Dairy's Role in Lactose Intolerance

Presented by Toby Amidor, MS, RD, CDN
Moderated by Constance Brown-Riggs MSEd, RD, CDE, CDN

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Complimentary 1-Credit Continuing Education Education Webinar
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Disclosure: Toby is a member of Dannon’s Yogurt Board and the National Dairy Council’s Lactose Intolerance Speakers Bureau.

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About Me

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Lactose Intolerance: Let Them Drink Milk

By TOBY AMIDOR
November 1, 2013

You read it right! Folks with lactose intolerance should be drinking milk. But let’s not stop there – cheese and yogurt should be on the menu, too. Recent research found that folks with lactose intolerance can tolerate up to 1 cup of milk in one sitting. But let’s start from the beginning.

What is Lactose Intolerance?

Lactose intolerance is a gastrointestinal disturbance that happens after consuming more lactose than your body can handle. Milk and dairy products contain a natural milk sugar called lactose, made from two sugar components, glucose and galactose. The body needs to separate lactose into its two sugar components is that it can be absorbed into your bloodstream. If these two sugars stay connected, uncomfortable symptoms like bloating, gas, loose stools and stomach pain can result.

Lactose intolerance is different from a milk allergy. A cow’s milk allergy is triggered by the immune system, not the digestive system like in lactose intolerance. Someone with a milk allergy must avoid all milk and dairy products. Those with a cow’s milk allergy should get retested regularly.
Have lactose intolerance? You can still drink milk and eat cheese

People with lactose intolerance don’t have to cut milk and dairy products completely from their diets because they can tolerate some lactose, and eating those products with another food makes them easier to digest.

BY TOBY AMIDOR / U.S. NEWS & WORLD REPORT
FRIDAY, NOVEMBER 1, 2013, 5:56 PM

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FACTS ABOUT LACTOSE INTOLERANCE

By Toby Amidor, MS, RD, CDN

Q: I’ve learned that people with lactose intolerance can tolerate some dairy in their diet. Are certain dairy foods better tolerated than others?

A: There are an estimated 30 million Americans who are lactose intolerant. However, there are many misconceptions about lactose intolerance. The National Medical Association and National Institutes of Health expert panels recommend including dairy in the diet, as the risk of developing a calcium deficiency can be minimized by including minimal amounts of calcium in the diet.

Including Dairy

The amount of lactose found in a food can determine how well it will be tolerated. The lower the lactose level, the better the person will tolerate the food. Here are the lactose levels of some common foods:

- 1 cup of yogurt: 13 g
- 1 cup of milk: 12 g
- 1 cup of Greek yogurt: 7 to 9 g
- 1 oz of hard cheese (e.g., asiago, cheddar, Edam): less than 0.1 g

Both traditional and Greek yogurts have live and active cultures that help digest the lactose and make it easier to tolerate. Lactose-free milk and dairy products such as cottage cheese and ice cream will enable clients to get the recommended servings of dairy per day without the gastrointestinal symptoms.

Moreover, when milk or dairy products are mixed with solid foods (e.g., using low-fat milk to thicken soup, garnishing pasta with grated Parmesan cheese), it helps slow digestion and gives the body more time to digest lactose. The issue with lactose intolerance isn’t a lack of the lactase enzyme; it’s consuming more lactose than the body can break down at one time. Studies have shown that up to 12 g of lactose can be tolerated in one sitting, especially when it’s eaten with other foods.

Counseling Clients

It’s important to explain to clients the difference between lactose intolerance and malabsorption and remind them to get an accurate diagnosis. Milk and dairy should be recommended as part of a healthful diet. Those with lactose intolerance should include small amounts of milk and dairy foods to help meet the recommended three servings of dairy per day. To
Twitter

* @TodaysDietitian

* @tobyamidor

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Attendees will be able to:

1. Explain to clients with lactose intolerance the importance of including dairy as part of lactose intolerance management.

