

## Executive summary

- Cow's milk allergy may be defined as a reproducible adverse reaction of an immunological nature induced by cow's milk protein. (A)
- Cow's milk allergy can be classified into IgE mediated immediate-onset and non-IgE mediated delayed-onset types according to the timing of symptoms and organ involvement. (A)
- The prevalence of cow's milk allergy is between 1.8% and 7.5% of infants during the first year of life. (B)
- Cow's milk allergy commonly presents in infancy, with most affected children presenting with symptoms by 6 months of age. Onset is rare after 12 months. (B)
- Cow's milk allergy has a favourable prognosis, as most children will outgrow their allergy by adulthood. (B)
- Cow's milk allergy is more likely to persist in IgE mediated disease and where there is greater sensitivity (higher specific IgE levels), multiple food allergies and/or concomitant asthma and allergic rhinitis. (B)
- The clinical diagnosis in IgE mediated disease is made by a combination of typically presenting symptoms, e.g. urticaria and/or angio-oedema with vomiting and/or wheeze, soon after ingestion of cow's milk, and evidence of sensitisation (presence of specific IgE). The spectrum of clinical severity ranges from skin symptoms only to life-threatening anaphylaxis. Clinical assessment should include a severity evaluation to ensure affected individuals are managed at the appropriate level. (B)
- The clinical diagnosis of non-IgE mediated disease is suspected by the development of delayed gastrointestinal or cutaneous symptoms that improve or resolve with exclusion and reappear with reintroduction of cow's milk. As with IgE mediated disease, non-IgE mediated disease varies widely in clinical presentation from eczema exacerbations to life-threatening shock from gastrointestinal fluid loss secondary to inflammation (Food Protein Induced Enterocolitis Syndrome (FPIES)). (B)
- Gastrointestinal symptoms of non-IgE mediated cow's milk allergy are variable and affect the entire gastrointestinal tract. There are some well recognised more easily identifiable conditions (e.g. eosinophilic proctitis) but symptoms are more commonly non-specific. Cow's milk allergy should be considered in these circumstances where symptoms fail to respond to standard therapy or where other features of allergy are present. (B)
- Lactose intolerance can be confused with non-IgE mediated cow's milk allergy as symptoms overlap. The terms are thus frequently mistakenly used interchangeably. Lactose intolerance should be considered where patients present only with typical gastrointestinal symptoms. (B)
- The reported levels of IgE required to support a diagnosis of IgE mediated cow's milk allergy varies between studies and depends on the research population. A skin prick test (SPT) weal size  $\geq 5\text{mm}$  ( $\geq 2\text{mm}$  in younger infants) is strongly predictive of cow's milk allergy. (C)
- A food challenge may be necessary to confirm the diagnosis either in IgE mediated disease where there is conflict between the history and diagnostic tests. (D)
- Food elimination and reintroduction is recommended for the assessment of non-IgE mediated cow's milk allergy where there is diagnostic uncertainty. (C)
- The management of cow's milk allergy comprises the avoidance of cow's milk and cow's milk products and dietary substitution with an allergenically and nutritionally suitable milk alternative. (D)
- The choice of cow's milk substitute should take into account the age of the child, the severity of the allergy and the nutritional composition of the substitute. Nutritionally incomplete substitutes can lead to faltering growth and specific nutritional deficiencies. (D)
- As cow's milk is the major source of calcium in infant diets, children on milk exclusion diets are at risk of a deficient calcium intake. A dietitian should assess calcium intake and dietary or pharmaceutical supplementation advised where appropriate. (D)
- Cow's milk allergy will resolve in the majority of children. Individuals should be reassessed at 6-12 monthly intervals from 12 months of age to assess for suitability of reintroduction. (B)
- The reintroduction of cow's milk may be graded according to the 'milk ladder' with less allergenic forms offered initially. More allergenic forms are then eaten sequentially as tolerated. Reintroduction can be performed at home or may need to be supervised in hospital. (D)
- Oral tolerance induction offers a novel treatment option to the small but clinically significant proportion of affected individuals whose cow's milk allergy persists. (C)
- Cow's milk allergy in adults more commonly arises in adulthood but may persist from childhood. This is frequently a severe form of allergy where up to 25% have experienced anaphylaxis. (C)

Grade of evidence/recommendations in parenthesis (see [www.nice.org.uk](http://www.nice.org.uk))