

Living with Lactose Intolerance

The condition is normal for much of the world's population.

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If drinking milk causes you digestive misery, you could be among the 30–50 million Americans who suffer from lactose intolerance. In fact, you would also belong to a worldwide majority of people whose ability to digest lactose—milk sugar—diminishes substantially after childhood. Nature seems to have made an exception for people of northern and central European ancestry and a few other groups that retain the ability to digest lactose throughout adulthood. But for most others throughout the world, lactose intolerance is the norm.

It's estimated that among people of Chinese or Japanese ancestry, 90% of the adult population is lactose-intolerant. That's why you aren't likely to find dairy-based foods on the menus of Chinese or Japanese restaurants. In people of African, Mexican, or Jewish ancestry, as much as 75% of the population may be lactose-intolerant. Given that the U.S. population is made up of a wide variety of ethnic groups and a diet heavy on dairy products, it's not hard to understand why the condition affects many Americans.

Role of Lactase

Lactose is a disaccharide composed of two simple sugars (glucose and galactose) that requires the action of the enzyme lactase (β -galactosidase) for digestion. In the small intestine, the enzyme hydrolyzes lactose into its component sugars, which then can be absorbed into the bloodstream. If you lack sufficient lactase to react with the quantity of lactose eaten, you are likely to notice, within 30 minutes to several hours after eating, symptoms that include bloating, diarrhea, cramps, gas pains, borborrygmi (rumblings caused by the passage of gas through the intestines), flatulence, or some combination of these. The sever-

ity of symptoms depends on several factors, including how much lactose is ingested, the rate at which it moves through the stomach, and the level of lactase present in the digestive system.



Lactose intolerance is not the same as milk allergy, a reaction to the protein in cow's milk that causes allergic symptoms such as hives, watery eyes, rashes, and wheezing. For the lactose-intolerant, it is strictly the milk sugar that leads to digestive problems. Although the natural process of reduced lactase production with aging is the most common cause of lactose intolerance, certain diseases and injuries to the small intestine can also decrease production of the enzyme and lead to intolerance. In rare instances, children are born with the inability to produce lactase.

A Self-Test

If you experience bloating, gas pains, diarrhea, or nausea after eating and want to

know whether lactose intolerance is causing these symptoms, you can conduct a simple test as a preliminary assessment. Eliminate all dairy products and other sources of lactose from your diet for one week, and note whether your digestive problems go away or are clearly lessened. Be sure to read food labels carefully, since many foods contain lactose where you might not expect to find it: salad dressings, pancake mix, breaded frozen chicken, nacho chips, English muffins, cakes, cookies, candies, and even medications, where it is often used as a filler. Avoid anything that lists as an ingredient lactose, milk (dry, evaporated, or skim), milk solids, whey, cream, yogurt, or cheese.

After one week, drink a glass of skim milk (8–12 oz) in the morning, on an empty stomach. Note whether symptoms return. If you are lactose-intolerant, you probably will notice symptoms within a few hours. But don't rely on the preliminary test alone. If your results suggest lactose intolerance, request a medical test. Your doctor can then confirm the diagnosis and ensure that a more serious illness is not producing your symptoms.

Lots of Calcium

If you are lactose-intolerant, you may think that the best solution is to stop eating dairy products. However, unless you are so sensitive to lactose that even a teaspoon of cottage cheese or a small amount of milk in coffee makes you feel sick, eliminating dairy products is not necessary. Armed with appropriate coping skills, you can keep milk-based foods in your diet and gain their substantial nutritional benefits while enjoying the variety of tastes and textures they provide.

Dairy foods are the primary source of calcium in the American diet, providing

Table 1. Calcium Content of Dairy Foods

| Food | Quantity, oz | Calcium, mg (approx) |
|------------------------|--------------|----------------------|
| Cheddar cheese | 1 | 204 |
| Ice cream, vanilla | | |
| Hard | 8 | 168 |
| Soft | 8 | 226 |
| Milk (fluid), 1% fat | 8 | 290 |
| Yogurt, plain (nonfat) | 8 | 452 |

Source: U.S. Department of Agriculture, National Nutrient Database for Standard Reference, Release 17.

75% of the calcium intake (see Table 1). Calcium is particularly important in the prevention of osteoporosis. The Institute of Medicine at the National Academy of Sciences recommends a minimum of 1000 mg of calcium per day for most adults and 1200 mg for those over 50 years old. Typical servings of most foods, unless they are fortified with calcium, do not come close to the calcium content of dairy products (1). Although calcium supplements can be beneficial, they should be viewed as adjuncts to food-derived calcium, not as total replacements.

How To Avoid Discomfort

If you are lactose-intolerant, you need guerrilla tactics to contend with the dairy-laden American diet. The guidelines below, distilled from some of the best resources available on lactose intolerance, offer a starting point.

