# COW'S MILK ALLERGY

allergy foundation south africa

http://www.allergyfoundation.co.za

A food allergy is a hypersensitivity reaction that involves the immune system (see what is an allergy). Although up to 20-30% of people believe they have a food allergy, studies show that between 2% and 5% of people suffer from a definite food allergy (see food allergy). Cow's milk allergy affects 2-7.5% of infants and children, and is common in the first 3 years of life.

## WHAT CAUSES COW'S MILK ALLERGY?

- Milk contains many different proteins that can cause allergic reactions.
- The main proteins are casein and whey.
- Casein is the curd on top of milk that forms when milk is left to go sour. About 80% of protein in milk is casein. Casein protein is not broken down by heating.
- Whey is the watery part. Whey makes up the other 20% and can be broken down by heating (whey allergic patient may be able to tolerate boiled milk or food cooked with milk).

## WHAT IS LACTOSE INTOLERANCE?

- Lactose is the sugar found in milk. Lactase is an enzyme that breaks down lactose so that it can be absorbed by the gut.
- If lactase levels are low, milk sugar cannot be broken down, so it builds up in the gut causing bloating, diarrhoea, gas, nausea and stomach pain. Lactose intolerance never causes severe allergy symptoms or anaphylaxis.
- Lactose intolerance is very rare in babies becoming more common in older children and adults.
- Lactose intolerance varies from mild to very severe. Some people can eat or drink a small amount without getting symptoms and get ill when they eat too much, but others get severe symptoms with a very small amount of milk.
- There are many dairy products with lower lactose levels than milk. Some people with lactose intolerance can eat yoghurt and cheese for example. There are also low lactose and lactose-free milks available as well as lactase enzyme replacements that can be added to milk products or eaten before consuming a milk product.
- A person with a true milk (protein) allergy will have allergic symptoms if they eat lactose-free dairy products.

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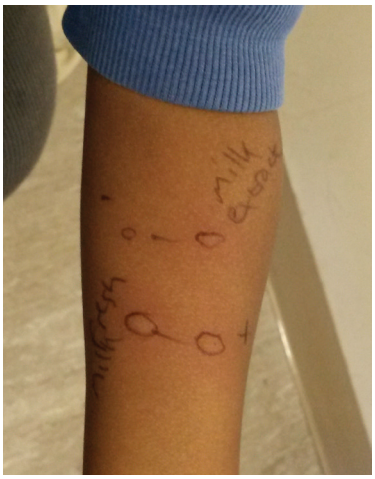
## MILK ALLERGY REACTIONS

- About 40% of reactions to cow's milk are "immediate" type (IgE-mediated) food allergy reactions, which occur within minutes to up to 2 hours after exposure (see food allergy brochure).
- Reactions may be mild or life-threatening and include hives, flushing, swelling, itching, nausea, vomiting, wheezing, difficulty breathing and collapse (anaphylaxis).

## HOW IS THE DIAGNOSIS MADE?

- The first step is for the doctor to hear all the details about what was eaten and exactly what reactions occurred. This will help indicate whether the reaction was an allergy or not and if it was an allergy, what kind of reaction it was and whether it was mild or severe. For immediate reactions a blood test and/or skin prick tests can be done to show the presence of the IgE antibodies. If these tests are negative an immediate type allergy is almost always ruled out. A "positive" result supports, but does not prove an immediate type food allergy, unless the values are very high.



- Blood tests are available to test for whole milk as well as the casein and whey proteins.
- Skin prick tests are done by placing a few drops of milk (fresh milk or specially manufactured milk extract) on the skin and making a prick through the droplet (see skin prick testing).
- In cases which are uncertain, the allergist may recommend a supervised food challenge to test for milk allergy. This entails giving initially tiny, then increasing amounts of milk to the person in a controlled setting (see oral food challenge tests).

## MANAGEMENT

- If you allergic to milk, you must avoid drinking whole milk and eating all dairy products.
- Parents should read food labels and recognize terms that may indicate the presence of cow's milk protein. These include terms such as whey, lactose, casein, caseinate, lactalbumin and lactoglobulin.
- Milk proteins are changed when they are cooked to become much less likely to cause an allergic reaction. Because of this, it is common for people with milk allergy (e.g. to drinking a cup of milk) to be able to eat milk without any symptoms if it is cooked as a minor ingredient in a meal and at a high temperature for a long time. This is referred to as "being tolerant" of "baked milk"

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- This is why many people with milk allergy can still eat biscuits or cupcakes that have been cooked with milk as a minor ingredient. These people should be encouraged to continue to eat the baked milk on a regular basis. This may even help them to outgrow their "whole milk" allergy!
- Avoiding foods is difficult! A dietician experienced in managing food allergy will provide advice, recipes and education on how to achieve a nutritious and complete diet.
- People on milk-free diets need calcium supplements.

