



Messaging Topic: Milk + Dairy's Role in Healthy Childhood Eating Patterns
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Evidence Supporting Milk and Dairy's Role in Healthy Childhood Eating Patterns

KEY MESSAGE & RESEARCH SUMMARY HIGHLIGHTS

Key Message:

Dairy foods play an important role in plant-based, sustainable eating patterns.

Research Summary:

Scientific research confirms that milk, yogurt and cheese offer a unique package of nutrients – including calcium, vitamin D, potassium and more – that work together to provide multiple health benefits including optimal growth and development in children and reduced risk of chronic diseases such as type 2 diabetes and heart disease. The wide variety of milk and dairy foods available provides many options to meet personal needs, tastes and preferences.

Alongside obesity and chronic disease is the interrelated issue of food insecurity, which serves as a reminder that solving complex public health problems require a broad range of solutions and a zealous application of credible science. From that perspective, we then look at nutrition recommendations and healthy eating guidance through the lens of whole foods and, ultimately, healthy eating patterns as the optimal way to obtain nutritional adequacy while supporting the health of both people and the planet.

Dairy foods offer health attributes that are different from plant-based and other animal source foods, playing an integral role in supporting overall health. This is especially true for growing young children and adolescents where dairy food consumption is essential for optimal growth and development. The three eating patterns recommended by the Dietary Guidelines for Americans (DGA) emphasize consuming a variety of plant-based foods, but it also recommends consuming dairy in order to meet nutritional needs and reduce the risk for chronic diseases. While these recommendations are clear, many Americans are under-consuming vegetables, fruits and dairy, resulting in nutrient gaps.¹ Encouraging consumption of nutrient dense foods, both from plant-based and dairy sources, can help close the nutrient gaps that exist among Americans of all ages.

Key Message:

Milk and dairy foods support optimal growth and development in children.

Research Summary:



Dairy milk, in comparison to plant-based alternative beverages, offers the most balanced distribution of energy from carbohydrates, protein and fat; and coupled with its unique nutrient package, dairy milk can be difficult to replace in a healthy dietary pattern.² Young children who do not meet the daily recommended servings of dairy milk, yogurt or cheese may have inadequate intakes of important nutrients and protein necessary for optimal growth and development.

Milk is an important source of essential nutrients that contribute to overall health in children's eating patterns, but by age 6, most children are not meeting the recommended daily servings from the Dairy food group.³ Poor eating patterns, especially in early childhood, can continue as habits in adulthood, increasing the risk for becoming overweight and developing chronic conditions such as heart disease.

There is compelling evidence linking food insecurity to poor health outcomes,⁴ heightening health sector urgency to seek solutions to close this gap. With so many children and families living with food insecurity, providing access to nutritious and wholesome foods is essential to helping children reach their full health potential as adults. Recommendations put forward to improve healthy eating serve as a catalyst for changes in public policy that may ultimately determine the food choices available to our most vulnerable populations through nutrition assistance programs. One example of this critical safety net is school meal programs. Research suggests that eating school breakfast every day is associated with healthier dietary intakes among U.S. schoolchildren, particularly increased intakes of fruits and vegetables, whole grains and dairy.⁵ Additionally, student consumption of breakfast – specifically the fruits, vegetables and dairy products made readily available in school meal programs – is associated with improved academic and health outcomes among children and adolescents.⁶

Milk, cheese and yogurt provide many essential nutrients important for good health. Consuming the recommended amount of dairy foods would go a long way in closing the gap on some nutrient intakes, including nutrients of concern such as calcium, vitamin D, magnesium and vitamin A.⁷

Recommendations for the public that generally restrict or eliminate animal protein without focusing on the whole food matrix or healthy eating patterns could unintentionally limit access to and the consumption of nutritious, nutrient-rich foods like milk and dairy foods. Ensuring that public health nutrition guidance is evidenced-based makes it easier to create opportunities for children and families to access nutritious foods in the communities where they live, learn, work and play.

The dairy agricultural community takes sustainability and improving food and nutrition security very seriously; they are committed to being part of the solution by continually improving sustainable production of essential, nutrient-rich dairy foods worldwide.