Learn which foods contain lactose and whether they contain large or small amounts. Without this information, you play digestive roulette every time you eat. Educating yourself will give you a basis for deciding whether to eat a particular food, how

much of it to eat, and whether you are likely to need remedies such as lactase tablets (sold in most supermarkets and pharmacies) to avoid indigestion. Milk, yogurt, sour cream, ice cream, and cheese are the most obvious sources of lactose, but even dairy foods differ greatly in the amount of lactose present in a typical serving. Table 2 shows the lactose content of common dairy foods. Note that most cheeses, particularly hard or aged cheeses, are much lower in lactose than milk is. This is because most lactose ends up in the whey that is separated from cheese during the cheese-making process.

Fruits, vegetables, meats, poultry, and fish do not contain lactose. However, processed and prepared foods often do. Reading labels for terms such as milk (in any form), whey (dried whey is approximately 75% lactose), cream, or yogurt is often the only way to discern the presence of lactose, because lactose itself is rarely listed as an ingredient.

Experiment to learn your normal comfort level of tolerance for dairy foods. Begin with small quantities, such as half a cup of milk or an ounce of cheese at a time. Take them with meals or snacks rather than alone, because the other foods eaten with them help slow down the digestive process, thereby allowing whatever lactase is in your system to work more effectively on the lactose. Gradually increase your dairy intake until you begin to notice symptoms within a few hours after eating. When you reach this level, you will know how much lactose is too much and can adjust your portions appropriately.

Eat yogurt. Many individuals tolerate yogurt better than milk, even though some brands that list “added milk solids” as an

Table 2. Lactose Content of Dairy Foods

| Food | Serving size, oz ^a | Lactose content, g |
|-------------------------------------|-------------------------------|--------------------|
| Butter | 0.5 | 0.1 |
| Cheese | | |
| American (pasteurized, processed) | 1 | 0.5–1.6 |
| Bleu | 1 | 0.7 |
| Camembert | 1 | 0.1 |
| Cheddar | 1 | 0.4–0.6 |
| Cottage | 8 | 5–8 |
| Cream | 1 | 0.8 |
| Muenster | 1 | 0.0–0.2 |
| Parmesan | 1 | 0.0–0.8 |
| Half and half | 0.5 | 0.6 |
| Ice cream (vanilla) | 8 | 8–21 |
| Margarine | 0.5 | 0.0–0.16 |
| Milk | | |
| Whole, low-fat, skim, or buttermilk | 8 | 9–14 |
| Sweetened condensed, whole | 8 | 35 |
| Sherbet (orange) | 8 | 1.5–5 |
| Sour cream | 0.5 | 0.6 |
| Whipped cream | 0.5 | 0.4 |
| Yogurt | 8 | 10–15 |

^a 0.5 oz = 1 tablespoon; 8 oz = 1 cup.

ingredient may contain the same amount of lactose as milk. Make sure you buy the kind that has “active cultures” (live bacteria) that help to digest the lactose.

Use lactose-reduced dairy products and/or lactase tablets. If even small amounts of dairy products cause you discomfort, try lactose-reduced milk (in which lactose content has been reduced by 70–100%), ice cream, cottage cheese, and yogurt. Several brands are sold nationally, such as Lactaid or Dairy Ease, but many grocery stores have their own brands as well. Eating lactase enzyme tablets (available

from pharmacies and most grocery stores) with meals that contain dairy food is a helpful strategy, particularly when you eat away from home where you have less control over the contents of the dishes served. If you know or suspect that a dish contains a source of lactose, chew a few lactase tablets with the meal.

Substitute nondairy products for dairy products. Thanks to the ingenuity of food companies, you can find a nondairy substitute for almost any kind of dairy food, including milk, yogurt, cheese, ice cream, and butter. Margarine, nondairy creamers, nondairy frozen desserts, soy- and rice-based beverages, and lactose-free “cheese” slices are just a few examples. Many of these foods have different nutrient profiles and tastes compared with their dairy versions, but they nonetheless provide some additional choices in a lactose-free or lactose-reduced diet.

Reference

- (1) U.S. Department of Agriculture National Nutrient Database. Click on calcium sorted by nutrient content; www.nal.usda.gov/fnic/foodcomp/data/SR17/wtrank/wt_rank.html.

Further Reading

- American Gastroenterological Association; www.gastro.org/clinicalRes/brochures/lactose.html.
- Burlant, A. *Secrets of Lactose-Free Cooking*; Avery Publishing Group Paperback: 1996; 186 pp.
- Carper, S. *Milk Is Not for Every Body: Living With Lactose Intolerance*; Facts On File: New York, 1995; 330 pp.
- Mayo Clinic Health Information; www.mayoclinic.com. Search on lactose intolerance.
- National Digestive Diseases Clearinghouse; <http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance/>.

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