



LACTOSE INTOLERANCE

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Lactase Deficiency

Lactose, commonly known as milk sugar, is the primary carbohydrate in dairy products. Lactase, an enzyme our bodies produce only in the small intestine, breaks down lactose into simpler units and thus is necessary for us to digest lactose. People who do not produce enough lactase are lactase deficient and are unable to digest lactose. These people can experience symptoms of bloating, cramping, gas, and diarrhea after eating dairy products.

Lactose is the only source of carbohydrate for breast-fed infants and is usually easily digested by young children. However, approximately 70 percent of children worldwide between three and five years of age lose their ability to digest lactose because of lactase deficiency. Some population groups, such as Caucasians living in northern and western Europe, maintain the ability to digest lactose throughout life; however, lactose intolerance is common among adults of African, Asian, and Mediterranean heritage. Premature babies may also be lactase deficient because full lactase production does not usually occur until a baby has reached full term.

Causes of Lactase Deficiency

Primary lactase deficiency is hereditary. Lactase deficiency, however, can also be caused by two other factors. Congenital lactase deficiency, which is extremely rare, occurs when the enzyme activity is diminished at birth. Secondary lactase deficiency results when the intestines become damaged from disease, surgery, or radiation. When the damaged intestinal cells recover, their ability to produce lactase often returns.

Symptoms

If there is not enough lactase available to digest the lactose in food, the lactose remains in the intestines, causing the intestines to retain water. Usually within 30 minutes after eating food that contains lactose, a person with lactase deficiency may experience bloating and cramping. As the lactose moves into the colon, bacteria there digest the lactose into smaller particles, causing additional bloating and cramping as well as diarrhea and gas.

Milk Allergy

Do not confuse lactase deficiency and the resulting lactose intolerance symptoms with symptoms from a milk allergy. A milk allergy is caused by proteins in milk. Less than seven percent of formula-fed infants are allergic to milk and most generally outgrow the allergy by the age of two. Some symptoms of a milk allergy are the same as lactose intolerance symptoms: bloating, cramping, diarrhea, and gas. However, other symptoms of an allergic reaction to milk may include severe diarrhea, vomiting, runny nose, skin rashes, or asthma.

The Lactose Limit

Among people with lactase deficiency, the range of tolerance to lactose is extremely wide. Most people with lactase deficiency generally can drink one glass of milk without having significant symptoms, especially if they drink milk with other food.

Diagnosis

To clinically test for lactose intolerance, people are given the equivalent amount of lactose found in one quart of milk. People with mild lactase deficiency cannot tolerate that much lactose. The most common diagnostic method is to draw blood samples periodically to measure a level of glucose that is associated with lactase deficiency.

Another way to diagnose lactose intolerance is to completely avoid foods with lactose for five days. If symptoms disappear, then lactase deficiency is usually the culprit. By slowly introducing foods with lower lactose levels, a person can determine how much lactose he or she can tolerate. If severe symptoms persist, the person should consult a physician.

Nutritional Value of Dairy Products

Simply avoiding milk to prevent lactose intolerance symptoms can result in a diet deficient in calcium. Dairy products are the most important source of calcium in our diet. Calcium is needed to build strong bones and teeth and plays other vital roles in the body as well. Lactose increases

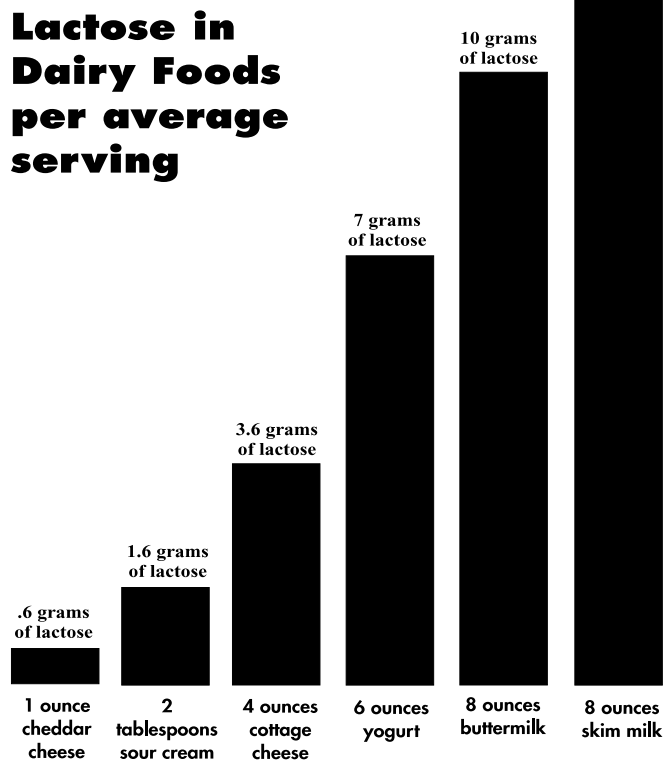
the absorption of the minerals calcium, phosphorus, magnesium, and zinc. The proteins in milk are of high quality, and fortified milk is a rich source of vitamin D. The water-soluble vitamin riboflavin is also abundant in milk. Other vitamins and minerals are found in smaller quantities.

Treatment

Treatment requires that lactose be restricted to the level that does not produce symptoms. This does not mean that you should totally eliminate lactose from your diet if you are lactose intolerant. Aged cheddar or Swiss cheese, cottage cheese, ice cream and “active cultured” yogurt have less lactose than most other dairy products. Lactose intolerant people can usually eat these products without incident. Whole or chocolate milk usually doesn’t cause discomfort because the increased fat and sugar slows digestion. Foods made with milk such as soups and milkshakes usually do not produce symptoms for most people with lactase deficiency.

Lactose in Foods

Only dairy products contain lactose naturally. The amount of lactose in an average serving size of some foods is listed below. Some foods, especially yogurt, may vary in lactose content depending on the product formulation.



Even though lactose is found primarily in dairy products, lactose is added to many packaged foods. The ingredients are usually listed on the ingredient label as lactose, whey, milk, milk solids, dry milk solids, or nonfat dry milk powder. These ingredients may be found in such foods as french fried potatoes, ice cream, pie fillings and bakery products, candies, frozen desserts, instant products, processed meats, and processed cheese.

Enzyme Replacement

Several enzyme replacement products are available on the market. These include tablets that can be taken before meals, drops that can be added to food, or treated dairy products that have most of the lactose predigested.

With these enzyme replacement products and careful menu planning, people with lactase deficiency can reap the nutritional benefits of dairy foods with none of the discomforting symptoms of lactose intolerance.