

What I need to know about Lactose Intolerance



National Institute of
Diabetes and Digestive
and Kidney Diseases

National Digestive Diseases
Information Clearinghouse

What I need to know about Lactose Intolerance

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What is lactose?

Lactose* is a sugar found in milk and milk products. The small **intestine** produces **lactase**, an **enzyme** that breaks down lactose. The small intestine is an organ that breaks down the food you eat. Enzymes are proteins that help to cause chemical changes in the body.

What is lactose intolerance?

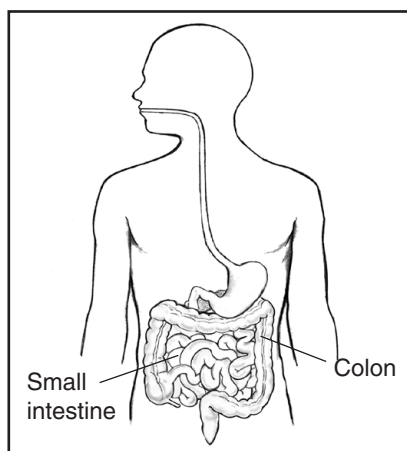
Lactose **intolerance** means you have symptoms such as bloating, diarrhea, and gas after you have milk or milk products.

If your small intestine does not produce much lactase, you cannot break down much lactose. Lactose that does not break down goes to your colon. The colon is an organ that absorbs water from stool and changes it from a liquid to a solid form. In your colon, bacteria that normally live in the colon break down the lactose and create fluid and gas, causing you to have symptoms.

*See the Pronunciation Guide for tips on how to say the words in **bold** type.

The causes of low lactase in your small intestine can include the following:

- In some people, the small intestine makes less lactase starting at about age 2, which may lead to symptoms of lactose intolerance. Other people start to have symptoms later, when they are teenagers or adults.
- Infection, disease, or other problems that harm the small intestine can cause low lactase levels. Low lactase levels can cause you to become lactose intolerant until your small intestine heals.
- Being born early may cause babies to be lactose intolerant for a short time after they are born.
- In a rare form of lactose intolerance, the small intestine produces little or no lactase enzyme from birth.



The digestive tract

Not all people with low lactase levels have symptoms. If you have symptoms, you are lactose intolerant.

Most people who are lactose intolerant can have some milk or milk products and not have symptoms. The amount of lactose that causes symptoms is different from person to person.



People sometimes confuse lactose intolerance with a milk allergy. While lactose intolerance is a digestive problem, a milk allergy is a reaction by the body's immune system to one or more milk proteins. If you have a milk allergy, having even a small amount of milk or milk product can be life threatening. A milk allergy most commonly occurs in the first year of life. Lactose intolerance occurs more often during the teen years or adulthood.

Can anyone have lactose intolerance?

Anyone can have lactose intolerance. In the United States, some people are more likely to be lactose intolerant, including

- African Americans
- American Indians
- Hispanics/Latinos
- Asian Americans

People with European heritage are least likely to be lactose intolerant.

What are the symptoms of lactose intolerance?

Common symptoms of lactose intolerance include

- bloating, a feeling of fullness or swelling, in your belly
- pain in your belly
- diarrhea
- gas
- nausea

You may feel symptoms 30 minutes to 2 hours after you have milk or milk products. You may have mild or severe symptoms.



How does lactose intolerance affect my health?

In addition to having unpleasant symptoms, you may have trouble getting enough nutrients, such as **calcium** and vitamin D. Milk and milk products are sources of calcium. Calcium is a mineral the body needs for strong bones and teeth. If you do not get enough calcium, over time your bones may become less dense and break easily.

How does my doctor know if I have lactose intolerance?

Your doctor will try to find out if you have lactose intolerance with the following:

- **Medical, family, and diet history.** Your doctor will ask you questions about your medical and family history, your diet, and your symptoms.
- **Physical exam.** A physical exam may help your doctor find out if you have lactose intolerance or another problem. During a physical exam, your doctor usually
 - checks for bloating in your belly
 - uses a stethoscope to listen to sounds within your belly
 - taps on your belly to check for tenderness or pain

After taking a history and completing a physical exam, your doctor may ask you to stop having milk and milk products to see if your symptoms go away. If your symptoms do not go away, your doctor might order the following tests:

- **Hydrogen breath test.** This test checks the amount of a gas called hydrogen in your breath. Normally, a person's breath only has a small amount of hydrogen after you eat lactose and the body breaks it down. Lactose that the body does not break down causes high amounts of hydrogen in the breath. For this test, you have a drink with a known amount of lactose. A doctor asks you to breathe into a balloon-type container that measures hydrogen. A doctor usually performs this test at a hospital, on an outpatient basis. Smoking and some foods and medicines may affect the results. Your doctor will tell you what foods and medicines you need to avoid before the test.

