


Dairy's Role in Today's Nutrition & Health Trends

Meeting
Date

NDC
NATIONAL DAIRY COUNCIL

Today's Presenter

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#DairyNourishesLife

The U.S. Dairy Stewardship Commitment. http://commitment.usdairy.com/

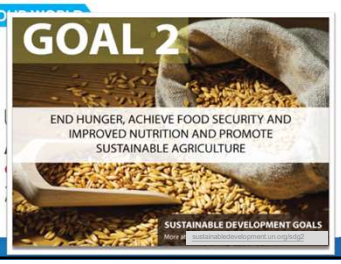
NDC
NATIONAL DAIRY COUNCIL

Bringing to life the dairy community's shared vision of a healthy, happy, sustainable world, with science as our foundation

Global Spotlight on Nutrition and Sustainability

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM O



Sustainable Diets are on Consumers' Minds

MINTEL

"The definition of **sustainability** is extending to encompass the **entire product lifecycle**."

"…sales will be driven as much by consumers desire to try new things as by concerns about **health**, getting more plants or **environmental worries**."

NewNutrition Business

"Consumers pay attention to **health** and **sustainability**… Brands increasingly commit in market actions and innovation… to answer **consumer expectation around sustainability**."

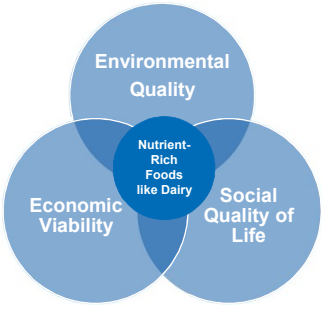
People are Asking…

Is this good for my body?

Is this good for the animals?

Is this good for the planet?

Dairy has an important place in sustainable nutrition



Learning Objectives

- Describe how RDN's can play a key role in supporting various facets of sustainable nutrition
- Discuss dairy foods' unique nutrient profile, their role in plant-based diets and emerging science on dairy consumption within a healthy dietary pattern
- Summarize data on dairy's environmental footprint and how dairy cows are part of the solution to sustainable food systems

Good for the Body

Cheese*: 6 essential nutrients

Protein
Calcium
Phosphorus
Vitamin B12
Niacin
Vitamin A

Milk: 9 essential nutrients

Protein
Calcium
Vitamin D
Phosphorus
Vitamin A
Riboflavin
Pantothenic acid
Niacin
Vitamin B12

