

PAEDIATRIC FOOD ALLERGY



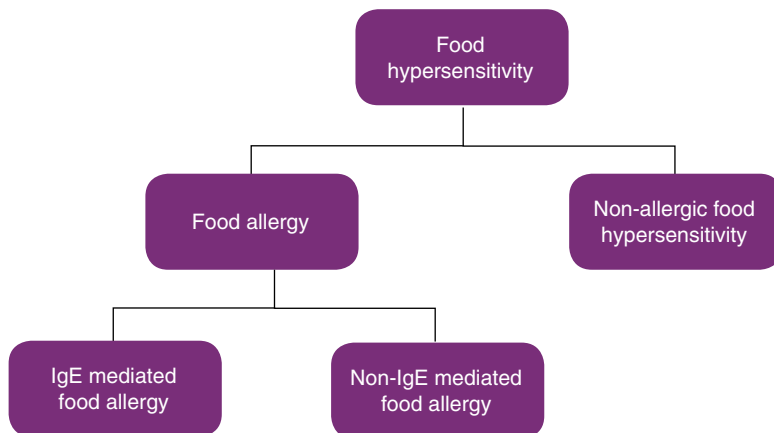
Sarah Heath
Specialist Paediatric
Allergy Dietitian
King's College
Hospital, London

Paediatric food allergy is an increasing problem in the United Kingdom. Whilst the exact prevalence has not been established, one study showed that between two to five percent of the infants studied had food hypersensitivity in the first year of life (1). Simple food allergy is often managed in Primary Care and as such, dietitians running general paediatric clinics may find that food allergy is increasingly becoming a part of their regular caseload. This article aims to answer some of the questions most frequently asked by parents with regards to food allergy.

WHAT IS THE DIFFERENCE BETWEEN FOOD ALLERGY AND FOOD INTOLERANCE?

In 2003, the World Allergy Organisation (WAO) published a review of the nomenclature for allergy (2), in order to standardise the terminology used and thereby reduce confusion.

Figure 1



The term 'food hypersensitivity' (Figure 1) is used as an umbrella term to describe objectively reproducible symptoms to a food that is usually tolerated by most people. 'Food allergy' is used where the symptoms are caused by an overreaction of the immune system to a protein in the offending food. 'Non allergic food hypersensitivity' is the preferred term to describe reactions to foods that do not have an immunological mechanism. Lactose intolerance for example can be described as non allergic food hypersensitivity.

Sarah has worked in paediatrics for six years. She began specialising in food allergy in 2007 and joined King's College Hospital as a Specialist Paediatric Food Allergy Dietitian in 2010.

Food allergy is subdivided further into IgE-mediated and Non-IgE-mediated food allergy, depending on whether IgE antibodies are involved in the allergic mechanism. In some cases, children may present with allergies that are a mix of both IgE and Non-IgE mediated reactions. IgE mediated food allergy is the form most people would recognise as food allergy. It generally presents as an acute reaction, with rapid onset of symptoms. These symptoms may include urticaria or angioedema and more rarely anaphylaxis. Due to the clear temporal relationship between food consumed and symptoms, alongside the ability to test for IgE antibodies, this form of allergy is usually easier to recognise and diagnose.

Non-IgE-Mediated food allergy is sometimes called delayed food allergy, as symptoms usually occur within 24 to 48 hours. Symptoms are often more chronic and include, exacerbation of atopic eczema, loose/frequent stools and gastro-oesophageal reflux disease.

WHAT TESTS CAN MY CHILD HAVE TO DIAGNOSE FOOD ALLERGY?

The two main tests used are Skin Prick Testing (SPT) and Specific IgE testing (sIgE). Both are validated tests for diagnosing IgE mediated food allergies in children.

Skin prick testing involves inserting a small amount of the suspected allergen under the skin along with a positive and negative control to ensure the test is working appropriately. The size of any resulting wheal is measured after 10-15 minutes. sIgE testing (sometimes called a RAST test), is a blood test that directly measures the amount of specific IgE to a suspected food.