- **Stool acidity test.** If your body does not break down lactose, the lactose creates acid. The stool acidity test measures the amount of acid in the stool from a bowel movement. Doctors sometimes use this test for infants and young children. The doctor will give you a container to take home for catching and storing your child's stool. You will need to return the sample to the doctor, and the doctor will send it to a lab for testing.



How much lactose can I have?

Most people with lactose intolerance can eat or drink some lactose without symptoms. Different people can have different amounts of lactose.

For example, one person may have severe symptoms after drinking a small amount of milk. Another person can drink a large amount without symptoms. Some people can easily eat yogurt and hard cheeses such as cheddar and Swiss, while other milk products cause them to have symptoms.

Research suggests that many people could have the amount of lactose in 1 cup of milk in one sitting without symptoms or with only minor symptoms.

You may be able to have more lactose if you have it with meals or in small amounts throughout the day.

Many people who have lactose intolerance do not need to avoid milk or milk products completely. If you avoid milk and milk products altogether, you may take in less calcium and vitamin D than you need.

What can I do if I have lactose intolerance?

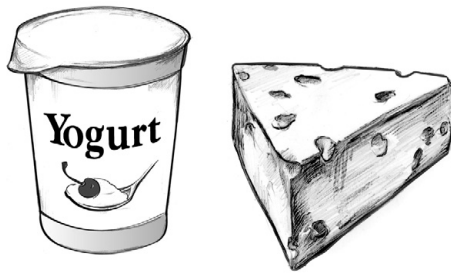
If you have lactose intolerance, you can make changes to what you eat and drink. Some people may only need to have less lactose. Others may need to avoid lactose altogether. Using products that contain lactase helps some people.

Eating, Diet, and Nutrition

Talk with your doctor about your dietary plan. A dietary plan can help you manage the symptoms of lactose intolerance and get enough nutrients. If you have a child with lactose intolerance, follow the diet plan that your child's doctor recommends.

Milk and milk products. You may be able to have milk and milk products without symptoms if you

- drink small amounts of milk—half a cup or less—at a time
- drink small amounts of milk with meals, such as having milk with cereal or having cheese with crackers
- add small amounts of milk and milk products to your diet a little at a time and see how you feel
- eat milk products that are easier for people with lactose intolerance to break down:
 - yogurt
 - hard cheeses such as cheddar and Swiss



Lactose-free and lactose-reduced milk and milk products. You can find lactose-free and lactose-reduced milk and milk products at the grocery store. These products are just as healthy for you as regular milk and milk products.

Lactase products. You can use lactase tablets and drops when you have milk and milk products. The lactase enzyme breaks down the lactose in food. Using lactase tablets or drops can help you prevent symptoms of lactose intolerance. Check with your doctor before using these products. Some people, such as young children and pregnant and breastfeeding women, may not be able to use these products.



Calcium and Vitamin D

If you are lactose intolerant, make sure you get enough calcium each day. Milk and milk products are the most common sources of calcium. Other foods that contain calcium include

- fish with soft bones, such as canned salmon or sardines
- broccoli and other leafy green vegetables
- oranges
- almonds, Brazil nuts, and dried beans
- tofu
- products with the label showing added calcium, such as cereals, fruit juices, and soy milk

Vitamin D helps the body absorb and use calcium. Be sure to eat foods that contain vitamin D, such as eggs, liver, and certain kinds of fish, such as salmon. Also, being outside in the sunlight helps your body make vitamin D. Some companies add vitamin D to milk and milk products. If you are able to drink small amounts of milk or eat yogurt, choose those that have vitamin D added.

Talk with your doctor about how to get enough nutrients—including calcium and vitamin D—in your diet or your child’s diet. Ask if you should also take a **supplement** to get enough calcium and vitamin D.

For safety reasons, talk with your doctor before using dietary supplements or any other nonmainstream medicine together with or in place of the treatment your doctor prescribes. Read more at www.ods.od.nih.gov and www.nccam.nih.gov.

How will I know if a food or medicine has lactose?

Lactose is in many food products and in some medicines.

