dependent. Especially for staple foods like milk or egg, a certain degree of sensitization is found in the general population. In addition, we still have no good understanding of the processes in the gut that lead to IgE and non-IgE mediated immune reactions to food.

Similar to IgE testing in food allergy, IgG₄ testing is intended to give hints that allow an accelerated identification of the relevant foods in food intolerance/non-IgE mediated immune reactions to food.

Why is the IgG₄ test positive for foods I am allergic to?

Internal and external studies demonstrated that strong IgE mediated allergic reactions often induce IgG₄ antibodies, and patients with elevated IgE to an allergen often also have elevated IgG₄ to the same. The primary function of IgG₄ is assumed to be to neutralize allergens before they can evoke an IgE-mediated cellular response, which results in the classical allergy symptoms, and thereby to modulate allergic responses. Elevation of IgG₄ is also found to be induced in allergy therapies.

I have a rapid onset physiological reaction to a food against which IgG₄ antibodies were detected.

Food intolerance reactions are expected to be delayed type reactions, and a rapid onset reaction could be an indicator for a classic (IgE-mediated) allergic reaction. As allergic reactions to certain foods can be life threatening, please consult an allergist to rule out such reactions.

I do have IgG₄s against some food I never been eating. How can that be?

Antibodies, being molecules themselves, are just recognizing small spots on other molecules, so called epitopes. Many different plants are producing highly related molecules, which can contain very similar epitopes, which then are recognized also by antibodies originally generated against that protein from another plant. This phenomenon is called cross-reactivity and can also cause that a patient to react to a wide range of fish or to a variety of seafood at the same time. There are also known cross-reactions between respiratory and food allergens, and the relationships especially between plant allergens is often not easy to see. These effects are well known from IgE mediated allergies, and we can expect to find them similarly for IgG₄ antibodies as well.

Does the level of IgG₄ correlate with physiologic symptoms?

Frankly, we don't know precisely. We expect this, at least to a certain degree, based on findings for IgEs in food allergies. Here, while high levels of antibodies are more often found in patients with symptoms, you may also have elevated IgE and no reaction, or low levels and significant physiologic reactions. And the correlations may also be food, age and population dependent. Data on IgG₄ are even more limited, and we would expect an even more complex correlation.

Thus, even though IgG₄ levels can be determined with high precision, the values are just expected to give a general indication on which foods to prioritize in the dietary food elimination / reintroduction procedures used to validate antibody-based findings.

I have been found reactive to a wide range of foods. What shall I do?

Certain people are found to react against a wide range of foods, while others are just reacting against a few selected ones. IgE multi-reactive patients are often described as "atopic" and are believed to have a generally higher tendency towards allergy type reactions.

Many patients will also see that they are reactive to several groups of food, as gluten-containing cereals, legumes, fish, etc. This may indicate that you are reactive to some molecules shared by these foods.

You may want to prioritize dietary measures based on strength of reactions or even the size of food groups. There is no general rule. Please do not extensively restrict your diet plan, avoid any type of malnutrition by elimination of foods containing critical vitamins or minerals without replacement by another food or other source.