

FACTSHEET No. 19

FOOD ALLERGIES

What is a food allergy?

Food allergy is an unusual sensitivity to a particular food or food ingredient. For most people the reaction will be mild but in some cases it can cause a life-threatening condition called anaphylaxis. This affects the whole body, often within seconds of eating even a minute portion of the food in question.

The foods most likely to cause anaphylactic reaction are:

- Peanuts (ground nuts)
- Tree nuts, including almond, Brazil, cashew, hazelnut, pecan, pistachio and walnut
- Shellfish/molluscs/crustacea
- Sesame seeds.

Other foods that can cause allergic reactions in some people include eggs, dairy products and soya.

Most people should know the foods to which they are allergic. If you think you may suffer from a food allergy you should consult your doctor.

Food Intolerance

There are an increasing number of stories in the press or on TV about foods causing unpleasant reactions. In fact, the terms food allergy and intolerance are much misused and apparently misunderstood by the media and the general public. In particular, wheat seems to be the target of unfounded, non-scientifically based claims about it causing intolerance or sensitivity.

This can create a lot of confusion and may lead people to think, wrongly, that they are 'allergic' to certain foods including wheat. This can lead people to cut out foods which in fact may be an essential part of a healthy balanced diet. This is not to deny that some people experience unpleasant symptoms after eating certain foods, but if you do you should consult your G.P rather than self-diagnose.

A report commissioned by the Flour Advisory Bureau on wheat allergy and intolerance¹ summarises current scientific opinion and research on both food allergy and food intolerance. The report shows that too many people are self diagnosing and could be restricting their diet unnecessarily without proper advice. Copies are available from their website at www.fabflour.co.uk or see their contact details at the end of this factsheet.

What constitutes a wheat allergy?

Food allergy is a reaction to food involving an antibody called IgE (Immunoglobulin E). This causes a range of symptoms usually within 2 hours of eating the foods, which could range from mild to severe. Food allergy occurs because the body treats the proteins present in a particular food, such as wheat, as an invader. When a person with wheat allergy eats wheat the body triggers an

¹ The Wheat Hypersensitivity Report 2009 - by Dr. Heather Mackenzie and Dr. Carina Venter, Portsmouth University.

immune response – an allergic reaction. This reaction can cause a number of allergic symptoms, eg. Hives/rash, swelling of the lip or tongue, abdominal cramps and itchy runny eyes and nose.

The most severe allergic reaction triggered by food is called anaphylaxis. This can be potentially fatal, but there are however no recorded deaths from allergic reactions to wheat.

What is wheat intolerance and how is it different from food allergy?

In contrast with food allergy, food intolerance does not involve the immune system. The exact mechanism of food intolerance is unclear in some cases, such as intolerance to wheat. Unlike food allergy, the symptoms of food intolerance tend to occur after a longer period of time, are usually less severe than food allergy and in most cases require ingestion of larger amounts of food than food allergy. Symptoms associated with food intolerance, such as headache, lethargy, muscle pain and nausea are also associated with many other ailments making diagnosis very difficult.

What is Coeliac disease?

Like wheat allergy, Coeliac Disease is immune-mediated, but different antibodies are involved. Coeliac Disease is a spectrum; there is a wide variation in symptoms experienced and also in the antibody serology and the degree of damage to the small intestine.

It has been suggested that some people may have a non-Coeliac Gluten Sensitivity, experiencing symptoms such as diarrhoea, although the mechanisms by which this might occur are still being investigated.

How prevalent is wheat allergy or intolerance?

In a large nationwide survey conducted in 1994, 20.4% of people in the UK reported that they had an allergy to any food, but only 0.9% of the respondents reported being allergic to wheat.

A more recent consumer tracking survey showed that 58.1% of the UK public either slightly or strongly agreed with the statement 'Many people are allergic to the wheat in bread'. Although this represents a fall from 2007 (65.1% of the public either slightly or strongly agreed), this suggests that a large percentage of the public still think of wheat allergy as a common illness. In this survey, the number of women reporting a food allergy or intolerance to any food decreased between 2001 (23.9%) and 2009 (21.3%). In contrast, however, the numbers of women reporting an allergy or intolerance to wheat actually increased between 2001 (4.3%) and 2009 (6.1%).

There is no published data on the levels of self-reported and confirmed wheat allergy and intolerance in the general population. However research suggests that the true incidence of wheat allergy and intolerance is much lower than perception².

The prevalence of Coeliac Disease is better researched; evidence suggests that 0.8-1.9% of the UK population have this condition.

How important is proper diagnosis?

Excluding wheat from the diet without good cause and without appropriate medical advice is undesirable for a number of reasons. Wheat is found in many foods including bread, pastry, pasta, noodles and biscuits, and contains important nutrients, namely: B vitamins (thiamin, riboflavin and niacin), calcium and iron. These foods also contain carbohydrate and fibre, which are essential to a healthy diet.

