

Science Summary

Cheese & Health



Overview

Cheese is delicious and nutritious and can start with just 3 ingredients: milk, starter culture and salt. This process can be done in so many ways that there are nearly 2,000 varieties of cheese. Cheese is also a nutrient-rich food that contributes protein, calcium, phosphorus and vitamin A to the U.S. diet. For vegetarians, cheese and other dairy foods are important sources of high-quality protein. For people with lactose intolerance (LI), cheese can be a source of dairy nutrients with minimal lactose. Three servings of low-fat and fat-free dairy foods, including cheese, are recommended for Americans 9 years and older as part of the Healthy U.S.-Style and Healthy Vegetarian Dietary Patterns in the 2020 Dietary Guidelines for Americans (DGA). A 2016 systematic review concluded that eating cheese is not associated with cardiovascular disease (CVD) risk, based on high-quality evidence, and may be

associated with a lower risk for stroke and type 2 diabetes (T2D), based on moderate-quality evidence. Cheese can be an important and nutrient-dense part of healthy dietary patterns.

Eating cheese helps Americans meet dairy food recommendations

Dairy foods like cheese are foundational foods in healthy dietary patterns. Healthy dietary patterns, which include low-fat and fat-free dairy foods, are associated with lower risk for both CVD and T2D.¹ Eating dairy foods is also linked to improved bone health, especially in children and adolescents.^{2,3} Limited evidence also indicates that eating cheese daily is linked to a protective effect on bone health in adults as well.⁴

Cheese can be included in healthy dietary patterns across the lifespan. The 2020 DGA recommends providing small amounts of cheese and yogurt as complementary foods to infants beginning around 6 months of age, depending on developmental readiness. While cow's milk should not be given to infants before 12 months of age, the 2020 DGA recommends 1½ to 2 servings of whole- and reduced-fat dairy foods (whole milk, reduced-fat cheese and reduced-fat plain yogurt) for toddlers 12-23 months who no longer consume human milk as part of the Healthy U.S.-Style Dietary Pattern.¹ Children can transition to low-fat and fat-free dairy foods like cheese beginning at 2 years of age. The 2020 DGA recommends 2 daily servings of low-fat or fat-free dairy foods for children 2-3 years, 2½ for children 4-8 years and 3 for those 9 years and older in the Healthy U.S.-Style Dietary Pattern.¹

Young children come the closest to meeting DGA recommendations. Toddlers 12-23 months years eat 2½ servings of dairy foods per day, on average.¹ Dairy food consumption tends to fall below recommended amounts by the time children go to school, and this trend carries forward through adolescence and into adulthood.¹ American adults 20 years and older average just 1½ servings of dairy foods daily.¹ Encouraging adults and children to add 1 more daily serving of dairy foods like cheese to their dietary patterns is a practical way to help meet dairy recommendations.^{5,6}

Eating cheese helps Americans meet nutrient recommendations

Cheese makes important nutrient contributions to the U.S. diet.⁷ Cheese is a good source of high-quality protein and contributes other essential nutrients such as calcium, phosphorus and vitamin A to the U.S. diet.^{7,8} Cheese provides about 28 percent of calcium, 9 percent of protein, 9 percent of vitamin D, 13 percent of vitamin A and 8 percent of vitamin B12 to the diets of Americans 2 years and older, on average, and contributes approximately 11 percent of total fat, 18 percent of saturated fat and 6 percent of total calories.⁹ Cheese is the second leading food source of dietary calcium in the U.S. diet (after milk) for Americans 2 years and older.⁹ With thousands of varieties of cheese available worldwide, there are many options for incorporating cheese into healthy dietary patterns.

For those with LI, avoiding dairy foods can lead to inadequate consumption of shortfall nutrients like calcium.¹⁰ Eating small amounts of aged, hard cheeses such as Parmesan, Cheddar and Swiss, which contain minimal lactose, may be an effective approach to manage LI and still consume important dairy nutrients.^{10,11} For vegetarians, cheese and other dairy foods can be important sources of high-quality protein. Even in the context of a plant-rich diet, it is important to consume adequate amounts of dairy foods such as cheese to meet nutrient needs.¹ Low-fat or fat-free dairy foods are included in all of the dietary patterns within the 2020 DGA, including the Healthy Vegetarian Dietary Pattern.¹

What to know about sodium in cheese

Sodium, in the form of salt, is essential to cheesemaking. It helps develop flavors, consistency and texture and helps preserve cheese and prevent spoilage.¹² Although cheese is a source of sodium in the U.S. diet,⁹ different cheeses contain different amounts of sodium. Some cheeses like Swiss and ricotta cheese tend to be made with less sodium and are naturally low-sodium choices. Advances in food science have also made it possible to reduce the sodium in cheese while maintaining flavor, quality and safety.¹²

Reducing sodium consumption, increasing potassium consumption and engaging in regular physical activity can help lower blood pressure for those with prehypertension or hypertension.¹³ A systematic review concluded that high-quality evidence indicates no link between cheese consumption and the risk for hypertension.¹⁴ In other studies, cheese consumption was related to reduced blood pressure, as well as an 8 percent lower risk of developing high blood pressure.¹⁵ Cheese can also be incorporated into the Dietary Approaches to Stop Hypertension (DASH) diet, a dietary pattern high in fruit, vegetables and low-fat dairy foods, recommended by the American Heart Association to lower blood pressure.¹⁶⁻¹⁹ The 2020 DGA highlights the DASH diet and reduced sodium consumption as effective dietary strategies for adults who would benefit from lowering their blood pressure.¹

Eating cheese may be linked with health benefits

Eating cheese has also been linked with health benefits. Systematic reviews found that moderate-quality evidence indicates eating cheese may be associated with a lower risk for T2D.^{14,20} Evidence from a meta-analysis also supports a link between eating cheese and a 10 percent lower risk for stroke, with the largest risk reductions observed with daily consumption of about 40 grams (~1½ ounce) of cheese.²¹ Another study found that the risk of developing T2D may depend on the types and food sources of saturated fatty acids (SFA).²² While there was no relationship between overall SFA intake and the risk of developing T2D, consumption of SFA commonly found in cheese was related to a lower risk of developing T2D.²²

Links between cheese consumption and CVD risk differ from what would be expected based on the SFA content of cheese. A systematic review found that high-quality evidence from two meta-analyses and a prospective study indicated no association between cheese consumption and CVD risk.¹⁴ Several additional studies concluded that eating cheese was linked to a lower risk of CVD, including stroke.²³⁻²⁶ This difference in the expected versus observed health impacts of cheese may be due to the unique physical structure, or matrix, of protein, vitamins and minerals in cheese.²⁷ More research is needed to understand if the links between cheese and T2D and CVD are due to the amount of SFA in cheese, nutrients such as calcium or the physical structure of cheese.

Cheese can be part of healthy dietary patterns

The DGA recommends low-fat or fat-free dairy foods for Americans ages 2 years and older.¹ The majority of cheese eaten in the U.S., however, is not low-fat or fat-free. Low-fat and fat-free cheese account for less than 1 percent of total cheese sales in the U.S.²⁸ However, food pattern modeling indicates that one serving of whole- or reduced-fat cheese can be incorporated into healthy dietary patterns while staying within recommended calorie and saturated fat levels.²⁹ Eating cheese can be part of a healthy dietary pattern.

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Note: One serving refers to 1 cup-equivalent. For cheese, 1 cup-equivalent equals 1 ½-ounce portion of natural cheese (cheddar, mozzarella, Parmesan) or 2 oz processed cheese.