Food Products

Lactose is in milk and all foods made with milk, such as

- ice cream
- cream
- butter
- cheese

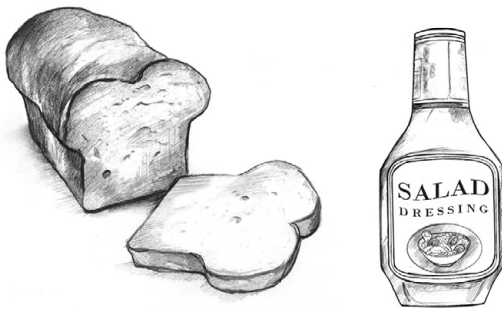


- cottage cheese
- yogurt

Rarely, people with lactose intolerance are even bothered by small amounts of lactose. Some boxed, canned, frozen, packaged, and prepared foods contain small amounts of lactose. These foods include

- bread and other baked goods
- waffles, pancakes, biscuits, and cookies, and the mixes to make them
- prepared or frozen breakfast foods such as doughnuts, frozen waffles and pancakes, toaster pastries, and sweet rolls
- boxed breakfast cereals
- instant potatoes, soups, and breakfast drinks
- potato chips, corn chips, and other packaged snacks
- prepared meats, such as bacon, sausage, hot dogs, and lunch meats

- margarine
- salad dressings
- liquid and powdered milk-based meal replacements
- protein powders and bars
- candies
- nondairy liquid and powdered coffee creamers
- nondairy whipped toppings



Look for certain words on food labels. These words mean the food has lactose:

- milk
- lactose
- whey
- curds
- milk by-products
- nonfat dry milk powder
- dry milk solids—another name for dry milk powder



Medicines

Some medicines contain lactose, including

- prescription medicines, such as birth control pills
- over-the-counter medicines, such as products to treat stomach acid and gas

These medicines most often cause symptoms in people with severe lactose intolerance. If you have lactose intolerance, ask your doctor if your medicines contain lactose.

Points to Remember

- Lactose is a sugar found in milk and milk products.
- Lactose intolerance means you have symptoms such as bloating, diarrhea, and gas after you have milk or milk products.
- Your doctor will try to find out if you have lactose intolerance with a medical, family, and diet history; a physical exam; and medical tests.
- Most people with lactose intolerance can eat or drink some lactose without symptoms.
- If you have lactose intolerance, you can make changes to what you eat and drink. Some people may only need to have less lactose. Others may need to avoid lactose altogether.

- Talk with your doctor about how to get enough nutrients—including calcium and vitamin D—in your diet or your child’s diet. Ask if you should also take a supplement to get enough calcium and vitamin D. For safety reasons, talk with your doctor before using dietary supplements or any other nonmainstream medicine together with or in place of the treatment your doctor prescribes.
- Lactose is in many food products and in some medicines.

Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases’ (NIDDK’s) Division of Digestive Diseases and Nutrition conducts and supports basic and clinical research into digestive disorders such as lactose intolerance.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at www.nih.gov/health/clinicaltrials. For information about current studies, visit www.ClinicalTrials.gov.

Pronunciation Guide

calcium (KAL-see-uhm)

enzyme (EN-zym)

hydrogen (HY-droh-jen)

intestine (in-TESS-tin)

intolerance (in-TOL-ur-uhnss)

lactase (LAK-tayss)

lactose (LAK-tohss)

supplement (SUH-pluh-muhnt)

For More Information

Academy of Nutrition and Dietetics

120 South Riverside Plaza, Suite 2000

Chicago, IL 60606-6995

Internet: www.eatright.org

**International Foundation for Functional
Gastrointestinal Disorders**

700 West Virginia Street, Suite 201

Milwaukee, WI 53204

Phone: 1-888-964-2001 or 414-964-1799

Fax: 414-964-7176

Email: iffgd@iffgd.org

Internet: www.iffgd.org

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National Digestive Diseases Information Clearinghouse

2 Information Way
Bethesda, MD 20892-3570
Phone: 1-800-891-5389
TTY: 1-866-569-1162
Fax: 703-738-4929
Email: nddic@info.niddk.nih.gov
Internet: www.digestive.niddk.nih.gov

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This publication is available at www.digestive.niddk.nih.gov.

This publication may contain information about medications and, when taken as prescribed, the conditions they treat. When prepared, this publication included the most current information available. For updates or for questions about any medications, contact the U.S. Food and Drug Administration toll-free at 1-888-INFO-FDA (1-888-463-6332) or visit www.fda.gov. Consult your health care provider for more information.



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