

Food allergy in children and young people

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

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NICE clinical guideline 116

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Introduction

Food allergy is an adverse immune response to a food. It can be classified into IgE-mediated and non-IgE-mediated reactions. Many non-IgE reactions, which are poorly defined both clinically and scientifically, are believed to be T-cell-mediated. Some reactions involve a mixture of both IgE and non-IgE responses and are classified as mixed IgE and non-IgE allergic reactions. Food allergy may be confused with food intolerance, which is a non-immunological reaction that can be caused by enzyme deficiencies, pharmacological agents and naturally occurring substances. Food intolerance will not be covered in this guideline. The starting point for the guideline is a suspicion of food allergy, and the use of an allergy-focused clinical history will help to determine whether a food allergy is likely.

In its review of allergy services in 2006, the Department of Health concluded that there was considerable variation in current practice for allergy care, with no agreed treatment pathways, referral criteria or service models. Specifically, it was reported that many people with allergies practised self-care, using alternative sources of support rather than NHS services (for example, complementary services with non-validated tests and treatments).

In the NHS, most allergy care takes place in primary care. People with a clear diagnosis, and mild but persistent symptoms, are usually managed in general practice without referral to a specialist service. Some people with allergies, and the parents or carers of children and young people with allergies, also buy over-the-counter medicines from community or high-street pharmacies. However, if there is diagnostic doubt or symptoms of a more severe disease, GPs often consider referral for a specialist opinion.

Patient-centred care

This guideline offers best practice advice on the care of children and young people with suspected food allergies.

Treatment and care should take into account patients' needs and preferences. Children and young people with suspected food allergies and their families and carers should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If patients do not have the capacity to make decisions, healthcare professionals should follow the [Department of Health's advice on consent](#) and the [code of practice that accompanies the Mental Capacity Act](#). In Wales, healthcare professionals should follow [advice on consent from the Welsh Government](#).

If the child or young person is under 16, healthcare professionals should follow the guidelines in the Department of Health's [Seeking consent: working with children](#).

Good communication between healthcare professionals and children and young people with suspected food allergy is essential. It should be supported by evidence-based written information tailored to the needs of the child or young person and their family. Treatment and care, and the information children and young people are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

Families and carers should also be given the information and support they need.

Care of young people in transition between paediatric and adult services should be planned and managed according to the best practice guidance described in [Transition: getting it right for young people](#).

Adult and paediatric healthcare teams should work jointly to provide assessment and services to children and young people with suspected food allergy. Diagnosis and management should be reviewed throughout the transition process, and there should be clarity about who is the lead clinician to ensure continuity of care.

1 Guidance

The following guidance is based on the best available evidence. The full [guideline](#) gives details of the methods and the evidence used to develop the guidance.

1.1 List of all recommendations

Assessment and allergy-focused clinical history

- 1.1.1 Consider the possibility of food allergy in children and young people who have one or more of the signs and symptoms in table 1, below. Pay particular attention to persistent symptoms that involve different organ systems.

Table 1. Signs and symptoms of possible food allergy

IgE-mediated	Non-IgE-mediated
The skin	
Pruritus	Pruritus
Erythema	Erythema
Acute urticaria – localised or generalised	Atopic eczema
Acute angioedema – most commonly of the lips, face and around the eyes	
The gastrointestinal system	
Angioedema of the lips, tongue and palate	Gastro-oesophageal 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 one or more gastrointestinal symptoms above (with or without significant atopic eczema)
The respiratory system (usually in combination with one or more 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	

Note: this list is not exhaustive. The absence of these symptoms does not exclude food allergy

1.1.2 Consider the possibility of food allergy in children and young people whose symptoms do not respond adequately to treatment for:

- atopic eczema^[1]
- gastro-oesophageal reflux disease
- chronic gastrointestinal symptoms, including chronic constipation.

