Is Lactose Intolerance Stopping Your Dairy Intake?

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Disclosures

- Board /Advisory Panel Member
  - Health and Wellness Advisory Panel for National Dairy Council
  - International Experts Movement for Essential Fatty Acid Education (Educational Grant from Unilever)
  - Aspartame Advisory Panel
  - California Walnut Commission Health Professionals Network
  - Facts Up Front Advisory Panel
Objectives

- Discuss and dispel myths surrounding lactose intolerance
- Outline the status of current science regarding the incidence of lactose maldigestion and intolerance
- Define currently accepted methods of diagnosis for lactose maldigestion and intolerance
- Review tips to help reduce clients’ fears about lactose tolerance in order to enjoy dairy foods and their nutrition
Lactose Intolerance

- Lactase enzyme needed for digestion of lactose
- Lactose intolerance is rare in younger children\(^1,\)\(^2\)
- Lactase begins to decline between ages 3 and 5
- Lactose intolerance typically emerges in late-adolescence or adulthood\(^2\)

12% of Adults Report Being Lactose Intolerant

Percent of Adults, by Ethnic Group, Who Self-Reported Lactose Intolerance

- 19.5% African Americans
- 10.05% Hispanic Americans
- 7.72% European Americans

Why Rates May Have Been Over-Estimated

New Estimates (2009)$^1$
- Based on self-reports
- Reflect real life consumption

Previous Estimates (1988)$^2$
- Lactose maldigestion breath tests
- Based on unrealistic amounts of lactose
- Findings widely misinterpreted

Varying Degrees of Lactose Sensitivity

**Lactose Maldigestion**
Incomplete digestion of *lactose*, the natural sugar in milk, due to low activity of the *lactase* enzyme; may be asymptomatic

**Lactose Intolerance**
Gastrointestinal disturbances following the consumption of an amount of lactose greater than the body’s ability to digest and absorb

Source: Lactose Intolerance, National Digestive Diseases Information Clearinghouse.

Lactose Maldigestion vs. Lactose Intolerance

**Lactose Maldigestion**
Result of normal physiologic, genetically determined decline in lactase activity. Does not automatically mean lactose intolerance.

**Lactose Intolerance**
Gastrointestinal symptoms associated with incomplete digestion of lactose.
Lactase Deficiency

- 3 forms
  - Congenital lactase deficiency
  - Secondary or acquired lactase deficiency
  - Primary lactase deficiency
Diagnosis of Lactose Intolerance

- Often subjective
- Generally begin 30 – 120 minutes after ingestion
- Symptoms vary dependent on individuals level of lactase enzyme, transit time and genetics
- Lactose maldigesters do not automatically have lactose intolerance
Diagnosis of Lactose Maldigestion

- Direct or indirect testing
  - Direct – intestinal biopsy
  - Indirect – lactose tolerance test, stool acidity test, breath hydrogen test
    - Breath hydrogen is the “Gold Standard”
    - Noninvasive, suitable for children and adults
    - Dose of lactose equal to 2 – 8 ounce glasses of milk
# Lactose Intolerance vs Milk Allergy

## Key differences...

<table>
<thead>
<tr>
<th>Lactose intolerance</th>
<th>Milk allergy</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sensitivity</td>
<td>An allergy</td>
</tr>
<tr>
<td>Occurs in gastrointestinal system</td>
<td>Triggered by immune system</td>
</tr>
<tr>
<td>A sensitivity to milk carbohydrate (lactose)</td>
<td>A reaction to milk protein</td>
</tr>
<tr>
<td>Rare in young children</td>
<td>Generally impacts young children; may be outgrown*</td>
</tr>
<tr>
<td>Can enjoy milk and milk products with simple management strategies</td>
<td>Should avoid milk and milk products (unless allergy is outgrown)</td>
</tr>
</tbody>
</table>


