

Diagnosis and assessment of food allergy in children and young people in primary care and community settings:

NICE clinical guideline

INTRODUCTION

Food allergy is recognised as a major paediatric health problem in western countries. The true prevalence is unknown but Europe and the US report ranges from 6% to 8% in children aged up to 3 years. The National Institute for Health and Clinical Excellence (NICE) has developed a guideline on the symptoms that should prompt consideration of food allergy when a child or young person presents in primary or community care.¹

Food allergy is an adverse immune response to food allergens. Reactions can be classified into those that are immunoglobulin E (IgE) mediated or non-IgE mediated. Some children may have both IgE and non-IgE mediated reactions to food; in this guideline, these are referred to as mixed reactions. In both IgE and non-IgE reactions, there is a response by the immune system to a protein within food. IgE mediated reactions are immediate type 1 hypersensitivity reactions while non-IgE mediated reactions usually occur several hours after allergen exposure. The exact mechanism is not clearly understood but, in both reactions, elimination of the allergenic food protein is required to prevent symptoms.

The correct diagnosis of food allergy should decrease the incidence of adverse food reactions that are a result of true food allergies; and help prevent the unnecessary exclusion of foods that are safe and that should be eaten as part of a normal, healthy diet.

This guideline does not cover children and young people with food intolerances (such as intolerance to lactose), reactions to pharmacological agents (such as salicylates), or reactions to those substances that naturally occur in foods (such as benzoic acid).

GUIDANCE

When to suspect food allergy

Food allergy should be suspected when the

following are present: persistent eczema, gastro-oesophageal reflux disease and bowel symptoms, including constipation, that do not respond to normal management; and certain symptoms (Table 1), be they mild or severe.

The more symptoms that are present, especially those involving different organ groups, the more likely it is that food allergy could play a part. Symptoms are usually from one of three organ systems: skin, gastrointestinal, and respiratory.

Allergy-focused clinical history

If food allergy is suspected — either by a healthcare professional or the parent or carer or child/young person — an allergy-focused clinical history should be obtained. The suggested process for this is outlined in Box 1.

Examination

An examination of the child or young person should pay particular attention to growth and physical signs of malnutrition, as well as any signs indicating allergy-related comorbidities, such as atopic eczema, asthma, and allergic rhinitis.

Investigation and diagnosis

The history should help determine whether the mechanism is likely to be IgE mediated or non-IgE mediated. If the history is suggestive of IgE mediated reactions, the child or young person should be offered a skin-prick test and/or blood tests for specific IgE antibodies to the suspected foods and likely co-allergens. Atopy patch testing should not be used. Oral food challenges may also be necessary to aid the diagnosis. These should not be performed in primary care if an IgE-mediated reaction is likely.

The choice for testing is between skin-prick testing and specific IgE testing. The tests are considered similar in their diagnostic performance so choice of test will depend on what is available to the clinician

J Walsh, BSc, MSc, MBChB, GP, The Roundwell Medical Centre, Costessey, Norwich. **N O'Flynn**, PhD, MRCP, clinical director, National Clinical Guideline Centre, London.

Address for correspondence

Norma O'Flynn, Royal College of Physicians, National Clinical Guideline Centre for Acute and Chronic Conditions, 11 St Andrews Place, London, NW1 4LE.

E-mail: norma.oflynn@rcplondon.ac.uk

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Table 1. Signs and symptoms of possible food allergy^{a,1}

IgE mediated (usually evident within minutes)	Non-IgE mediated (may be several hours before they present)
Skin	
Pruritus	Pruritus
Erythema	Erythema
Acute urticaria: localised or generalised	Atopic eczema
Acute angioedema: most commonly lips, face, around eyes	
Gastrointestinal system	
Angioedema: lips, tongue, palate	Gastroesophageal reflux disease
Oral pruritus	Loose or frequent stools
Nausea	Blood and/or mucus in stools
Colicky abdominal pain	Abdominal pain
Vomiting	Infantile colic
Diarrhoea	Food refusal or aversion
	Constipation
	Perianal redness
	Pallor and tiredness
	Faltering growth: in conjunction with at least ≥ 1 of the above gastrointestinal symptoms (with or without significant atopic eczema)
Respiratory system (usually in combination with ≥ 1 of the above symptoms and signs)	
Upper respiratory tract symptoms: nasal itching, sneezing, rhinorrhoea, or congestion (with or without conjunctivitis)	
Lower respiratory tract symptoms: cough, chest tightness, wheezing, or shortness of breath	
Other	
Signs or symptoms of anaphylaxis or other systemic allergic reactions	

^aThis list is not exhaustive. The absence of these symptoms does not exclude food allergy.

and acceptable to the child/young person. The tests requested should be guided by the clinical history and the results interpreted by someone competent to do so. Skin-prick

Box 1. Obtaining an allergy-focused clinical history

Ask about

- any individual and family history of atopic disease (such as asthma, eczema, allergic rhinitis, or food allergy) in parents or siblings; and
- details of any foods that are avoided and the reasons why.

Assess presenting symptoms and other symptoms that may be associated with food allergy.

