

Cow's milk allergy: the facts

This factsheet aims to answer some of the questions you and your family might have about cow's milk allergy. It will help you understand:

- the types of cow's milk allergy and the symptoms
- how cow's milk allergy is diagnosed
- how to manage the allergy after diagnosis

Cow's milk allergy happens when the body's immune system wrongly identifies proteins in cow's milk to be a threat.

In the UK, cow's milk allergy affects 2-3 out of 100 babies. Cow's milk allergy usually starts in babies under 12 months of age, with most outgrowing their allergy during childhood. Cow's milk allergy is uncommon in adults. Older children and adults who are allergic to cow's milk tend to have a more serious cow's milk allergy.

What are the types of cow's milk allergy?

There are two types of cow's milk allergy: immediate and delayed.

Immediate cow's milk allergy is also called 'IgE mediated' as it involves IgE antibodies, which are part of the immune system. Reactions are usually very fast and happen between minutes and up to 2 hours after drinking cow's milk or eating dairy containing foods. Symptoms can vary, but in some people this type of allergy has the potential to cause a serious, life-threatening allergic reaction called anaphylaxis.

Delayed cow's milk allergy is also called 'non-IgE mediated' as it involves a different part of the immune system, not involving IgE antibodies. Symptoms can vary, but mainly affect the digestive system and the skin. Symptoms usually occur between 4 - 48 hours after drinking cow's milk or eating dairy containing foods.

With both types of cow's milk allergy, there is often (but not always) a close family history of allergy such as eczema, hay fever, asthma or food allergy in a mother, father, brother or sister.

What are the symptoms of cow's milk allergy?

Immediate cow's milk allergy

Symptoms can include:

- rash (known as hives or urticaria)
- swelling of the skin (known as angioedema) anywhere on the body (e.g. lips, face)
- stomach pain, feeling sick and vomiting
- change in behavior

More serious symptoms are often referred to as the ABC symptoms and can include:

- AIRWAY - swelling in the throat, tongue or upper airways (tightening of the throat, hoarse voice, difficulty swallowing)
- BREATHING - sudden onset wheezing, breathing difficulty, noisy breathing
- CIRCULATION - dizziness, feeling faint, sudden sleepiness, tiredness, confusion, pale clammy skin, loss of consciousness

The term for this more serious reaction is “anaphylaxis”. In extreme cases there could be a dramatic fall in blood pressure. The person may become weak and floppy and may have a sense of something terrible happening. This may lead to collapse and unconsciousness and on rare occasions can be fatal.

Most healthcare professionals consider an allergic reaction to be anaphylaxis when it involves the ABC symptoms. Click [here](#) to read our anaphylaxis factsheet for further information. It is essential that someone having anaphylaxis is given adrenaline.

Delayed cow's milk allergy

Symptoms can include:

- stomach pains
- diarrhoea (which might be bloody)
- constipation
- being sick
- itchy skin
- unexplained rash
- eczema

A rare type of delayed allergic reaction to food is called Food Protein Induced Enterocolitis Syndrome (FPIES). The condition is more common in babies and young children and cow's milk protein is one of the most common causes. Symptoms of FPIES include diarrhoea and severe and repeated vomiting. FPIES can result in drastic fluid loss - this is a medical emergency and urgent hospital admission is required.

There are other types of delayed allergic conditions also triggered by milk. There are also non-allergic conditions triggered by milk, which do not involve the immune system, such as lactose intolerance. These conditions are not covered in this factsheet.

How is cow's milk allergy diagnosed?

If you suspect you or your child is allergic to cow's milk, you must see your GP. If you need to be referred to a specialist allergy clinic, your GP can locate one in your area by visiting the website of the British Society for Allergy and Clinical Immunology (BSACI): <https://www.bsaci.org/find-a-clinic/index.htm>

Immediate cow's milk allergy is confirmed by a healthcare professional:

- discussing the reactions and symptoms with you
- taking a detailed family allergy history and allergy focused history
- analysing results from allergy testing (skin prick and blood tests called specific IgE tests)

In a minority of cases a 'food challenge' may also be needed to confirm the diagnosis.

