SCIENCE SUMMARY: Lactose Intolerance

There are solutions to help people with lactose intolerance enjoy dairy foods

Overview

Dairy foods such as milk, cheese and yogurt are an integral part of healthy eating patterns in the U.S., providing important shortfall nutrients, including calcium, potassium and vitamin D, as well as other essential nutrients. The Dietary Guidelines for Americans (DGA) recommend 3 daily servings of low-fat or fat-free dairy foods for those 9 years and older in the Healthy U.S.-Style Eating Pattern. However, lactose intolerance (LI) may lead some individuals to avoid or reduce dairy food consumption, which can result in missing out on many essential nutrients found in dairy foods. Low consumption of calcium and vitamin D has been linked to low bone mineral density and other adverse health outcomes, like higher risk of bone fracture or osteoporosis. Objective diagnosis and individualized management strategies can help many Americans who experience LI symptoms include dairy foods in their eating patterns. Personalized solutions may help those experiencing LI symptoms enjoy dairy foods and meet nutrient needs.

Lactose intolerance doesn't have to be a barrier to consuming dairy foods

Lactose intolerance is characterized by a group of symptoms, such as abdominal pain, bloating, gas, and/or diarrhea, that occur in some people after they consume dairy foods. If a person develops these symptoms due to the inability to break down milk sugar, lactose, he or she is said to have LI. The inability to break down lactose is known as lactose malabsorption, which is due to deficient levels of lactase, the enzyme that breaks down lactose.[1] Not all people with lactose malabsorption experience the symptoms of LI.[2] LI is a highly individualized condition; the types and severity of symptoms, and the amount of lactose that triggers symptoms, varies among and within individuals.[1]

Reducing dairy food consumption is a common, yet often unnecessary, reaction among those who experience LI, but this can lead to lower consumption of key nutrients.[1,2,3,4,5] Research indicates that in the U.S. and Canada, people who report they have LI eat fewer dairy foods and have lower calcium intakes compared to those who report they do not have LI.[6,7]

Lower dairy food consumption is of concern because Americans are not meeting recommendations for dairy foods and some of the shortfall nutrients dairy foods provide, including calcium, vitamin D and potassium.[4] Milk is the number one food source of these three nutrients in U.S. diets.[8,9] The 2015 DGA recommends low-fat or fat-free dairy foods, such as milk, cheese and yogurt, as part of healthy eating patterns that have been linked to lower risk of cardiovascular disease and type 2 diabetes.[5] Dairy food consumption is also linked to improved bone health, especially in children and adolescents.[5]

Individuals with LI may avoid dairy foods and, as a result, consume lower amounts of calcium and vitamin D.

Lactose intolerance is associated with higher risk for some chronic diseases

In 2010, the National Institutes of Health (NIH) issued a consensus statement on LI and health, and provided guidance on the condition.[1] An important finding was that individuals with LI may avoid dairy foods and, as a result, consume less calcium and vitamin D, which can contribute to low bone mineral density and other adverse health outcomes.[1] Americans who report LI

symptoms also report having significantly higher incidence of doctor-diagnosed diabetes and hypertension compared to Americans who report they do not have LI.[6]

Additionally, in their 2013 joint consensus statement on LI, the National Medical Association and the National Hispanic Medical Association encouraged African Americans and Hispanic Americans to eat 3 servings of low-fat or fat-free dairy foods daily.[10] According to the statement, minority groups consume fewer dairy foods than the general population and are at a higher risk for developing certain disease conditions, such as hypertension and diabetes,[10] which are associated with low calcium intake from dairy foods.[11] The American Academy of Pediatrics encourages children with LI to keep dairy foods in their diet to help meet nutrient needs.[12] Taken together, experts agree that nutrient-rich dairy foods are an important part of healthy eating patterns.[5]

Lactose intolerance: the importance of proper diagnosis

Obtaining a proper diagnosis is an important step when it comes to managing LI. Some individuals believe they have LI, though objective testing indicates they can digest lactose.[10] Health professionals recommend objective testing (e.g., the breath hydrogen test) to help ensure proper diagnosis,[10] instead of reducing dairy food consumption to determine if symptoms disappear. Many LI symptoms may be confused with those of other conditions (e.g., irritable bowel syndrome).[1]

Self-diagnosis and/or improper diagnosis may have contributed to misinformation about LI prevalence rates globally and within the U.S.[1] In addition, some studies vary in how LI is defined and how it is linked to lactose malabsorption.[1] Some studies have indicated LI prevalence rates differ by ethnicity.[13] Recent research conducted among individuals who report experiencing LI symptoms indicates LI rates are much lower than previous estimates.[11] Within the U.S., average self-reported LI prevalence rates in a national sample are about 12% of European American, African American and Hispanic American adults.[6]

Consuming smaller amounts of dairy foods at one time, or choosing lactose-reduced dairy foods, can help people meet dairy recommendations.[2,11]

A personalized approach can help manage symptoms and meet nutrient needs

Many people with LI may want to enjoy the taste, convenience and variety that dairy foods offer, but may be uncertain about the types or amounts of dairy foods to choose. Personalized management strategies can help, such as drinking small amounts of milk at a time, consuming milk with meals, opting for lactose-free or lactose-reduced milk, or choosing natural cheeses.[10,11,12]

