

Testing for Food allergy

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IgE mediated food allergies

Food allergies are immediate hypersensitivity reactions caused by an IgE antibody recognising a particular food and triggering the release of chemicals such as histamine. These chemicals cause the symptoms of a food allergy which include itching of the mouth and lips, urticaria (nettle rash, hives and wheals) and angioedema (swelling) of the face. In addition to the above symptoms, some individuals can also sometimes experience gastrointestinal symptoms but it is unusual for gastrointestinal symptoms to occur alone - except in the case of babies and very young children. Severe food allergy can sometimes result in anaphylaxis.

Allergic reactions to food are rapid, generally occurring within minutes or at most up to one hour after ingestion of the food. Reactions occurring after one hour are unlikely to be due to a food allergy. Food allergies will result in symptoms every time the food is eaten. Common food allergies include nuts, fruit, seafood, legumes, eggs, milk, wheat and soya, however it is possible to become allergic to most foods, including spices. Because allergies to food are caused by an IgE antibody, it is possible to perform allergy testing to determine the exact trigger and establish a diagnosis.

Oral allergy syndrome

Some individuals only develop tingling, itching or mild swelling of their mouth and lips, without urticaria or angioedema, after eating foods such as fruits, vegetables and nuts. This can be due to oral allergy syndrome which is caused by cross reactivity between certain proteins in fruits, vegetables and nuts and inhaled allergens such as birch pollen. Oral allergy syndrome is often only associated with mild symptoms such as those described above. The diagnosis is made by taking a very careful history together with allergy testing and sometimes challenge. In recent years, new specific IgE tests have become available to help distinguish true oral allergy syndrome from more severe allergies.

Allergy tests

The aim of allergy testing is to establish the correct diagnosis so that the offending allergic trigger can be avoided in future and thus prevent further reactions. Because immediate hypersensitivity reactions are triggered by IgE antibody, it is possible to perform allergy testing to detect the presence of this antibody against the substance in question. Allergies can be tested for by skin-prick tests or blood tests.

Skin-prick tests

This test involves placing a small drop of liquid containing the allergen to be tested on the arm and pricking the top layer of skin with a fine needle. The aim is to introduce a small amount of the allergen into the skin. If IgE specific to the allergen is present, this will cause a small reaction at the site called a wheal and flare reaction. Again, both false positive and negative results can occur and correct interpretation by an experienced physician is essential. Antihistamines affect this test and therefore it is essential to avoid taking antihistamines for at least 3 days prior to the test.

Specific IgE tests (Rasts)

This test involves taking a small sample of blood and measuring how much IgE specific to the allergen tested is present in the blood. Specific IgE tests are available for a large number of allergens. The test is very convenient, completely safe and can be performed when the patient is taking antihistamines. Like any laboratory test, specific IgE tests are subject to occasional false positive or false negative results. Because of this, correct interpretation by an experienced physician, taking into account the patient's clinical history, is essential. Such tests are not affected by antihistamines.

Molecular IgE tests

A new class of specific IgE tests have recently become available which, instead of testing for a mixture of allergic proteins to a particular food or aeroallergen, only test the unique proteins that can cause an allergic reaction. This is also known as component resolved diagnostics. These tests can help sometimes help distinguish between more serious allergic reactions and less severe reactions due to cross reactivity with inhaled allergens such as birch pollen (see oral allergy syndrome). Examples of situations where these tests can be useful are peanut, hazelnut, peach, fruit and soy allergies.

Immuno Solid-phase Allergen Chip (ISAC) test

The most advanced diagnostic technology is the ISAC allergy microchip array. Using just a small blood sample, the ISAC array tests for 50 different allergens and 112 different allergen components.