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The National Dairy Council® (NDC) appreciates the opportunity to submit comments for consideration by the 2015 Dietary Guidelines Advisory Committee (DGAC) in response to the Federal Register notice (79 FR 8187) issued February 11, 2014.

The NDC, the non-profit organization founded by U.S. dairy farmers, is committed to nutrition research and education about dairy's role in the diet and health and wellness. NDC provides science-based dairy nutrition information to, and in collaboration with, a variety of stakeholders committed to fostering a healthier nation, including health professionals, educators, school nutrition directors, academia and industry. Established in 1915, NDC comprises a staff of registered dietitians and nutrition research and communications experts across the country.

The following comments are offered to help Americans move towards meeting overall dietary goals including dairy recommendations for three servings per day, as the DGAC undertakes the work of evaluating current science on health and nutrition in support of developing national food-based dietary recommendations.

Practical guidance is needed to help meet dairy recommendations

Americans are under-consuming fruits, vegetables, whole grains and low-fat and fat-free dairy foods (1). To meet Dietary Guidelines for Americans (DGA) goals, Americans need to change the types and amounts of foods they eat, and to make choices that reduce intakes of saturated fat, solid fats, sodium and added sugars while increasing intakes of the foods mentioned above. For example, intakes of milk, cheese and yogurt are under two servings per day, on average, for those two years and older (2) and those servings are not primarily low-fat and fat-free options as recommended (3, 4).

To meet dairy recommendations, a variety of low-fat (1%) and fat-free (skim) milks and yogurts are widely available, and there are efforts to increase intakes of these dairy foods. For example, research indicates increasing milk drinking at meals could be an effective strategy to increase milk consumption (5). However, only 1% of cheese available in the retail market is low-fat (< 3 grams fat per 30 grams of cheese) and fat-free (<0.5 grams fat per 30 grams of cheese) (6), which may explain why intakes of these cheese varieties is low. In contrast, reduced-fat ($\geq 25\%$ reduction in fat) and part-skim cheeses make up about one-quarter of the cheese available at retail (6). Including reduced-fat cheese in eating patterns is a practical approach that can help Americans make the required shifts to meet DGA recommendations for dairy and nutrients to reduce.

USDA has modeled "typical" food group choices and compared them to DGA recommendations in the context of balanced USDA eating patterns (7). For the Dairy Group, a "typical" dairy composite serving contains significantly more calories and saturated fat per cup equivalent compared to the "ideal" dairy composite. To increase dairy to the three servings recommended, and to improve overall dietary goals, a realistic dietary

approach is needed. Diet modeling shows that a variety of dairy food combinations can help reduce fat and increase nutrients of concern compared to “current” intakes, while progressing towards achieving “ideal” dairy intakes. These comments focus on modeling that replaces low-fat cheese with reduced-fat cheese in a dairy composite to illustrate the value of this approach. It appears the DGA recognized the value by including reduced-fat cheese in one of their specific strategies to achieve recommended intakes of dairy foods: “When selecting cheese, choose low-fat or **reduced-fat versions.**” (emphasis added) (Table A2.1: Key Consumer Behaviors and Potential Strategies for Professionals) (1). Including reduced-fat cheese also has been used in the original DASH trial diet (8,9), NHLBI’s DASH eating plan (10), IOM’s models for school meal revisions (11) and USDA’s recommended strategies for making nutrient-dense choices (7,12).

Reduced-fat cheese can help achieve three servings of dairy and improve the American diet, as evidenced by diet pattern modeling

Diet modeling is an approach that was used by Center for Nutrition Policy and Promotion and the 2010 DGAC (3), as well as published by Shaw et al., (13) and Britten et al. (7), to determine a composite of foods that represents each food group and its nutrient content, with the end goal of building diet patterns that meet food group and nutrient recommendations within allotted calories. The “ideal” food cluster is comprised of the most nutrient-dense (i.e., lowest fat and added sugar) options within each food group, in proportions based on actual dietary intake. For the Dairy Group, the “ideal” composite contains low-fat and fat-free milk and yogurt, and low-fat cheese, and contains 81 calories, 1.47 g of saturated fat and 181 mg of sodium per cup equivalent (7). In contrast, USDA’s dairy composite that represents “typical” consumption in the U.S. contains mostly full-fat and reduced-fat options and 145 calories, 4.52 grams of saturated fat and 262 milligrams of sodium per cup equivalent. Britten et. al. reports that 83% of “typical” dairy choices are not aligned with the “ideal” nutrient-dense options.