## EMERGENCY TREATMENT

- Milk may be difficult to avoid completely and accidental reactions do occur.
- Caregivers in schools, family members and friends should know about the allergy and what to do in an emergency. A detailed "action plan" should be provided in case of reactions. This should clearly describe the difference between mild and severe reactions as well as what to do if different types of reactions occur. The action plan should be highly visible at home and in the school/work environment.
- The patient should have access to their emergency treatment at all times. For milder reactions an anti-histamine may be enough. For severe reactions, injectable adrenaline will be needed.
- The allergy doctor should decide on whether a person with allergy is at risk to have a severe reaction. People with previous severe reactions or at risk of severe reactions should carry injectable adrenaline with them at all time, preferably in the form of an auto-injector.

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**COW'S MILK ALLERGY ACTION PLAN**

**Ambulances:**

Municipal: 10177
ER24: 084 124
Netcare 911: 082 911

Plan prepared by Dr.: _____

Signed: _____ Date: _____

Hospital/Clinic: _____

Tel no.: _____

- People who have been prescribed an autoinjector must be trained when and how to use it and carry it with him/her at all times.

- Milk allergic individuals should wear a Medic alert or similar bracelet, especially if they have a severe allergy or also have asthma.

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## TREATMENT IN INFANTS

- It is very uncommon for a baby to have symptoms of cow's milk allergy while breastfeeding, as the levels of cow's milk protein passed through into the mother's milk are very low. Even if a baby has proven cow's milk allergy to their formula and is still breastfeeding as well, it is often not necessary for a breastfeeding mother to avoid all milk in her own diet, as babies often tolerate these trace amounts. If, however symptoms do occur, the mother will have to

  avoid milk while supplementing her own diet with calcium.
- In older children and adults, cow's milk can be more easily avoided, but babies get most of their nutrition from milk.
- Where severe and life-threatening reactions to milk occur, an infant should be put on a milk formula where the protein chains have been completely broken down into tiny amino-acids. Amino-acid based formulas include Aminomed, Neocate, Neocate Advance and Neomino.
- For milder reactions a baby may tolerate a milk formula where the protein chains have been very broken down into small pieces, but not into their individual building block. Such extensively hydrolysed formula include Alfare, Alimentum, Allernova or Pepticate
- Soy- based milk may be considered for children with immediate type food allergy if soy allergy has been excluded on history and skin or blood tests.
- Goat, ewe, mare and donkey milk is almost identical to cow's milk and people with cow's milk allergy almost always also have reactions to these milks. They also are not formulated for a baby's only nutrition. They are not recommended for babies with milk allergy.

## WILL THE MILK ALLERGY BE OUTGROWN?

- Most children outgrow their milk allergy but this depends on the type of allergy, the time of diagnosis, the level of antibodies at the time of diagnosis and the specific milk protein to which the child is allergic.
- Children who are allergic to casein are less likely to outgrow their allergy.
- Children with milk allergy should see their allergy doctor regularly to check their growth and nutrition and to make sure they are managing to avoid the food and are able to treat any accidents correctly.

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- The allergy doctor will monitor the allergy yearly either by skin prick or blood test. If those tests indicate that the allergy may have been outgrown then you (or your child) may be brought into hospital or clinic as a day case for a milk challenge.
- A milk challenge is a supervised procedure where increasing doses of milk will be fed to the patient to decide if tolerance has developed and if that the person is no longer allergic to milk (see oral food challenges).

## DELAYED TYPE (NON IGE MEDIATED) FOOD ALLERGY

This type of allergy is less common than immediate type food allergy (see delayed food allergy pamphlet).

- The reason delayed type food allergy has this name is because symptoms only occur hours to days after eating the offending food. Because of this, it is often much more difficult to recognise or associate with a certain food.
- Symptoms of delayed type food allergy commonly cause poor growth and involve the gullet, stomach or bowels,
- Unlike immediate type (IgE mediated) allergies, where skin prick tests and/or blood tests (which detect IgE antibodies to various foods in the blood) may be useful, there are no regular laboratory tests that can either rule in or rule out a delayed type food allergy.
- In this case an "elimination-challenge" test is performed. This should demonstrate the relief of symptoms on removal of milk from the diet as well as the recurrence of symptoms when milk is reintroduced. This should be supervised by a doctor and dietician.

A medical specialist with a special interest and skill in allergy might be able to help. See the list of health professionals with skills in allergy on the AFSA website.

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