Lactose Intolerance:
Information for Health Care Providers

Most tweens* and teens are not getting the recommended 1,300 mg of calcium a day they need to build strong bones—in fact, fewer than one in 10 girls and just more than one in four boys ages 9 to 13 are at or above their adequate intake of calcium.[1] And adolescents who may be lactose intolerant are even less likely to get enough calcium.

As you know, pediatric bone development plays a considerable role in osteoporosis prevention. The tween and teen years are critical for bone development because most bone mass accumulates during this time. In fact, by the time teens finish their growth spurts around age 17, 90 percent of their adult bone mass is established.

As a health care provider, you can help your patients get the calcium they need by talking with them and their parents to determine if they have trouble digesting lactose and by providing guidance about how they can get enough calcium each day in spite of this condition.

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*Note: Tweens are kids ages 9 to 12.

Milk Matters

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Institute of Child Health and Human Development

Are there different types of lactose intolerance?

Individuals with lactose intolerance are unable to digest significant amounts of lactose due to an inadequate amount of the enzyme lactase.[2]

Research shows that lactase is high at birth in all infants regardless of race or ethnicity, but wanes by age 5 to 7 in non-Caucasians and other populations that don't traditionally include dairy products in their diets.[3]

There are three main types of lactose intolerance:

- **Primary lactose intolerance**, in which individuals who were able to digest lactose previously begin experiencing symptoms of digestive discomfort with no history or signs of underlying intestinal disease, is the most common form of lactase deficiency.
- **Secondary lactose intolerance** is the result of a gastrointestinal disease, such as severe gastroenteritis.
- **Congenital lactose intolerance**, such as galactosemia, is a lifelong complete absence of lactase, and it is relatively rare. However, it is not uncommon for secondary lactose intolerance to be misdiagnosed during the newborn period as congenital lactose intolerance.

Clinical symptoms of lactose intolerance can include abdominal pain, diarrhea, flatulence, and bloating. The severity of symptoms differs, often depending on the amount of lactase remaining in the body and how much lactose has been consumed.

Individuals vary in their degree of lactose intolerance, but even children and teenagers with primary lactose intolerance can usually consume 8 to 12 ounces (1 to $1^{1}/_{2}$ cups) of milk without experiencing symptoms.

Some patients with lactose intolerance may believe they are allergic to milk or milk products. A milk allergy, however, is related to the proteins in milk rather than the lactose.

How common is lactose intolerance?

An estimated 30 million to 50 million American adults are lactose intolerant.[4] The pattern of primary lactose intolerance appears to have a genetic component, and specific populations show high levels of intolerance, including approximately: 95 percent of Asians, 60 percent to 80 percent of African Americans and Ashkenazi Jews, 80 percent to 100 percent of American Indians, and 50 percent to 80 percent of Hispanics. Lactose intolerance is least common among people of northern European origin, who have a lactose intolerance prevalence of only about 2 percent.[5]

Most people with lactose intolerance do not require a completely lactose-free diet.

Is self-diagnosis of lactose intolerance accurate?

In some cases, self-diagnosis of lactose intolerance may be the result of culturally based attitudes toward or misinformation about milk and its effects on health. Consequently, many people may be unnecessarily limiting or depriving themselves of the best source of calcium and other nutrients, to the detriment of their overall health. For instance:

- Ethnic minorities may consume less calcium in their diets because they believe that their ethnic group as a whole is lactose intolerant.
- Many people believe, incorrectly, that all milk and milk products are fattening.[6] Among adolescents, particularly females, claims of lactose intolerance may be attempts to avoid the calories in milk.
- Children and teenagers may also maintain that they have lactose intolerance because advertising suggests that milk isn't "cool."[7]

What are calcium consumption strategies for patients with lactose intolerance?

Although the degree of lactose intolerance varies, most people with lactose intolerance do not require a completely lactose-free diet. Milk and milk products should not be completely eliminated because they provide key nutrients such as calcium, vitamins A and D, riboflavin, and phosphorus.

Studies indicate the following strategies can diminish symptoms in people who have lactose intolerance:

- Drink low-fat or fat-free milk in servings of 1 cup or less.
- Consume low-fat or fat-free milk with other food, such as breakfast cereal.
- Consume other dairy products, such as low-fat or fat-free hard cheeses or cottage cheese, or low-fat or fat-free ice cream or yogurt. These foods contain a lower amount of lactose per serving compared with milk and may cause fewer symptoms.[8]
- Choose lactose-free milk and milk products, which have an equivalent amount of calcium as regular milk.
- Use over-the-counter pills or drops that contain lactase, which can eliminate symptoms altogether.
- Consume calcium-fortified foods such as orange juice with added calcium, soy beverages with added calcium, and some fortified breads and breakfast cereals.

Some non-dairy foods, such as spinach and broccoli, are also healthy sources of calcium. However, the body absorbs much less calcium from these foods compared to milk or milk products.

Are there any special recommendations for populations with high rates of lactose intolerance?

The American Academy of Pediatrics (AAP) recommends that population groups with high rates of lactose intolerance should *not* be encouraged to avoid milk and milk products.[9] They should try the calcium consumption strategies to get dietary calcium.

Should children take calcium supplements?

Experts suggest that the preferred source of calcium is through calcium-rich foods.[10] However, if calcium cannot be obtained dietarily, calcium supplements can be given to children.

Other resources:

- The National Library of Medicine at the National Institutes of Health (NIH) provides information on calcium through its MedlinePlus Web site at **http://www.nlm.nih.gov/medlineplus/lactoseintolerance.html**.
- The National Institute of Diabetes and Digestive and Kidney Diseases at the NIH provides information about lactose intolerance at **http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance/index.htm**.
- The NIH Office of Dietary Supplements Web site also provides information about calcium at **http://dietary-supplements.info.nih.gov/factsheets/calcium.asp**.
- The AAP has information for parents about lactose intolerance at **http://www.aap.org/patiented/calciumneed.htm**.

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[7] American Academy of Pediatrics. (1999). Calcium requirements of infants, children, and adolescents. *Pediatrics*,104(5), 1152-1157.

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[9] American Academy of Pediatrics, Committee on Nutrition. (1990). The practical significance of lactose intolerance in children: supplement. *Pediatrics*, 86, 643-644.

[10] National Institutes of Health, DHHS. Consensus Development Conference Statement on Optimal Calcium Intake. Retrieved August 16, 2005, from http://consensus.nih.gov/cons/097/097_statement.htm.

What can I do to help my patients?

There are many things you can do as a health care provider to help your patients get enough calcium, including:

- If you have patients who are lactose intolerant, share the "calcium consumption strategies" with them so they know how they can still get calcium without discomfort.
- Provide parents with copies of the *Milk Matters* booklet, *For strong bones…For lifelong health…Milk Matters*. To order free copies of the booklet, call **1 800 370 2943** or visit **http://www.nichd.nih.gov/milk**.
- Encourage patients ages 9 to 18 to consume 1,300 mg of calcium a day. If a patient does not want to add milk or milk products to his or her diet, suggest non-dairy sources of calcium and calcium-fortified foods.
- Learn more about discussing calcium consumption with patients and their parents in the fact sheet *Building Strong Bones: Calcium Information for Health Care Providers.*
- For more information, visit the *Milk Matters* Web site at **http://www.nichd.nih.gov/milk**.

For additional copies of this fact sheet or to order free copies of patient education materials, contact the **NICHD Information Resource Center** at:

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