

Rethinking Lactose Intolerance: A Guide for Including Dairy Foods in the Diet

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Why Drink Milk? What History Shows Us



If you think about it, drinking the milk of a cow seems a little strange.

We are hunter-gatherers. We hunt animals for their meat, and we grow and gather vegetables, fruits, and nuts. One of the real advantages of herd animals is that that they are a long-term “bank account.” Humans invest in these animals

by having them graze, then reap the benefit by either using their milk or eating their meat. Gathering their milk is a way to live off the interest of the bank account.

The milk of a cow is highly nutritious. It is a good source of protein, calcium, and riboflavin as well as other vitamins and minerals. Adding vitamin D enhances this nutritional value. The nutrition that milk provides per calorie makes it a nutrient-dense food. It is not designed for humans exactly, but we eat milk as part of complex mixed diet of many different foods. Cow’s milk shouldn’t replace human milk for infants due to their different nutrient profiles.

Why Be Concerned with Calcium in the Diet?

- Calcium builds stronger bone density, but there are very few good sources of calcium in the American diet.
- On average, humans are living longer, so our bones have to survive 80-plus years now.
- The bone density we develop occurs in early life around puberty and peaks by early adulthood.
- We lose bone density as we get older, but adequate calcium and vitamin D intake along with regular exercise can help us maintain bone density.

Everyone will experience bone loss as they age, but the question is, How much? Will it result in osteoporosis, fragile bones, or bone breakage?

Physicians and nutrition scientists are interested in maximizing bone density so that you have more to lose without experiencing fragile bones or osteoporosis, a disease that causes bones to become brittle and weak. The stronger your bones, the better equipped you will be to weather the storm of aging and bone loss.

For many older adults, a bone break is the start of downward trend in health. A bone break, such as in a hip or leg, often happens before or as a result of a fall. Bone repair is a challenge for the elderly. A break in the bone can lead to more severe health issues by limiting mobility and leading to complications, such as pneumonia.

Prevention of the downward trend in health is key. To do so means to maximize bone density when you are young and maintain it as you age.

The American Culture and Calcium

Among the foods available in American culture, milk is one of the few sources of calcium — a mineral used by your body’s bones, muscles, nervous system, and heart. Almost three-quarters of the calcium that Americans eat comes from dairy foods. There are few other good sources of calcium, so it is difficult to get calcium in the American diet without eating dairy foods.

Dairy foods can be made into many secondary products. Milk spoils quickly, but cheese and yogurt have a much longer shelf life. Yogurt evolved naturally as a way to preserve milk. The curds and whey were separated from the yogurt and were made into cheese, which has an even longer shelf life.

Lactose Intolerance and Humans

Most humans do not have the ability to digest large amounts of milk as adults. Between ages 3 and 5, many people begin producing less lactase, which is the enzyme in the body that helps digest lactose, the sugar naturally found in milk. The inability to fully digest lactose is known as lactose maldigestion and can cause symptoms of lactose intolerance.

However, a quarter of the world’s population continues producing high levels of lactase. These are the populations where the business of owning and operating dairies began (northern Europe, the Middle East, or central Africa). Among these populations, there is a genetic basis for being able to digest high levels of lactose.

In the United States, about 25 percent of the population are lactose maldigesters (poor digesters), including African Americans, Hispanics, Asians, and a small group of northern Europeans. As the diversity of the U.S. population increases, so will the number of those who are intolerant to lactose.

True lactose intolerance symptoms typically start with stomach rumbling and some gas. There may be stomach discomfort and, in more severe cases, acute (rapid and quick) diarrhea where once the lactose is gone, the symptoms are gone. Lactose intolerance symptoms occur from one to six hours after consuming the excess dairy. Consult your doctor if these symptoms persist.

Symptoms of Concern

- If you drink milk and experience a fever or rash, contact your doctor.
- If you are having gas that lasts beyond eight hours after drinking the milk, you may have intestinal flu, a virus, or food poisoning. Contact your physician if these symptoms persist for more than a day or two.

