

F



A

FOOD INTOLERANCE

C

In *food allergy* an abnormal immune system response results in the body making antibodies to 'fight off' a food. However some people suffer symptoms after eating certain foods even when they are not producing antibodies against them. A variety of different mechanisms can cause foods to affect people in this way; collectively these are known as non allergic hypersensitivity, or *food intolerance*.

T

Food intolerance is much more common than food allergy. The onset of symptoms is usually slower and may be delayed by many hours after eating the offending food; the symptoms may also last for many hours, even into the next day. Intolerance to several foods or a group of foods is not uncommon, and it can be much more difficult to decide whether food intolerance is the cause of chronic illness, and which foods or substances may be responsible.

S

In allergy, the patient can usually not tolerate even a small amount of the offending food without suffering symptoms, as it only takes a tiny amount to trigger a response from the immune system. With intolerance, most people can tolerate a reasonable amount of the food, but if they eat too much (or too often) they get symptoms because their body cannot keep up to speed with breaking down the constituents of the food.

H

The symptoms caused by food intolerance are varied and can include fatigue, bloating, irritable bowel, joint pains, rashes, nettlerash, eczema, migraine, arthritis and other chronic conditions.

Food intolerance can have a number of different causes:-

- **Enzyme defects.** Enzymes are required to help with the breakdown of natural substances found in certain foods. If these enzymes are missing or in short supply, then eating the food can cause symptoms because part of the content of the food cannot be properly dealt with by the body.

E

E

3 White Oak Square • London Road • Swanley • Kent • BR8 7AG
Tel: 01322 619 898 • Fax: 01322 663 480
Website: www.allergyuk.org

Allergy UK is the operational name of The British Allergy Foundation, a charitable company limited by guarantee and registered in England and Wales.
Company No: 4509293. Charity No: 1094231
Registered in Scotland – Charity No: SC039257



T

We should remember that many foods contain chemicals that would be harmful if we could not detoxify them – the only reason we can eat, say, potatoes, but not deadly nightshade (which is part of the potato ‘family’) is because we have the enzymes to break down the toxins in one but not the other (cooking, of course, also helps). In lactose intolerance, for example, the body lacks the enzyme (lactase) that breaks lactose (milk-sugar) down into smaller sugars ready for absorption from the gut. Lactose is too large to be absorbed across the gut wall undigested, and its presence in the gut causes gut spasm, pain, bloating, diarrhoea and ‘failure to thrive’. Incidentally, these same symptoms can occur in milk allergy, when the body has made antibodies to milk protein which causes an immune reaction when you drink milk. Hence you cannot always distinguish allergy from intolerance by symptoms alone.

Most foods require some enzyme activity in their digestion, and enzyme deficiencies can be an important factor in food intolerance.

- **Pharmacological.** Some foods contain naturally occurring ingredients that have an effect on the body, such as caffeine in coffee, tea and chocolate, or amines in certain cheeses. Some people seem to get a greater effect from these natural substances in the food, causing symptoms which would not occur in other people unless they ate far larger quantities of the food. Often patients suffering this form of intolerance also have a history of greater side-effects from medications.

- **Toxic** - a number of foods contain naturally occurring substances that can exert a toxic effect in susceptible people. For example, some beans contain compounds called *lectins* that in some people can cause immune system cells to release the same chemicals that are released during an allergic reaction. This means that the person gets ‘food allergy’ symptoms when they eat the food, but they have not actually produced antibodies against the food and they are not, in fact, allergic to it.

- **Histamine in foods.** Some foods contain histamine naturally, and others (such as certain fish that are not fresh and have not been stored properly) can develop a build-up of histamine in their flesh as they age. In certain people this histamine occurring naturally in the food can cause symptoms when the food is eaten; typically, rashes, stomach pains, diarrhoea and vomiting.

- **Salicylates in foods.** Many foods naturally contain salicylates, and our tolerance to this can vary. The vast majority of people can eat salicylate-containing foods with no problems, but other people may suffer symptoms if they eat too many foods which in combination contain a large amount. These salicylate-intolerant people will get better if they eat a diet of low- and moderate salicylate foods and avoid those with the highest levels.

- **Additives in foods.** A wide variety of natural and artificial additives are used in colouring, preserving and processing foods. Some people can suffer symptoms provoked by hypersensitivity to food additives.

- **IgG antibodies to foods.** Some people may make abnormal antibodies (IgG, different from the IgE that causes allergy) which mistakenly ‘fight off’ the food when they eat it. There is some evidence that food-related IgG may be involved in the development of symptoms such as irritable bowel syndrome, arthritis and migraine. However IgG to foods is also found in the blood of people who do not suffer symptoms (and some people who do suffer do not have IgG). Food intolerance tends to develop to the foods that we eat most often (such as dairy products and grains); these are also the foods that most often have the highest levels of IgG.

