

Lactose Intolerance

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Lactose intolerance is the inability to digest lactose, the natural sugar found in most dairy products. Lactase, an enzyme our bodies produce, breaks down lactose into simpler units during digestion. Some people do not produce enough lactase or do not produce lactase at all. In this case, the lactose does not get broken down into smaller units. Instead, the lactose is fermented in the colon. This fermentation process often produces common symptoms of lactose intolerance, including bloating, abdominal gas or pain, diarrhea, and nausea.

Lactose intolerance is not the same as a milk allergy. An allergy involves an immune system response to proteins found in milk and milk products. An allergic response ranges from mild symptoms to a severe reaction that can be life-threatening. Lactose intolerance often results in uncomfortable symptoms when lactose is ingested, but it can be managed with changes to diet or with enzyme replacement and is not life-threatening.

Who Is at Risk?

Our bodies produce lactase from birth to digest breast milk and infant formula. As we age, our bodies may produce less lactase, making it harder to digest lactose. Some populations are more widely affected than others, including those of African, Asian, Hispanic, and American Indian descent.

Symptoms of lactose intolerance may be related to a health condition, like celiac disease or Crohn's disease. Lactose intolerance may result from intestinal damage from medical treatments like surgery, radiation or chemotherapy, or from some medications. When the damaged intestinal cells recover, their ability to produce lactase often returns.

Diagnosis

Lactose intolerance can be medically diagnosed by your health-care provider, who will consider your symptoms and family, medical, and diet history. A physical exam and some medical tests may be run to measure the amount of undigested lactose in your system and the effects on the digestive system. If you are experiencing symptoms related to lactose intolerance, avoid self-diagnosing to prevent removing unnecessary nutrients from your diet. Lactose intolerance is managed with changes to the diet, but it often does not require the removal of all dairy products. Management will depend on the symptoms present and can vary between diagnosed individuals.

Managing Lactose Intolerance

Management of lactose intolerance involves restricting lactose consumption to the level that does not produce symptoms. Among people with lactose intolerance, the amount they can eat or drink without experiencing symptoms varies. Most people who experience lactose intolerance can enjoy one glass of cow's milk, containing about 12 grams of lactose, without having significant symptoms.

Dairy products contribute to a balanced diet. Rather than removing all dairy from your diet, consider some ways to get the benefits from dairy without the symptoms. Dairy products provide many nutrients to our diets, most notably calcium, vitamin D, and phosphorus. These vitamins and minerals support strong bones and teeth. Those with lactose intolerance may be able to tolerate some dairy foods that naturally have less lactose in them. Also on the market are dairy products processed to have less lactose or no lactose at all. See Table 1 for some common dairy products and their lactose content.

Table 1. Lactose content of common dairy products.

Food or Drink Product	Amount	Lactose (in grams)
Cow's milk (whole, 2%, 1%, fat-free)	1 cup	12–13
Yogurt (plain)	1 cup	11–17
Buttermilk	1 cup	12
Goat's milk	1 cup	9
Ice cream	8 ounces	6–7
Greek yogurt (plain)	4–6 ounces	2–4
Cottage cheese (low-fat, 2%)	4 ounces	2–3
Hard cheeses (cheddar, Swiss, mozzarella)	1 ounce	0.3–1
Sour cream	1 tablespoon	Less than 0.5
Lactose-free milk	1 cup	0

Source: *Academy of Nutrition and Dietetics Complete Food and Nutrition Guide*. 2017.

In addition to choosing lower-lactose foods to manage symptoms, consider these additional tips:

- Enjoy smaller amounts of food and drinks containing lactose at a time. Consider drinking one-quarter cup to one-half cup of cow's milk several times throughout the day to meet dairy suggestions instead of a whole cup one to three times per day. Consuming smaller amounts of lactose over longer periods of time can help your body to digest it properly.
- Eat or drink lactose-containing foods with a meal or snack rather than alone. Consuming it with other food helps to slow the release of lactose into the digestive system, which helps your body to digest it.
- Support your body's tolerance to lactose by helping it to adapt. Eating small amounts of lactose-containing food and drink frequently and gradually increasing the amount you are eating can encourage your body to tolerate more and more.
- Dairy products with "friendly" bacteria can support digestion of lactose. Consider adding buttermilk, kefir, and yogurt products labeled as having "live and active cultures" into your eating pattern.
- Whole-milk dairy products may lower the risk of symptoms or lessen the severity because of the higher fat content. The fat present can help slow the rate of digestion of lactose.
- Look at the ingredient lists on the labels of foods and beverages to identify lactose. It is often used in unexpected products like baked goods, processed foods, cold cuts and hot dogs, prepared foods, salad dressings, sauces, gravies, drink mixes, and alcoholic beverages, including some beer.

If these modifications do not help improve your symptoms, there are other ways to reap the benefits of dairy without the consequences of discomfort. Lactase enzymes, available in drops, capsules, or tablet form, can be used to digest the lactose so your body doesn't have to. The drops can be added to cow's milk before drinking, and the capsules or tablets can be consumed before eating lactose-containing foods. Keep in mind that lactose intake may need to be limited still, depending on the sensitivity of the intolerance.

Additionally, there are many food and drink alternatives on store shelves to cater to those who do not consume dairy products. Plant-based milk alternatives, like soy milk, almond milk, and oat milk, are often fortified with calcium and vitamin D to have a similar nutritional content to cow's milk. Nondairy calcium-rich foods include tofu, chia seeds, legumes, some dark leafy greens, and canned fish with bones. Some food and drink items are fortified with calcium and vitamin D, including bread, cereal, and orange juice. Check out the Nutrition Facts label for a full listing of nutrients provided for each serving.

If you are experiencing symptoms of lactose intolerance, speak with your health-care provider about your options. A registered dietitian can help you plan meals and snacks to ensure you are meeting your needs for nutrients often provided by dairy products. In extreme cases or specific life circumstances, like pregnancy, a calcium or vitamin D supplement may be necessary. Your health-care provider can provide accurate diagnosis, guidance with management of symptoms, and support for further treatment options.

References

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