² 'Bloating, IBS and a Healthy Diet', 2005 consumer leaflet produced for the Grain Information Service by Luci Daniels, Registered Dietician and Ex-Chairman of the British Dietetic Association.

Wheat should not be excluded without taking appropriate dietary advice on how to continue to maintain a healthy diet. This is especially important for children, who are more prone to nutritional problems when foods are excluded from the diet.

Eliminating wheat from the diet can also be difficult to maintain and makes food shopping, meal preparation and eating out more difficult. This is particularly so in the case of wheat and gluten avoidance, as opposed to other foods, because wheat-based products form a key part of our diet with 76.4% of the UK population eating bread once a day or more.

Finally, if wheat allergy or intolerance has been self-diagnosed there is a chance that the symptoms are in fact due to a different illness, which may remain undiagnosed and untreated.

How is a wheat allergy diagnosed?

It is very important that food allergy or intolerance is properly diagnosed by a medical professional.

A number of so-called allergy tests have been found to be unreliable, for example:

Immunoglobulin G (IgG) - this can be measured in a blood sample and will be raised to specific foods we eat on a regular basis. This rise has no relationship to allergy.

VEGA testing – this involves measuring disordered electromagnetic currents in the body to certain substances. The test substances are kept in glass vials connected to a device while a probe measures 'disordered' readings on the patient's hand. According to a survey in the British Medical Journal, the results are unreliable.

Applied kinesiology – this tests muscle strength in the presence of various allergens held by the patient. A loss of muscle strength in the arm allegedly indicates an allergy or intolerance. The allergy antidote allows muscle strength to return. This test is unreliable and the public should be discouraged from using it, according to the British Society for Allergy and Clinical Immunology.

Hair analysis - a sample is analysed for trace element deficiencies or heavy metal toxicity. It has no allergy diagnostic value.

Only qualified medical professionals are able to determine the source of adverse reactions to food. If a medical professional suspects that a patient's symptoms are caused by a food allergy they can use a number of tests to find out whether this is the case.

How is food allergy diagnosed?

Food allergy can be diagnosed by a blood test or a skin prick test.

Blood Testing: A sample of your blood is sent to a specialist laboratory for a RAST (radioallergosorbent test) or CAP-RAST. This measures the amount of specific immunoglobulin E antibodies (IgE) to inhalants and foods in your blood. IgE causes histamine to be released when you're exposed to various environmental and food allergens. The test is safer than a skin-prick test, as you're not directly exposed to the allergen. Results are graded from grade 0 (negative) and grade 1 (weak positive) to grade 6 (strong positive), depending on the level of the allergen's specific IgE antibody in your blood. The higher the grade, the more likely it is you have an allergy to that allergen. More than 400 specific allergens can be tested for in this way.

Skin Prick Testing (SPT): This is the most common allergy test. A small needle (lancet) is used to scratch the skin gently through a droplet of fluid containing a known allergen. The test is usually done on the forearm, and a positive reaction occurs when the skin around the needle prick becomes itchy with redness and develops a white swelling called a wheal. The wheal reaches its maximum size in about 15 to 20 minutes and the reaction fades within an hour. Wheal diameter varies from 5mm to 10mm in a positive test - the larger the wheal, the more likely that you are allergic.

There are special considerations, however, when performing SPTs with wheat allergens because there is a large proportion of cross-reactivity between the proteins in wheat and grass. This means that a number of people will show a wheal to both wheat and grass, even though only a small proportion will actually be allergic to wheat.

For example, Pereira et al found that 72/80 fifteen year olds and 76/80 eleven year olds in their study who were sensitised to wheat were also sensitised to grass, and were tolerating wheat in their diet. Venter et al also found that of the 8 three year olds in their study who had a positive SPT to wheat all also had a positive SPT to grass, and again, were tolerating wheat in their diet. Similar patterns have been observed elsewhere.

How is a food intolerance diagnosed?

At present there are no validated tests for diagnosing food intolerance. The only way of diagnosing food intolerance is the avoidance of the food for a period of 4-6 weeks. If the symptoms improve, it is recommended the food should either be introduced at home or during a food challenge, over a period of at least 4 days. Many patients diagnosed with wheat intolerance may need further investigations in order to find out which mechanisms are involved in causing their symptoms. However, such investigations are not always possible.

How is Coeliac Disease diagnosed?

It is very important that coeliac disease is properly diagnosed by a medical professional.

The condition can be diagnosed by a blood test measuring IgA antibodies to intestinal wall proteins such as endomysium or tissue transglutaminases (other older tests include IgA or IgG antibodies to gliaden and bowel reticulín). A positive test should be followed by a small bowel biopsy to confirm coeliac disease.