SPT has the advantage of fast results, meaning that the clinician can formulate a plan whilst the family are ▶

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still in clinic. It may, however, be unsuitable for children with severe widespread eczema and can not be performed if the child has taken antihistamine. Whilst SPT has an excellent safety record, there is a very small possibility of a more widespread reaction occurring, so it should only be performed in settings where there is appropriate medical support in case of adverse events. sIgE testing, on the other hand, can be used even if the child has taken antihistamines, so is useful in children for whom coming off antihistamine may be unpleasant and in addition it carries no risk of allergic reaction.

It is important that any test is used in conjunction with a thorough medical history, taken by a healthcare professional with appropriate competencies (3,4). With both tests, a larger positive result indicates a higher likelihood of allergic disease, but the presence of IgE antibodies alone does not guarantee clinical allergy. Test results are also unable to predict the severity of allergic symptoms.

Double blind placebo controlled food challenges are the gold standard for diagnosing food allergy, but are rarely used in clinical practice. Single blind or open food challenges are more frequently used to confirm food allergy where the history and tests are inconclusive or where a food allergy may have resolved.

Unfortunately, there are currently no validated tests for diagnosing non-IgE mediated food allergies. Some commercial companies offer IgG blood tests as a way of diagnosing 'food intolerances'. But, there is as yet no convincing evidence that this test is valid and it should not be recommended. The best investigation and treatment for a suspected non-IgE mediated food allergy is an elimination and reintroduction diet supervised by a healthcare professional.

There are many other commercially available food allergy tests that have been proven to be unreliable in

diagnosing food allergy and as such should be avoided; these include kinesiology, hair testing and Vega testing.

WILL MY CHILD OUTGROW THEIR FOOD ALLERGY?

The prevalence of food allergy in children is much higher than in adults because many children do in fact outgrow their food allergies. Egg and milk allergies are the most frequently outgrown, but allergies to nuts and fish are likely to persist into adulthood.

Because of the potential for change in allergic status it is important the children's food allergies are monitored and reassessed over time to ensure that dietary restrictions are not in place for longer than necessary. As a general rule, children under the age of five with positive allergy tests will usually have these repeated at least yearly, although this will be agreed with the health professional managing their care.

IS THERE A CURE FOR FOOD ALLERGIES?

Unfortunately, at present there is no cure for food allergies and the only recommended treatment is avoidance of the offending food. Oral desensitisation therapy, similar to that used for inhalant allergens, is currently being trialled at some centres. It involves giving increasing oral doses of the allergenic food in order to encourage tolerance development. This is still in an early stage and should only be undertaken as part of a suitable hospital protocol.

IF MY CHILD HAS A FOOD ALLERGY, WILL THEY DEVELOP ASTHMA?

As a population, children presenting as infants with food allergy and/or eczema have an increased risk of

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later developing other allergic disease such as rhinitis and asthma. This is often referred to as the 'allergic march'. This pattern is seen in large groups of allergic children and whilst it means that a child with food allergy is at a higher risk of developing asthma, that it is by no means a given. These children should be monitored by their doctor for any signs of developing further allergic disease.

WHAT IS THE ADVICE REGARDING NUTS IN PREGNANCY, BREASTFEEDING AND WEANING?

In August 2009, after a review of the literature, the government updated its advice to say that women can choose to eat peanuts during pregnancy and breastfeeding as part of a varied diet. This is because currently there is no clear evidence that eating, or not eating peanuts during pregnancy, breastfeeding or early childhood has any effect on the chances of a child developing a peanut allergy (5). Children without any existing allergic disease can be introduced to peanut products from six months of age providing that they are in an age appropriate format. If the child has existing allergic disease then the introduction of peanuts should be discussed with their healthcare professional.

WHAT ARE THE FOOD LABELLING LAWS?

