INFANT MILK INTOLERANCE AND ALLERGY: ARE YOU SURE?

Emma Coates RD
Dr Schar, Mevalia Low Protein Dietitian

Milk allergy, milk intolerance, cows' milk intolerance, cows' milk protein allergy, food allergy, food insensitivity, food hypersensitivity, IgE mediated or non IgE mediated, adverse food reaction, non-allergic hypersensitivity… Is it any wonder that many parents and some healthcare professionals are baffled by the world of allergy and intolerance? There are many terms to describe the reactions to food, but which ones are correct?

Allergy and intolerances are commonly seen as part of the caseload of most paediatric dietitians. With the diagnosis and management of an intolerance in comparison to an allergy being quite different, knowing exactly what you are working with is not always clear cut.

Just to clarify, the overall term for food allergy and intolerance is 'Food Hypersensitivity'.[1] 'Adverse food reaction' is also used as the term to describe these reactions.

Any reaction to food which is demonstrated with immunological symptoms is defined as an 'immune mediated' reaction and is sometimes described as a 'food allergy'. 'Immune mediated food allergy' is also used. However, technically, coeliac disease is also included under this umbrella as it's a non IgE mediated reaction. But many consider it not to be an allergy.

Immune mediated reactions can be further subdivided in to three categories:

1. IgE mediated - for example in cows' milk allergy; causing immediate onset symptoms* such as vomiting, abdominal pain, diarrhoea and/or bloody stools, atopic symptoms such as wheezing and/or coughing, urticarial rash/hives, angioedema, blocked or runny nose. In severe cases anaphylaxis. Oral allergy syndrome (pollen associated food allergy syndrome) can also present as a consequence of IgE mediated activity.
2. Non-IgE mediated - for example in cows' milk allergy; causing later onset of symptoms** such as abdominal pain and distention, diarrhoea, constipation, colic, nappy rash, worsening eczema.
3. Mixed IgE and non-IgE mediated - for example in allergic eosinophilic oesophagitis where chronic abdominal pain, vomiting and swallowing difficulties develop. Eczema is also a consequence of this type of reaction.

* Within 30 minutes of consumption

** May take two to four hours for symptoms to present. Can been quite delayed and present after eight hours.

Any food reaction where there is no immunological involvement, the term 'non immune mediated' reaction should be used. This brings us on to the term 'intolerance'; for example, both lactose intolerance and fructose intolerance are enzymatic non-immune mediated reactions. There are also pharmacological non-immune mediated reactions where histamine, sometimes found in fish or tyramine, found in ripe cheese, beers and red wine, are responsible for symptoms.

WHO REALLY HAS AN ALLERGY OR INTOLERANCE?

Immune mediated food allergy is quite rare, affecting approximately up to 8% of children in the UK,[2,3] with cows' milk allergy affecting 3-6% of infants and children.[2] In 2014 the EAACI (European Academy of Allergy & Clinical Immunology) Food Allergy and Anaphylaxis Guidelines Group conducted a systematic review and

Emma has been a Dietitian for almost 10 years, working within the NHS in both adult and paediatric care for eight years. She is now Metabolic Dietitian at Dr Schar UK.

Table 1: An overview of milk allergy and lactose intolerance

Condition	Key points
Milk allergy - an immune mediated reaction to the proteins within mammalian milks, e.g. cows', goats' and sheep	
Cows' milk protein allergy Cows' milk allergy	Commonly seen in infants less than six months of age. Can be IgE or non IgE mediated. Immediate or delayed reactions can occur. If IgE mediated - diagnosis via blood tests and skin prick tests to indicated presence of IgE. Good clinical history taking to determine non IgE mediated or intolerance diagnosis. Treat with extensively hydrolysed or amino acid infant formulas. Exclusion of milk and products containing milk.
Lactose intolerance - an intolerance to lactose, the sugar within mammalian milks. Caused by lactase deficiency and there is no immune mediated activity involved.	
Primary lactose intolerance	Widely linked to ethnicity. Most commonly seen in children over three years of age. Late onset or delayed reactions tend to occur. Severity of symptoms can vary greatly. Caused by a gradual reduction in lactase as the child grows. Diagnosis via hydrogen breath test or stool testing for reducing substances or pH.* Exclusion or reduction of lactose within the diet. Often some lactose is tolerated depending on the individual. *Can be difficult to complete and services to complete the tests may not always be available. Also used in the diagnosis of other forms of lactose intolerance. Some questionability regarding accuracy when used invery young babies.
Developmental lactase deficiency	Presents in young infants, particularly premature babies.** Late onset symptoms tend to occur, in particular, colic like symptoms and/or diarrhoea. Lactase drops and/or a trial of a lactose free formula may be beneficial in its management. **Caused by lactase deficiency until at least 34 weeks gestation. Lactase activity mostly develops in the final trimester of pregnancy [8]
Congenital lactase deficiency (Primary alactasia)	Very rare form of lactose intolerance. A hereditary condition (autosomal recessive gene). Caused by an almost complete absence of lactase. Presents at birth when first milks feeds are given. Characterised by watery diarrhoea and faltering growth. Lactose-free formula to be given. Breastfeeding is contraindicated. Strict lifelong lactose-free diet is required.
Secondary lactose intolerance	
Acute lactase deficiency	Caused by damage to the intestinal villi where lactase activity takes place. Often as a result of gastrointestinal infection, e.g. rotorvirus. Common symptoms include diarrhoea, abdominal pain, bloating if milk is regarded into the diet. Treatment via a lactose-free formula and/or lactose-free diet for six to 12 weeks. Gradually reintroduce lactose into the diet thereafter.
Chronic lactase deficiency (CLD)	If regrading milk back in to the diet after a six- to 12-week exclusion is unsuccessful, CLD may be caused by an underlying condition. Cows' milk allergy, inflammatory bowel disease, coeliac disease and the side effects of chemotherapy treatment are possible causes. Loose, watery, bloody or mucousy stools, abdominal pain/discomfort, faltering growth, food refusal plus any of the atopic symptoms may occur. Further exclusion of milk and products containing milk is recommended.