2. Debunk common myths surrounding dairy avoidance.

3. Provide clients with practical lactose intolerance management tips and techniques.

4. Respond to client questions regarding lactose intolerance.
Part 1
What is Lactose Intolerance?
Clinical Definition of Lactose Intolerance

GI disturbances that may be experienced following intake of an amount of lactose greater than the body’s ability to absorb it

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# Lactose Intolerance vs. Milk Allergy

<table>
<thead>
<tr>
<th>Lactose Intolerance</th>
<th>Milk Allergy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensitivity</strong></td>
<td><strong>Allergy</strong></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>

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Prevalence of Lactose Intolerance

* An estimated 30-50 million Americans identify as being lactose intolerant
* Rare in children

(NIH Publication, 2006)
By ethnic groups, data from a 2009 study reveal:

* ~19.5% African Americans
* ~10% Hispanic Americans
* ~8% European Americans

(Dairy Council Digest, 2010)
By gender:

- Both men & women can be affected
- Insufficient data to show a difference in prevalence between gender

(Suchy et al, NIH Consens State Sci Statements, 2010)
Lactose (dairy foods) and gluten (wheat)

Many people self-diagnose

Those who avoid gluten tend to avoid dairy foods too
Common Symptoms of Lactose Intolerance

Symptoms vary on the individual and may include:

- Gas/flatulence
- Bloating
- Abdominal pain
- Diarrhea

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Symptoms following lactose consumption vary based on:

- Level of lactase enzyme activity
- Gastric emptying rates
- Fecal bacterial metabolites
- Colonic mucosal absorptive capacity
- Intestinal transit time
Common Symptoms of Lactose Intolerance

- Severity of LI discomfort differ:
  - Perception of abdominal pain
  - Psychological impact of pain
  - Perceived social discomfort
Dairy foods contribute 9 essential nutrients:

- Vitamin B12
- Riboflavin
- Protein
- Calcium
- Potassium
- Zinc
- Magnesium
- Vitamin A
- Vitamin D

Many people self-diagnosed and properly diagnosed with LI avoid dairy.
2010 Dietary Guidelines for Americans recommends:

* 3 daily servings of low-fat or fat-free milk and milk products every day including those with LI
* ≥ 9 years of age
* As part of a healthy, balanced diet
Health Outcomes of Adequate Dairy

- Higher nutrient intake
- Better diet quality
- Ensure intake of nutrients of concern for Americans (Ca, K, Mg)
- May help maintain a healthy weight
- Associated with reduced risk of osteoporosis, hypertension, colon cancer, metabolic syndrome & diabetes

(McCullough et al, Cancer Causes Control, 2003)
New research conducted among African Americans & Hispanic Americans found those who considered themselves to be lactose intolerant:

- Calcium intake from dairy was lower
- Incidence for doctor-diagnosed DM & HTN was higher

(Bailey et al, J Nat Med Assoc., 2013)
Identifying Lactose Intolerance

- Many people self-diagnose based on uncomfortable symptoms
- Clients should be:
  - Referred to a physician for proper testing
  - Referred to a RDN to ensure a well-balanced diet
Measures ability of the intestines to break down lactose

- Measures the amount of hydrogen in the air breathed out

Normal: very little hydrogen in breath

- If the body has trouble breaking down & absorbing lactose → higher breath hydrogen levels

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How It Works

* Looks for glucose in your blood
  * Your body creates glucose when lactose breaks down
* Several blood samples taken before and after consuming a lactose-containing drink
In 2013, the National Dairy Council conducted a survey on health professionals to get a better understanding of their knowledge and practice when dealing with patients who experience lactose intolerance. They found that:

* Physicians assistants asked patients about lactose intolerance often, more often than family practitioners, internists and nurses (57% sometimes, 43% always)

* They also refer mostly to Gastroenterologists (43%), RDNs (29%), family practitioners (14%) and nurse practitioners (14%)
Part 2

Strategies for Management
The National Institute of Health (NIH)

- Expert panel suggests that adults & adolescents diagnosed with LI can tolerate ~12 g of lactose in a single dose = 1 cup of milk or yogurt

NMA & NIH

- Expert panel recommend folks with lactose intolerance try to keep dairy foods in their diet
NMA Recommended Strategies

- The nation’s largest and oldest organization representing African American physicians
- Recommends that African Americans and other with lactose intolerance make efforts to keep dairy foods in their diets to help meet nutrient recommendations
In its most recent statement, the NMA suggests health professionals:

- Provide health education regarding the beneficial role of dairy nutrients and chronic diseases
- Educate about the critical role 3 daily servings of dairy foods play in a healthy diet
- Encouraging patients to be formally tested
In its most recent statement, the NMA suggests health professionals:

- Gradually increasing regular exposure to lactose-containing foods
- Recommending other milk or milk products to reduce the risk of nutritional shortcomings
  - Yogurts, lactose-free dairy milk & low dairy lactose products
  - Lactase enzyme supplements

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The amount of lactose varies in dairy foods (milk, yogurt, cheese)

Lower lactose foods include Greek yogurt, cottage cheese, Swiss cheese, mozzarella

Greek and traditional yogurt contain live and active cultures to help digest yogurt

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# Amount of Lactose in Common Dairy Foods

<table>
<thead>
<tr>
<th>Product</th>
<th>Lactose (grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACTAID® Milk, low-fat, lactose-free (1 cup)</td>
<td>0</td>
</tr>
<tr>
<td>Butter (1 tablespoon)</td>
<td>0.01</td>
</tr>
<tr>
<td>Cheddar Cheese, sharp (1 oz)</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Swiss Cheese, Cheddar Cheese (sharp), Mozzarella (1 oz)</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>American Cheese, pasteurized, processed (1 oz)</td>
<td>1</td>
</tr>
<tr>
<td>Cottage Cheese (1/2 cup)</td>
<td>3</td>
</tr>
<tr>
<td>Yogurt, Greek-style (6 oz)</td>
<td>4</td>
</tr>
<tr>
<td>Ice Cream (1/2 cup)</td>
<td>4</td>
</tr>
<tr>
<td>Whole, 2%, 1%, Skim Dairy Milk (1 cup)</td>
<td>12</td>
</tr>
<tr>
<td>Yogurt, low-fat (6 oz)</td>
<td>13</td>
</tr>
</tbody>
</table>

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**Strategies for Dietary Management**

* **Try It**
  * Opt for lactose-free & milk products

* **Sip It**
  * Start with small amounts of milk daily
  * Increase slowly over several days/weeks

* **Stir It**
  * Mix milk with other foods to help slow digestion
  * Allows the body more time to digest lactose

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Strategies for Dietary Management

* Slice It
  * Top sandwiches/crackers with natural cheeses
  * Cheddar, Colby, Monterey Jack, Swiss mozzarella

* Shred It
  * Shred natural cheeses onto veggies, pastas, salads and soups

* Spoon It
  * Live & active cultures in yogurt make it easier to digest
Lactose-Free Dairy Products

- Milk (low fat, fat free, low fat chocolate, half-and-half)
- Yogurt
- Ice cream
- Eggnog
- Cottage cheese
A natural lactase enzyme is added to help breakdown lactose into its monosaccharide components.

May have a slightly sweeter taste due to the process of breaking down the sugars.
Lactose-Free ≠ Dairy Free

* Lactose-free milk/dairy are made from cow’s milk
* Lactose-free dairy provides the same essential nutrients as traditional dairy products

* Cooks just like cow’s milk
  * Puddings
  * Oatmeal

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## Milk Alternatives

<table>
<thead>
<tr>
<th>Milk Type</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Soy Milk        | * Off-white/yellowish color  
* Carrageenan (CSPI “caution”)                                                  |
| Coconut Milk    | * Thick/creamy flavor  
* ? Saturated fat (MCT)                                                        |
| Rice Milk       | * Made from unsweetened brown rice  
* Mild flavor  
* Watery texture                                                           |
| Almond Milk     | * Made from ground, soaked almonds  
* Texture similar to low fat cow’s milk  
* Sweet flavor                                                             |
| Hemp Milk       | * Made from ground, soaked hemp seeds  
* Creamy, nutty flavor                                                          |

**Consider:** Nutrition, Flavor, Appearance, Cost, Use

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WIC & Lactose-Free Milk

* WIC supports lactose-free milk before non-dairy options

* Soy can be substituted for cow’s milk
  * Children need medical documentation

* 2009 large scale study of ~900 adult consumers (Caucasian, African American, Hispanics) found:
  * Lactose-free cow’s milk scored significantly higher for overall liking/acceptability over soy-products
  * Participants included lactose tolerant & intolerant individuals

