SCIENCE SUMMARY: Nutrient Contributions

Dairy foods make significant contributions to healthy eating patterns

Overview

Dairy foods such as milk, cheese and yogurt were included in the first Dietary Guidelines for Americans (DGA) released in 1980, and low-fat and fat-free dairy foods continue as a core component of all healthy eating patterns recommended in the 2015 DGA. Consumption of milk, cheese and yogurt can help meet recommendations for the underconsumed nutrients of concern, calcium, vitamin D, and potassium, and dairy foods make important contributions to protein, magnesium, vitamin A and other nutrients in the U.S. diet. The DGA recommends low-fat or fat-free dairy foods as a part of healthy eating patterns that have been linked to health benefits, such as reduced risk of CVD and type 2 diabetes, and dairy food consumption has been linked to improved bone health, especially in children and adolescents. Most Americans are not consuming the recommended amounts of dairy foods, but even at current intakes, dairy foods supply more than half of the calcium and vitamin D in the U.S. diet. Meeting daily recommended intakes of dairy foods can help Americans close key nutrient gaps and contribute to a healthy eating pattern.

Low-fat or fat-free dairy foods are an important part of healthy eating patterns

The DGA recommends low-fat or fat-free dairy foods, such as milk, cheese and yogurt, as a part of healthy eating patterns that have been linked to health benefits, such as reduced risk of CVD and type 2 diabetes (1). In addition, dairy food consumption has been linked to improved bone health, especially in children and adolescents. The 2015 DGA recommends three daily servings of low-fat or fat-free dairy foods for those 9 years and older, 2½ for children 4-8 years and two for children 2-3 years in the Healthy U.S.-Style Eating Pattern. (1). Dairy foods are important sources of three of the four underconsumed nutrients of public health concern in the American diet (calcium, vitamin D and potassium) (2), and the nutrients in dairy foods can be difficult to replace in a healthy dietary pattern (3, 4). Low-fat or fat-free milk, 100% juice and water are recommended as primary beverages, and drinking milk with meals is among strategies to increase dairy consumption (1).

Dairy foods are widely accessible, affordable and appealing, with many options available to meet individual needs, including lower-sodium and lower-fat options.

Many Americans do not meet current dairy food and nutrient recommendations

Most Americans, ages 2 years and older, are not meeting current dairy food recommendations, consuming on average about two servings of dairy foods daily (1.0 of milk, 0.8 of cheese, and 0.1 of yogurt (5). While children aged 2-5 years consume close to the 2½ servings, as children get older, their consumption of dairy foods does not increase to meet age-specific recommendations, thereby creating a dairy gap that continues into adulthood (6). More than 80% of the U.S. population do not meet daily dairy recommendation, most notably, only 5% of adult women and 10% of adolescent girls consume three servings (3). Certain racial and ethnic groups in the U.S. have lower than average dairy intakes. For example, Hispanics and non-Hispanic blacks consume fewer daily dairy foods than non-Hispanic whites (1.5, 1.2 and 1.9 servings, respectively) (7).

For the nutrients of public health concern, concerns for calcium and vitamin D are primarily due to bone health, and for potassium, primarily due to cardiovascular health and blood pressure (3). Population groups of most concern with regard to calcium intake are preadolescent and adolescent females, pregnant females, and middle aged and older females (3). For vitamin D, consumption is low in all age/gender groups with about 95% of individuals not meeting the estimated average requirement (3). Potassium intakes are low in all age/gender groups, but there is a particular concern for middle-aged and older adults, who are at increased risk for cardiovascular diseases (3).

Dairy foods make important nutrient contributions to the U.S. diet

At current intakes (<two servings per day), milk, cheese and yogurt contribute 58% of the vitamin D, 51% of the calcium, and 16% of the potassium in the U.S. diet but 10% of the total calories, 14% of total fat, 26% saturated fat, and only 3% added sugars at current intake for Americans ≥ 2 years old (3). For children, milk is the leading source of nine essential nutrients (protein, calcium, phosphorus, magnesium, potassium, vitamins A, B12, D and riboflavin) (8). Although milk and cheese contribute saturated fat to the diet, consuming low fat and fat-free dairy foods is a way to keep saturated fat intakes below the recommended 10% of calories while still taking advantage of all the nutrients that dairy foods have to offer. Adding just one daily serving of dairy foods to current consumption can help Americans meet dairy food recommendations and contribute to closing key nutrient gaps (4)

Two-thirds of dairy foods are consumed as individual foods items (fluid milk, cheese snacks, and yogurt), while one-third is as mixed foods (egg dishes, pizza, smoothies, etc.) (5). Dairy products that are consumed as individual food items stand out as valuable sources of key nutrients (calcium, vitamin D, and potassium), but not major sources of saturated fat, added sugars or sodium (5). About two-thirds of cheese is consumed as part of mixed dishes, and choosing lower fat and lower sodium versions of cheese can improve the nutritional profile (3). Sweetened flavored milks and yogurts also provide dairy nutrients, but contribute only 4% of total added sugars intake on average (3).

Nutrient in dairy foods can be difficult to replace with other foods

If Americans > 9 years old consumed the recommended amount of dairy foods (three servings/day) that could help close the gap for some nutrient intakes (9). When foods from the dairy group are removed from daily eating patterns, or replaced with sugar sweetened beverages, calcium, magnesium, iron, vitamin A, and riboflavin dropped below 100% of goals and levels of vitamin D, potassium and choline dropped substantially (3). Diet modeling studies have shown that increasing current consumption to meet the recommended servings of dairy foods each day would result in most Americans meeting the Estimated Average Requirement (EAR) for calcium, magnesium, and vitamin A (9).

It would take 1.1 servings of fortified soy beverage, 0.6 servings of fortified orange juice, 1.2 servings of bony fish, or 2.2 servings of leafy greens to replace the calcium in one cup of milk in a healthy eating pattern (4). Substituting milk, cheese and yogurt with other food sources of calcium can also change the overall nutrient profile of the diet, because the replacement foods may not be meaningful sources of dairy's other nutrients (4). For example, using non-dairy foods like nuts and legumes to reach recommended calcium intakes can be calorically expensive, because an individual would need to consume multiple servings of either food to replace the calcium in one cup of milk (3), and it could push calorie intakes too high. Many milk alternatives, including almond and rice beverages, are fortified with calcium; potassium amounts, however, vary (3). In addition, these alternatives contain 1 gram or less of protein per cup, compared to 8 grams in cow's milk and fortified soy beverage (3). Using alternative foods to meet dairy-related nutrients within a healthy dietary pattern can require a significant change in dietary behaviors as most of these foods are not highly consumed (4), and can cost more, too (10).

When foods from the dairy group are removed from daily eating patterns, calcium, magnesium, iron, vitamin A, and riboflavin drop below 100% of dietary goals, and levels of vitamin D, potassium and choline also drop substantially (3).

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