1.1.3 If food allergy is suspected (by a healthcare professional or the parent, carer, child or young person), a healthcare professional with the appropriate competencies (either a GP or other healthcare professional) should take an allergy-focused clinical history tailored to the presenting symptoms and age of the child or young person. This should include:

-
- any personal history of atopic disease (asthma, eczema or allergic rhinitis)
 - any individual and family history of atopic disease (such as asthma, eczema or allergic rhinitis) or food allergy in parents or siblings
 - details of any foods that are avoided and the reasons why
 - an assessment of presenting symptoms and other symptoms that may be associated with food allergy (see recommendation 1.1.1), including questions about:
 - the 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
 - what food and how much exposure to it causes a reaction
 - cultural and religious factors that affect the foods they eat
 - 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
 - any response to the elimination and reintroduction of foods.

1.1.4 Based on the findings of the allergy-focused clinical history, physically examine the child or young person, paying particular attention to:

- growth and physical signs of malnutrition
- signs indicating allergy-related comorbidities (atopic eczema, asthma and allergic rhinitis).

Diagnosis

Food allergy can be classified into IgE-mediated and non-IgE-mediated allergy. IgE-mediated reactions are acute and frequently have a rapid onset. Non-IgE-mediated reactions are generally characterised by delayed and non-acute reactions.

IgE-mediated food allergy

1.1.5 Based on the results of the allergy-focused clinical history, if IgE-mediated allergy is suspected, offer the child or young person a skin prick test and/or blood tests for specific IgE antibodies to the suspected foods and likely co-allergens

1.1.6 Tests should only be undertaken by healthcare professionals with the appropriate competencies to select, perform and interpret them.

1.1.7 Skin prick tests should only be undertaken where there are facilities to deal with an anaphylactic reaction.

1.1.8 Choose between a skin prick test and a specific IgE antibody blood test based on:

- the results of the allergy-focused clinical history **and**
- whether the test is suitable for, safe for and acceptable to the child or young person (or their parent or carer) **and**
- the available competencies of the healthcare professional to undertake the test and interpret the results.

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- 1.1.9 Do not carry out allergy testing without first taking an allergy-focused clinical history. Interpret the results of tests in the context of information from the allergy-focused clinical history.
- 1.1.10 Do not use atopy patch testing or oral food challenges to diagnose IgE-mediated food allergy in primary care or community settings.

Non-IgE-mediated food allergy

- 1.1.11 Based on the results of the allergy-focused clinical history, if non-IgE-mediated food allergy is suspected, trial elimination of the suspected allergen (normally for between 2–6 weeks) and reintroduce after the trial. Seek advice from a dietitian with appropriate competencies, about nutritional adequacies, timings of elimination and reintroduction, and follow-up.

Providing information and support to the child or young person and their parent or carer

- 1.1.12 Based on the allergy-focused clinical history, offer the child or young person and their parent or carer, information that is age-appropriate about the:
- type of allergy suspected
 - risk of severe allergic reaction
 - potential impact of the suspected allergy on other healthcare issues, including vaccination
 - diagnostic process, which may include:
 - an elimination diet followed by a possible planned rechallenge or initial food reintroduction procedure
 - skin prick tests and specific IgE antibody testing, including the safety and limitations of these tests
 - referral to secondary or specialist care.

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- 1.1.13 Offer the child or young person and their parent or carer, information that is relevant to the type of allergy (IgE-mediated, non-IgE-mediated or mixed).
- 1.1.14 If a food elimination diet is advised as part of the diagnostic process (see recommendation 1.1.11), offer the child or young person and their parent or carer, taking into account socioeconomic status and cultural and religious issues, information on:
- 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
 - the proposed duration of the elimination diet
 - when, where and how an oral food challenge or food reintroduction procedure may be undertaken
 - the safety and limitations of the oral food challenge or food reintroduction procedure.
- 1.1.15 For babies and young children with suspected allergy to cows' milk protein, offer:
- food avoidance advice to breastfeeding mothers
 - information on the most appropriate hypoallergenic formula or milk substitute to mothers of formula-fed babies.
- Seek advice from a dietitian with appropriate competencies.
- 1.1.16 Offer the child or young person, or their parent or carer, information about the support available and details of how to contact support groups.