Some people think that IgG in the blood for specific foods just relates to the foods that we eat most often, rather than necessarily meaning that they are doing us any harm. Research is ongoing to try and understand the relevance of IgG reactions in food intolerance.

How is Food Intolerance recognised?

Certain features such as the pattern and type of symptoms can help to distinguish food intolerance reactions from those that might be a result of food allergy or some quite different cause unrelated to food.

Symptoms are not immediate. The time relationship between eating the food and getting symptoms depends on many factors. If the food is only eaten very occasionally, symptom onset after digestion ranges from almost immediate to several hours. However this is different when the food is being consumed regularly, when each 'reaction' will run in to the next, leading to the development of chronic, almost continual symptoms with no clear immediate reaction each time the food is eaten.

Symptoms are usually multiple. In food allergy the range of symptoms is quite limited and predictable. In food intolerance a very much wider range of symptoms may occur and multiple symptoms are usual. The conditions listed below have been shown by properly conducted scientific trials to be either caused or made worse by food intolerance. These conditions are shown linked to particular organ systems (gastrointestinal, central nervous, cardiovascular, etc.); however in practice, when food intolerance is involved, such conditions rarely exist alone, the typical patient having symptoms relating to a number of different organ systems. For example, a typical food intolerance person may suffer migraine, unexplained fatigue (central nervous system symptoms) abdominal pain, bloating and frequent diarrhoea (gastrointestinal system symptoms) and unexplained muscle and joint pains (musculoskeletal system symptoms).

Conditions which may be caused or affected by food intolerance.

Respiratory	Asthma, Rhinitis (Nasal allergy), Glue ear.
Gastrointestinal	Infantile colitis and colic, Crohn's disease, recurrent abdominal pain (especially in children), diarrhoea and constipation, irritable bowel syndrome.
Skin	Atopic (allergic) eczema, urticaria.
Central nervous System	Headache and migraine, hyperactivity.
Cardiovascular	Palpitations (heart rhythm abnormalities)
Musculoskeletal	Unexplained joint pain, some kinds of arthritis, unexplained muscle pain.
Renal tract	Bed-wetting, nephrotic syndrome, non-bacterial cystitis.
Psychiatric	'Somatisation disorder' (see text), Fatigue and hypersomnia.

Brief elimination may precipitate withdrawal effects. Worsening or precipitation of symptoms may result from avoidance of the culprit food - a kind of withdrawal effect. Thus a person who suffers with migraine due to food intolerance may find that missing breakfast triggers a migraine attack. Very careful elimination and challenge testing of that patient's regular breakfast foods then usually identifies the culprit food, for example milk, wheat or corn. The existence of a withdrawal response can also explain why the food intolerant patient is often mildly addicted (often without realizing it) to the food or foods causing their problem. The child with catarrh, recurrent ear infection, insomnia and irritability who craves regular milk, cheese and yogurt, is a good example. Night-time waking, only settling after a drink of milk, is an even stronger clue. The complete disappearance of symptoms with milk avoidance (and recurrence with milk reintroduction) is then clear evidence of the relationship.

Brief elimination followed by re-introduction results in a swifter and stronger response.

This is the basis for the diagnostic test that is necessary to confirm the existence of food intolerance. Ten days of scrupulous avoidance effectively unmask the hidden intolerance, so that the first eating of the food after the period of avoidance usually produces symptoms within an hour or two. The avoidance phase is called an elimination diet and during this phase the symptoms should get better (although there may be an initial 'withdrawal' worsening, as explained above); the reintroduction phase is called the food challenge. Attention to detail is needed during the elimination phase. For example, if sensitivity to milk is the cause of symptoms, they not disappear unless all forms of milk are excluded (milk, butter, yoghurt, cheese and milk products such as lactose, casein and whey in cakes, biscuits and other processed foods). This may require, for example, the avoidance of toothpaste and certain medications.

Prolonged elimination builds tolerance. Weeks or months of elimination of the reactive food may well lead to re-introduction of the food without reaction. This is known as tolerance, and its maintenance depends on establishing the threshold of both frequency and quantity for that person – in other words, eating the food occasionally may be tolerated, but re-introducing it in large quantities or on a very regular basis (e.g. every day) might lead to symptoms recurring.