meta-analysis of the prevalence of common food allergies in Europe,[4] It found that overall between 1-6% of common lifetime* food allergies were self-reported. In milk allergy, up to 3% of lifetime cases were 'food challenged defined' with around 6% of cases being self-reported.

*defined as 'the proportion of the population that at some point in their life will have experienced food allergy'.[5]

Table 2: YouGov report 'Understanding the free-from market' findings, 2015: health related reasons why parents are reducing diary in their children's diet

It's healthier/better for you	27%
It'll help with weight loss	11%
They have tried a reduction and feel better as a result	10%
They feel less tired if it is reduced	9%
An intolerance is suspected	22%
It helps my child's mood	14%
It was recommended by a friend/member of the family	11%
It was recommended by a healthcare professional	1%

The statistics for non-immune mediated reactions show a variable prevalence depending on ethnicity. Up to 70% of the global population suffer from primary lactose intolerance.[6,7] However, Allergy UK states that 'perhaps one in five people will suffer symptoms suggestive of lactose intolerance'.[2] Primary lactose intolerance is less common in Europeans, with approximately 2% of people affected, but incidence amongst people of American Indian and Asian origin may be as high as almost 100%.[6]

A MATTER OF CHOICE?

There is evidence to suggest that the prevalence of allergies and intolerances is increasing. Prevalence is not only increasing within the European population, but in countries where there is much industrial development occurring. In Europe, cases of food allergies have doubled over the last decade, with hospital admissions, because of severe allergic reactions, increasing seven fold.[2] There is also evidence to suggest that a growing number of people are choosing dairy free as a 'healthier option'.

A recent report by YouGov[9] reviewed the potential for the free-from foods market in the UK. It was found that nearly one in five people in the UK consider themselves to have a food allergy or intolerance (12% food intolerance, 6% food allergy, 1% coeliac disease). Up to a quarter of UK households includes at least one allergy or intolerance sufferer. In August 2015, 1,328 adult participants completed the YouGov online survey, which included 20 questions covering a variety of aspects relating to free-from diets and products. The survey also looked at reasons for reducing dairy in the diet. Of the overall participants, 13% were actively trying to reduce their intake of dairy; however, 69% of these participants did not have a dairy intolerance or allergy. 15% of parents included in the survey were actively reducing the amount of dairy they give to their children. Of this, 6% of participants with children were reducing dairy in their diet due to an actual dairy allergy or intolerance. There were numerous reasons why parents were aiming to reduce the amount of dairy in their children's diet. These are summarised in Table 2.

The most commonly bought free-from products were milk, cheese and yoghurt. The report found that there is a great potential for the free-from market to grow in the UK. 39% of parents in the survey were buying specially designed free-from foods for their children. This was an increase from 28% in the previous year. 31% of parents were sending their children to school with a packed lunch due to a reported allergy or intolerance.

As healthcare professionals, we are responsible for ensuring appropriate information regarding the indications for and the management of reducing or excluding dairy from the diet, is provided to parents who come to clinic. Yet, it seems that we may only be reaching the tip of the iceberg. The low rate of healthcare professional guidance for the general population, which is indicated in the YouGov report, is quite alarming: only 1% of participants received the recommendation to reduce or exclude dairy from their child's diet via a healthcare professional.

As I mentioned at the start of this article, knowing the difference between allergy and intolerance along with all of their intricacies is a challenge for many parents (and some healthcare professionals), which is a concern, as there are many parents choosing to reduce or exclude dairy from their child's diet based on 'suspected intolerance'. Unnecessary reduction or exclusion of dairy foods from the diet during childhood can be detrimental to the child's bone health and development and, although there are dairy free alternatives available which are being purchased, we cannot be certain that consumption of these are adequate to meet a child's daily requirements for calcium.

For article references please email:
info@networkhealthgroup.co.uk