

UW HEALTH - ONLINE HEALTH FACT

Lactose Intolerance

What is lactose intolerance?

Lactose is the natural sugar, found in milk and other dairy products. Lactose Intolerance (LI) occurs if you have a shortage of the enzyme lactase. Lactase helps break down the lactose we eat in our diet. When you don't have enough lactase in your body, the lactose you eat doesn't get absorbed like it should. Instead, it ends up in the large intestine where it can cause symptoms like nausea, cramps, diarrhea, bloating and gas. These symptoms can occur 30 minutes to 2 or more hours after eating foods with lactose in them. Some people with LI can eat small amounts of lactose without any problems. Others may get many of the symptoms mentioned from very small amounts of lactose. You can improve LI by reducing foods that have lactose in them or by using lactase enzyme tablets (Lactaid[®], Dairyase[®]) when eating food with lactose.

What causes LI?

True LI in infants is rare. LI is often inherited and is more common in certain ethnic groups. Most people are born with enough lactase to digest lactose as an infant. LI may develop later on as enzyme levels slowly drop.

LI can also occur when there is an injury to the intestinal lining, such as stomach flu, chemotherapy, radiation and other intestinal illnesses. We call this "secondary LI" and for most people, the symptoms may go away after the intestine is healed.

How is LI treated?

For some people, foods that contain lactose must be reduced or not eaten at all or enzyme tablets (Lactaid[®], Dairyase[®]) must be used. Others may be able to have small amounts of food that contain lactose without symptoms.

Sources of lactose

The foods listed below contain lactose and may need to be reduced in your diet, depending on how much lactose your body can handle.

- Butter
- Buttermilk
- Cheese (some kinds)
- Cottage cheese
- Cream cheese
- Chocolate milk
- Dry powdered milk
- Half and half cream
- Light cream
- Ice cream
- Ice milk
- Margarine
- Milk
- Milk chocolate
- Milk solids
- Sherbet
- Ricotta cheese
- Evaporated milk
- Sour cream
- Shortening
- Sweetened condensed milk
- Whipping cream
- Whey
- Yogurt

Hidden sources

There are many foods that we don't think of as lactose foods. This is not a complete list of all foods with hidden lactose. If you are sensitive to lactose, be sure to read ingredient lists.

Hot dogs, cold cuts, bologna, sausages, pancakes, creamy salad dressings, creamed soups, breaded meats, French fries (if pre-blanching in whey), commercial pie crust and pie fillings, caramels, fudge and other chocolate candies, prepared cakes and sweet rolls, powdered coffee creamers, imitation dairy products, party dips, cream cordials and liquors, certain breads, sauces and gravies, frosting, certain prepared or processed foods, prescription and over the counter medications.

How to read a food label

It is best to read the "ingredients list", just below the "Nutrition Facts Label" on the food item in question. Ingredients are listed from the most to the least in weight. So, if the first four ingredients are not milk based, the lactose content in the food is likely to be small.

Some label ingredients will be easy to identify as having lactose. Others are not as easy. For your guide, the food additives listed below are lactose free and safe to use.

- lactate
- lactalbumin
- caseinate
- lactic acid
- casein
- lactylate

Special enzyme products and foods

You can buy low lactose and lactose-free milks at most local grocery stores. Lactaid[®] and Dairyease[®] are two brands found in many stores. Other products, such as lactose-reduced cheese and cottage cheese can also be purchased.

Enzyme tablets can be helpful to many people with LI. Lactaid[®], Dairyease[®], and others also make enzyme tablets. Many stores, like Walgreens, Walmart or Target carry their own brands of enzyme tablets and these are fine to use as well. These tablets work by giving you the enzyme lactase to break down the lactose in dairy foods. Read label directions for dosing. The tablets need to be eaten with the first bite of the lactose-containing food for them to work well. Ask your health professional if you have questions about a certain brand because many contain different levels of the lactase enzyme.

Tips for living with LI

- Space foods that contain lactose throughout the day, instead of eating large amounts at one time.
- Combine foods that contain lactose with non-lactose foods to help reduce symptoms.
- Higher fat lactose foods (whole milk) are often better tolerated than lowfat (skim milk) because higher fat foods take longer to digest so the lactase that you do have has more time to work.
- Yogurt is often well tolerated even though it has lactose in it. Choose a yogurt with active cultures (seen on label) because this helps to break down the lactose.
- Enzyme treated milk (Lactaid[®] and Dairyease[®]) can reduce symptoms because all lactose is removed from the milk.

