SCIENCE SUMMARY: Cardiovascular Disease

Dairy food consumption is not linked to higher CVD risk and may be linked to lower stroke risk

Overview

Dairy foods such as milk, cheese and yogurt are foundational foods in healthy eating patterns. The dairy group contributes important shortfall nutrients, including calcium, vitamin D and potassium to the U.S. diet. Low-fat and fat-free dairy foods are part of the Dietary Guidelines for Americans (DGA) and American Heart Association (AHA) dietary recommendations. A growing body of research indicates that dairy food consumption is associated with multiple health benefits, and a 2016 review concluded that dairy food consumption is not linked to higher risk for cardiovascular disease (CVD) or coronary artery disease (CAD), and it is linked to lower risk for stroke. This research provides further support for consuming low-fat or fat-free dairy foods as recommended in the 2015 DGA.

Healthy eating patterns can help lower risk for CVD and decrease public health costs

CVD is the leading cause of death in the U.S., accounting for 31% of all deaths in recent years.[1] CVD includes several diseases of the heart and blood vessels that can impair heart function, while CAD and stroke are specific types of CVD that affect the arteries that feed the heart muscle or the brain.[2,3] Annual health care costs and lost productivity due to CVD and stroke in the U.S. are estimated to be $316.6 billion.[1] The 2015 DGA states that healthy eating patterns are associated with lower risk for several chronic diseases, including CVD (strong evidence) and type 2 diabetes (moderate evidence).[4] The DGA recommends 3 daily servings of low-fat or fat-free dairy foods for those 9 years and older, 2½ for children 4-8 years, and 2 for children 2-3 years in the Healthy U.S.-Style Eating Pattern.[4] In 2016, AHA published eating patterns recommended to achieve adherence to the AHA/American College of Cardiology Guidelines on Lifestyle Management to Reduce Cardiovascular Risk,[5] and they include guidance similar to the DGA regarding daily consumption of low-fat or fat-free dairy foods.[6]

The 2015 Dietary Guidelines for Americans notes that current evidence indicates healthy eating patterns, which include low-fat or fat-free dairy foods, are linked to lower risk for CVD among adults.[4]

Research explores links between dairy food consumption and lower risk for CVD outcomes

The 2015 DGA recommendation to include dairy foods in healthy eating patterns builds on conclusions that emerged in the 2010 DGA, including that dairy food consumption is associated with lower risk for CVD.[7] The 2010 DGA conclusions were based on studies published through 2009, and evidence on the association between dairy food consumption and CVD has continued to grow.[i] In 2016, Drouin-Chartier, et al., published a comprehensive systematic review of prospective research on dairy and chronic diseases, including CVD, CAD and stroke, and rated the quality of evidence.[8,ii] This Science Summary highlights the findings from the Drouin-Chartier review[9] and two meta-analyses that were also published in 2016.[10] Current evidence indicates

[i] Research published between 2009 and 2016 (8-29) has explored the association between dairy food consumption and CVD, CAD and stroke in 10 meta-analyses (9-18) that examined 57 total prospective cohort studies plus 11 prospective cohort studies not included in those meta-analyses (19-29).

[ii] Drouin-Chartier et al. (8) reviewed eight meta-analyses (11-18), two meta-analyses published between 2004 and 2009 (30, 31), and 11 prospective studies (19-29).

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that total dairy food consumption is not associated with higher risk for CVD or CAD, and it is associated with lower risk for stroke.[8,9,10] Emerging research also highlights the need for studies that directly compare the effects of consuming whole- and reduced-fat versus low-fat and fat-free dairy foods on CVD-related outcomes.[8]

High- to moderate-quality evidence finds eating dairy foods is not linked to higher CVD risk

The Drouin-Chartier review concluded that high-quality evidence indicates cheese consumption is not associated with higher risk for CVD, and moderate-quality evidence indicates total dairy food consumption, as well as yogurt consumption, is not associated with higher risk for CVD (based on five meta-analyses of prospective cohort studies [PCS]).[8] No directional association could be established for milk and risk for CVD because of the low-quality of available evidence.[8] In addition, a meta-analysis on cheese and health outcomes published in 2016, after the Drouin-Chartier review, found that cheese consumption is associated with a 10% lower risk for total CVD (largest risk reductions seen with approximately 40 grams per day of cheese).[9] These findings indicate that dairy food consumption is not associated with higher risk for CVD outcomes, and specific dairy foods may provide a benefit.[8]

High-quality evidence finds eating dairy foods is not linked to higher CAD risk

The Drouin-Chartier review concluded that high-quality evidence indicates total dairy food consumption is not associated with higher risk for CAD, and moderate-quality evidence indicates milk, cheese and yogurt consumption is not linked to higher risk for CAD (based on five meta-analyses of PCS).[8] In addition, a meta-analysis on cheese and health outcomes published in 2016, after the Drouin-Chartier review, found that cheese consumption is associated with a 14% lower risk for CAD.[9] These findings indicate dairy food consumption is not associated with higher risk for CAD, and specific dairy foods may provide a benefit.

Drouin-Chartier, et al., concluded that dairy food consumption is not linked to higher risk for CVD or CAD and is linked to lower risk for stroke.[8]

Moderate-quality evidence finds eating dairy foods is linked to lower stroke risk

The Drouin-Chartier review concluded that moderate-quality evidence indicates total dairy food consumption, as well as cheese consumption, is associated with lower risk for stroke, and milk consumption is not associated with higher risk for stroke (based on eight meta-analyses of PCS).[8] A meta-analysis not included in the Drouin-Chartier review examined cheese consumption and stroke and reported cheese consumption is associated with a 10% lower risk for stroke.[9] Another systematic review and meta-analysis, not included in the Drouin-Chartier review, found yogurt, butter or total dairy consumption are not associated with risk for stroke, and 200 grams per day of daily milk consumption (245 grams milk = one 8-ounce cup) is associated with a 7% lower risk for stroke.[10] In addition, this study found 40 grams of cheese (28 grams cheese = one ounce) per day is marginally associated with a 3% lower risk for stroke (trend).[10] These results indicate dairy food consumption is associated with a lower risk for stroke.

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