Tips for Tolerating Lactose

Everyone can digest some lactose. For those who are lactose intolerant, the most important factor to consider when drinking milk is dose: how much milk at a time and how you drink it.

▶ **Drink 8 ounces (one cup) or less of milk with a meal.**

Research suggests that you will tolerate milk fairly well if it is 8 ounces (one cup) or less. Slowing down the digestion of the milk will also improve the tolerance. Drink a small serving of milk with a meal — such as over a bowl of cereal or with dinner — and it will be better tolerated than on an empty stomach. Drinking milk with a meal will improve digestion by three times as compared to drinking the milk by itself.

▶ **Train your body to adapt.**

Research indicates the amount of lactose you can tolerate can be changed. For some people, one cup might be too much to tolerate when introducing milk back into the diet. Start with a small amount, such as a quarter cup at meals. After a few days, increase to a half cup with meals. After a week or two, increase to a cup, but don’t go beyond that. By doing this, you will train your intestinal bacteria to aid the digestion of lactose, and this will help eliminate symptoms of lactose intolerance. Drink a small amount of milk once or twice a day, and you will keep your bacteria trained and further enhance your body’s ability to digest milk.

The *Dietary Guidelines for Americans* recommend that adults consume three cups or servings per day of fat-free or lowfat milk and milk products. Work up to this amount. One or two cups could be milk with meals, and the remaining amount could be yogurt or cheese. Spreading the three cups out over the day is

most beneficial. For example, doubling up milk with yogurt at a meal does not increase tolerance. It only increases the amount of lactose, which can make symptoms of intolerance more likely.

Lactose Content in Dairy Foods

You won't find this on the food label, but a cup of milk contains about 12 grams of lactose. Maldigesters should stay below 12 grams of lactose in a meal to prevent symptoms. So in other words, a cup of milk with a meal is just about right.

Hard cheeses are well tolerated because they are low in lactose, with 1.5 ounces of a hard cheese (cheddar, mozzarella, Swiss, Parmesan) containing only 1 to 2 grams of lactose. Cottage cheese contains 4 to 6 grams of lactose (depending on the amount).

A 6- to 8-ounce serving of yogurt contains 11 to 17 grams of lactose (depending on the amount), but it is well tolerated. Researchers at Purdue University and across the globe have studied the digestion of yogurt and found that yogurt lactose digestion is far superior to milk lactose. Yogurts contain their own enzymes, which are active in the digestion of lactose in the intestine.

Lactose Content in Foods (grams per serving)

Milk (8 oz.)	11–13
Yogurts (plain, 8 oz.)	11–17
Greek yogurt (plain, 4–6 oz.)	2–4
Cheeses	
Cottage cheese (4 oz.)	2–3
Processed cheese (1 oz.)	2–3
Hard cheeses (1 oz.)	0.3–1
Sour cream (4 oz.)	4–5
Cultured milk (8 oz.)	9–13
Acidophilus milk (8 oz.)	11–13
Ice cream (8 oz.)	6–7
Whey (8 oz. fluid)	13
(1 Tbsp = 2.9g dry)	2.1

Source: USDA National Nutrient Database for Standard Reference, Release 26, ndb.nal.usda.gov

Greek yogurts are also well tolerated due to a low level of lactose and higher protein content, which slows down stomach emptying and increases tolerance. Kefir is a type of fermented beverage that limited research suggests is also fairly well tolerated and a good source of calcium, too.

Dairy foods are by far the best source of calcium and include excellent quality protein and substantial amounts of potassium and riboflavin. But another option might be low-lactose products such as almond or rice beverages. These are well tolerated, but be sure to read the Nutrition Facts label to check the amount of calcium and other nutrients in these products. These other “milks” are often fortified with calcium and vitamins to improve their nutritional value, but amounts can vary by manufacturer, and there are no clear national guidelines for these products. They may also contain large amounts of sweeteners.

More Information about Lactose Intolerance

National Institutes of Health

<http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance>

Mayo Clinic

<http://www.mayoclinic.com/health/lactose-intolerance/DS00530>

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Jan. 2015

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