

Food allergy in under 19s: assessment and diagnosis

Clinical guideline

Published: 23 February 2011

www.nice.org.uk/guidance/cg116

Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should [assess and reduce the environmental impact of implementing NICE recommendations](#) wherever possible.

Contents

Overview	4
Who is it for?	4
Introduction	5
Recommendations.....	6
Assessment and allergy-focused clinical history.....	6
Diagnosis.....	9
Recommendations for research	14
1 Prevalence and natural history of non-IgE-mediated food allergy.....	14
2 Clinical predictors of non-IgE-mediated food allergy	14
3 Information needs for children and young people during their care pathway to diagnosis of food allergy	15
4 Values of skin prick testing and specific IgE antibody testing and their predictive value.....	15
5 Modes of provision of support to healthcare professionals	16
Finding more information and committee details.....	17
Update information	18

This guideline is the basis of QS118.

Overview

This guideline covers assessing and managing food allergy in children and young people under 19. It aims to improve symptoms such as faltering growth and eczema by offering advice on how to identify food allergy and when to refer to secondary or specialist care.

The guideline does not cover reactions to food that are due to intolerance (for example, intolerance to lactose in dairy products) rather than allergy.

NICE has also produced [diagnostics guidance on ImmunoCAP ISAC 112 for multiplex allergen testing](#).

Who is it for?

- Healthcare professionals
- Children and young people with food allergy and their families and carers

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 and Social Care 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.

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

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.

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	<ul style="list-style-type: none"> • Pruritus • Erythema • Acute urticaria – localised or generalised • Acute angioedema – most commonly of the lips, face and around the eyes 	<ul style="list-style-type: none"> • Pruritus • Erythema • Atopic eczema

–	IgE-mediated	Non-IgE-mediated
<p>The gastrointestinal system</p>	<ul style="list-style-type: none"> • Angioedema of the lips, tongue and palate • Oral pruritus • Nausea • Colicky abdominal pain • Vomiting • Diarrhoea 	<ul style="list-style-type: none"> • Gastro-oesophageal reflux disease • Loose or frequent stools • Blood and/or mucus in stools • Abdominal pain • Infantile colic • 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)
<p>The respiratory system (usually in combination with one or more of the above symptoms and signs)</p>	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Lower respiratory tract symptoms (cough, chest tightness, wheezing or shortness of breath)
<p>Other</p>	<p>Signs or symptoms of anaphylaxis or other systemic allergic reactions</p>	<p>–</p>

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 (for information about treatment for atopic eczema, see [NICE's guideline on atopic eczema in under 12s](#))
- gastro-oesophageal reflux disease (for information about gastro-oesophageal reflux disease, see [NICE's guideline on gastro-oesophageal reflux disease in children and young people](#))
- chronic gastrointestinal symptoms, including chronic constipation.

Someone with apparent symptoms of food allergy may be suffering from coeliac disease; for information about coeliac disease, see [NICE's guideline on coeliac disease](#).

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, whether they were breastfed or formula-fed and the age of weaning
 - the mother's diet, if the child is currently being breastfed
 - 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 (for information about faltering growth, see [NICE's guideline on faltering growth](#))
- 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 often immediate and frequently have a rapid onset. Non-IgE-mediated reactions are generally characterised by delayed 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.
- 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. (For people undergoing

investigation for coeliac disease, see [NICE's guideline on coeliac disease](#).)

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.
- 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. (See the [information for the public for examples of organisations that provide information and support.](#))

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.

Recommendations for research

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 recommendations for research below focus on assessment and diagnosis.

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).

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.

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 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.

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.

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the [NICE topic page on allergies](#).

For full details of the evidence and the guideline committee's discussions, see the [full guideline and appendices](#). You can also find information about [how the guideline was developed](#), including [details of the committee](#).

NICE has produced [tools and resources to help you put this guideline into practice](#). For general help and advice on putting our guidelines into practice, see [resources to help you put NICE guidance into practice](#).

Update information

Minor changes since publication

October 2018: After a surveillance review, links to other NICE guidance have been updated as needed and new links added in some recommendations. Some terminology has also been updated.

ISBN: 978-1-4731-2856-9