

Milk substitutes and nutrition

Milk is a significant source of protein, fat, calcium and vitamin D. It is important to ensure that your child meets his/her nutritional needs because improper nutrition can lead to serious health problems such as weight loss, poor growth, and weak bones. Nutritional requirements change from infancy to childhood to adolescence. Below are a number of substitutes so your child can receive adequate nutrition with a milk-free diet.

Infants

- Breast feeding is the best option; however it is not always possible. If breast feeding, the mother must avoid foods that the baby is allergic to.
- If breast feeding is not an option, a formula that does not contain cow's milk is the next best alternative.
- To ensure that your infant is receiving enough fat, protein, calcium, and vitamins, breast feeding or formula may be used up to 18 to 24 months of age.
- Soy formula may be substituted, but many infants who are allergic to milk are allergic to soy as well.
- Rice milk is not a proper nutritional replacement.

Toddlers

- Toddlers have high protein requirements, but require less fat than infants. It is still important that they get enough vitamins and calcium. The vitamins can come from fruits and vegetables. A toddler needs about 600 mg of calcium a day. There are several options for calcium replacements.
 - Milk substitutes such as soy or rice milk
 - Calcium-fortified juices, such as orange juice with calcium
 - Calcium supplements

Children, adolescents, and adults

- It may be challenging to make sure your child or adolescent receives proper nutrition. The following can be great milk replacements for people with milk allergy from childhood through adulthood.
 - Milk substitutes such as soy or rice milk
 - Calcium-fortified juices
 - Calcium supplements
 - Green leafy vegetables (broccoli, collards, kale, mustard greens, turnip greens, bok choy)
 - Canned salmon or sardines, shellfish, almonds, Brazil nuts, and dried beans (only if your child is not allergic to them)

Goat's or sheep's milk vs. cow's milk

Goat's and sheep's milk cannot be substituted for cow's milk because they contain many of the same proteins. Most people who are allergic to cow's milk are allergic to goat's and sheep's milk as well.

Milk Substitutes and Cooking

There are also a number of items that can be used to substitute milk in recipes that call for it. The website www.foodallergykitchen.com has many substitutes for milk-containing ingredients. Water, fruit juice, soy milk, and rice milk can be used as milk substitutes while cooking.

One word of caution about milk substitutes. Some milk substitutes may still contain milk, so be sure to read the label carefully before giving the food to your child.

What about baking without butter? Margarine, cooking oils, and vegetable shortening can be used to substitute for butter in baking. But, be sure to read the label since some of these products might still contain milk.

And what about cheese? Soy- and rice-based cheese substitutes can be used, but again be very careful to read the label, since some soy cheeses especially may contain milk protein.

PROGNOSIS

Milk allergy is often outgrown. In fact, 80% of children with a milk allergy outgrow it by the age of five. The chance of outgrowing the milk allergy often depends on whether it is IgE-mediated or non-IgE mediated. Non-IgE mediated milk allergies are usually outgrown in early childhood. IgE-mediated allergies can be outgrown, but in about 20% of children with milk allergy these allergies persist throughout life. IgE levels to milk will be monitored throughout your child's care. Changes in IgE levels can predict the likelihood of your child outgrowing his/her allergy. If the levels are dropping and they reach a certain level, a food challenge may be done in a controlled medical setting to determine whether or not your child has outgrown the allergy.

FOOD ALLERGY PROGRAM

The Food Allergy Program at Children's National Medical Center provides comprehensive services in the evaluation and management of a wide variety of food allergies, including IgE-mediated food allergy, gastrointestinal food allergy, and eosinophilic gastrointestinal disorders.

Food Allergy Program
Children's National Medical Center
111 Michigan Avenue, NW
Washington, DC 20010
Phone: 202-476-3016
Fax: 202-476-2280

RESOURCES

For more detailed information about food allergies, visit:

- The Food Allergy and Anaphylaxis Network (www.foodallergy.org)
- The Food Allergy Initiative (www.faiusa.org)

www.childrensnational.org

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ALL about

MILK ALLERGY



MILK ALLERGY OVERVIEW

Milk allergy is the most common food allergy in infants and young children. It affects 2.5 percent of young children in the United States. It is a reaction by the body's immune system to one or more of the proteins in milk. The proteins responsible for most milk allergies are casein, whey, and betalactoglobulin.