References:

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DAIRY NUTRITION KEY MESSAGES

- Milk and dairy foods play an important role in healthy eating patterns.
- Scientific research confirms that milk, yogurt and cheese offer a unique package of nutrients—including calcium, vitamin D, potassium, protein and much more—that work together to provide multiple health benefits including optimal growth and development in children and reduced risk of chronic diseases.
- All three eating patterns recommended by the Dietary Guidelines for Americans (Healthy U.S.-Style Eating Pattern, Healthy Vegetarian Eating Pattern and Healthy Mediterranean-Style Eating Pattern) recommend two to three servings of low-fat and fat-free dairy because milk, yogurt and cheese provide important nutrients for health.
- Consuming more of the under-consumed food groups – which includes Dairy, Vegetables and Fruits – can help close nutrient gaps that exist among Americans of all ages.
- Dairy foods offer health attributes that are different from plant-based and other animal-source foods, playing an integral role in supporting overall health.
- There is a growing body of evidence that links the consumption of milk and dairy foods to a wide range of health benefits, from well-studied associations like controlling blood pressure and improving bone health to newer associations like reducing the risk of diabetes and heart disease.⁴
- Research looking specifically at fat in whole milk and reduced-fat dairy foods suggests that dairy fat may have unique properties that differentiate it from fat found in other food sources.⁷
- Studies that examine whole foods like milk, cheese, yogurt and other fermented dairy food suggest that the many nutrients that make up the sum of a food work in synergy to holistically contribute to more favorable health outcomes compared to the results found in single-nutrient studies.
- Milk and many dairy foods are heart-healthy.
- Protein and other nutrients in milk help kids grow and build strong bones and muscles.
- Dairy milk is rich in nutrients such as potassium, calcium and phosphorus that kids and adults need for good health.
- Studies show that adults who consume dairy foods, such as milk, yogurt and cheese, are less likely to have heart disease, type 2 diabetes or high blood pressure.



- Consuming the daily recommendation of dairy servings is linked to improved bone health and may reduce the risk of osteoporosis.
- All dairy milk, from whole to fat-free to lactose-free, is rich in nutrients and play an important role in optimal health.

SUSTAINABLE DAIRY NUTRITION KEY MESSAGES

- California dairy farmers and food processors are committed to employing and continually enhancing sustainable practices now and in the future, taking into account social, economic, nutritional and environmental perspectives.
- The dairy agricultural community takes sustainability and improving food and nutrition security very seriously; they are committed to being part of the solution by continually improving sustainable production and facilitate access to essential, nutrient-rich dairy foods worldwide.
- The California dairy community shares a common goal: to provide global food sustainability that improves both the lives of people and the health of the planet. We believe there are many ways to get there.
- Sustainably feeding a growing global population that is expected to reach 10 billion people by 2050 will require collaboration and innovative solutions across the entire global food system, and we believe U.S. dairy will play a vital role in developing the solution.



ADDITIONAL RESOURCES:

Optimizing Bone Health in Children and Adolescents (AAP Clinical Report)

Calcium is necessary for bone growth, and dietary calcium intake during infancy, childhood, and adolescence is essential for bone mass acquisition. Milk intake during childhood and adolescence is associated with higher bone mineral content and reduced fracture risk in adulthood. *Resource: [Golden N & Abrams A. Pediatrics. 2014.](#)*

Cow's Milk Consumption and Health: A Health Professional's Guide (Review)

When consumed according to appropriate national guidelines, milk and its derivatives contribute essential micro- and macronutrients to the diet, especially in infancy and childhood where bone mass growth is in a critical phase. Furthermore, preliminary evidence suggests potentially protective effects of milk against overweight, obesity, diabetes, and cardiovascular disease, while no clear data suggest a significant association between milk intake and cancer. Overall, current scientific literature suggests that an appropriate consumption of milk and its derivatives, according to available nutritional guidelines, may be beneficial across all age groups, with the exception of specific medical conditions such as lactose intolerance or milk protein allergy. *Resource: [Marangoni F et al. J Am Coll Nutr. 2018.](#)*

Nutrient density of beverages in relation to climate impact

A study using a "Nutrient Density to Climate Impact" index found that due to its high nutrient density, milk scored considerably better than other beverages including orange juice, soy drink, carbonated water, soft drink, beer, red wine and oat drink. *Resource: [Smedman, A. et al., 2010.](#)*

