Ferrell-Duncan Clinic Allergy/Immunology

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**Lactose intolerance**

**Lactase deficiency; Milk intolerance; Disaccharidase deficiency; Dairy product intolerance**

Lactose intolerance is the inability to digest lactose. Lactose is a type of sugar found in milk and other dairy products.

**Causes, incidence, and risk factors**

Lactose intolerance happens when the small intestine does not make enough of the [enzyme](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A002353/) lactase. Enzymes help the body absorb foods. Not having enough lactase is called lactase deficiency.

Babies' bodies make this enzyme so they can digest milk, including breast milk. Premature babies sometimes have lactose intolerance. Children who were born at full term usually do not show signs of lactose intolerance until they are at least 3 years old.

Lactose intolerance can begin at different times in life. In Caucasians, it usually affects children older than age 5. In African Americans, lactose intolerance often occurs as early as age 2. Lactose intolerance is very common in adults and is not dangerous. Approximately 30 million American adults have some amount of lactose intolerance by age 20.

**Symptoms**

Symptoms often occur 30 minutes to 2 hours after you eat or drink milk products, and are often relieved by not eating or drinking milk products. Large doses of milk products may cause worse symptoms. Symptoms include:

* [Abdominal bloating](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A003122/) or cramping
* Diarrhea
* Gas ([flatulence](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A003124/))
* Nausea
* Infants or children may have [slow growth](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A003021/) or weight loss.

**Signs and tests**

Other intestinal problems, such as [irritable bowel syndrome](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A000246/), may cause the same symptoms as lactose intolerance.

Tests to help diagnose lactose intolerance include:

* [Enteroscopy](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A003889/)
* Lactose-hydrogen breath test
* [Lactose tolerance test](http://www.ncbi.nlm.nih.gov/pubmedhealth/n/pmh_adam/A003500/)
* Stool pH

**Treatment**

Decreasing or removing milk products from the diet usually improves the symptoms. Most people with low lactase levels can drink 2 - 4 ounces of milk at one time (up to one-half cup) without having symptoms. Larger (more than 8 oz.) servings may cause problems for people with lactase deficiency.

These milk products may be easier to digest:

* Buttermilk and cheeses (they have less lactose than milk)
* Fermented milk products, such as yogurt
* Goat's milk (but drink it with meals, and make sure it is supplemented with essential amino acids and vitamins if you give it to children)
* Ice cream, milkshakes, and aged or hard cheeses
* Lactose-free milk and milk products
* Lactase-treated cow's milk for older children and adults
* Soy formulas for infants younger than 2 years
* Soy or rice milk for toddlers

You can add lactase enzymes to regular milk or take these enzymes in capsule or chewable tablet form.

Not having milk in the diet can lead to a shortage of calcium, vitamin D, riboflavin, and protein. You may need to find new ways to get calcium into your diet (you need 1,200 - 1,500 mg of calcium each day):

* Take calcium supplements
* Eat foods that have more calcium (leafy greens, oysters, sardines, canned salmon, shrimp, and broccoli) or drink orange juice that contains added calcium

Read food labels. Lactose is also found in some non-milk products -- including some beers.

**Expectations (prognosis)**

Symptoms usually go away when you remove milk products or other lactose containing products from the diet.

**Complications**

Weight loss and malnutrition are possible complications.

**Calling your health care provider**

Call your health care provider if:

* You have an infant younger than 2 or 3 years old who has symptoms of lactose intolerance.
* Your child is growing slowly or not gaining weight.
* You or your child has symptoms of lactose intolerance and you need information on food substitutes.
* Your symptoms get worse or do not improve with treatment, or you develop new symptoms.

**Prevention**

There is no known way to prevent lactose intolerance. If you have the condition, avoiding or restricting the amount of milk products in your diet can reduce or prevent symptoms.

**References**

1. Genauer CH, Hammer HF. Maldigestion and malabsorption. In: Feldman M, Friedman LS, Sleisenger MH, eds. *Sleisenger & Fordtran's Gastrointestinal and Liver Disease*. 9th ed. Philadelphia, Pa: Saunders Elsevier; 2010: chap 101.

Lactose intolerance. The National Digestive Diseases Information Clearinghouse (NDDIC). NIH Publication No. 09-2751. June 2009. Review Date: 7/7/2010.