Ask about

- age of the child or young person when symptoms first started;
- speed of onset of symptoms following food contact;
- duration of symptoms;
- severity of reaction;
- frequency of occurrence;
- setting of reaction (for example, at school or home);
- reproducibility of symptoms on repeated exposure;
- which foods, and how much exposure to them, causes a reaction (for example, does the child get a systemic reaction after a small amount of well-cooked egg in a cake touched their lips, or can they tolerate egg when cooked but get redness around the mouth if eating raw egg when baking); and
- cultural and religious factors that affect the foods the child eats.

Ask

- who has raised the concern and suspects the food allergy;
- what the suspected allergen is;
- the child or young person's feeding history, including the age at which they were weaned and whether they were breastfed or formula fed. If the child is currently being breastfed, consider the mother's diet;
- details of any previous treatment, including medication, for the presenting symptoms and the response to this; and
- whether there has been any response to the elimination and reintroduction of foods.

testing should only be performed by those who are competent in the procedure and in locations where an anaphylactic reaction can be managed. Facilities available for routine childhood vaccinations are felt to be appropriate.

If the history is suggestive of non-IgE mediated reactions, elimination and reintroduction of the suspected allergen is recommended. The suspected allergen should be eliminated from the diet and reintroduced after 2–6 weeks of elimination. A recurrence of symptoms on reintroduction is necessary to confirm the diagnosis. Children and young people with severe systemic reactions should have been referred to secondary care and the reintroduction of the suspected allergen may need to take place in that setting.

Information for parents and carers

Age-appropriate advice should be given on:

- type of allergy suspected;
- risk of severe allergic reaction;
- potential impact of the suspected allergy on other healthcare issues, including appropriateness of vaccination (note: allergy to egg is not a contraindication to having the measles, mumps, rubella vaccination but influenza and yellow-fever vaccinations contain egg protein);
- diagnostic process, that may include an elimination diet followed by a possible planned re-challenge or initial food reintroduction procedure;
- skin-prick tests and specific IgE antibody testing, including the safety and limitations of these tests; and
- referral to secondary or specialist care.

If a food elimination diet is advised as part of the diagnostic process, the child/young person and their carer should be offered information on how to implement that diet. Information given must take into account socioeconomic status as well as cultural and religious issues, and should include:

- what foods and drinks to avoid;
- how to interpret food labels;
- alternative sources of nutrition to ensure adequate nutritional intake;
- the safety and limitations of an elimination diet; and
- the proposed duration of the elimination diet.

For babies and young children with suspected allergy to cow's milk protein, offer:

- mothers who are breastfeeding advice on food avoidance;
- mothers of formula-fed babies information on the most appropriate hypoallergenic formula or milk substitute (advice from a dietitian is advised); and
- the child/young person, or their parent or carer, information about the support available, and details of how to contact support groups.

GPs should note that an allergy to cow's milk protein should still be considered if the infant fails to respond to extensively hydrolysed formulas as, sometimes, amino acid formulas are necessary to eliminate the allergen sufficiently not to cause symptoms.

Referral to secondary care

Referral to secondary care is suggested if the child/young person has:

- an acute systemic reaction;
- a severe delayed reaction;
- faltering growth in combination with one or more of the gastrointestinal symptoms;
- significant atopic eczema, where multiple or cross-reactive food allergies are suspected by the parent or carer;

Referral is also suggested if there is:

- persisting parental suspicion of food allergy (especially in children/young people with difficult or perplexing symptoms), despite a lack of supporting history; or
- clinical suspicion of multiple food allergies.

After initial investigations, the following individuals should also be referred:

- those who have not responded to a single-allergen elimination diet;
- those with asthma who have confirmed IgE mediated food allergy (children with asthma are more at risk of severe reactions); and
- those in whom there is a strong clinical suspicion of IgE mediated food allergy but allergy test results are negative.

Alternative testing

There is no role for vega testing, applied kinesiology, hair analysis, and serum-specific immunoglobulin G testing in the diagnosis of food allergy in children and young people.

DISCUSSION

Much of this guideline was based on the guideline development group consensus as there is a lack of evidence relating to many aspects of the UK primary care population with food allergy. The research recommendations acknowledge this and include recommendations for research into prevalence and natural history of non-IgE mediated food allergy; clinical predictors of non-IgE mediated food allergy; information needs for children and young people during their care pathway to the diagnosis of food allergy; values of skin-prick testing and specific IgE antibody testing and their predictive value; and modes of provision of support to healthcare professionals.

At present, there is no national guideline for the management of children with food allergies, other than the guideline on egg allergy from the British Society for Allergy and Clinical Immunology.² As such, the management of children diagnosed with food allergy will continue to be variable. The NICE guideline presents a challenge to the current primary care diagnosis of food allergy in children and young people. It suggests that testing for food allergy should be considered by primary healthcare professionals and can take place in the primary care setting; it also makes clear that choosing the appropriate test and interpreting results may not be straightforward, and that GPs and their staff may not currently have the required skills or competencies to do this. The implementation report, including a costing report that accompanies the guideline, discusses the need to train GPs and practice nurses to offer this service in the community. Access to dietetic support and to specialists at secondary care level will also be required.

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Competing interests

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Provenance

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