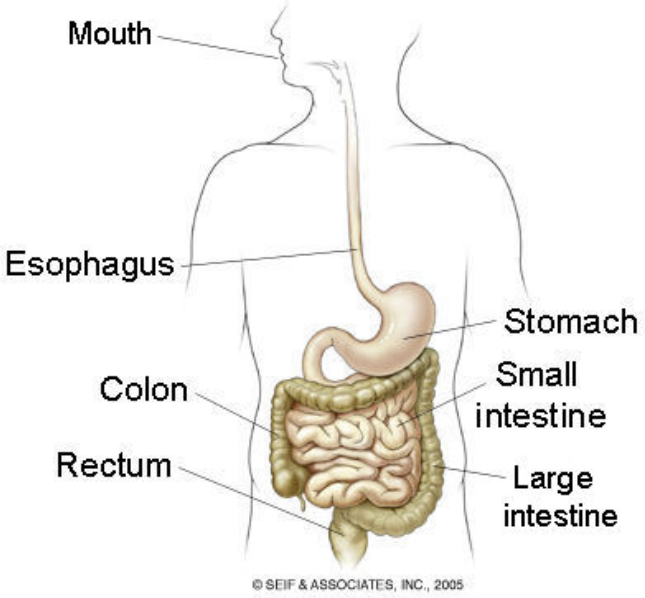
Lactose Intolerance, General

Lactose intolerance is the inability to digest enough *lactose*. That is the sugar in milk. This inability results from a shortage of the enzyme lactase. This enzyme is normally made by the cells that line the small intestine. Lactase breaks down milk sugar into simpler forms. These can then be absorbed into the bloodstream. When there is not enough lactase to digest the amount of lactose consumed, the result may cause discomfort. While not all people low in lactase have symptoms, those who do are considered to be lactose intolerant.



SYMPTOMS

Common symptoms include nausea, cramps, bloating, gas and diarrhea. These symptoms begin about 30 minutes to 2 hours after eating or drinking foods that contain lactose. How bad the symptoms get depends on the amount of lactose each person can tolerate.

CAUSES

Certain digestive diseases and injuries to the small intestine can reduce the amount of enzymes produced. In rare cases, children are born without the ability to make lactase. For most people, though, lactase deficiency is a condition that develops naturally over time. After about the age of 2 years, the body begins to produce less lactase. But many people may not experience *symptoms* (problems) until they are much older.

WHO IS AT RISK FOR LACTOSE INTOLERANCE?

Certain ethnic and racial populations are more widely affected than others. As many as 75 percent of all African Americans and American Indians and 90 percent of Asian Americans are lactose intolerant. The condition is least common among persons of northern European descent.

TREATMENT

- Lactose intolerance is fairly easy to treat. No treatment can improve the body's ability to produce lactase. But symptoms can be controlled through diet.
- Young children with lactase deficiency should not eat any foods that contain lactose. Older children and adults do not need to avoid lactose completely. But people differ in the amounts and types of foods they can handle. For example, one person may have symptoms after drinking a small glass of milk, while another can drink one glass but not two. Others may be able to manage ice cream and aged cheeses, such as cheddar and Swiss, but not other dairy products. Dietary control of lactose intolerance depends on people learning through trial and error how much lactose they can handle.
- For those who react to very small amounts of lactose or have trouble limiting their intake of foods that contain it, lactase enzymes are available without a prescription. These help people digest foods that contain lactose. The tablets are taken with the first bite of dairy food. Lactase enzyme is also available as a liquid. Adding a few drops of the enzyme will convert the lactose in milk or cream. This makes it more digestible for people with lactose intolerance.
- Lactose-reduced milk and other products are available at most supermarkets. The milk contains all of the nutrients found in regular milk. It also remains fresh for about the same length of time, or longer if it is super-pasteurized.

HOW IS NUTRITION BALANCED?

Milk and other dairy products are a major source of nutrients. The most important of these nutrients is calcium. Calcium is essential for the growth and repair of bones throughout life. In the middle and later years, a shortage

of calcium may lead to thin, fragile bones that break easily. This condition is called osteoporosis. A concern for both children and adults with lactose intolerance is getting enough calcium in a diet that includes little or no milk.

