The Science Behind Dairy

Both the body of evidence and trusted third-party organizations continue to emphasize dairy's role in a sustainably nutritious diet.

Sustainable Nutrition

1. When the environmental impact of popular drinks is examined in relation to their nutritional value, milk comes out on top. Swedish researchers analyzed the nutrient density of a variety of beverages in relation to their climate impact. Milk has the highest nutrient density in relation to greenhouse gas (GHG) emissions compared to other beverages studied.

   - Smedman A, Lindmark-Månsson H, Drewnowski A, Edman AK. Nutrient density of beverages in relation to climate impact. Food Nutr Res. 2010; 54:10.3402/fnr.v54i0.5170.

2. The United Nations' Food and Agriculture Organization emphasizes that dairy is essential for global nutrition and food security. They recommend working with dairy farmers to continue cutting emissions and not abandoning dairy for exclusively plant-based alternatives. Nutrition and sustainable food systems must go hand in hand in order to protect people and planet.

   - Food and Agriculture Organization of the United Nations and Global Dairy Platform, Inc. Climate change and the global dairy cattle sector – The role of the dairy sector in a low-carbon future. Rome. 36 pp. Licence: CC BY-NC-SA- 3.0 IGO. Published 2018. Accessed November 2019.

3. In the United States farmers are already implementing sustainable farming practices, particularly across the Midwest.

   - Miller G, Auestad N. Towards a sustainable dairy sector: Leadership in sustainable nutrition. International Journal of Dairy Technology. 2013;66(3):307-316.

4. The Innovation Center for U.S. Dairy recognizes the need to build a sustainable future and set 2050 environmental stewardship goals to do such. These goals continue a commitment by dairy to produce nutritious dairy foods that sustainably feed a growing global population.

   - 2050 Environmental Stewardship Goals

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Health Benefits

1. A recent (Sept 2019) technical report and accompanying consensus statement (from AAP, AHA, AND, and AAPD) reinforced the unique benefits of milk for children under five.

- Lott M, Callahan E, Welker Duffy E, Story M, Daniels S. Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations. Consensus Statement. Healthyeatingresearch.org. Published September 2019. Accessed November 2019.

2. Dairy is a major source of calcium and therefore critical for bone health.

- Golden N, Abrams S. Optimizing Bone Health in Children and Adolescents. Pediatrics. 2014;134(4):e1229 – e1243.

3. The PURE study, a diverse, multinational prospective cohort study published in November 2018 in The Lancet, found that dairy consumption was associated with lower risk of mortality and major cardiovascular disease events.

- Dehghan M, Mente A, Rangarajan S, Sheridan P, Mohan V, Iqbal R. Association of dairy intake with cardiovascular disease and mortality in 21 countries from five continents (PURE): a prospective cohort study. The Lancet. 2018;392(10161): P2288-2297.

4. Many studies and meta-analyses reinforce that consuming dairy reduces the risk for cardiovascular disease, elevated blood pressure, metabolic syndrome and type 2 diabetes.

- Drouin-Chartier JP, Brassard D, Tessier-Grenier M, et al. Systematic Review of the Association between Dairy Product Consumption and Risk of Cardiovascular-Related Clinical Outcomes. Adv Nutr. 2016;7(6):1026–1040.
- de Oliveira Otto MC, Mozaffarian D, Kromhout D, et al. Dietary intake of saturated fat by food source and incident cardiovascular disease: the Multi-Ethnic Study of Atherosclerosis. Am J Clin Nutr. 2012;96(2):397–404.
- Ralston R, Lee J, Truby H, Palermo C, Walker K. A systematic review and meta-analysis of elevated blood pressure and consumption of dairy foods. J Human Hypertens. 2012; 6:3-13.
- Tong X, Dong J, Wu Z, Li W, Qin L. Dairy consumption and risk of type 2 diabetes mellitus: a meta-analysis of cohort studies. Eur J Clin Nutr. 2011; 65:1027–1031.
- Sochol KM, Johns TS, Buttar RS, et al. The Effects of Dairy Intake on Insulin Resistance: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. Nutrients. 2019;11(9):2237.

5. Though still an emerging area of research, recent reviews of the evidence to date indicates that dairy foods are associated with anti-inflammatory effects.

- Bordoni A, Danesi F, Dardevet D, Dupont D, Fernandez A, Gille D, Nunes dos Santos C, Pinto P, Re R, Rémond D, Shahar D, Vergères G. Dairy products and inflammation: A review of the clinical evidence. Critical Reviews in Food Science and Nutrition. 2017;57(12):2497-2525.
- Ulven SM, Holven KB, Gil A, Rangel-Huerta OD. Milk and Dairy Product Consumption and Inflammatory Biomarkers: An Updated Systematic Review of Randomized Clinical Trials. Adv. Nutr. 2019;10(suppl_2): S239-S250.

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Alternatives

1 Among plant-based alternatives, only soy beverage comes close to cow's milk in terms of nutrient density.

- Lott M, Callahan E, Welker Duffy E, Story M, Daniels S. Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations. Consensus Statement. Healthyeatingresearch.org. Published September 2019. Accessed November 2019.
- Vanga SK, Raghavan V. How well do plant based alternatives fare nutritionally compared to cow's milk?. J Food Sci Technol. 2018;55(1):10–20.

Learn more

Look at these additional supporting materials:

- General Health
  - National Dairy Council (2019). Dairy foods: key for supporting health.
- Mediterranean Diet
  - National Dairy Council (2018). Dairy foods fit into the Mediterranean Diet.
  - Wade, A, Davis C, Dyer K, Hodgson J, Woodman R, Murphy K. A Mediterranean diet supplemented with dairy foods improves markers of cardiovascular risk: results from the MedDairy randomized controlled trial. Am J Clin Nutr. 2018;108(6):1166–1182.
- Disease States
  - National Dairy Council (2019). Research roundup: dairy and cancer risk, fermented foods and cardiovascular disease, and more
- Health Care Cost Savings
  - National Dairy Council (2019). Following healthy eating patterns has potential to reduce health-care costs.
  - Scrafford C, Bi X, Multani J, Murphy M, Schmier J, Barraj L. Health economic evaluation modeling shows potential health care cost savings with increased conformance with healthy dietary patterns among adults in the United States. JAND. 2019;119(4):599-616.

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