Delayed cow's milk allergy can be more difficult to diagnose as there are no allergy tests that can tell whether a delayed allergy is present. Symptoms can also be similar to common conditions in babies, such as colic.

This type of allergy is confirmed by:

- removing all the cow's milk protein from the diet for a set period of time (2-4 weeks). In bottle fed babies this will mean changing to a milk-free formula. In breastfed babies, this sometimes means the mum needs to follow a milk-free diet.
- After 2-4 weeks the cow's milk containing foods are reintroduced in a planned way, while monitoring symptoms.

All cow's milk must be removed for between 2-4 weeks, which should be discussed with a healthcare professional. For someone with delayed cow's milk allergy, the symptoms will improve when cow's milk is taken out of the diet and will reappear when cow's milk is introduced again.

How are allergic reactions treated?

For those with immediate cow's milk allergy, mild allergic symptoms can be treated with antihistamines.

If there is a risk of anaphylaxis, adrenaline auto-injectors (AAIs) will be prescribed. Two AAIs should be available at all times and it is important to know how and when to use them. An AAI should be used as soon as anaphylaxis is suspected, and a second AAI can be used after 5 minutes if symptoms don't improve or get worse.

After the first AAI is used, someone must dial 999 immediately. The emergency service operator must be told the person is suffering from anaphylaxis (pronounced ana-fill-axis). Click [here](#) to read our Adrenaline factsheet for further information.

The importance of a dietitian

Cow's milk is a source of protein, energy, fat, vitamins and minerals (such as calcium and iodine). If you or your child have a cow's milk allergy, your GP or allergy clinic can refer you to a dietitian. This is important as a dietitian can give advice about which foods to avoid and suggest dairy-free alternatives, so you can achieve a balanced diet. Your dietitian can also advise whether it is necessary to take a vitamin or mineral supplement.

Avoiding cow's milk

If you are allergic to cow's milk you need to read food labels carefully. When eating out in restaurants, takeaways and other catering establishments question staff directly about ingredients.

Cow's milk protein can be found in the following foods and ingredients:

- Butter, buttermilk, butter oil, ghee and margarine
- Casein (curds), caseinates, hydrolysed casein, calcium caseinate, sodium caseinate
- Cheese, cheese powder and cottage cheese
- Cow's milk (fresh, condensed, dried, evaporated, powdered e.g. infant formulas)
- Cream, sour cream, crème fraiche and ice cream
- Lactalbumin and lactoglobulin
- Whey, hydrolysed whey, whey powder, whey syrup sweetener
- Yogurt and fromage frais

Cow's milk may also be found in some cosmetics and personal care products – it is

important to read labels carefully.

Reintroducing cow's milk

Your allergy specialist or dietitian will advise when it is appropriate to start reintroducing milk into the diet. For those with a delayed milk allergy, this will be done gradually, usually at home, following something called a 'milk ladder'. Baked milk is less likely to cause allergic reactions than lightly heated or fresh milk, so it is likely the advice will be to start with very small quantities of baked milk within food products (such as cakes or biscuits). This should only be done under the advice of a healthcare professional.

With immediate cow's milk allergy, it is likely that further skin prick or blood tests will be needed before the reintroduction of milk, and that reintroduction will be supervised in an allergy clinic.

Reactions through touch and inhalation

Serious allergic reactions will usually only occur when the milk protein is actually consumed, although reactions can be triggered by either touch or inhalation (breathing in).

A splash of milk on the skin can cause a skin reaction, such as a rash. If the milk were to get through a cut in the skin, onto the lips or in the eye then the reaction could be more serious.

Cow's milk protein can become airborne when milk is heated, this can cause reactions if it is inhaled for very sensitive people. For example, in coffee shops, 'frothing milk' has been known to cause itchiness in the eyes and nose.

It is important to talk to your GP or allergy specialist about these types of contact reactions and how to manage the risk of a serious allergic reaction.

How do I feed my baby with cow's milk allergy?

