



*Improving the care of infants with cow's milk allergy*

# Food allergy in children and young people: the NICE guidelines in practice

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*Food allergy can have a profound effect on quality of life for patients and their families. It is recognised as a major paediatric health problem that is increasing in prevalence. For example, the most common form, cow's milk allergy, occurs in between 2% and 7.5% of infants.<sup>1</sup> The recently*

*published NICE guidelines aim to address variation in the diagnosis and care of children and young people with food allergy in primary and community settings, encouraging patient-centred care and well-structured links with secondary care.<sup>2</sup>*

## **The NICE guidelines: key steps in diagnosis and assessment of food allergy in children and young people.**

### **Assessment**

- Recognise the signs and symptoms of potential allergy (Box 1)
- Take a thorough allergy-focused history and physically examine the child
- Consider referral, based on key criteria (Box 2)



### **Information and support**

- Offer age-appropriate information relevant to the type of allergy (IgE-mediated, non IgE-mediated or mixed)
- Include the risk of severe reactions, the diagnostic process and support groups



### **Diagnosis**

*Suspected IgE-mediated allergy*  
Offer skin prick tests or specific IgE blood tests  
Tests should be undertaken by a healthcare professional with appropriate competencies

*Suspected non-IgE-mediated allergy*  
Suggest an elimination diet for 2–6 weeks  
Consult a dietitian with appropriate competencies



## Assessment

The first step in the diagnosis of food allergy is to consider whether the child's symptoms may potentially be caused by a food allergy (Box 1). Symptoms can be highly variable, in part because food allergy may be driven by two distinct immune pathologies: IgE- and non-IgE-mediated allergy. Some reactions may involve a mixture of the two and are classified as mixed IgE and non-IgE allergy. Importantly, there are considerable differences in care pathways between the types.

A personal or familial history of atopic conditions is a risk factor for food allergy. In particular, early onset, significant eczema is a risk factor for IgE-mediated food allergy. Therefore, if a food allergy is suspected, a thorough allergy-focused clinical history should be taken, with careful consideration of the history and timing of atopic symptoms in the child, and atopic disease in immediate relatives.

A physical examination should always follow, and may help identify signs of growth problems, malnutrition or allergy-related comorbidities (atopic eczema, asthma, and allergic rhinitis).

Recognising patterns and overlap among symptoms can be key to identifying children with food allergy. For instance, presentation of faltering growth or eczema in combination with gastrointestinal symptoms can be suggestive of food allergy. Similarly, timing can be important; the appearance of symptoms around the time of a change in diet, such as the introduction of a cow's milk-based formula, may provide cause to suspect cow's milk allergy. In addition, food allergy is a possibility if a child has shown an inadequate response to treatment for eczema or gastrointestinal conditions.

### Box 1. Individuals with food allergy may present with a wide variety of signs and symptoms.<sup>2</sup>

*This is not an exhaustive list, and absence of these symptoms does not exclude food allergy.*

	IgE-mediated		Non-IgE-mediated	
Skin	Pruritus Acute urticaria	Erythema Acute angioedema	Pruritus Atopic eczema	Erythema
Gastrointestinal system	Angioedema of lips, tongue, palate Nausea Vomiting	Oral pruritus Colicky abdominal pain Diarrhoea	Gastro-oesophageal reflux disease Blood or mucus in stools Colic Constipation Pallor and tiredness	Loose or frequent stools Abdominal pain Food refusal or aversion Perianal redness Faltering growth*
Respiratory system <sup>†</sup>	Upper respiratory tract symptoms	Lower respiratory tract symptoms	Lower respiratory tract symptoms	
Other	Anaphylaxis	Other systemic allergic reactions		

\*In conjunction with one or more gastrointestinal symptoms; <sup>†</sup>Usually in combination with one or more skin or gastrointestinal symptoms

## Diagnosis

The next steps depend on the suspected mechanism of allergy, and must be undertaken by healthcare professionals with appropriate competencies.

**For suspected IgE-mediated allergy,** the child should be offered skin prick tests (SPTs) or specific IgE blood tests. Tests should include the specific allergen suspected, and possible cross-reactive and co-reactive allergens. For example, many children with cow's milk allergy also have allergy to egg, soya or peanut;<sup>3</sup> therefore tests for these allergens should be considered in a child with suspected cow's milk allergy. The small risk of anaphylaxis with SPTs means that they should only be conducted in settings with appropriate facilities. It is also worth noting that alternatives such as atopy patch tests and oral challenge are not recommended for use in primary care.

**For suspected non-IgE-mediated allergy,** elimination of the suspected allergen from the diet should be trialled for a period of 2–6 weeks, followed by reintroduction. The guidelines emphasise that it is important to seek advice and support from a dietitian, to ensure that food-allergic children receive adequate nutrition during the trial, with careful reintroduction of the allergen and subsequent follow-up.

Although these steps should enable a diagnosis to be made in the majority of cases, variation in symptoms and interpretation of test results can make diagnosis difficult and perplexing. In these cases it may be necessary to refer to secondary or specialist care (Box 2).

### Box 2. When should I consider referral to secondary or specialist care?<sup>2</sup>

During assessment, consider referral if the child has:

- faltering growth in combination with one or more gastrointestinal symptoms
- had one or more acute systemic or severe delayed reactions
- significant atopic eczema where multiple or cross-reactive food allergies are suspected
- possible multiple food allergies.

During diagnosis, consider referral if:

- there is persisting parental suspicion of food allergy despite a lack of supporting history
- symptoms do not respond to a single-allergen elimination diet
- the child has confirmed IgE-mediated food allergy and concurrent asthma
- tests are negative but there is strong clinical suspicion of IgE-mediated allergy.