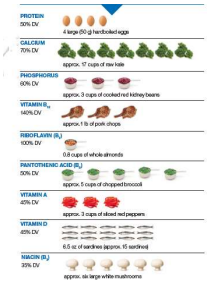
Yogurt: 7 essential nutrients

Protein
Calcium
Phosphorus
Vitamin B12
Pantothenic Acid
Riboflavin
Zinc

*Nutrients based on USDA Database for Cheddar #01009

3 Servings of Milk Deliver a Unique Nutrient Package

Three servings of milk provide the same level of nutrients found in these foods

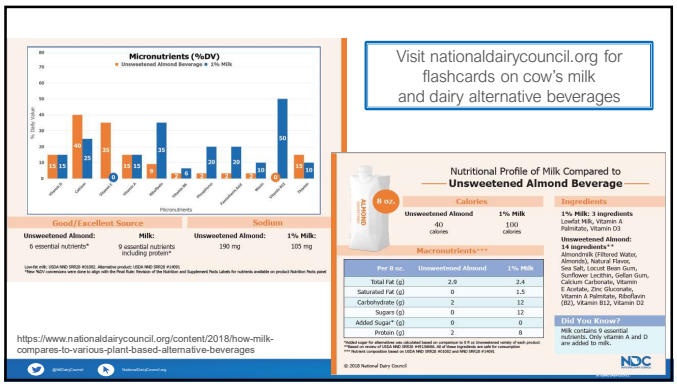


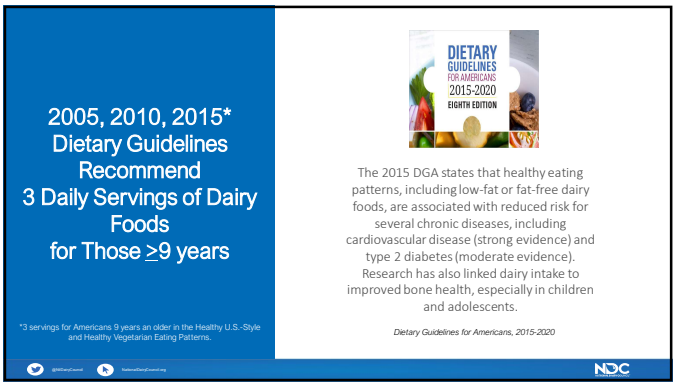
"… the **amount** of many potential alternatives to provide sufficient calcium would provide **too many calories** and/or **be a large amount to consume daily**."

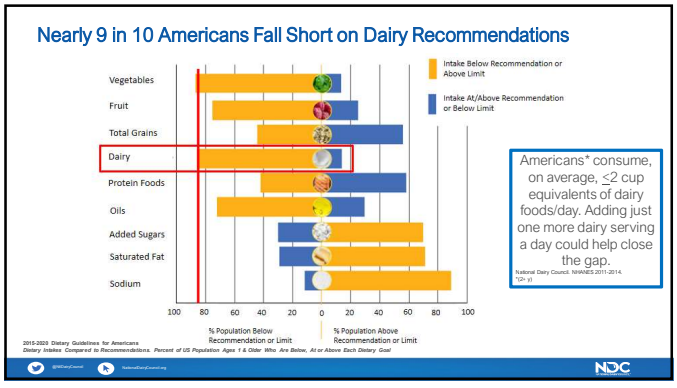
"…**bioavailability** of the calcium in vegetable products has not been addressed and **could pose a concern**."

2015 Dietary Guidelines Advisory Committee Report. Appendix E3.6

https://www.nationaldairycouncil.org/content/2018/three-servings-of-milk-deliver-a-unique-nutrient-package


Micronutrients (%DV)
Unsweetened Almond Beverage
1% Milk
Visit nationaldairycouncil.org for flashcards on cow's milk and dairy alternative beverages
Nutritional Profile of Milk Compared to Unsweetened Almond Beverage
8 oz.
Calories
Unsweetened Almond
40 calories
1% Milk
100 calories
Ingredients
1% Milk: 3 ingredients
Lowfat Milk, Vitamin A Palmitate, Vitamin D3
Unsweetened Almond: 14 ingredients**
Almondmilk (Filtered Water, Almonds), Natural Flavor, Sea Salt, Locust Bean Gum, Sunflower Lecithin, Gellan Gum, Calcium Carbonate, Vitamin E Acetate, Zinc Gluconate, Vitamin A Palmitate, Riboflavin (B2), Vitamin B12, Vitamin D2
Macronutrients***
Per 8 oz.
Unsweetened Almond
1% Milk
Total Fat (g) 2.8 2.4
Saturated Fat (g) 0 1.5
Carbohydrate (g) 2 12
Sugars (g) 0 12
Added Sugar* (g) 0 0
Protein (g) 2 8
Good/Excellent Source
Unsweetened Almond: 6 essential nutrients*
Milk: 9 essential nutrients including protein*
Sodium
Unsweetened Almond: 190 mg
1% Milk: 105 mg
Did You Know?
Milk contains 9 essential nutrients. Only vitamin A and D are added to milk.
https://www.nationaldairycouncil.org/content/2018/how-milk-compares-to-various-plant-based-alternative-beverages