Tests for food intolerance

The 'gold-standard' test for food intolerance is the elimination and challenge diet, and this is the only test that takes account of whichever mechanism is the cause of the intolerance. It would be very helpful for many people suffering common conditions such as migraine and irritable bowel syndrome if there was an easier test than the elimination diet test. One result of this has been the proliferation of tests and clinics that offer to 'diagnose' your intolerance. Some use measurements of muscle strength (Kinesiology) or electrical activity (Vega) when you are in close contact with the food. Some clinics will even offer to test a sample of your hair or urine through the post. None of these tests has any rational scientific basis and none has been validated or properly compared with the results of elimination diet and sequential food challenge. Other tests use a blood sample and examine the effects of dilute quantities of the food on the white blood cells (Nutron, Cytotoxic and Alcat test). These tests require much more investigation and validation before they can be regarded as useful in assessing food intolerance.

IgG food tests are becoming more scientific and clinical trials for IgG tests are being undertaken for IBS and Migraine. The British Allergy Foundation funded an independent audit by The University of York of over 4,000 people who had undertaken York Nutritional Laboratory IgG Tests. The anecdotal evidence found that considerable benefit had been obtained from excluding the foods identified in the IgG test. As explained above, this does not necessarily mean that IgG causes the problem – it may just be an alternative way of identifying commonly eaten foods in the patient's diet. Further clinical trials into food intolerance are very much needed and hopefully will be carried out in the coming years.

Getting Help

If you think that food intolerance might be your problem, and you need help to investigate it, then you should start by asking your family doctor. Although the investigation of food intolerance can be undertaken by making simple changes to your diet, in practice it can be very helpful to have someone instruct you in how to go about it. This kind of approach is not without risk and pitfalls, and the guidance of an experienced health professional will avoid you getting into difficulty. Reaching the wrong conclusion (and committing yourself to unnecessary diet restriction) is the commonest risk. Some cases, especially children investigated without help by over-zealous parents, may result in nutritionally inadequate or dangerous diets. Challenge testing a food to which you have an immediate food allergy (rather than food intolerance) is the greatest danger, giving rise to the possibility of anaphylaxis (allergic collapse).

If you do consult your family doctor, you must remember that many doctors will discount food intolerance except when faced with the most obvious case. Although the concept is now well recognized, the breadth of possibly related symptoms, and the range of foods that may be involved will be considerably underestimated by most. However if you appear genuine in your desire to look into this possibility, most family doctors will realize that it is better for you to do this with proper help than without it. There may be a dietitian at the local hospital with experience in the investigation of food intolerance.

If you do decide to try a simple elimination and challenge diet, remember the following basic points:

- You should never undertake an elimination and challenge diet if you have severe asthma, severe eczema, or have ever had a severe allergic reaction such as anaphylaxis or angioedema (swelling of the throat, tongue or lips).
- Keep a food diary for a couple of weeks to identify your most commonly eaten foods. If you keep a symptom diary at the same time, this may give you clues about which foods to suspect.
- Plan in advance. If you will need to replace the 'avoided' food with alternatives, shop for these first. Do not try and do an elimination and challenge diet when you are very busy, either at work or at home.
- Try eliminating one food or food group that you eat on a regular basis. Dairy products, wheat and other grains, coffee, sugar and yeasts are probably the most common foods that cause intolerance problems. As explained above, you need to avoid the food **strictly** and for about 10 to 14 days. If your symptoms improve significantly during this

time then this suggests that the food may be relevant. If your symptoms get rather worse in the first couple of days, this is also a positive sign. The second part of the test is the challenge – eat a normal portion of the food that you have been avoiding, and look for your typical symptoms developing over the next several hours. If nothing happens, have a second portion of the food the following day and assess for symptoms again. If symptoms are provoked by either challenge, then avoidance of the food is required unless the symptoms were mild, in which case you could eat the food occasionally. Strict avoidance for a period of time may well allow you to gain tolerance and re-introduce the food, as explained above.

You should not avoid foods or food groups for an extended period without seeking professional advice, to ensure that your diet remains nutritionally sound. Replace foods that are being avoided with alternatives. Because both allergy and intolerance tends to occur with frequently eaten foods, the best plan is always to eat the widest possible variety of foods in your diet, and not to progressively eliminate more and more foods.

Please contact Allergy UK for further advice and support as required. Elimination and challenge diets are not always easy and it is better to get the support you need rather than just give up.

Other factors

In a few people, underlying conditions such as low levels of digestive enzymes, the presence of the wrong mix of bacteria in the gut, parasites or excessive yeast levels, can make food intolerances worse. In these cases treatment for the underlying condition may be required in order to allow symptoms to improve. You should always seek advice rather than attempting to diagnose or treat these problems yourself.

See the Allergy UK website about food intolerance for more information:

www.foodintoleranceawareness.org

MAY 2009