In planning meals, making sure that each day's diet includes enough calcium is important, even if the diet does not contain dairy products. Many non-dairy foods are high in calcium. Green vegetables, such as broccoli and kale, and fish with soft, edible bones, such as salmon and sardines, are excellent sources of calcium. To help in planning a high-calcium and low-lactose diet, the table that follows lists some common foods that are good sources of dietary calcium and shows how much lactose they contain. Recent research shows that yogurt with active cultures may be a good source of calcium for many people with lactose intolerance, even though it is fairly high in lactose. Evidence shows that the bacterial cultures that are used to make yogurt produce some of the lactase enzyme required for proper digestion of lactose.

CALCIUM AND LACTOSE IN COMMON FOODS

Vegetables	**Calcium Content**	**Lactose Content**
Calcium-fortified orange juice, 1 cup	308-344 mg	0
Sardines, with edible bones, 3 oz.	270 mg	0
Salmon,canned,with edible bones, 3 oz.	205 mg	0
Soymilk, fortified, 1 cup	200 mg	0
Broccoli (raw), 1 cup	90 mg	0
Orange, 1 medium	50 mg	0
Pinto beans, 1/2 cup	40 mg	0
Tuna, canned, 3 oz.	10 mg	0
Lettuce greens, 1/2 cup	10 mg	0
Dairy Products		
Yogurt, plain, low-fat, 1 cup	415 mg	5 g
Milk, reduced fat, 1 cup	295 mg	11g
Swiss cheese, 1 oz.	270 mg	1g
Ice cream, 1/2 cup	85 mg	6g
Cottage cheese, 1/2 cup	75 mg	2-3g

Adapted from Manual of Clinical Dietetics. 6th ed. American Dietetic Association; and Soy Dairy Alternatives. Available at: www.soyfoods.org.

Some people with lactose intolerance may think they are not getting enough calcium and vitamin D in their diet. Talking with a caregiver or dietitian may be helpful in deciding whether any dietary supplements are needed. Taking vitamins or minerals of the wrong kind or in the wrong amounts can be harmful. A dietitian can help in planning meals that will provide the most nutrients with the least chance of causing discomfort.

WHAT IS HIDDEN LACTOSE?

Although milk and foods made from milk are the only natural sources, lactose is often added to prepared foods. People with very low tolerance for lactose should know about the many food products that may contain even small amounts of lactose, such as:

- Bread and other baked goods.
- Processed breakfast cereals.
- Instant potatoes and soups.
- Powdered meal-replacement.
- Margarine.
- Lunch meats (non-kosher).
- Candies and other snacks.
- Supplements.
- Pancake, biscuits and cookie mixes.
- Breakfast cereals.
- Salad dressings.

Some products labeled non-dairy, such as powdered coffee creamer and whipped toppings may also include ingredients that are derived from milk and therefore contain lactose. Smart shoppers learn to read food labels with care, looking not only for milk and lactose among the contents, but also for such words as whey, curds, milk by-products, dry milk solids, and nonfat dry milk powder. If any of these are listed on a label, the product contains lactose.

In addition, lactose is used as the base for more than 20 percent of prescription drugs and about 6 percent of over-the-counter medicines. Many types of birth control pills, for example, contain lactose, as do some tablets for stomach acid and gas. But these products typically affect only people with severe lactose intolerance.

SUMMARY

Even though lactose intolerance is widespread, it need not be a serious threat to good health. People who have trouble digesting lactose can learn which dairy products and other foods they can eat without discomfort and which ones they should avoid. Many will be able to enjoy milk, ice cream, and other such products if they take them in small amounts or eat other food at the same time. Others can use lactase liquid or tablets to help digest the lactose. Even older women at risk for osteoporosis and growing children who must avoid milk and foods made with milk can meet most of their special dietary needs by eating greens, fish, and other calcium-rich foods that are free of lactose. A carefully chosen diet, with calcium supplements if the caregiver or dietitian recommends them, is the key to reducing symptoms and protecting future health.

Some of this information courtesy of the National Institute of Health, NIH

Document Released: 12/18/2006 Document Re-Released: 10/20/2009
ExitCare® Patient Information ©2011 ExitCare, LLC.