2005, 2010, 2015* Dietary Guidelines Recommend 3 Daily Servings of Dairy Foods for Those ≥9 years
*3 servings for Americans 9 years an older in the Healthy U.S.-Style and Healthy Vegetarian Eating Patterns.
DIETARY GUIDELINES FOR AMERICANS 2015-2020 EIGHTH EDITION
The 2015 DGA states that healthy eating patterns, including low-fat or fat-free dairy foods, are associated with reduced risk for several chronic diseases, including cardiovascular disease (strong evidence) and type 2 diabetes (moderate evidence). Research has also linked dairy intake to improved bone health, especially in children and adolescents.
Dietary Guidelines for Americans, 2015-2020


Nearly 9 in 10 Americans Fall Short on Dairy Recommendations
Vegetables
Fruit
Total Grains
Dairy
Protein Foods
Oils
Added Sugars
Saturated Fat
Sodium
Intake Below Recommendation or Above Limit
Intake At/Above Recommendation or Below Limit
100 80 60 40 20 0 20 40 60 80 100
% Population Below Recommendation or Limit
% Population Above Recommendation or Limit
Americans* consume, on average, <2 cup equivalents of dairy foods/day. Adding just one more dairy serving a day could help close the gap.
National Dairy Council. NHANES 2011-2014.
*(2+ y)
2015-2020 Dietary Guidelines for Americans
Dietary Intakes Compared to Recommendations. Percent of US Population Ages 1 & Older Who Are Below, At or Above Each Dietary Goal


Preponderance of Evidence: Dairy Food Consumption has a Neutral or Beneficial Association with Reduced Risk for Chronic Diseases
NDC Science Summary on Cardiovascular Disease, Blood Pressure and Type 2 Diabetes
SCIENCE SUMMARY: Cardiovascular Disease
SCIENCE SUMMARY: Blood Pressure
SCIENCE SUMMARY: Type 2 Diabetes

EATING DAIRY FOODS IS NOT LINKED TO HIGHER RISK FOR KEY CHRONIC DISEASES and in some cases may be linked to lower risk, according to a review of 20+ studies.

CVD (includes heart attack and stroke)	HIGH BLOOD PRESSURE	TYPE 2 DIABETES
Total dairy* and cheese consumption is associated with lower risk for stroke (moderate quality evidence) Total dairy, cheese and yogurt consumption is not associated with higher risk for CVD (moderate- to high-quality evidence) Total dairy, cheese and yogurt consumption is not associated with higher risk for coronary artery disease (moderate- to high-quality evidence)	Total dairy is associated with lower risk for hypertension (high-quality evidence) Cheese and yogurt consumption is not associated with higher risk for hypertension (moderate- to high-quality evidence) Clinical trials continue to investigate how dairy products, including low-fat dairy products, might contribute to a healthy blood pressure in different populations	Total dairy, yogurt and cheese consumption is associated with lower risk for T2D (moderate- to high-quality evidence) A meta-analysis found eating approximately 3 ounces of yogurt (80 g) per day, compared to none, is associated with lower risk for T2D

*Dairy foods in these studies are whole, reduced fat, low-fat and fat-free milk, cheese and yogurt
Link to infographic: https://www.nationaldairycouncil.org/content/2019/dairy-foods-key-for-supporting-health

Drouin-Chartier JP. Systematic Review of the Association between Dairy Product Consumption and Risk of Cardiovascular-Related Clinical Outcomes. Adv Nutr 2016

Visit www.nationaldairycouncil.org for Science Summaries

Plant-based in Perspective

2015-2020 Dietary Guidelines For Americans Dietary Patterns are Plant-Based and Incorporate Animal Foods

Healthy US-style Pattern	Healthy Vegetarian Pattern	Healthy Mediterranean-style Pattern
3 servings LF/FF dairy foods per day	3 servings LF/FF dairy foods per day	2 servings LF/FF dairy foods per day

Dairy 3 → 2 cup eq/day
Seafood 8 → 16 oz eq/wk

https://health.gov/dietaryguidelines/2015resources/2015-2020_Dietary_Guidelines.pdf

Plant + Animal Foods = Improved Nutrient Intakes

nutrients an open access journal by MDPI

NHANES Modeling Study
N=17,387, ≥ 2 years

"Specific recommendations to increase low fat and nonfat dairy foods in conjunction to increasing healthy plant-based foods will help to close some of the nutrient gaps currently present among Americans of all ages."

