



# Lactose Intolerance

Lactose intolerance is the inability to digest lactose, a sugar found in milk and milk products. Lactose intolerance is caused by a deficiency of the enzyme lactase, which is produced by cells lining the small intestine. Lactase breaks down lactose into two smaller sugars, called glucose and galactose. Lactose intolerance is sometimes confused with a milk allergy, which is your immune system's reaction to one or more proteins in milk, not the sugar.

## Risk Factors

Factors that may lead to the develop of lactose intolerance include:

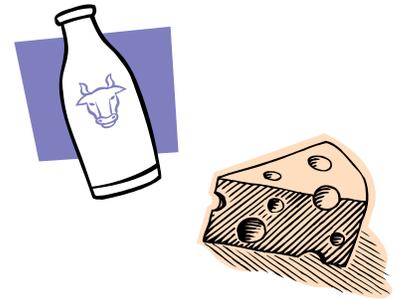
- **Increasing age.** Lactose intolerance usually develops during adolescence or adulthood and becomes more common as you age. Lactase deficiency develops begins after the age of two when the body begins to produce less of the enzyme.
- **Ethnicity:** African Americans, Asian Americans, Hispanic Americans and American Indians.
- **Premature birth.** The lactase enzyme increases late in the third trimester; therefore, infants born prematurely may have reduced levels of lactase.
- **Illness or diseases affecting the small intestine.** Small intestine problems that can cause lactose intolerance include bacterial overgrowth, celiac disease and Crohn's disease.
- **Radiation to the abdomen.** If you've received radiation therapy for cancer in your abdomen, you have an increased risk of lactose intolerance.

Individuals ages 19-50 years old are recommended to consume approximately 1000 mg of calcium daily.

## Symptoms

Symptoms of lactose intolerance may begin 30 minutes to 2 hours after consuming milk and milk products. The severity of these symptoms depends on the amount of lactose consumed and the amount a person can tolerate. Common symptoms include:

- ⇒ abdominal cramps
- ⇒ bloating
- ⇒ gas
- ⇒ diarrhea
- ⇒ nausea



Lactose intolerance is typically treated by restricting milk and milk products from the diet. This means you may miss out on vital nutrients, such as protein, riboflavin, vitamin A, vitamin D, phosphorus, magnesium, and especially, calcium. Not to worry, you can get these nutrients from other non-dairy sources or fortified dairy alternatives.

## Calcium Supplements

If you are not getting enough calcium from your diet, a calcium supplement may be necessary. Calcium supplements are available over-the-counter. The most common supplements are in the form of calcium carbonate or calcium citrate. Calcium carbonate (i.e., Caltrate®, Os-Cal® 500, Tums®, Viactiv®) is the least expensive, however, some medications may interfere with its absorption. With certain medications, calcium citrate (i.e., Citracal®), may be a better option. Check with a health professional prior to beginning a supplement. Calcium is best absorbed by the body in doses of 500 mg or less. If you need more than 500 mg, divide the dose in half and take it twice a day.

## Calcium Content of Dairy and Alternatives

Dairy products	Serving Size	Lactose (grams)	Calcium (mg)	Lactose-free products	Serving Size	Calcium (mg)
Butter/Margarine	1 tsp	Trace	1	Oranges	1 medium	55
Cheddar Cheese	1 ounce	0	205	Almonds	1 ounce	75
Cream Cheese	1 ounce	1	23	Broccoli, cooked	1 cup	83
American Cheese	1 ounce	1	155	Pinto Beans	1 cup	82
Swiss Cheese	1 ounce	1	225	Tofu	1.5 ounces	95
Bleu Cheese	1 ounce	2	250	Kale, cooked	1 cup	100
Cottage Cheese, uncreamed	1/2 cup	2	60	Bok Choy, cooked	1 cup	158
Sherbet, Orange	1/2 cup	2	40	Salmon, canned, with bones	3 ounces	212
Whipping Cream	1/2 cup	3	39	Spinach, cooked	1 cup	245
Sour Cream	1/2 cup	4	133	Almond milk, fortified	1 cup	300
Low-fat Yogurt	1 cup	5	370	Soy milk, fortified	1 cup	300
Half-and-Half	1/2 cup	5	130	Rice Milk, fortified	1 cup	300
Ice Cream	1/2 cup	6	85	Lactaid® Milk	1 cup	300
Chocolate Milk	1 cup	11	286	Sardines, canned, with bones	3 ounces	324
Milk (nonfat, 1%, 2%, whole)	1 cup	11	286	Calcium-Fortified Juices	1 cup	350

\* Check the food labels for nutrition content on canned and frozen products.

### Tips for Including Dairy

It may not be necessary to completely eliminate dairy products from your diet. Most people with lactose intolerance can enjoy some milk products without experiencing any symptoms. You may try to increase your tolerance to dairy products by gradually introducing them into your diet. Here are some ways you can change your diet to reduce symptoms:

1. Choose smaller servings of dairy (up to 4 ounces or 1/2 a cup milk or yogurt) at one time.
2. Drink milk with food or at mealtimes, rather than alone, for better tolerance.
3. Try a variety of dairy products since they contain different amounts of lactose. When compared to regular milk, yogurt has a lower amount of lactose and more probiotics (good bacteria), which help break down the milk sugar.
4. Buy lactose-free or lactose-reduced products, such as Lactaid® milk or soymilk.
5. Check ingredients on food labels to identify possible sources of lactose. Look for words such as milk, lactose, whey, curds, milk by-products, margarine, and cream.
6. Over-the-counter lactase enzyme tablets or drops can help by increasing tolerance of milk and milk products.

### Lactose-Free Straw-Nana Smoothie



#### Ingredients

- 1 banana, sliced, then frozen
- 1/2 cup diced, frozen strawberries
- 1 cup soy milk (your favorite flavor)
- 2 Tbsp sweetener of choice (optional)
- 1/8 tsp. vanilla (optional)

#### Directions

1. Blend everything together! Add more or less of anything to get it to just the right consistency/taste.
2. Add chocolate syrup to the glass to make it look nice (doesn't really change the taste).