Referral to secondary or specialist care

1.1.17 Based on the allergy-focused clinical history, consider referral to secondary or specialist care in any of the following circumstances.

- The child or young person has:
 - faltering growth in combination with one or more of the gastrointestinal symptoms described in recommendation 1.1.1
 - not responded to a single-allergen elimination diet
 - had one or more acute systemic reactions
 - had one or more severe delayed reactions
 - confirmed IgE-mediated food allergy and concurrent asthma
 - significant atopic eczema where multiple or cross-reactive food allergies are suspected by the parent or carer.

- There is:
 - persisting parental suspicion of food allergy (especially in children or young people with difficult or perplexing symptoms) despite a lack of supporting history
 - strong clinical suspicion of IgE-mediated food allergy but allergy test results are negative
 - clinical suspicion of multiple food allergies.

Alternative diagnostic tools

1.1.18 Do not use the following alternative diagnostic tests in the diagnosis of food allergy:

- vega test

- applied kinesiology

- hair analysis.

1.1.19 Do not use serum-specific IgG testing in the diagnosis of food allergy.

^[1] For information about treatment for atopic eczema see [Atopic eczema in children](#) (NICE clinical guideline 57)

2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from our [website](#) – click on 'How this guidance was developed'.

3 Implementation

NICE has developed [tools](#) to help organisations implement this guidance.

4 Research recommendations

We have made the following recommendations for research, based on our review of evidence, to improve NICE guidance and patient care in the future.

The focus of this guideline was the diagnosis and assessment of food allergy in children and young people in primary care and community settings. Therefore, the management of food allergy after a confirmed diagnosis was not reviewed. The research recommendations below focus on assessment and diagnosis.

4.1 Prevalence and natural history of non-IgE-mediated food allergy

How common are non-IgE-mediated food allergies in children and young people in primary care and community settings and when food allergies may be outgrown?

Why this is important

Food allergy has many presentations. IgE-mediated food allergy manifests itself with a relatively homogenous group of presentations. Along with objective tests, measures of prevalence in the relevant settings and later development of tolerance have yielded useful information on the burden of IgE-mediated food allergy. However, non-IgE-mediated food allergy has a more heterogeneous group of presentations and the lack of validated diagnostic tests make it very difficult to assess prevalence without using formal diagnostic food challenges. Until high-quality prevalence studies in primary care and community settings are carried out, the burden of this food allergy will remain unknown. Studies should also evaluate prevalence rates and the resolution of allergies in subgroups, such as by allergies to particular food groups, or by method of infant feeding (exclusive formula, exclusive breastfeeding or mixed).

4.2 Clinical predictors of non-IgE-mediated food allergy

Which features in the clinical history best predict the presence of non-IgE-mediated food allergy in children and young people in primary care and community settings?

Why this is important

Non-IgE-mediated food allergy often presents with non-specific problems that are common in children and are often non-allergy related, such as colic, reflux, diarrhoea, eczema and faltering growth. Failure to recognise food allergy causes unnecessary morbidity, whereas appropriate food elimination can result in rapid improvement in symptoms. In the absence of a simple diagnostic test, it remains for the history to provide the best diagnostic clues as to which child may benefit from a trial of an elimination diet. A validated, primary care-focused questionnaire, developed by comparison with proven double-blind placebo-controlled food challenge outcomes, would significantly improve the process of diagnosis.

4.3 Information needs for children and young people during their care pathway to diagnosis of food allergy

What do children and young people with IgE-mediated food allergy and their parents or carers want to know during the process of diagnosis and how is this demand best met?

Why this is important

The patient journey to diagnosis, through testing, can last for several months. The needs of children and young people and their parents or carers, and the most effective method of information and support provision during this time of uncertainty, need to be established.

4.4 Values of skin prick testing and specific IgE antibody testing and their predictive value

Can skin prick testing and specific IgE antibody testing cut-off points be established to diagnose IgE-mediated food allergy in children and young people, and to predict the severity of reaction?