A report by The High Level Panel of Experts on Food Security and Nutrition

Helping people make better choices to eat healthy diets composed of a variety of nutrient-rich vs. nutrient-poor foods is critical to creating a sustainable food system. Dairy foods like milk, cheese and yogurt are nutrient-rich options. *Resource: [FAO Committee on World Food Security. 2017.](#)*

Nutritional and greenhouse gas impacts of removing animals from US agriculture (Modeling Study)

US agriculture was modeled to determine impacts of removing farmed animals on food supply adequacy and greenhouse gas (GHG) emissions. The modeled system without animals increased total food production (23%), altered foods available for domestic consumption, and decreased agricultural US GHGs (28%), but only reduced total US GHG by 2.6 percentage units. Compared with systems with animals, diets formulated for the US population in the plants-only systems had greater excess of dietary energy and resulted in a greater number of deficiencies in essential nutrients. *Resource: [White RR & Hall MB. pNAS. 2017.](#)*

International survey on growth indices and impacting factors in children with food allergies.



A prospective growth survey was performed of children (aged 0–16 years) on an elimination diet with confirmed immunoglobulin (Ig)E and non-IgE mediated food allergies. Data from 430 patients from twelve allergy centers were analyzed: median age at diagnosis and data collection was 8 months and 23 months, respectively. Pooled data indicated that 6% were underweight, 9% were stunted, 5% were undernourished and 8% were overweight. Cow's milk elimination lead to a lower weight-for-height Z-scores than other food eliminations and mixed IgE and non-IgE mediated allergy had lower height-for-age Z-scores than IgE mediated allergy. *Resource: [Meyer R et al. J Hum Nutr Diet, 2019.](#)*

Kenyan School Children Have Multiple Micronutrient Deficiencies, but Increased Plasma Vitamin B-12 Is the Only Detectable Micronutrient Response to Meat or Milk Supplementation (Original Research)

Animal source foods (ASF) can provide micronutrients in greater amounts and more bioavailable forms compared to plant source foods, but their intake is low in many poor populations. However, the impact of ASF on micronutrient status of undernourished populations has not been assessed. Supplemental meat, milk or energy (iso-caloric with the meat and milk) were randomly assigned to undernourished school children in a rural malaria-endemic area of Kenya, at one school meal daily for one school year. At the end of the year of supplementation, plasma vitamin B-12 concentrations were significantly increased in children fed the Meat or Milk meal; prevalence of severe plus moderate deficiency fell from 80.7% at baseline to 64.1% in the Meat group and from 71.6 to 45.1% in the Milk group, respectively. *Resource: [Siekmann JH et al. J Nutr. 2003.](#)*

Veganism, vegetarianism, bone mineral density, and fracture risk: a systematic review and meta-analysis.

This systematic review and meta-analysis sought to study the impact of vegetarian and vegan diets on bone mineral density (BMD) and fracture risk. Twenty studies including 37,134 participants met the inclusion criteria. Compared with omnivores, vegetarians and vegans had lower BMD at the femoral neck and lumbar spine and vegans also had higher fracture rates. *Resource: [Iquacel I et al. Nutr Rev, 2019.](#)*

A life cycle assessment framework combining nutritional and environmental health impacts of diet: A case study on milk (Modeling Study)

The first epidemiology-based study of the combination of nutrition, environment and human health concluded that adding one serving of milk to the average American's current diet would result in a significant health benefit. *Resource: [Stylianou, K. et al., 2015.](#)*

***Funded by the Dairy Research Institute**

Increasing Plant Based Foods or Dairy Foods Differentially Affects Nutrient Intakes: Dietary Scenarios Using NHANES 2007–2010

It has long been accepted that fruits, vegetables, whole grains and legumes are important components of healthy eating plans. And, animal-based foods, such as milk, cheese and yogurt, also are components of healthy eating styles as they contain high-quality protein and are major



contributors of essential nutrients to the American diet, including many vitamins and minerals. *Resource:* [Cifelli CJ et al. Nutrients, 2016.](#)

****Authors include National Dairy Council***

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

The replacement of dairy with calcium-equivalent foods alters the overall nutritional profile of the diet and affects nutrients including protein, potassium, magnesium, phosphorus, riboflavin, vitamins A, D and B12. Similar modeling exercises using consumption data from the National Health and Nutrition Examination Survey also demonstrated that nondairy calcium replacement foods are not a nutritionally equivalent substitute for dairy products. *Resource:* [Fulgoni et al. Nutr Res. 2011.](#)

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