The NIH found that those with lactose malabsorption can consume 12 grams of lactose (the amount in one cup of milk) at one time with no or minor LI symptoms.[1] Research also finds the lactose in yogurt may be easier for some people with LI to digest.[14] When yogurt contains live cultures, these bacteria may provide lactase to help the body break down lactose.[14] Some preliminary studies are finding other options that may show promise to help reduce symptoms, such as probiotic consumption.[15,16] Research indicates there is no benefit of raw milk consumption for reducing LI symptoms compared to pasteurized milk.[17] Because drinking raw milk is associated with foodborne illness, drinking pasteurized milk is recommended.[18]

A proper diagnosis can help people with LI find a solution that allows them to enjoy the variety of ways dairy foods can fit in their eating patterns. There are solutions available that can help people with LI continue to enjoy dairy foods.

SCIENCE SUMMARY: Lactose Intolerance

There are solutions to help people with lactose intolerance enjoy dairy foods

NATIONAL DAIRY COUNCIL

References

[1] Suchy FJ, Brannon PM, Carpenter TO, Fernandez JR, Gilsanz V, Gould JB, Hall K, Hui SL, Lupton J, Mennella J, Miller NJ, Osganian SK, Sellmeyer DE, Wolf MA. NIH Consensus Development Conference Statement: Lactose Intolerance and Health. *NIH Consens State Sci Statements* 2010;27:1-27.
[2] Di Rienzo T, D'Angelo G, D'Aversa F, Campanale MC, Cesario V, Montalto M, Gasbarrini A, Ojetti V. Lactose intolerance: from diagnosis to correct management. Eur Rev Med Pharmacol Sci 2013;17 Suppl 2:18-25.
[3] Committee to Review Dietary Reference Intakes for Vitamin D and Calcium, Food and Nutrition Board, Institute of Medicine. Dietary Reference Intakes for Calcium and Vitamin D. Washington, DC: National Academy Press, 2010.
[4] Fulgoni VL 3rd, Keast DR, Auestad N, Quann EE. Nutrients from dairy foods are difficult to replace in diets of Americans: food pattern modeling and an analyses of the National Health and Nutrition Examination Survey 2003-2006. Nutr Res 2011;31:759-65.
[5] U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015-2020 Dietary Guidelines for Americans. 8th Edition, December 2015. Available at http://health.gov/dietaryguidelines/2015/guidelines/.
[6] Nicklas TA, Qu H, Hughes SO, He M, Wagner SE, Foushee HR, Shewchuk RM. Self-perceived lactose intolerance results in lower intakes of calcium and dairy foods and is associated with hypertension and diabetes in adults. Am J Clin Nutr 2011;94:191-198.
[7] Barr SI. Perceived lactose intolerance in adult Canadians: a national survey. Appl Physiol Nutr Metab 2013;38:830-5.
[8] O'Neil CE, Keast DR, Fulgoni VL, Nicklas TA. Food sources of energy and nutrients among adults in the United States: National Health and Nutrition Examination Survey 2003–2006. Nutrients 2012;4:2097-120.
[9] O'Neil CE, Nicklas TA, Fulgoni VL. Food sources of energy and nutrients of public health concern and nutrients to limit with a focus on milk and other dairy foods in children 2 to 18 years of age: National Health and Nutrition Examination Survey, 2011-2014. Nutrients 2018 Aug; 10: 1050.
[10] Bailey RK, Fileti CP, Keith J, Tropez-Sims S, Price W, Allison-Ottey SD. Lactose intolerance and health disparities among African Americans and Hispanic Americans: an updated consensus statement. J Natl Med Assoc 2013; 105: 112-27.
[11] Jarvis JK, Miller GD. Overcoming the barrier of lactose intolerance to reduce health disparities. J Natl Med Assoc 2002;94:55-56.
[12] Heyman MB and the Committee on Nutrition. American Academy of Pediatrics. Lactose intolerance in infants, children, and adolescents. Pediatrics 2006; 118: 1279-86.
[13] Nicklas TA, Qu H, Hughes SO. Prevalence of self-reported lactose intolerance in a multi-ethnic sample of adults. Nutr Today 2009;44:186-7.
[14] Savaiano DA. Lactose digestion from yogurt: mechanism and relevance. Am J Clin Nutr. 2014;99(5 Suppl):1251S-5S.
[15] Staudacher H. Probiotics for lactose intolerance and irritable bowel syndrome. Br J Community Nurs. 2015;20 Suppl 6a:S12-4.
[16] Fassio F, Facioni MS, Guagnini F. Lactose Maldigestion, Malabsorption, and Intolerance: A Comprehensive Review with a Focus on Current Management and Future Perspectives. Nutrients 2018; 10: 1599.
[17] Mummah S, Oelrich B, Hope J, Vu Q, Gardner CD. Effect of raw milk on lactose intolerance: a randomized controlled pilot study. Ann Fam Med 2014;12:134-41.
[18] Mungai EA, Behravesh C, Gould L. Increased Outbreaks Associated with Nonpasteurized Milk, United States, 2007–2012. Emerg Infect Dis. 2015;21:119-22.