VIEWPOINT

Is Low-Fat Dairy an Appropriate Recommendation for Children?

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Many countries' dietary guidelines recommend a daily intake of nutrient-rich dairy products in the form of milk, yogurt, or cheese, typically from cow's milk (hereinafter referred to as dairy). From ages 2 to 18 years, children are encouraged to consume 2 to 3 servings of dairy daily and shift from consuming whole-fat to low-fat dairy to prevent obesity and cardiovascular disease (CVD); the Dietary Guidelines for Americans (DGA) and UK, Australian, and European guidelines all make this recommendation.[1,2] However, evidence suggests that, when consumed within recommended quantities, whole-fat dairy may have a null or even protective effect on children's weight, adiposity, and cardiovascular health.[1-4] The current evidence base comprises mostly observational studies; changing dietary guidelines on this basis alone will be challenging. High-quality intervention trials should be prioritized, given the staple role dairy plays in many children's diets. Meanwhile, health care professionals should communicate the existing evidence for higher- vs lower-fat dairy and emphasize choosing unsweetened options.

Dietary guidelines have historically promoted the consumption of low-fat dairy to control energy intake and prevent childhood obesity. However, pediatric intervention and cohort studies have found no association between whole-fat dairy consumption and increased weight or adiposity.[1-4] Conversely, some studies indicate low-fat dairy is positively associated with adiposity, whereas whole-fat dairy shows an inverse association.[2-4] One meta-analysis[4] found that children who consumed whole-fat milk had 39% lower odds of having overweight or obesity compared with those who consumed reduced-fat milk, though heterogeneity between studies was high. Similarly, the 2025 DGA scientific advisory committee[5] concluded that consumption of higher- vs lower-fat milk by younger children may be associated with favorable growth and body composition and lower risk of obesity, though they rate the evidence as limited. No conclusion was drawn for older children and adolescents. In most studies, average dairy intake was approximately 2 servings/d, in line with DGA recommendations.

The satiating effects of higher-fat dairy products may prevent substitution with less healthy foods.[3,4] Interactions between fats and other nutrients in milk may stimulate the release of satiety-inducing gut hormones and slow gastric emptying.[4] Young children naturally regulate their energy intake by replacing energy saved from one food with alternative sources.[3] Children report greater satiety after drinking whole vs skim milk, and when dairy fat intake is reduced, children compensate by increasing intake of other foods.[3] Energy overcompensation with unhealthier options, such as foods with a high glycemic index (GI) or sugary beverages, could explain dairy's potentially protective role. In cohort studies, consuming high-GI foods or drinks, but not whole milk, was associated with weight gain.[6]

Consumers are also encouraged to choose low-fat dairy to reduce saturated fat intake and lower CVD risk. There are insufficient pediatric studies on the association between dairy fat and CVD to draw a definitive conclusion, but some studies have shown a null association. In 1 randomized clinical trial,[1] children who regularly consumed whole-fat dairy swapped their intake for lower-fat options for 3 months. No significant differences in adiposity or cardiometabolic risk factors (ie, blood pressure and levels of serum lipids, glucose, hemoglobin A_{1c}, and C-reactive protein) were observed.[1] Other pediatric observational studies have reached similar conclusions.[2,7]

Possible explanations for these findings include a theory that the food matrix accompanying dairy fat may impact its biological effect.[1] The numerous bioactive compounds in dairy may act synergistically, producing different cardiometabolic effects than would be expected when looking solely at the saturated fat content. Another explanation is that the rise in low-density lipoprotein (LDL) levels induced by dairy fat is attributable to higher levels of large particles rather than atherogenic small, dense particles, leaving CVD risk unchanged.[8] Furthermore, some dairy fats may confer cardiometabolic health benefits.[4] For example, trans-palmitoleic acid has shown associations with higher high-density lipoprotein and lower LDL and triglyceride levels as well as insulin resistance and adiposity.[4]

The effect on CVD risk also depends on what dairy fat is substituted for. Replacing saturated fat with high-GI foods or drinks would increase the risk for CVD.[6] In one adult trial, low-fat dairy was replaced with whole-fat options in the Dietary Approaches to Stop Hypertension diet,[8] resulting in increased saturated fat intake and a corresponding decrease in sugar intake. The higher-fat diet was as effective in lowering blood pressure and also improved lipid profiles (reduced triglyceride and very low-density lipoprotein levels with no significant increase in LDL cholesterol levels).[8] The 2025 DGA scientific advisory committee[5] found no association between substituting higher-fat dairy with lower-fat dairy and CVD morbidity in adults, though evidence was rated as limited. Alternatively, substituting saturated fats for unsaturated fats or low-GI foods would improve cardiovascular health, but this is not the norm in Western dietary patterns.[6]

For children, when dairy fat intake is restricted, what foods or drinks are they likely to compensate with? Reduced-fat foods often contain more sugar and additives to make up for the poorer palatability.[6] Furthermore, US youths aged 2 to 19 years consume the majority (67%) of their daily calories from ultraprocessed foods such as industrial grain foods (eg, processed breads, cereals, biscuits), sweet snacks (eg, cookies, cakes, candy, cereal bars), and ready-to-eat dishes (eg, pizza, sandwiches, and hamburgers).[9] This was consistent across parental educational levels and family income, highlighting the ubiquitous nature of these foods in children's diets.[9] Compared with less processed foods, ultraprocessed

foods have a poorer nutrient profile and contain higher levels of sodium and added sugar.[9] It is plausible that restricting energy from dairy fat intake could result in compensation with foods of poorer nutrition quality.

The existing evidence, while limited, suggests that low-fat dairy consumption may not reduce the risk of childhood overweight, obesity, or CVD. Instead of focusing on fat content, more emphasis should be placed on choosing unsweetened dairy to meet daily requirements. Swapping 1 cup of whole, plain milk (12 g of sugar) for chocolate-flavored reduced-fat milk (25 g of sugar) would add 13 g of sugar to a child's diet.[6] Flavored skim milk is the leading source of added sugar in US school meals.[10] For children, the home and school environments play a vital role in regulating dairy choices. The current evidence for higher- vs lower-fat dairy should be clearly communicated to caregivers, allowing families to make informed decisions based on each child's needs. Schools should promote unsweetened dairy consumption and aim to reduce added sugar consumed from flavored milks. Recent US school policies limiting added sugar amounts in flavored milk are a step in the right direction.

At present, the evidence for higher- vs lower-fat dairy consumption in children is drawn mostly from observational studies where issues of reverse causality, confounding, or bias persist. Changing dietary guidelines on this basis alone will be challenging. Funding for high-quality intervention trials is needed and should be prioritized, given the staple role dairy plays in many children's diets. Meanwhile, health care professionals should communicate the existing evidence for higher- vs lower-fat dairy and emphasize choosing unsweetened options.

ARTICLE INFORMATION

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Published Online: February 24, 2025. doi:10.1001/jamapediatrics.2024.7105

Conflict of Interest Disclosures: None reported.

Additional Contributions: We thank Alyssa J. Moran, ScD, MPH, Division of Health Policy, University of Pennsylvania, Philadelphia, for her overall support and help in reviewing earlier versions of the manuscript, for which she was not compensated.

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