Modeling Scenario	Improved Intakes	Insufficient Intakes
Double usually consumed plant-based foods	Magnesium Iron Folate Vitamin C Vitamin E	Calcium* Vitamin D* Vitamin A Protein
Double milk, cheese, yogurt	Calcium* Vitamin D* Vitamin A Protein Magnesium	

Cifelli et al. Nutrients 2016
*NDC sponsored study

* = Nutrient of Public Health Concern

FARM Animal Care Program

Farmers
Assuring
Responsible
Management

~98% of U.S. milk comes from farms participating in the FARM Animal Care Program

Ensuring Milk, Cheese and Yogurt are Free of Antibiotics

- FDA prohibits antibiotics in milk
- Numerous checkpoints in place as milk moves from farm to dairy case
- Any milk that tests positive is rejected and does not enter the food supply

Recombinant Bovine Somatotropin (rbST): A Safety Assessment

Initially presented at the Joint Annual Meeting of the American Dairy Science Association®, Canadian Society of Animal Science, and American Society of Animal Science

Montreal, Canada
July 14, 2009

Updated on March 22, 2010

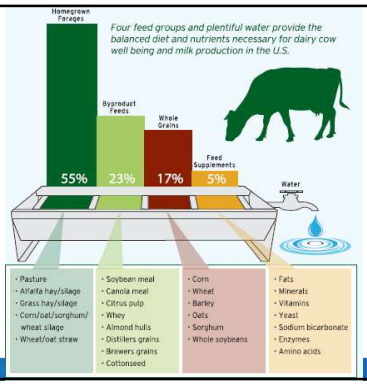
"…food products from cows treated with rbGH are safe for consumption by human."

"The FDA's review of rbGH has been scrutinized by both the Department of Health and Human Services' Office of Inspector General (OIG) and by GAO, as well as by JECFA."

Cows have dietitians, too!

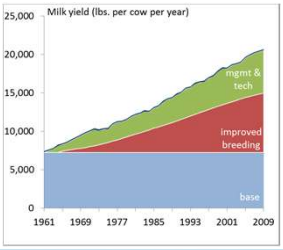
Animal nutritionists carefully plan their diets

Think of it as MyPlate for cows!



Innovation is the Historical Driver of U.S. Productivity and Reduced Environmental Impact

U.S. yield increase: 1961-2009



- Milk production per cow in the U.S. has increased 280 lbs. per year since 1961
- The increase was driven by ***innovation*** (dairy cow breeding, housing, management, feeding)
- American dairy farmers improved milk production while using less natural resources thus protecting the environment

USDA-NASS, http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats_1.0/index.asp, Last accessed 25OCT10
USDA-ARS-AIPL, http://aipl.arsusda.gov/eval/summary/trend.cfm, Last accessed 26.OCT10

U.S. Dairy: Committed to Continuous Progress

- In 1950, there were 24 million dairy cows in the US, vs 9 million today
- With 15 million fewer cows (1950 vs 2018), milk production nationally has increased 86 percent while maintaining commitment to animal care
- The carbon footprint of a glass of milk is 2/3 smaller today than it was 70 years ago

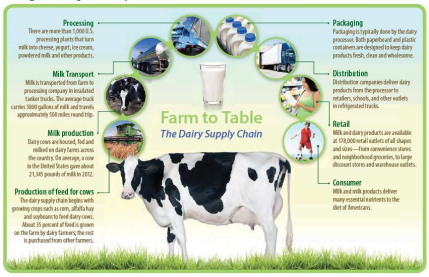
Source:
USDA NASS Quickstats https://www.quickstats.nass.usda.gov/
Capper J, Cady A, Bauman D. 2009. The environmental impact of dairy production: 1944 compared with 2007. Journal of Animal Science. 87:2160-2167