The importance of breastfeeding

Cow's milk allergy typically occurs when formula milk is introduced to a baby's diet or when weaning on to solid foods is started. Cow's milk allergy happens less in exclusively breastfed babies compared to formula-fed or mixed fed babies.

If your breastfed baby has a cow's milk allergy you should continue to breastfeed and seek advice from your GP or dietitian. If the baby has no allergy symptoms when only breastfeeding, then there is no need for the mum to cut cow's milk out of her diet. If the baby does have symptoms while breastfeeding, the mum may be advised to cut cow's milk out of her diet. In this case, the mum should be prescribed a calcium and vitamin D supplement.

Hypoallergenic formulas

If not breastfeeding, a type of hypoallergenic infant formula called 'extensively hydrolysed formula' can be prescribed. These formulas are suitable for babies with cow's milk allergy as they contain fully broken-down proteins. In serious cases, an 'amino-acid formula' may be prescribed. These do not contain any cow's milk proteins.

The 'Comfort' range of formulas

The 'comfort' range of formulas are not suitable as the proteins are only partially broken down.

Lactose-free milk

Lactose is a sugar naturally found in cow's milk. Lactose-free milk is not suitable as it still contains the milk proteins which cause allergic reactions.

Soya-based formulas

These are not suitable for babies less than six months old. After six months old, soya-based formula may be considered for some children, but it is important to seek the advice of your GP or dietitian.

Rice milk and other milk substitutes

Rice milk is not recommended before the age of four and a half years. Ready-made oat, coconut, almond, pea and other 'milk' substitutes may be used after two years of age, but it is important to seek the advice of your GP or dietitian.

Milk from other mammals

Milk from mammals, such as goat and sheep, all share similar proteins so are not recommended.

Is cow's milk allergy outgrown?

Most cases of cow's milk allergy are outgrown during childhood. After that, it can still be outgrown, but some children will stay allergic into adult life. It is possible but unusual for cow's milk allergy to start in adulthood.

Delayed cow's milk allergy will usually be outgrown more quickly than immediate cow's milk allergy, commonly in the first few years of life.

Hopes for the future

There are ongoing studies in the development of immunotherapy (also known as desensitisation) treatments for cow's milk allergy. Click [here](#) to read our Allergen Immunotherapy factsheet for further information.

Key messages

- If you or your child experience allergic symptoms after drinking cow's milk or eating dairy containing foods, it is important to visit your GP and seek medical advice
- In most cases, cow's milk allergy is outgrown during childhood
- Your GP or allergy specialist, with support from a dietitian, can advise which foods need to be avoided and how to achieve a balanced diet
- If there is a risk of anaphylaxis, AAIs will be prescribed - two AAIs should be available at all times and it is important to know how and when to use them

Feedback

Please help us to improve our information resources by sending us your feedback at: -

<https://www.anaphylaxis.org.uk/information-resources-feedback/>

Sources

All the information we produce is evidence based or follows expert opinion and is checked by our clinical and research reviewers. If you wish to know the sources we used in producing any of our information products, please contact info@anaphylaxis.org.uk and we will gladly supply details.

Reviewer

This factsheet was peer-reviewed by Rachel de Boer, Specialist Paediatric Allergy Dietitian.

Disclosures

We are not aware of any conflicts of interest in relation to the review of this factsheet.

Disclaimer

The information provided in this factsheet is given in good faith. Every effort has been taken to ensure accuracy. All patients are different, and specific cases need specific advice. There is no substitute for good medical advice provided by a medical professional.

About Anaphylaxis UK

Anaphylaxis UK is the only UK-wide charity solely focused on supporting people at risk of serious, life-threatening allergic reactions. We provide information and support to people living with allergies through our free national helpline. We also campaign and fundraise to achieve our ultimate aim, to create a safer environment for all people at risk of serious allergies. Visit our website www.anaphylaxis.org.uk and follow us to keep up-to-date with our latest news. We're on Facebook @anaphylaxixUK, LinkedIn, Instagram @anaphylaxisUK, Twitter @AnaphylaxisUK and YouTube.