

Patient information

Cow's milk protein allergy (immediate and delayed symptoms)

IgE mediated allergy with immediate type symptoms

Background

- Milk allergy is an abnormal response of the body's immune system to the proteins in milk.
- About 80% of cow's milk proteins are casein and 20% are whey proteins - such as lactalbumin, lactoglobulins. Milk proteins used in processed foods are often labelled as caseinates or whey, but under new EEC labelling will clearly have the word milk in **bold type** in the ingredients list. Most children with milk allergy will react to both casein and whey.
- Allergy to milk is the commonest food allergy in infants and young children and affects about 1 in 50 children. It usually starts when infants are first given cow's milk or milk products (eg formula milk or a weaning food containing milk).
- About 20% of infants outgrow milk allergy by 1 year, and nearly all by 3 years.
- It is unusual to develop milk allergy later in life, but some children will continue to have immediate type severe symptoms to small traces into adult life.
- Most children with milk allergy will get a reaction to goat's milk, as the proteins are very similar. Some infants (about 20–30%) may also react to soya, especially if this has been given before 6 months.

Symptoms of IgE mediated milk allergy

- In early infancy symptoms are usually urticaria (nettle rash, hives), swelling, vomiting, diarrhoea, eczema and wheeze (occasionally floppiness).

- As infants get older more typical symptoms are:
 - Redness and hives around the mouth, which can spread; and swelling
 - Runny nose, sneezing and red itchy eyes
 - Throat sensation, choking, gagging, cough, wheeze and difficulty breathing
 - Vomiting, diarrhoea, tummy pains and cramps
 - Anaphylaxis in a small number of children
- Some children have delayed reactions to cow's milk ingestion. We call this form non-IgE mediated milk allergy. More information is provided overleaf.

Diagnosis

- Symptoms are usually confirmed by a positive allergy test, although this is not always possible or conclusive in young infants.
- Allergy tests are skin prick tests or blood tests for IgE antibodies, or dietary challenge if needed.

Treatment

- When a child is diagnosed with milk allergy, avoiding cow's milk proteins is the recommended treatment until the child develops tolerance or grows out of the allergy. In some children where tolerance does not occur by school age (about 6 years), avoidance may not need to be continued life long as we can treat them to help them develop tolerance – called oral immunotherapy (OI).
- **Rarely**, some children may remain anaphylactic to cow's milk protein and therefore need to very strictly avoid all traces, and carry an EpiPen or Jext.
- **Our dietitian will provide advice and written information on excluding cow's milk and suitable substitutes.**
- All children under 2 years require a suitable complete substitute infant formula, usually a hypoallergenic formula. A calcium supplement will be recommended if too little milk substitute is taken. Your Dietitian will advise you on this.
- **All** infants who are continuing breast milk as the main feed after 6 months require a multi vitamin syrup containing Vitamin D such as Dalivit or an over the counter preparation.

Non-IgE mediated allergy with delayed type symptoms

Background

- Not all children with milk allergy have immediate symptoms like hives, swelling and vomiting.
- Symptoms of milk allergy can be delayed. These usually involve the gut (eg colic, reflux, diarrhoea, persisting constipation, failure to gain weight) or the skin with eczema. We refer to these presentations as non-IgE mediated milk allergy.
- As many of these symptoms can occur in young children without allergy, other treatments are often suggested first (eg anti-reflux medicines) before a milk exclusion diet.
- Non-IgE mediated milk allergy also usually starts in infancy when children are first given cow's milk or milk products (eg formula milk or a weaning food). **But**, because the symptoms are not severe and are delayed (perhaps 3 hours to 3 days after ingestion), the child may be older before a diagnosis is made.
- As in IgE mediated milk allergy, most children with non-IgE mediated milk allergy will also grow out of their allergy at similar ages. However, some may continue to have a poor tolerance to large amounts of cow's milk.
- Most children with milk allergy will get a similar reaction to goat's milk, as the proteins are very similar. Some infants (about 20–30%) may also react to soya, especially if this has been given before 6 months.
- **Lactose intolerance** is not a type of cow's milk allergy. It is caused by a lack of or deficiency in lactase (an enzyme in the gut that digests milk sugar). There are two main causes:
 - Inherited: Some children lose the lactase in their gut as they get older.
 - Acquired: After damage to the lining of the gut that can occur in gastroenteritis or Coeliac disease. This 'damage' is usually temporary and heals quickly when the cause is removed.
 - Symptoms are frequent watery diarrhoea, red soreness of the nappy area, wind / bloating and tummy ache.

Symptoms of non-IgE mediated milk allergy

- Symptoms are usually delayed, occurring anywhere between 2 hours to days

after ingestion of cow's milk.

- Younger children present mostly with gut symptoms of poor feeding, refusal to feed, colic, screaming episodes, back arching, diarrhoea, blood or mucus in the stool, constipation and poor weight gain. They can also have extensive itchy eczema.
- In later childhood, symptoms are more likely to include recurrent vomiting episodes, nausea, tummy aches, poor appetite, diarrhoea, chronic constipation or a runny nose.

Diagnosis

- Symptoms after the introduction of cow's milk, and improvement when cow's milk is removed.
- Blood tests if there is poor weight gain. Allergy tests are less useful.

Treatment

- Our approach to treatment is similar to that for immediate type symptoms.
- **Our dietitian will provide advice and written information on excluding cow's milk and suitable substitutes.**
- All children under 2 years require a suitable complete substitute infant formula, usually a hypoallergenic formula. A calcium supplement will be recommended if too little milk substitute is taken. Your Dietitian will advise you on this.
- **All** infants who are continuing breast milk as the main feed after 6 months require a multi vitamin syrup containing Vitamin D such as Dalivit or an over the counter preparation.

With thanks to the Children's Allergy Clinic, University Hospitals of Leicester NHS Trust, for permission to reproduce this information.

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