# Amount of Lactose in Common Dairy Foods

<table>
<thead>
<tr>
<th>Product</th>
<th>Lactose (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole, 2%, 1%, Skim Milk (1 cup)</td>
<td>12 g</td>
</tr>
<tr>
<td>Lactaid® Milk, low-fat, lactose-free (1 cup)</td>
<td>0 g&lt;sup&gt;A&lt;/sup&gt;</td>
</tr>
<tr>
<td>Cottage Cheese, low-fat, 2% milkfat (1/2 cup)</td>
<td>3 g</td>
</tr>
<tr>
<td>Cheddar Cheese, sharp (1 oz)</td>
<td>&lt;0.1 g</td>
</tr>
<tr>
<td>Swiss Cheese (1 oz)</td>
<td>&lt;0.1 g</td>
</tr>
<tr>
<td>Mozzarella (1 oz)</td>
<td>&lt;0.1 g</td>
</tr>
<tr>
<td>American Cheese, pasteurized, processed (1 oz)</td>
<td>1 g</td>
</tr>
</tbody>
</table>

Note: these averages are supplied by the USDA. Lactose content varies by product and the lactose content of a specific product would need to be verified by a vendor.

Unless otherwise indicated, data sourced from: USDA / ARS, Nutrient Data Laboratory, Standard Reference, 24, Accessed December 15, 2011. Lactose content varies by product and the lactose content of a specific product would need to be verified by a vendor.

What Science Knows about LI?

- NIH Conference on Lactose Intolerance – 2010
  - Consumption of 1 cup of milk seems to yield few if any symptoms
  - Tolerance of intake higher when consumed w/meals or distributed throughout the day
  - 2 cups seem to trigger symptoms in most adults
  - Tolerance of hard cheese, yogurt and reduced lactose foods generally good

The Unintended Consequences

People who avoid milk and milk products due to lactose intolerance miss many benefits

Dairy and its essential nutrients are associated with:

• Improved nutrient intake and diet quality
• Better bone health
• Weight management
• Reduced risk of certain chronic diseases

Comparison of Consumption to Recommendations

**FIGURE 5-1. How Do Typical American Diets Compare to Recommended Intake Levels or Limits?**

**Eat more of these:**
- Whole grains: 15% (59% goal)
- Vegetables: 42% (59% goal)
- Fruits: 52% (61% goal)
- Dairy: 44% (61% goal)
- Seafood: 61% (75% goal)
- Oils: 40% (56% goal)
- Fiber: 28% (75% goal)
- Potassium: 56% (66% goal)
- Vitamin D: 75% (80% goal)
- Calcium: 75% (80% goal)

**Eat less of these:**
- Calories from SoFAS*: 280% (200% limit)
- Refined grains: 149% (200% limit)
- Sodium: 110% (149% limit)
- Saturated fat: 110% (149% limit)

Percent of goal or limit
Impacts of Low Calcium Intake

- Those with LI do not have impaired absorption of calcium

- Limiting factor in those with LI is poor calcium intake

- Low calcium intake impacts bone accretion and bone mass – affecting young to old
There’s More than One Way to Enjoy Dairy

- Lattes, warm milk, hot chocolate
- Natural cheeses such as Cheddar, Parmesan, Swiss
- Cold beverages such as smoothies/licuados
- Cereal and milk (hot or cold)
Simple Strategies to Manage Lactose Intolerance

✓ Sip it – Introduce dairy slowly
✓ Try it – Opt for lactose-free products
✓ Stir it – Mix milk with food
✓ Slice it – Choose natural cheeses
✓ Spoon it – Try easy-to-digest yogurt
Health & Nutrition Authorities Support Dairy
Dietary Guidelines for Americans

- Identifies milk and other dairy products as food groups to increase
- Recommends 3 cups of low-fat or fat free/day
- Recommends lactose free and lower lactose products
2009 report recommends dairy foods as first choice
Encourages MD’s to communicate this message
Discusses cultural beliefs versus the science
2006 report on lactose intolerance

Recommends dairy consumption for the calcium, vitamin D, protein and other nutrients needed for bone health and growth