Why this is important

It is well described that about 1 in 5 people reporting an adverse reaction to food have a true food allergy. Of these, the majority will have non-IgE-mediated allergies. Food challenges are cumbersome and time-consuming and there are some safety risks involved. The availability of skin prick testing and specific IgE testing cut-off points to diagnose food allergy and to predict the severity of reaction would therefore lead to huge cost savings in the NHS and would reduce

patient risk. There are published data available from the US, Australia and Europe, but allergists argue that these cut-off points are population-specific and should not be used in the UK.

4.5 Modes of provision of support to healthcare professionals

What would be the impact of dietetic telephone support to healthcare professionals to aid in the diagnosis and assessment of babies showing non-IgE-mediated food allergy symptoms in primary care and community settings?

Why this is important

There is currently no evidence to assess the impact of early diagnosis of non-IgE-mediated food allergy on the quality of life for babies and their families. The standard method of written referral is not timely (within the first month of presentation), yet there is no evidence whether providing indirect dietary advice via a healthcare professional is acceptable to the family. This system, however, could result in reduced attendances at GP surgeries and health clinics, reduced need for unnecessary medications and treatment, improved health for the whole family and improved skills for the healthcare professionals being supported in the diagnosis. However, it would need increased dietetic support and skills. A community-based randomised controlled trial is needed to compare the standard written dietetic referral method with indirect advice via a healthcare professional following consultation with a dietitian, for families with babies aged under 1 year who present with symptoms of non-IgE-mediated food allergy. Primary outcomes should be an assessment of the quality of life and acceptability of this service to the family. Secondary outcome measures could be related to attendance at GP surgeries, and medications and other interventions implemented.

5 Other versions of this guideline

5.1 Full guideline

The full guideline, [Food allergy in children and young people: Diagnosis and assessment of food allergy in children and young people in primary care and community settings](#), contains details of the methods and evidence used to develop the guideline.

5.2 NICE Pathway

This guidance has been incorporated into the [food allergy in children and young people NICE Pathway](#), along with other related guidance and products.

5.3 Information for the public

NICE has produced [information for the public](#) explaining this guideline.

We encourage NHS and voluntary sector organisations to use text from this information in their own materials about diagnosis and assessment of food allergy in children and young people.

6 Related NICE guidance

Published

- [Coeliac disease](#). NICE clinical guideline 86 (2009).
- [Diarrhoea and vomiting in children](#). NICE clinical guideline 84 (2009).
- [Atopic eczema in children](#). NICE clinical guideline 57 (2007).
- [Inhaled corticosteroids for the treatment of chronic asthma in children under the age of 12 years](#). NICE technology appraisal guidance 131 (2007).
- [Postnatal care: Routine postnatal care of women and their babies](#). NICE clinical guideline 37 (2006).

7 Updating the guideline

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 3 years after publication, and healthcare professionals and patients are asked for their views; we use this information to decide whether all or part of a guideline needs updating. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations. Please see our website for information about updating the guideline.

Appendix A: The Guideline Development Group, the Short Clinical Guidelines Technical Team, the Short Clinical Guidelines Team and the Centre for Clinical Practice

Guideline Development Group

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A short clinical guidelines technical team was responsible for this guideline throughout its development. It prepared information for the Guideline Development Group, drafted the guideline and responded to consultation comments. The following NICE employees made up the technical team for this guideline.

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Appendix B: The Guideline Review Panel

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

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About this guideline

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

The guideline was developed by the Short Clinical Guidelines Technical Team. The team worked with a group of healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, who reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

The methods and processes for developing NICE clinical guidelines are described in [The guidelines manual](#). This guideline was developed using the [short clinical guideline process](#).

The recommendations from this guideline have been incorporated into a [NICE Pathway](#). We have produced [information for the public](#) explaining this guideline. Tools to help you put the guideline into practice and information about the evidence it is based on are also [available](#).

Changes after publication

December 2011: minor maintenance

March 2013: minor maintenance

Your responsibility

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have

regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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