(Palacios et al. J. Sensory Studies, 2009)
Part 3

Lactose Intolerant-Friendly Dishes
Cooking with Lactose-Free Milk

* **Baking & Cooking**
* **Curdling**
  * Casein proteins curdle when exposed to heat
  * Soups/sauces
  * Prevention: careful control of heat
* **Scorching**
  * AKA burning of milk
  * Casein micelles and whey protein drop to bottom of pan, stick & burn
  * Heating milk can cause scorching
  * Prevention: medium-low flame or double boiler
Kefir, Fruit & Oatmeal Smoothie

* Serves: 2

* 1 cup lactose-free, fat free milk

* ¾ cup vanilla kefir

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Quiche Cups

- Serves: 12
- 1 cup nonfat plain Greek yogurt
- 12 oz reduced fat Cheddar cheese

www.nationaldairycouncil.org

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Oatmeal Crème Brulee

* Serves: 4

* 4½ cups lactose-free, fat free milk

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Cauliflower Cheese Puffs

* Serves: 10
* 10 oz reduced fat sharp Cheddar
* ¼ cup grated Parmesan (optional)
* 2 cup Greek yogurt (dip)

www.nationaldairy council.org

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Blue Cheese Deviled Eggs

* Serves: 6
* 1 cup lactose-free low fat cottage cheese
* 2.5 oz reduced fat crumbled blue cheese

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Cheesy Guacamole

* Serves: 8

* 16 oz lactose-free, low-fat cottage cheese

* 4 oz sharp reduced fat Cheddar

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Twitter Snapshot!

Photo courtesy of Amanda Soled, RD, CDN

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Lactose-Free Paneer

- Serves: 4
- 8 cups lactose-free, fat free milk

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Creamy Carrot Soup

* Serves: 10

* 3 cups lactose-free, fat free milk
Milk-Braised pork Shoulder

- Serves: 16

- 12 cups lactose-free, low fat milk

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Almond Twist Bread

- Serves: 18
- 1 cup lactose-free, reduced fat milk + 3 tsp (icing)
- Butter

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Eggs Benedict with Lighter Hollandaise Sauce

* Serves: 4

* ½ cup nonfat plain Greek yogurt
Grilled Asian Shrimp Skewers

Serves: 4

1 ½ cups nonfat plain Greek yogurt

Marinade

Dipping sauce
Peanut Butter-Banana Icebox Bars

- Makes: 16 bars
- 2 tablespoons butter
- 1 cup nonfat vanilla Greek yogurt
Part 4
Common Client Questions
Question #1

Does full fat milk have more lactose than low fat or fat free milk?
Answer: No

* The lactose content is the same no matter the fat content
* Same goes for cottage cheese, yogurt, and other dairy foods with varying levels of fat
Are lactose-free dairy products REALLY made from cow’s milk?
Answer: Yes!

* Lactose-free dairy products are made with real cow’s milk

* Traditionally have been made by adding a natural enzyme that breaks down the lactose to make milk lactose free
Question #3

I was diagnosed with lactose intolerance. Should I avoid all milk and dairy?
Many people with LI can still enjoy lactose-containing dairy foods without discomfort.

Here are some tips to help you:

- Start with a small amount of milk daily and increase slowly
- Opt for lactose-free dairy milk & milk products
- Mix milk with other foods
- Try natural cheeses like Cheddar, Colby, mozzarella or Swiss
- Choose yogurt with live and active cultures
Are lactose-free dairy products just as nutritious as cow’s milk products?
Answer #4

Answer: Absolutely!

* Lactose-free dairy foods provide the same essential nutrients as the equivalent form of regular dairy products
Can I cook with lactose-free milk?
Answer: Yes!

- Lactose-free milk and dairy cook just like cow’s milk
- Use in puddings, oatmeal, and in baking.
- Substitute 1:1 for cow’s milk
Please raise your glass of milk...

Here’s to enjoying dairy again!

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Thank you!

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Credit Claiming

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Credit Claiming Instructions:

1. Go to [www.CE.TodaysDietitian.com/LactoseIntolerance](http://www.CE.TodaysDietitian.com/LactoseIntolerance) OR Log in to [www.CE.TodaysDietitian.com](http://www.CE.TodaysDietitian.com) and go to My Account→ My Activities→ Courses (in Progress) and click on the webinar title.

2. Click “Continue” on the webinar description page. Note: You must be logged-in to see the “Continue” button.

3. Select the Evaluation icon to complete and submit the evaluation.

4. Download and print your certificate.

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