There are different kinds of milk allergies because the immune system can respond in several different ways to milk protein. A milk allergy can be either IgE-mediated or non-IgE mediated:

- **IgE-mediated milk allergic reactions** are caused by IgE antibodies to milk protein and can usually be detected by skin and radioallergosorbent tests (RAST). This kind of milk allergy can cause immediate symptoms after exposure to milk, including:
 - Skin: hives and eczema
 - Gastrointestinal tract: abdominal pain and vomiting
 - Respiratory system: nasal congestion, sneezing, and wheezing
- **Non-IgE mediated allergic reactions** do not involve IgE antibodies; therefore, skin and RAST tests to milk are usually negative. This kind of milk allergy usually involves the gastrointestinal tract and can cause chronic vomiting, diarrhea, bloody stools, or poor growth. Disorders belonging to this category of milk allergy include:
 - Milk protein-induced enterocolitis syndrome
 - Milk protein-induced proctocolitis syndrome
 - Eosinophilic esophagitis (actually both IgE- and non-IgE-mediated)

Milk allergy vs. lactose intolerance

Many people confuse milk allergy with lactose intolerance. Lactose intolerance is an inability of the body to digest lactose, which is a sugar found in milk and dairy. Milk allergy is mediated by the immune system; however, lactose intolerance is not. The symptoms associated with lactose intolerance include nausea, gas, bloating, diarrhea, and cramps. The final difference between milk allergy and lactose intolerance is lactose intolerance is rarely life threatening.



The rest of this brochure will focus mostly on IgE-mediated milk allergy. The severity of a milk-allergic reaction and the amount of milk that triggers a reaction depend on the sensitivity of the child and differ greatly from one child to the next. Some children can have a severe reaction from only a small exposure, while others will have more mild symptoms.

MANAGEMENT OF MILK ALLERGY

Preventing a milk allergic reaction

The only way to prevent a milk allergic reaction is to avoid milk and any food products containing milk. Milk is found in a number of foods, including:

- Cheese
- Ice cream
- Yogurt
- Butter or ghee
- Bread
- Baked goods such as cookies and cakes
- Baby food
- Milk chocolate
- Crackers
- Cereals

Food Labeling

While grocery shopping, it is very important to read the labels of products to make sure they do not contain milk. Even if you have purchased the item in the past, ingredients tend to change frequently and unexpectedly. When reading labels there are a few important points to keep in mind:

- Kosher Dairy or Pareve are two words to look for on food labels. Foods that are kosher have a “K” or a “circled U.”
 - **Foods with a “D” or “DE” should be avoided by people with milk allergies.** Kosher agencies use a “D” to indicate that the product contains dairy and a “D” or “DE” to indicate that the food was produced on the same equipment used to produce dairy-containing food.
 - **“Pareve” is used to indicate those foods that are considered milk-free** according to kosher dietary law, but these foods may still contain trace amounts of milk.
- Products labeled as “dairy-free” or “nondairy” may actually contain milk proteins. Also, remember that “lactose-free” products often contain milk protein. It is important to still read the ingredients label to make sure these foods are actually free of milk.

Hidden sources of milk

Milk can be found in a number of places you would never expect. It is important to be aware of these hidden sources in order to prevent accidental milk exposure.

- **Some medications** contain lactose, a milk sugar found in cow's milk, and therefore may have traces of milk protein. This could cause an allergic reaction in a child with milk allergies.
- **Some asthma inhalers** contain lactose. Recent studies have shown that Advair Diskus®, which contains lactose, also has traces of milk proteins and there has been a case in which a child with milk allergy reacted to the inhaled medication. Serevent® and Foradil® inhalers also have been shown to contain traces of milk proteins.
- **Nondairy or dairy-free products**, as discussed above, may contain milk proteins
- **Some brands of tuna fish or meat** contain casein, which is a milk protein.
- **Restaurants sometimes put butter on** steaks or other meats after they have cooked
- **Deli meat may be cross-contaminated** with milk from the deli slicer
- **Some restaurants and stores dip shellfish in milk** in order to take away the fishy odor.

Formulas

If your infant has been diagnosed with a milk allergy, the best option in many cases is continuing to breastfeed with maternal avoidance of milk and dairy. If breastfeeding is not an option, infant formulas that are safe for your child may include soy formulas and hypoallergenic formulas. You should discuss this with your allergist, since the feeding plan for your infant may depend on the type of milk allergy, as well as any other food allergies, he or she may have.

- **Soy formulas** have the same nutritional value as milk formulas, but do not contain milk proteins.
- **Hypoallergenic formulas** have cow's milk protein that is broken up so the proteins cannot be recognized by the immune system, known as casein hydrolysate formulas. Examples include Alimentum® and Nutramigen®. These formulas will not cause an allergic reaction in at least 90 percent of milk allergic infants.
- **Amino acid-based formulas**, such as Neocate® and Elecare®, are a great source of nutrition for highly allergic infants and are used in children who react to the hypoallergenic formulas.