- Enzymes, in the form of tablets, like Lactaid[®] or Dairyease[®] can give you the freedom to eat foods with lactose in them. These tablets provide the lactase needed to break down the lactose in a food. Read the package directions for dose and timing.

Substitutes for Dairy Products

(good for recipes)

- 1 cup whole milk = mix ½ cup water with ½ cup non-dairy cream*^o or use 1 cup soy or rice milk
- 1 cup skim milk = ¼ cup non-dairy cream plus ¾ cup water
- 1 cup evaporated milk = 1 cup non-dairy cream or soy milk
- 1 cup buttermilk = ½ cup non-dairy cream plus ½ cup water plus 1 tbsp lemon juice or vinegar
- 1 cup whipped cream = 1 cup non-dairy whipped topping
- 1 tbsp cream cheese = 1 tbsp mayonnaise
- ½ cup cottage cheese = ½ cup tofu
- 1 tbsp butter = 1 tbsp milk-free margarine or 1 tbsp vegetable oil
- 1 cup sour cream = ¼ cup cornstarch in ¾ cup water plus ¼ cup vinegar

*Poly-Perk[®], Mocha Mix[®], Rich's Non-Dairy Whipped Topping[®], etc.

^ofor people concerned about dietary fat intake, a low-fat type of non-dairy creamer should be chosen.

Getting Enough Calcium

Food Sources

The main source of calcium in our diets comes from dairy products. Your diet may be lacking in calcium if you do not eat dairy foods. Other food sources of calcium include canned fish with bones (salmon and sardines), clams, oysters, shrimp, some tofus (check the food label), turnip, collard and mustard greens, rhubarb, broccoli, kale, sesame seeds, almonds, black strap molasses and dried beans. Fortified soy or rice milk also provides a very good source, as do the lactose free milks mentioned before. There are many other calcium-fortified foods and drinks you can buy (juices, cereals and breakfast bars).

Supplements like Boost[®], Ensure[®], Pediasure[®] and Kindercal[®] are also lactose –free and provide a good calcium source. Ask your health professional if it would be a good idea for you to try one of these products.

Supplements

Calcium pills are sold as calcium carbonate, calcium gluconate, calcium citrate or calcium lactate. If you don't want to take a pill you can try Tums[®] or Rolaids[®], which are chewable antacids that have calcium carbonate in them. In most cases you should not take calcium in amounts greater than 1200-1500mg. High amounts of calcium can cause urinary tract stones in some people. Ask your health professional if you should take a supplement to meet your needs and what type would be right for you.

| Life Stage | Age | Optimal Daily Intake of Calcium (milligrams) |
|-----------------------------|-----------------------|---|
| Infants | 0-6 months | 210 |
| | 6-12 months | 270 |
| Children | 1-3 years | 500 |
| | 4-8 years | 800 |
| Adolescents | 9-18 years | 1300 |
| Adults | 19-50 years | 1000 |
| | 51-70 years | 1200 |
| Pregnant and nursing | under 19 years | 1300 |
| | 19-50 | 1000 |

Resources and References

Dairy-free Cookbook: Over 250 Recipes for People with Intolerance or Milk Allergy, by Jane Zukin, New York: Prima Publishing Co., Inc., 1998. (ISBN 0761514678)

Cooking Without Milk: Milk Free and Lactose Free Recipes, by Florence Schroeder, Cumberland House Publishing, 2002. (ISBN 1581823096)

International Foundation for Functional Gastrointestinal Disorders

www.iffgd.org

Additional materials available on calcium include:

“*Nutrition Care for You...Calcium (178PI)*” booklet from University of Wisconsin Hospital and Clinics Food and Nutrition Services Department, Nutrition Clinics (see below).

If you have more questions please contact UW Health at one of the phone numbers listed below.

Nutrition Clinic Room 193
University Station
2880 University Avenue
Madison, WI 53705
(608) 263-5012

Nutrition Clinic Room 1296
UW Health West Clinic
451 Junction Road
Madison, WI 53717
(608) 265-7526

Nutrition Clinic Room 2085
UW Health East Clinic
5249 East Terrace Drive
Madison, WI 53718
(608) 265-0963