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DAIRY CONSUMPTION IN FOOD-BASED DIETARY GUIDELINES: INSIGHTS FROM THE AMERICAS

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Abstract

Milk and dairy products are widely recognized for their nutritional contributions, providing bioavailable calcium, protein, and micronutrients essential for human health, while also playing a significant socio-economic role in many countries. Food-Based Dietary Guidelines (FBDGs) serve as policy instruments to promote healthier dietary patterns, yet the way dairy is represented within them varies substantially across the Americas. This study aimed to analyze how dairy is addressed in national FBDGs across the region, identifying consistencies, gaps, and divergences. A descriptive and comparative documentary analysis was conducted using official national dietary guidelines published or endorsed by government institutions between April and May 2025. Guidelines were included if they contained explicit or implicit recommendations on milk and/or dairy consumption for healthy adults. To enable cross-country comparisons, recommendations were standardized into milk equivalents (mL/day), with conversion factors applied for cheese and yogurt. Recommendations were then classified by type (quantitative or qualitative), intake volume, and subgroup-specific guidance. The analysis revealed marked heterogeneity. North American countries, particularly the United States and Canada, provided structured, quantitative recommendations of 600–800 mL/day, with subgroup-specific adjustments. Several Latin American countries, such as Argentina, Mexico, and Costa Rica, issued quantitative but less detailed guidance (400–600 mL/day). Conversely, many Central American and Caribbean countries included only qualitative statements or omitted dairy altogether. A notable finding was Brazil's absence of quantitative dairy recommendations despite being the region's largest producer and consumer, reflecting its guidelines' emphasis on dietary patterns rather than food group servings. In conclusion, dairy-related recommendations in the Americas are fragmented, shaped by cultural traditions, policy priorities, and health concerns. While structured guidance can support nutrient

adequacy, its absence may hinder public health goals. Regional dialogue and evidence-based, context-sensitive strategies are needed to strengthen dietary guidance, address inequalities, and ensure adequate nutrient intake across the continent.

Key words: Nutritional guidelines; consumption patterns; population health; dietary policy; micronutrient deficiencies

Introduction:

Milk and dairy products are key components of healthy diets as they provide essential nutrients such as calcium, potassium, magnesium, iodine, high-quality protein, and vitamin B12. Their high nutrient bioavailability, particularly of calcium, makes dairy an important food group for maintaining nutritional adequacy and preventing deficiencies (Górska-Warsewicz et al., 2019; Cifelli et al., 2021; Gil and Ortega, 2019; Thorning et al., 2016). Beyond their nutritional role, dairy is also a major sector of the agri-food economy in many countries, contributing to employment and regional food security. These nutritional and socio-economic dimensions help explain why dairy foods are frequently addressed in Food-Based Dietary Guidelines (FBDGs) (Comerford et al., 2021).

FBDGs are policy instruments designed to guide populations toward healthier dietary patterns. Since the 1990s, several countries in the Americas have developed or updated national dietary guidelines, incorporating dairy either as a separate food group or within broader categories such as “animal-based foods” or “protein sources.” However, the representation of dairy varies substantially across countries: while some nations provide detailed quantitative recommendations, often stratified by age, sex, or physiological stage, others offer only qualitative mentions or omit dairy entirely (Comerford et al., 2021). This heterogeneity reflects differences in food cultures, health priorities, equity considerations, prevalence of lactose intolerance, food availability, and the methodological rigor of guideline development (Dai et al., 2021; Comerford et al., 2021; Kovacs et al., 2021; Jacobs et al., 2020).

At the same time, discussions are expanding regarding how dairy is positioned within dietary guidance. Evidence supporting its contribution to bone health, growth, and the prevention of nutrient deficiencies is well established (De Lamas et al., 2019; Gil and Ortega, 2019; Savaiano and Hutkins, 2020). More recently, attention has shifted to dairy’s role in overall dietary quality. Research on cardiometabolic health has advanced, showing that both low-fat and full-fat dairy products can fit within healthy dietary patterns when consumed in

moderation (Soedamah-Muthu and De Goede, 2018; Hirahatake et al., 2020; Drouin-Chartier et al., 2016; Poppitt, 2020; Torres-Gonzalez and Bradley, 2023; Hirahatake et al., 2019; Muñoz-Alvarez et al., 2024; Taormina et al., 2024; Astrup, 2014). Additionally, sustainability has emerged as an important consideration, although most FBDGs in the Americas still prioritize nutritional adequacy and public health outcomes, with limited integration of environmental aspects (Gil and Ortega, 2019).