Nourishing Cows = Nourishing People

- Multiple safe guards in place to ensure all dairy products are free of antibiotics
- Dairy cows' diets are primarily made up of foods people can't eat
- Dairy cows turn plants and by-products into high-quality protein, nutrient-rich milk to nourish people, because of their unique, 4-chambered stomach and digestive process

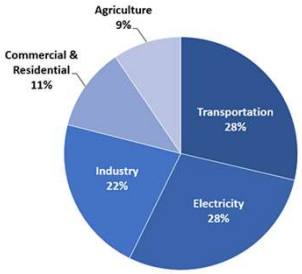
Good for the Planet

Dairy Life Cycle Assessment (LCA): Understanding Dairy's Impact From Grass to Glass



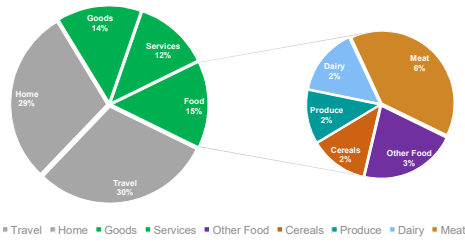
Sources: Dairy's Environmental Footprint. A Summary of Findings, 2009-2012. Production of Feed: USDA Economic Research Service, 2007; Milk Production: USDA, National Agricultural Statistics Service, 2012; Milk Transport: "Greenhouse Gas Emissions of Fluid Milk in the U.S.", University of Arkansas, 2010 Processing: USDA, National Agricultural Statistics Service, Agricultural Statistics Board, 2010; Retail: Progressive Grocer, 2008

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2016



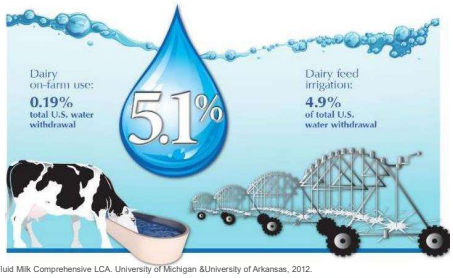
US Environmental Protection Agency (2018). US Inventory of Greenhouse Gas Emissions. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

The Average U.S. Household Carbon Footprint



Christopher M. Jones and Daniel M. Kammen. Quantifying Carbon Footprint Reduction Opportunities for U.S. Households and Communities. *Environ. Sci. Technol.*, 2011, 45 (9), pp 4088–4095.

Dairy is ~5% of Total U.S. Water Withdrawal



Henderson, A., et al. U.S. Fluid Milk Comprehensive LCA. University of Michigan &University of Arkansas, 2012.

Cow Manure Can Be Recycled to Nourish The Land and Generate Electricity

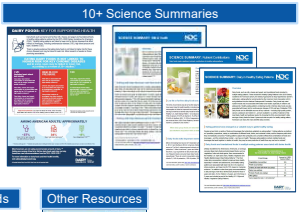
- Cow manure is a natural source of nitrogen and phosphorus - key nutrients for plant health.
- The use of cow manure can reduce the use of synthetic fertilizers derived from fossil fuels
- Methane from cow manure can be captured and used to produce heat, power electric generators and fuel trucks.

Host of Resources on www.nationaldairycouncil.org

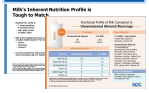
U.S. Dairy Sustainability Report

Dairy as a Driver of SDGs Infographics

10+ Science Summaries



Beverage Flashcards



Other Resources

Dairy Nourishes NETWORK

Dairy Nourishes Network members will receive:

- Quarterly updates
- Advance notice of webinars
- Recipe ideas/meal tips
- Engaging contests
- Opportunities to be highlighted on NDC's social
- In-person educational and networking events

www.NationalDairyCouncil.org/DairyNourishesNetwork

Questions?

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