NDC, in collaboration with Nutrition Impact, LLC, used this same diet modeling approach to examine composites within the Dairy Group that consider both the most nutrient-dense and most commonly consumed dairy choices to help better understand ways people can achieve three servings of dairy recommendations as well as overall dietary patterns goals. A composite consisting of reduced-fat cheese along with low-fat and fat-free milk and yogurt resulted in a savings of nearly 40 calories, 2 grams of saturated fat and over 70 milligrams of sodium per serving compared to “typical” intake (Table 1). Therefore, when expanded to three servings, it would equate to 44% less saturated fat, 27% fewer calories and 28% less sodium than dairy foods currently consumed. Including reduced-fat cheese with currently recommended low-fat and fat-free dairy foods could, thus, greatly improve the current U.S. diet, including improved nutrient adequacy and reduced nutrients to limit.

Table 1. Dairy Group composites (nutritional per cup equivalent)

	“Ideal”	“Typical”	Modeled with reduced-fat cheese
Calories	81	145	106
Saturated fat, grams	1.47	4.52	2.54
Sodium, mg	181	262	189
Calcium, mg	298	302	341
Vitamin D, IU	62	68	67
Potassium, mg	237	241	248

“Ideal” and “typical” dairy composites defined by USDA (5). Modified composite containing reduced-fat cheese developed according to the same ratio of milk, cheese and yogurt in the ideal composite (56:40:4%, respectively) with nutrient content obtained from USDA’s FNDDS 5.0 (14104015 cheese, natural, American or Cheddar type, reduced-fat).

Reduced-fat cheese can fit in an overall healthy diet pattern

When modifying the types or amount of food within a diet pattern, total calories and nutrients need to be assessed to ensure overall dietary goals are met. Because a serving of the modified dairy composite containing reduced-fat cheese is slightly higher in calories and saturated fat (25 calories and 1.1 grams more, respectively) than the “ideal” dairy composite (Table 1), trade-offs may need to be considered to include three servings while meeting USDA’s total diet recommendations. Including three servings of the composite containing reduced-fat cheese in an “ideal” 2,000-calorie diet pattern results in a diet containing 2,061 calories, 11.8% of calories from saturated fat and it does not contain a meaningful difference in total sodium content compared to the “ideal” pattern.

To achieve a USDA diet pattern with 10% of calories from saturated fat and meet food group and total calorie goals, one possible solution is to designate 10 grams of the solid fat (as discretionary calories) to the inclusion of reduced-fat cheese. This supports the recommendation that calories from solid fats and added sugars are best used to increase the palatability of nutrient-dense foods (1), and therefore could help improve essential nutrient adequacy among the population. It is also consistent with MyPlate’s tips that state, “If you choose milk or yogurt that is not fat-free, or cheese that is not low-fat, the fat in the product counts against your maximum limit for “empty calories” (calories from solid fats and added sugars)” (12). Similarly, given the recognition by the 2010 DGAC that milkfat containing foods may have different metabolic effects than other sources of saturated fats, including a neutral or positive impact on blood lipids (3), this could be a favorable approach to using discretionary calories.

Consumer choices and uses of dairy need to be considered

When forming recommendations to help Americans increase total dairy intake while decreasing fat in the diet, it is important to consider various dietary uses in conjunction with taste preferences and market availability. Milk, cheese and yogurt are unique foods that come in different forms and are used in different ways. NHANES data indicate that milk is consumed by the glass, mixed in coffee, poured on cereal and used in cooking (e.g., oatmeal, soup) (4). About half of cheese is consumed “as is” (e.g., as a snack) and half is consumed as part of food mixtures and entrees like Mexican and pasta dishes. Yogurt is a versatile food that can meet both sweet and savory taste preferences and can be eaten alone or as a component of food mixtures. Strategies for increasing dairy intake to meet recommendations need to take into account the different dietary niches that milk, cheese and yogurt fill.

Summary

Research has demonstrated that switching from higher to lower fat milk is a behavioral strategy that can lower fat intake from milk (14, 15). A parallel change is choosing reduced-fat or part-skim cheeses instead of full-fat cheese. The DGA recommends choosing reduced-fat cheeses among the suggested strategies to improve consumer eating behavior, but it is not included in the formal dairy group recommendations (1). Helping Americans meet the recommended three servings of dairy each day would have a large public health impact by helping to close nutrient gaps, reduce the risk of chronic diseases like cardiovascular disease and type 2 diabetes, support bone health and potentially displace other less nutritious options in the diet (1). Finding practical ways to meet the recommendation for three servings of dairy foods while considering what is available, commonly consumed and affordable is an important part of this strategy. Diet modeling indicates including reduced-fat cheese, along with low-fat and fat-free milk and yogurt, addresses these considerations. A dairy composite consisting of these choices could improve the typical U.S. diet and be included in healthy food patterns with consideration of appropriate trade-offs. This approach supports using “discretionary” fat calories for nutrient-dense food choices.

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