The Americas provide a particularly relevant context for exploring these dynamics. The region includes major global dairy producers and exporters—such as the United States, Brazil, and Argentina—alongside countries with limited dairy availability and weaker consumption traditions. Consequently, the representation of dairy in national guidelines varies substantially (Comerford et al., 2021; Dai et al., 2021; Jacobs et al., 2020). Notably, some key countries, including Brazil, still lack explicit quantitative recommendations for dairy despite its nutritional and economic significance (Comerford et al., 2021; Dai et al., 2021).

In this context, analyzing the representation of dairy within FBDGs across the Americas can generate valuable insights into regional disparities, gaps, and opportunities. By mapping these recommendations, this study aims to highlight both consistencies and divergences among countries, contributing to ongoing debates on how dietary guidelines can more effectively address nutritional adequacy, cultural diversity, and emerging sustainability concerns.

Methods

This study received financial support from Minas Gerais State Agency for Research and Development (FAPEMIG). We employed a descriptive and comparative documentary analysis of national FBDGs from countries in the Americas, focusing specifically on dairy-related recommendations. Between April and May 2025, the most recent versions of national dietary guidelines were retrieved from official government websites and publications issued by ministries of health and national food authorities. Only official documents published or endorsed by national public institutions were included in the analysis. Guidelines were considered eligible if they provided explicit or implicit recommendations for milk and/or dairy product consumption in healthy adults, while those that did not mention dairy products or originated from unofficial or non-governmental sources were excluded.

To facilitate comparison across countries, all recommendations were standardized and expressed in milliliters (mL) of milk equivalents, based on a reference serving size of 200 mL. For guidelines reporting cheese or yogurt, standard conversion factors were applied: one serving (30 g) of cheese was considered equivalent to 200 mL of milk, and one serving (125

g) of yogurt was considered equivalent to 200 mL of milk. The extracted information was then organized into a structured database and classified according to type of recommendation (quantitative versus qualitative), recommended intake volume (mL/day), and whether subgroup-specific guidance was provided, such as for children, adolescents, older adults, or pregnant and lactating women.

Results

The Americas comprise 35 countries, of which five, Argentina, Canada, Costa Rica, Guatemala, and the United States, were identified with Food-Based Dietary Guidelines (FBDGs) that include dairy-related recommendations. The analysis of these guidelines revealed marked heterogeneity in the presence, specificity, and structure of recommendations. To illustrate these patterns, Figure 1 summarizes national guidance expressed as milk equivalents (mL/person/day), alongside average per capita consumption levels in each country.

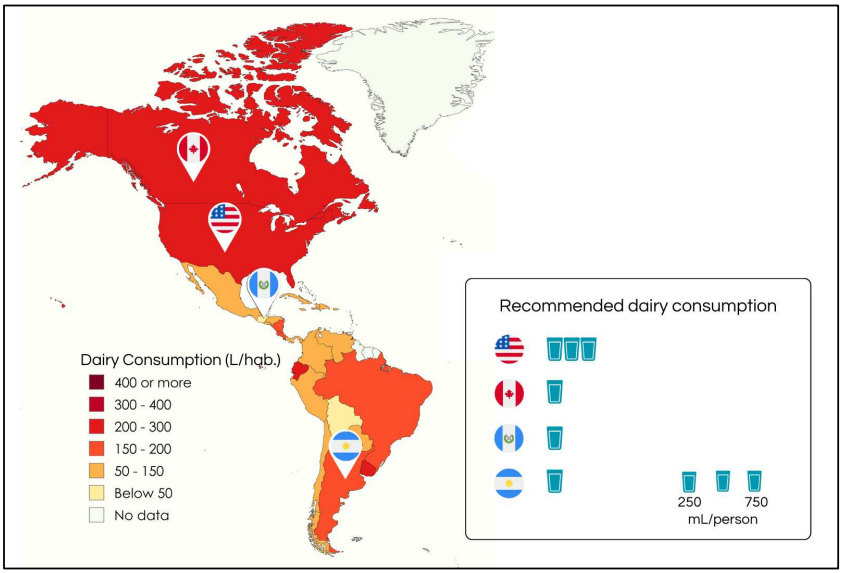

Figure 1: America distribution of daily dairy consumption recommendations for healthy adults, based on the minimum suggested volume (mL) of milk.
Source: Results of the study.