The possibility of gluten sensitivity (particularly in patients with Irritable Bowel syndrome) can not be diagnosed in the same way as Coeliac Disease and more research is needed in this area.

Managing a wheat-free diet

Anybody who needs to avoid wheat or gluten for medical reasons has to be careful to check the ingredients of all the foods they eat. However, the degree of avoidance necessary depends on the illness.

Wheat allergy - The only management plan for any food allergy involves avoidance of the allergen. Management of wheat allergy should involve the strict avoidance of wheat and those with a wheat allergy need to be very careful to ensure that the food they eat does not contain wheat. The decision to allow small amounts in food should be made on an individual basis together with an allergist/dietician.

Wheat intolerance - Those with wheat intolerance may be able to tolerate a small amount of wheat without consequence and strict avoidance measures are not needed by most.

Coeliac Disease - The only management plan for Coeliac Disease involves the strict avoidance of gluten. This is important as there are long-term health implications associated with ingesting gluten, including being at greater risk of osteoporosis and lymphoma.

'Gluten' is a general term which refers to the alcohol-soluble proteins, including gliadins in wheat, hordeins in barley, secalins in rye and avenins in oats. Some products contain wheat but not gluten, and vice versa, so it is important those with Coeliac Disease check the ingredients carefully. Barley

and rye must be avoided but oats may be tolerated by some individuals (on the advice of a healthcare professional).

Maintaining a healthy diet - Wheat is found in many foods including bread, pastry, pasta, noodles and biscuits. These foods contain carbohydrate and fibre, which are essential to a healthy diet. Those who are allergic or intolerant to wheat, or who have coeliac disease, should be sure to check that their diet contains alternative sources of starch and fibre.

Avoiding foods involves taking great care to check the ingredients of all meals which can have a real effect on quality of life. It is important that those with wheat allergy get good support from friends, family and health professional, to help them manage the demands of maintaining a wheat-free diet. It is also extremely important that people do not impose these restrictions on themselves unnecessarily and seek the proper advice.

Bakery products

Some bakery products contain nuts or sesame seeds as an ingredient. These will always be included, by name, in the list of ingredients. Bakeries take all possible steps to avoid inadvertent cross-contamination of products with allergenic ingredients. If there is a risk that a product may contain traces of nuts or seeds, the product wrapper should have a warning note '**may contain nuts or seeds**'.

People who suffer from a food allergy should always check the list of ingredients on the product wrapper carefully.

Food manufacturers keep lists of the foods which contain ingredients likely to cause an allergic reaction and should be able to provide the necessary information for consumers on request. The food wrapper will include a contact address or telephone number for the manufacturer or retailer.

Some people may be intolerant to the gluten protein in wheat flour. This is called coeliac disease. Further information on gluten is available on the Federation of Bakers' website at www.bakersfederation.org.uk/gluten.htm

Food safety and hygiene/good manufacturing practice

In plant bakeries, all workers involved in handling ingredients, equipment, utensils, packaging and products are trained in the hazards associated with food allergy. All possible action is taken to ensure there is no inadvertent cross-contamination of products with potentially allergenic ingredients. Controls will include separate storage of ingredients, good handling and hygiene procedures, washing and cleaning down of production plants and the implementation of Good Manufacturing Practice.

With these controls in place it is unlikely that wrapped bread and other wrapped bakery products will contain any unlisted allergenic material.

Useful addresses:

The Anaphylaxis Campaign
P.O. Box 275
FARNBOROUGH
Hants. GU14 6SX
Tel: 01252 542029
Website: www.anaphylaxis.org.uk

The National Asthma Campaign
Providence House
Providence Place
LONDON N1 0NT
Tel: 020 7226 2260
Helpline: 08457 010203
Website: www.asthma.org.uk

The British Allergy Foundation
Deepdene House
30 Bellgrove Road
WELLING Kent DA16 3PY
Tel: 020 8303 8525
Website: www.allergyfoundation.com

The British Dietetic Association
5th Floor, Charles House
148/9 Great Charles Street
Queensway
BIRMINGHAM B3 3HT
Tel: 0121 200 8080
Website: www.bda.uk.com

The British Nutrition Foundation
High Holborn House
52-54 High Holborn
LONDON WC1V 6RQ
Tel: 020 7404 6504
Website: www.nutrition.org.uk

The Food and Drink Federation
6 Catherine Street
LONDON WC2B 5JJ
Tel: 020 7836 2460
Website: www.fdf.org.uk

The Coeliac Society
P. O. Box 220, HIGH WYCOMBE
Bucks. HP11 2HY
Tel: 01494 437278
Website: www.coeliac.co.uk

The Flour Advisory Bureau
21 Arlington Street
LONDON SW1A 1RN
Tel: 020 7493 2521
Website: www.fabflour.co.uk