

## Food intolerances - What should be considered if allergy diagnostics do not provide an explanation?

Food intolerances are steadily increasing. Information about the frequency of those affected in Germany varies between 4 and 11 %. But every intolerance is by no means based on a true allergy.

If a **type I allergy** (no specific IgE to food in the RAST, negative prick test) and **type IV reactions** (negative LTT food screening) have been by and large excluded, immunological cross-reactivity and non-allergic forms of food intolerance should be considered:

### Non-allergy related food intolerances:

1. For those with pollen allergies, immunological cross-reactions can mimic food allergies, e.g., birch pollen-nut-pome fruit syndrome, celery-mugwort-spice syndrome. In patients with a latex sensitisation, latex-banana-avocado syndrome should be considered (see reverse).
2. An intolerance to histamine-rich foods (histaminosis) based on a histamine metabolic disorder is not uncommon. The cause is a deficiency in the enzyme diamine oxidase.
3. Malabsorption disorders due to enzyme defects in the intestinal mucosa. The most important medical conditions are lactose intolerance, fructose malabsorption and (more rarely) fructose intolerance.
4. Gluten intolerance (coeliac disease) – atrophy of the villi in the small intestine induced by gluten.

### Other rarer causes include:

5. An allergy to moulds (primarily Aspergillus) can mimic a food allergy because these fungi can afflict herbs, cherries, grapes, rye and wheat breads, barley, corn, rice and fruit juices as saprophytes without the foods being obviously spoiled.
6. For some nickel allergy sufferers, the nickel present in food and drinks can cause or intensify a wide range of symptoms. Nickel-containing foods include: chocolate, nuts, wholemeal products or some types of fruit and vegetables. Diagnosis is done using the LTT for nickel. Diagnostic and dietary information is available from the Institute for Medical Diagnostics.
7. Rarer food allergies due to immunological cross-reactivities include:

Inhalation allergens	Foods not tolerated
Grass and grain pollen	Flour, bran, tomato, pulses
Ficus benjamina	Fig
Poultry feathers	Egg, poultry meat
Animal epithelia	Cow's milk, meat, offal
House dust mite	Crustacean, snails

The most common foods 'responsible' for the medical conditions indicated above as well as the corresponding diagnostic recommendations are shown on the reverse.



In our information brochure „Food intolerances“, you will find a detailed description of the laboratory diagnostics for suspected food intolerances.

This brochure is available in both German and English, and can be ordered free of charge by calling +49 (0)30 77 001-220 or by sending an e-mail to [si.service@imd-berlin.de](mailto:si.service@imd-berlin.de).

Do you have questions? Our serviceteam will be happy to support you: +49 (0)30 770 01-220.

**From 'allergen' to diagnosis**

Intolerances to foods are not always allergies. The figure shows typical 'suspicious' foods for the corresponding diseases.

<p>Hazelnuts Celery Apple Carrots Peanuts Cow's milk (raw&gt;cooked) Fish (cod, salmon) Soy Chicken eggs Beef Seafood Wheat, rye, corn</p> <p>→</p>	<p>Apple Pear Cherry Plum Peach Hazelnuts Almonds Walnuts Potatoes Tomatoes Carrots</p> <p>→</p>	<p>Celery Parsley Carrots Camomile Aniseed Dill Coriander Caraway Fennel</p> <p>→</p>	<p>Banana Avocado Mango Kiwi fruit Paw-paw Chestnut (Fig)</p> <p>→</p>	<p>Red wine Sparkling wine Stout &gt; wheat beer &gt; pilsner Sauerkraut Tuna Mackerel Sardines Emmental cheese Harz cheeses Mould cheeses Salami Corned meats Red wine vinegar Chocolate Strawberries Tomatoes</p> <p>→</p>	<p>All types of milk Fresh milk, UHT milk also cooked milk Milk products, whey Packaged small goods Fresh cheeses Low-fat quark Pre-packaged soups Ready-made sauces Fine breadcrumbs Cakes Ice cream Chocolate Tomato sauce Mustard Mayonnaise Sweetener tablets Margarine</p> <p>→</p>	<p>Dried fruit Fruits, particularly: Apple Pear Cherry Kiwi fruit Grapes Fruit juices Lemonades Cola drinks Honey Jams and marmalades Confectionary, ice cream Cakes Fruit quark Tomato sauce Mayonnaise Ready-made sauces Sugar substitutes</p> <p>→</p>	<p>Wheat Rye Barley Unripe spelt Spelt Bread Rusks Pasta Desserts Muesli Sauces Breaded products</p> <p>→</p>
<p><b>Primary food allergy</b></p> <p>Specific IgE anti-bodies (type I) or T cells (type IV) against food proteins</p>	<p><b>Pollen-associated food intolerances</b></p> <p>Cross-reaction between pollen and food with existing sensitisation to the corresponding pollen allergens</p> <p>Responsible: <b>Birch-/hazel pollen</b></p> <p>Responsible: <b>Mugwort-/composite pollen</b></p> <p>Responsible: <b>Latex/Ficus</b></p>	<p><b>Intolerance of histamine-rich foods</b></p> <p>Deficiency in the histamine degrading enzyme diamine oxidase and/or Histamine accumulation</p>	<p><b>Lactose intolerance</b></p> <p>Deficiency in lactase in the intestinal mucosa</p>	<p><b>Fructose intolerance, Fructose malabsorption</b></p> <p>Deficiency in the fructose-cleaving enzyme aldolase B or/and fructose malabsorption</p>	<p><b>Gluten intolerance (coeliac disease)</b></p> <p>Gluten-induced inflammatory changes in the intestinal mucosa</p>		
<p><b>Type I – spec. IgE</b> 1 ml serum per allergen or <b>Type IV – LTT</b> 20 ml heparin blood + 5 ml whole blood</p>	<p><b>IgE birch and hazelnut pollen</b> 2 ml serum</p> <p><b>IgE mugwort pollen</b> 2 ml serum</p> <p><b>IgE to latex/Ficus</b> 2 ml serum</p> <p><b>BDT latex and Ficus</b> 2 ml EDTA blood</p>	<p><b>Diamine oxidase (DAO activity)</b> 2 ml serum</p> <p><b>Histamine</b> 10 ml heparin blood</p>	<p><b>Lactose load test</b> or <b>Lactase genetic test</b> 2 ml EDTA blood</p>	<p><b>Fructose load test</b> or <b>Fructose genetic test</b> 2 ml EDTA blood</p>	<p><b>Gliadin-Ak Endomysium-Ak D-Gliadin-Ak</b> 5 ml whole blood <b>HLA-DQ2/7/8-typing</b> 2 ml EDTA blood</p>		