## Information and support

As part of the patient-centred approach, detailed, age-specific advice and written information should be offered to the child and their carer, including the diagnostic process and available sources of support. It is particularly important to provide carefully selected information to patients and carers undertaking elimination diets, to ensure complete exclusion of the suspected allergen as well as adequate nutrition for the child.

For breast-fed babies with suspected cow's milk allergy, food avoidance advice should be given to the mother, as food proteins can enter the milk of breast-feeding mothers. On the other hand, for bottle-fed children with suspected cow's milk allergy, information on an appropriate hypoallergenic formula or milk substitute should be provided (Box 3).

### **Box 3. Which hypoallergenic formulas or milk substitutes are appropriate for bottle-fed babies with cow's milk allergy?**

*NICE recommends that information on an appropriate formula or substitute should be provided for bottle-fed children with suspected cow's milk allergy, but does not give specific advice. Nonetheless, the following national and international recommendations have been made to help support the choice.*

- Infants with cow's milk allergy who are not exclusively breast fed should receive an extensively hydrolysed formula as first-line.<sup>1,4</sup>
- In cases where extensively hydrolysed formula is ineffective, or where the infant has severe or multiple food allergy, an amino acid-based formula should be used.<sup>1,4</sup>
- Bottle-fed babies with moderate to severe atopic eczema who are suspected of having a food allergy should be offered a 6–8 week trial of an extensively hydrolysed formula or an amino acid-based formula.<sup>5</sup>
- Formulas based on unmodified proteins of other species' milk (for example, goat's or sheep's milk), or partially hydrolysed protein, are not hypoallergenic and should not be used for the management of cow's milk allergy.<sup>1,6</sup>
- Soya-based formulas contain high phytate, aluminium, and phytoestrogen concentrations, the long-term effects of which are unknown. These formulas should not be used in infants with cow's milk allergy before age 6 months, and should not be the first choice thereafter.<sup>1,7,8</sup>



## The guidelines in practice

The NICE guidelines emphasise that a number of core skills and competencies are key to the delivery of high quality care for children with food allergy. At the same time, a number of clinical and governmental bodies have highlighted the pressing need for allergy training in primary and community care.<sup>9,10</sup>

Accordingly, NICE highlights that most GPs may benefit from allergy training, as either first-time training or a refresher course.<sup>11</sup> It is not anticipated that training costs for GPs and other healthcare professionals would have a significant impact on NHS resources because they can be incorporated into continuing professional development, and specialists in allergy could support training at a local level.<sup>11</sup>

Under these guidelines, NICE anticipates that we may see increases in the number of early

diagnoses, and the number of diagnoses made in primary care.<sup>11</sup> Conversely, we can expect reductions in misdiagnosis. Taken together, these factors may result in a reduction in the number of GP visits, with potential for local-level cost savings.<sup>11</sup>

The NICE guidelines outline a careful and methodical approach to diagnosis of food allergy. Combined with a thorough understanding of the underlying pathology, it is anticipated that the guidelines will help successful diagnosis and streamline the care of children with food allergy in primary and community care settings.

The guidelines have been issued alongside a comprehensive care pathway for food allergy, developed by the Royal College of Paediatrics and Child Health.<sup>13</sup>

A number of supporting documents are available for the NICE guidelines, including:<sup>12</sup>

- a costing report
- a slide set
- information for parents and carers

These documents are available from [www.nice.org.uk/](http://www.nice.org.uk/)

### References

**1.** Du Toit G et al. *Arch Dis Child Educ Pract Ed* 2010;95:134–44; **2.** National Institute for Health and Clinical Excellence. CG116: Food allergy in children and young people. 2011; **3.** Bishop JM et al. *J Pediatr* 1990;116:862–7; **4.** Vandenplas Y et al. *Arch Dis Child* 2007;92:902–8; **5.** National Institute for Health and Clinical Excellence. CG57: Atopic eczema in children. 2007; **6.** Host A et al. *Arch Dis Child* 1999;81:80–4; **7.** Agostoni C et al. *J Pediatr Gastroenterol Nutr* 2006;42:352–61; **8.** Department of Health. *CMO's Update* 37 2004;2; **9.** Department of Health. A review of services for allergy. 2006; **10.** Royal College of Physicians. Allergy: the unmet need. 2003; **11.** National Institute for Health and Clinical Excellence. Food allergy in children and young people: costing report. 2011; **12.** National Institute for Health and Clinical Excellence. [www.nice.org.uk/](http://www.nice.org.uk/); **13.** Royal College of Paediatrics and Child Health. Allergy care pathways for children: food allergy. 2011





## Improving the care of infants with cow's milk allergy

Allerni is an educational programme supporting healthcare professionals in the care of infants with cow's milk allergy. The programme publishes a comprehensive range of learning resources, from allergy education for healthcare professionals, to leaflets on weaning and milk-free recipes for parents. Allerni also hosts a programme of seminars around the country, linking front-line practitioners with local allergy experts and leading researchers. For further information please contact Mead Johnson.



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**IMPORTANT NOTICE:** Breastfeeding is best for babies. The decision to discontinue breastfeeding may be difficult to reverse and the introduction of partial bottle-feeding may reduce breast milk supply. The financial benefits of breastfeeding should be considered before bottle-feeding is initiated. Failure to follow preparation instructions carefully may be harmful to a baby's health. Parents should always be advised by an independent healthcare professional regarding infant feeding. Products of Mead Johnson must be used under medical supervision. NUT/NICEnews/7-11 (EU11.536)

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