In 2005, the labelling laws changed so that allergenic foods have to be listed clearly on the food label if they are intentionally added to the food (6). The legislation currently covers the 14 most common food allergens (Figure 2). This law only applies to pre-packaged, manufactured foods sold within the EU, so some foods will be exempt, including foods sold loose in bakeries.

The 'may contain nuts' warning is currently a voluntary statement that there is the possibility of inadvertent contamination of the product with nuts, for example, if nuts are used in the same factory. It is not telling the consumer that there is definitely a small amount of nut in the products. In order to be safe, it is advised that these foods should be avoided by nut allergic children, even if they have been eaten in the past. If parents are very keen to use these foods then they should discuss the risks with an appropriate healthcare professional.

ARE GLUTEN-FREE FOODS SUITABLE FOR WHEAT ALLERGIC CHILDREN?

Foods manufactured for people with coeliac disease and labelled 'gluten free' may include Codex wheat starch, which is essentially wheat with the gluten removed to a trace level. These foods are unsuitable for a child with a wheat allergy. Some other foods aimed at coeliac disease and labelled 'gluten free' are made from naturally gluten-free grains, such as maize, rice or millet and are therefore suitable. The best advice is to encourage parents to read

Figure 2: The 14 most common food allergens

- | | |
|----------------------------|---------------|
| • Cows milk | • Fish |
| • Eggs | • Crustaceans |
| • Soya | • Mustard |
| • Peanuts | • Celery |
| • Tree nuts | • Sulphites |
| • Gluten containing grains | • Molluscs |
| • Sesame | • Lupin |

the ingredients list carefully and look for 'wheat-free' labelling instead of/ as well as a 'gluten-free' label.

DOES COOKING A FOOD MAKE IT LESS ALLERGENIC?

The proteins in some foods, such as milk and egg, are denatured by heat, which may make the protein less likely to be recognised by the immune system. Factors such as length of cooking and temperature affect this process. In practice, this may mean that some children will tolerate foods containing baked egg or milk in items such as biscuits or cakes, but may react to more lightly cooked or raw versions. As children can still react to these foods, they should be avoided unless recommended by an appropriate health professional. Other food proteins such as nuts and fish protein are not heat labile and cooking them will not make them any less allergenic.

MY ELDEST CHILD HAS ALLERGIES AND I AM PREGNANT AGAIN. IS THERE ANYTHING I CAN DO DURING WEANING TO REDUCE THE RISK OF FOOD ALLERGIES?

There is no evidence that delayed introduction of allergenic foods (beyond six months) will help to prevent food allergies in at-risk infants or indeed in any infant (7). In a child who has a family history of allergic disease, but no personal history, it would be sensible to introduce allergenic foods individually to be able to note any adverse reactions. The BDA Food Allergy and Intolerance Specialist Group (FAISG) has produced a useful consensus statement discussing allergy prevention for at risk infants (8). It should be noted that the statement does not apply to children who already have existing allergic disease.

For BDA members, the FAISG has a number of useful resources. There are also a number of professional organisations dealing with paediatric food allergy and their websites are a great place to start for further reading and information.

British Society of Clinical Allergy & Immunology (BSACI): www.bsaci.org/

European Academy of Allergy & Clinical Immunology (EAACI): www.infoallergy.com

World Allergy Organisation (WAO): www.worldallergy.org/index.php

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Questions relating to: Paediatric food allergy

Type your answers below and then **print for your records**. Alternatively print and complete answers by hand.

Q.1	What is food allergy?
A	
Q.2	Describe the two subdivisions of food allergy.
A	
Q.3	What is non-IgE-mediated food allergy?
A	
Q.4	Briefly describe the main tests for food allergy?
A	
Q.5	When is SPT unsuitable?
A	
Q.6	What is the best investigation and treatment for non-IgE mediated food allergy?
A	
Q.7	What trials are taking place in order to find a cure for food allergies?
A	
Q.8	What is the current government advice on children eating nuts?
A	
Q.9	Does cooking food make it less allergenic?
A	

Please type extra notes here . . .