



australasian society of clinical immunology and allergy inc.

Food Intolerance

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When people complain of symptoms such as headaches, bloating or mouth ulcers after eating, they are describing food intolerance, rather than food allergy. During an allergic reaction to food, many irritant chemicals (such as histamine) are released into the tissues. This can result in itchy rashes, stomach upset, cough and wheeze and the more severe allergic symptoms (anaphylaxis). These reactions are due to allergy, which is an immune system reaction to foods.

What is food intolerance?

Food allergy and food intolerance are commonly confused as symptoms of food intolerance occasionally resemble those of food allergy. However, the following difference should be noted: food intolerance does not involve the immune system and does not cause severe allergic reactions (known as anaphylaxis). Food intolerance does not show on allergy testing.

Food intolerance can be a difficult concept to understand and is poorly understood by doctors as well. Sometimes substances within foods can increase the frequency and severity of migraine headaches, rashes (such as hives) or the stomach upset of irritable bowel. Coincidence can often confuse the issue, as we spend many of our waking hours eating or drinking.

The best approach is to **first consult your doctor to:**

1. Make a diagnosis (such as migraines, hives, irritable bowel, recurrent mouth ulcers);
2. Determine whether dietary (or other) factors play an aggravating role;
3. Identify individual triggers to be avoided.

Natural substances in foods can cause food intolerance

Natural chemicals are found in the foods we eat. Food is composed of protein, carbohydrate, fat and various nutrients as well as a number of natural chemicals. These naturally occurring molecules often add flavour and smell to food. Sometimes they will trigger symptoms in unlucky individuals.

- Monosodium glutamate (MSG, additive numbers 620 and 621) was originally isolated from seaweed in 1908 by a Japanese chemist. Glutamates also occur naturally in such foods as camembert cheese, Parmesan cheese, tomatoes, soy sauce and mushrooms. MSG stimulates nerve endings, perhaps accounting for its function as a flavour enhancer when it is added to food.
- Vasoactive amines such as tyramine, serotonin and histamine are well known triggers of migraines in some patients and are present naturally in pineapples, bananas, baked meat, vegetables, red wine, wood-matured white wine, avocados, chocolate, citrus fruits and mature cheese. Amines can act directly on small blood vessels to expand their

ASCIA EDUCATION RESOURCES (AER) PATIENT INFORMATION

capacity, perhaps accounting for their effect on flushing, migraines and nasal congestion in some patients.

- Salicylates are natural aspirin like compounds (aspirin was originally isolated from willow tree bark) present in a wide variety of herbs, spices as well as fruit and vegetables. Reactions to these may be even more common than reactions to artificial colours and preservatives. Aspirin can trigger hives (urticaria) by acting directly on skin mast cells. Natural and structurally similar salicylates can also worsen hives in some patients.
- Toxins. Other than contamination of food with micro-organisms or their products (spoilage, food poisoning), some foods contain toxins that can cause severe symptoms. For example, if some types of fish are stored poorly, their gut bacteria can convert histidine to histamine, resulting in allergy-like symptoms.
- Irritants. Caffeine and curry are gut irritants and can trigger indigestion in some people.

It is important to realise that reactions to these substances are not due to allergy, and so allergy testing is of little use in helping decide what to avoid.

Other adverse reactions to food

There are many other adverse reactions to foods, apart from allergy and intolerance, including:

- Feeling unwell after eating from other causes such as heartburn after a fatty or spicy meal or a hangover after too much red wine.
- Enzyme deficiencies. Some people are born with, or develop, insufficient enzymes to digest, absorb or deal with some foods. For example, a deficiency of the enzyme lactase results in lactose intolerance. The inability to digest lactose can result in bloating, wind, nausea and diarrhoea after having dairy products. Similarly, people with low levels of alcohol dehydrogenase will experience flushing and severe nausea because they are unable to metabolise toxic breakdown products of alcohol.
- Coeliac disease is not an allergy, but does involve an immune system response to foods containing gluten. When gluten-containing cereals (like wheat) are eaten, inflammation of the gut occurs, resulting in poor absorption of nutrients. Major symptoms are gut upset, fatigue, anaemia or weight loss.
- Non-coeliac gluten intolerance is a recently recognised condition which can cause symptoms such as abdominal disturbance (usually bloating but sometimes other symptoms as well) and occasionally malaise and tiredness. It appears to be genuine as proven by blinded challenge studies but the mechanism is not known.
- Food aversion is a condition where a person not only dislikes a food, but also experiences unpleasant physical symptoms when they see or smell the food. Symptoms are triggered by emotions associated with food rather than the food itself. This does not usually occur if the food is disguised.

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- Underlying anxiety can result in unconscious over-breathing or hyperventilation. The symptoms that result (dizziness, tight chest, blurred vision or numbness) can be very distressing, and can sometimes resemble food allergy.

Are allergy tests necessary?

A diagnosis of adverse reactions to food is based on the history, response to treatment and testing where necessary. Skin prick or blood allergen specific IgE allergy tests are of little use unless the history suggests that allergy (as opposed to intolerance) is the problem.

Unorthodox tests can be misleading

Some adults and children in Australia and New Zealand use unorthodox methods for diagnosing health problems, including allergies. Unfortunately, a number of misleading tests have been promoted for diagnosing allergies, in the absence of any credible evidence of their reliability. Various methods such as cytotoxic food testing, Vega testing, kinesiology, allergy elimination techniques, iridology, pulse testing, Alcat testing, Rinkel's intradermal skin testing, reflexology, hair analysis and IgG food antibody testing have all been proposed as being useful for diagnosing allergic conditions or food intolerances. Not only do these tests lack any scientific rationale, but have been shown to be inaccurate and poorly reproducible when subjected to careful study. Treatment based on inaccurate results is not only misleading, but can result in ineffective and sometimes harmful treatments, and delay more effective therapy. Information on these methods is available on the ASCIA website: www.allergy.org.au/patients/allergy-testing/unorthodox-testing-and-treatment

Management of food intolerance may involve elimination diets

Once a diagnosis is made (e.g. migraines, hives, eczema, irritable bowel, recurrent mouth ulcers), the history may help identify the role of dietary or other factors in making symptoms worse. The only reliable way to determine if diet is playing a role is by people being placed on a temporary elimination diet under the supervision of a dietitian and medical practitioner. If removing the food from the diet helps, this is followed by challenges under controlled conditions to identify dietary triggers which may need to be avoided in the future. It is important to emphasise that elimination diets must only be undertaken for a short term, under strict medical supervision. Prolonged restricted diets can lead to problems with adequate nutrition, particularly in children.

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