Figure 1 illustrates the America distribution of dairy recommendations. The analysis of FBDGs from the Americas revealed marked heterogeneity in the presence, specificity, and structure of dairy-related recommendations. In North America, both the United States and

Canada issued detailed, quantitative guidance, typically recommending three to four daily servings (600–800 mL/day), with specific adjustments for children, adolescents, older adults, and, in some cases, for pregnant and lactating women. These recommendations are aligned with nutrient reference values for calcium and magnesium and exemplify how structured guidelines can support population-level nutrient adequacy (Dai et al., 2021; Cámara et al., 2021; Comerford et al., 2021; Herforth et al., 2019; Kovacs et al., 2021).

In Latin America, recommendations were more variable. Countries such as Argentina, Mexico, and Costa Rica provided explicit quantitative guidance, generally ranging from two to three daily servings (400–600 mL/day). While less detailed than those of North America, these recommendations nonetheless indicate recognition of the nutritional role of dairy products in regional diets. Conversely, several countries in Central America and the Caribbean either issued only qualitative statements—such as recommending the consumption of dairy products without specifying amounts—or lacked identifiable guidance altogether.

A particularly significant finding concerns Brazil. Despite being the largest producer and consumer of dairy products in Latin America, its national FBDG did not present explicit quantitative recommendations for dairy intake. This omission is paradoxical, as it contrasts with neighboring Argentina, which provides clear serving recommendations, and with Mexico, which incorporates dairy into its dietary framework. Brazil's Food Guide for the Brazilian Population (Brasil, 2014) has been widely regarded as innovative for its emphasis on dietary patterns, culinary practices, and the reduction of ultra-processed foods, rather than on food group–specific serving sizes. While this approach highlights broader policy priorities, including dietary diversity and traditional food systems, it may also limit the ability of public health policies to address widespread nutritional challenges such as calcium deficiency, osteoporosis, and related chronic conditions (Luz et al., 2021; Galvão et al., 2022; Sousa and Da Costa, 2018).

These disparities reveal the fragmented nature of dairy recommendations across the Americas. Countries with robust production systems and strong traditions of dairy consumption are more likely to issue structured guidelines, whereas others restrict themselves to vague recommendations or lack explicit guidance. This heterogeneity indicates that the Americas cannot be considered a homogeneous block in terms of dietary policies, underscoring the need for context-sensitive guidelines that take into account cultural factors, population health profiles, and socioeconomic inequalities in access to dairy products (Comerford et al., 2021; Dai et al., 2021; Jacobs et al., 2020).

Furthermore, the contrast between detailed North American guidelines and the less specific

or absent recommendations in parts of Latin America raises important policy implications. While harmonization at a global level may be challenging, greater regional coordination could support the development of more consistent and evidence-based guidelines (Allen et al., 2019; Thorndike et al., 2022), thereby contributing to improved nutrient adequacy and reducing health disparities across the continent (Wang et al., 2023; Fletcher et al., 2024; McCullough et al., 2024).

Conclusions

Ultimately, the analysis of dairy-related recommendations in the Food-Based Dietary Guidelines of the Americas highlights substantial heterogeneity, ranging from highly structured, quantitative guidance in countries such as the United States and Canada to qualitative or absent recommendations in several parts of Latin America. While this diversity reflects distinct cultural traditions, policy priorities, and methodological approaches, it also exposes gaps that may hinder the promotion of adequate nutrient intake across the region. The case of Brazil illustrates both the innovative potential of guidelines centered on dietary patterns and the limitations of omitting quantitative references to key food groups such as dairy. These findings underscore the importance of advancing regional dialogue and fostering evidence-based, context-sensitive recommendations that can better align nutritional guidance with public health needs and reduce inequalities in access to dairy products across the continent.

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