



## Warning! cross-reactions are possible

In some cases, complaints also arise in response to foods that are related to the "main allergens" triggering the positive test.

A cross-allergy is when immune cells that are directed at a particular allergen also react to different, structurally similar allergens in other foods. In these cases, the cross-reacting foods should also be eliminated from meals temporarily.

Allergies:	cross-reactions are possible:
Apple	Birch, mugwort and ragweed pollen, tomatoes, pears, potatoes, celery, cherries
Orange	Birch pollen, bergamot oranges, Seville oranges, clementines, grapefruit, lime, mandarins, pomelo, satsumas, tangerines
Baker's yeast	Brewer's yeast, candida albicans
Spelt	Wheat, poss. other grains
Peanut	Tomatoes, peas, lentils, peaches, soya, parietaria, mugwort, latex
Hazelnut	Hazel and birch pollen, kiwi fruit, poppy seeds, peaches, rye, sesame, mugwort, walnut
Hen's eggs	Chicken meat, goose and duck meat and feathers, cockatiel, budgerigar and canary feathers, pigeon proteins
Chicken meat	Hen's eggs
Cod	Fish of the cod group, lots of types of fish, particularly salmon, herring, mackerel, tuna, plaice, carp, eel, sole

Carot	Birch and mugwort pollen, celery, cucumber, lettuce, mango, melon
Potato	Birch pollen, apples, tomatoes, latex
Kiwi fruit	Birch and grass pollen, avocado, bananas, hazelnut, poppy seeds, rye, sesame
Cow's milk	Products made from cow's milk, beef (particularly raw), milk from other species depending on the responsible protein
Maize	Wheat, peaches, mustard, lupin
Peppers	Celery, chillies, hot peppers
Pepper (black)	Celery, birch, mugwort, artemisia
Peach	Birch and grass pollen, apples, apricots, pears, peanuts, hazelnuts, cherries, plums, walnuts, grapes
Beef	Cow's milk (particularly if positive for casein), camembert, milk products, particularly lots of types of cheese, lamb (mutton)
Rye	Grass pollen, barley, oats, wheat, hazelnuts, kiwi fruit, poppy seeds, sesame
Pork	Pork can contain soya allergens if the pigs are fed with soya
Celery	Apples, carrots, curry, fennel, cucumber, coriander, caraway, mango, melon, paprika, pepper, tomatoes
Spinach	Potatoes, tomatoes, latex, pineapples, avocado, bananas, kiwi fruit, tuna, eel, cod, fish of the cod group, sole
Tomato	Grass, mugwort and birch pollen, peanuts, potatoes, latex, apples, celery, peaches
Wheat	Spelt, oats, barley, rye

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## Food intolerances of the delayed type (type IV allergy)





The causes of an adverse food reaction can be diverse. Besides allergies, digestive disorders as well as various enzyme defects or even autoimmune reactions may be responsible.

With regard to allergies, a distinction is made between IgE-mediated immediate-type allergies and cell-mediated delayed-type allergies.

Delayed-type food allergies are considered in particular if the range of suspected allergens is very broad and the symptoms do not appear immediately but only hours or even a few days after ingestion.

In delayed-type allergies, allergen-specific immune cells, so-called lymphocytes, play the crucial role in the inflammation process triggered by the food. Evidence of these lymphocytes takes place via the lymphocyte transformation test. The problem with delayed-type allergies is that the symptoms may often be unspecific to food. Besides digestive symptoms and inflammation processes in the intestines, other existing systemic illnesses may be made worse.

These may include skin disorders such as atopic dermatitis, psoriasis and urticaria as well as chronic inflammation of mucous membranes such as those of the paranasal sinuses, periodontitis, heartburn and gastritis.

### Causes of delayed-type allergies

The causes of delayed-type allergies are diverse. The fact that they frequently do not occur until adulthood makes the significance of environmental factors probable. In particular, disruptive factors that increase the permeability of the intestinal mucosa (leaky gut) and disrupt immune tolerance in the intestines are significant for the development of type IV sensitisation to food. These include the reduction of natural intestinal flora and the effect of environmental pollutants, heavy metals, synthetic substances and other dental substitutes on the mucous membranes of the gastrointestinal tract. The increased permeability of the intestinal mucosa can thus be viewed as a cause and also (as a result of inflammation) as a consequence of a delayed-type allergy.

### I have positive results in the LTT. What now?

If foods were identified in the LTT to which type IV sensitisation exists, these should be removed from meals for a significant period. This very frequently "soothes" the inflammation in the wall of the intestine, as inflammatory reactions are reduced and the permeability of the intestinal mucosa is normalised again.



### Does heating help?

It depends on the food. The allergenicity of celery, for example, is barely affected by heat (or freezing). In contrast, the responsible allergenic components of apples are completely eliminated by baking at a medium heat. With regard to cow's milk, heat stability depends on which milk protein you are actually allergic to. If the allergy is to the  $\beta$ -lactoglobulin contained in milk, even milk that has been heated will not be tolerated. If, however, the allergy is to  $\alpha$ -lactalbumin, heating often makes the milk tolerable. Testing for individual proteins is now possible and can be helpful for planning diets. In summary, it can be stated that, with the exception of celery, a continual allergen reduction occurs upon heating for all of the foods investigated in the LTT, which is why processed foods are usually better tolerated than unprocessed, fresh products.

### For delayed-type allergies, a diet diary may be helpful

For fruit and vegetables in particular, the allergenic component content can vary significantly between different varieties. For example, people who are allergic to apples often tolerate old varieties better. If in doubt, only sampling is of any help. Because the symptoms may be delayed and may occur only after 1-2 days for delayed-type allergies, it is advisable

to keep a diet diary for this type of adverse reaction. This makes it considerably easier to identify foods to which adverse reactions occur, because often you only have a vague memory of what you have eaten up to 2 days before.

Unlike with type I immediate-type allergies, there is no danger of a life-threatening reaction with delayed-type allergies, which is why small amounts of the foods are often tolerated.

### Don't fall into the next trap.

Eliminating the foods in question is often not very easy, particularly when allergens were found that form part of our basic foodstuffs.

A balanced diet must still be ensured and should not be unhealthy under any circumstances. Professional nutritional advice may be helpful.

It is particularly necessary if allergens were identified that are "hidden" in our food by the industry (sometimes without being declared).