Includes mention of low lactose dairy options
New recommendations recognize dairy first for LI

- Lactose free and lactose reduced dairy are in WIC packages w/o a note from MD

- Soy and more cheese allowed with MD support
2010 met and concluded
- Avoidance of nutrient dense milk and milk foods is unnecessary
- Avoidance of milk and milk foods could lead to nutrient gaps
2010 adopted a scientific opinion

Discourages avoidance of milk and milk products for LI

Recommends lactose-reduced and lactose free dairy products
Lactose Lowdown

The Lowdown on Lactose Intolerance

Making the Most of Milk

The facts about lactose intolerance may surprise you. For starters, it’s not as widespread as many people think. And, it does not require avoidance of dairy foods. In fact, research shows that people who have trouble digesting lactose can enjoy dairy foods daily.

Let’s Look at the Facts

Lactose intolerance is one type of food sensitivity — it’s not an allergy. It is the result of not having enough lactase, an enzyme that digests lactose, the natural sugar in milk. The amount of lactase a person has is genetic. People who have low levels of the lactase enzyme may experience intolerance symptoms such as gas, bloating, or diarrhea if they consume more lactose than their system can handle at one time. Not everyone diagnosed
Make Lactose Fit

Fall In Love with Dairy Again

Do you love the taste of dairy foods, but sometimes feel uncomfortable or bloated after having milk, cheese or yogurt? If so, there are a variety of tips that may help you enjoy the recommended 3 servings of low-fat or fat-free dairy foods every day – without experiencing discomfort. This is good news because the 2010 Dietary Guidelines for Americans (DGA) recognizes dairy foods as an important source of nutrients, such as calcium, potassium and vitamin D, for those with lactose intolerance.

Enjoy Dairy Again with These Tips:

SIP IT. Start with a small amount of milk daily and increase slowly over several days or weeks to build your tolerance.

TRY IT. Opt for lactose-free milk and milk products, like Lactaid. These real milk products have lower amounts of or zero lactose and provide the same nutrients as regular dairy foods. They also taste great!

STIR IT. Mix milk with other food, such as soup or cereal; blend with fruit; or drink with meals. Solid foods help slow digestion and allow the body more time to digest lactose.

SLICE IT. Top sandwiches or crackers with natural cheese such as Cheddar, Colby, Queso Blanco, Mozzarella, Jack, or cream cheese.

FAST FACTS ABOUT LACTOSE-FREE AND OTHER DAIRY FOODS

A cup of milk has 12 grams of lactose. People with lactose intolerance can often enjoy these dairy foods without discomfort:

<table>
<thead>
<tr>
<th>Dairy Food</th>
<th>Lactose Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactaid® Milk</td>
<td>0 g lactose</td>
</tr>
<tr>
<td>Low-fat, Lactose-free*</td>
<td>(1 cup) 0 g lactose</td>
</tr>
<tr>
<td>Low-fat Cottage Cheese</td>
<td>(1/2 cup) 3 g lactose</td>
</tr>
<tr>
<td>Cheddar, Swiss, Mozzarella Cheese</td>
<td>(1 oz) &lt;0.1 g lactose</td>
</tr>
<tr>
<td>American Cheese</td>
<td>1 g lactose</td>
</tr>
<tr>
<td>Plain Greek-style Yogurt**</td>
<td>(6 oz) 4 g lactose</td>
</tr>
<tr>
<td>Plain, Low-fat Yogurt**</td>
<td>(6 oz) 13 g lactose</td>
</tr>
<tr>
<td>Select Hispanic Cheeses (Queso Blanco, Queso Fresco)</td>
<td>1 g lactose</td>
</tr>
</tbody>
</table>

There is a variation in lactose content from product to product.

Lactose-free milk is real milk, just without the lactose! So, sip and enjoy the nutritional benefits of dairy, without unwanted discomfort. People like the taste of lactose-free milk more than some of the available.
Resources

- White paper, “Unintended Consequences of Dairy Avoidance”
Thank You!

December 5, 2013