

# Health Implications of Dairy Intake in US Hispanics: Opportunities for Nutrition Intervention and Education



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## INTRODUCTION

The Hispanic population includes any person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish cultural origin, and is the largest and fastest growing minority group in the United States. According to the 2008 United States Census Bureau population estimate, there are 46.9 million Hispanics living in the US, comprising 15% of the total population, with projected growth to 30% by 2050.<sup>1,2</sup> Mexicans rank as the largest subgroup in the US, at 66% of the Hispanic population, followed by Central and South Americans (13%), Puerto Ricans (9.4%), and Cubans (3.9%).<sup>1</sup> (See Table, Page 2.)

In the US, Hispanics are disproportionately impacted by obesity and chronic health conditions, as compared to the general population.<sup>3,4</sup>

- ◆ Overweight and obesity:<sup>1</sup> In 2007, Hispanic Americans were 1.1 times as likely to be obese, and Mexican American women were 1.3 times more likely to be obese. In 2003- 2004 Mexican American children between the ages 6–11 were 1.3 times more likely to be overweight.
- ◆ Insulin resistance syndrome (IRS) and diabetes: Mexican American adults are 2 times more likely to have been diagnosed with diabetes.<sup>1</sup> Among overweight Hispanic children, IRS estimates were found to range from 25.7% to 39%.<sup>5</sup>
- ◆ Cardiovascular disease: Despite lower prevalence rates, cardiovascular disease, including stroke, is the leading cause of death for US Hispanics.<sup>1</sup>
- ◆ Hypertension: Despite a similar prevalence of nearly one in three, US Hispanics have a higher rate of hypertension-related morbidity and mortality.<sup>6</sup>
- ◆ Osteoporosis: Hispanic women have a 31% greater likelihood of having osteoporosis.<sup>7</sup>

Research has found an association between the consumption of milk and milk products, and a reduction in chronic disease risk,<sup>8,9</sup> including several of the conditions for which Hispanics have increased risk. Dairy products contribute key nutrients that may directly or indirectly have beneficial effects on insulin sensitivity, body weight, blood pressure and lipid levels, and when consumed as part of a healthy diet may help to reduce the risk of osteoporosis, IRS and diabetes, coronary heart disease, and hypertension.<sup>8,9</sup>

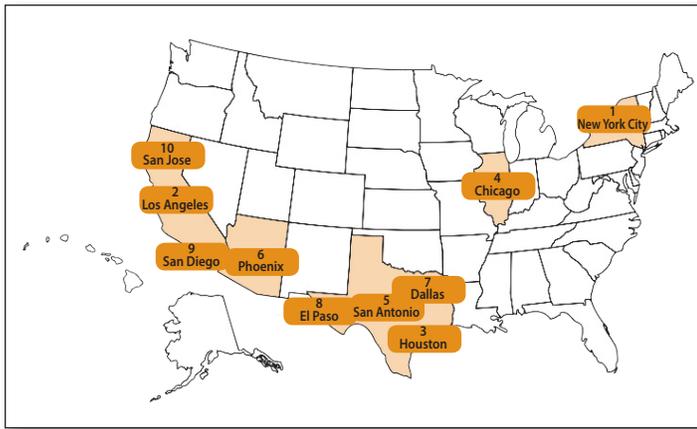
The 2005 *Dietary Guidelines for Americans* identifies calcium, potassium, magnesium, and vitamin A, all found in significant levels in dairy foods, among the shortfall nutrients for both US children and adult diets.<sup>10</sup> Evidence that higher intakes of vitamin D are associated with better health outcomes led the American Academy of Pediatrics to increase the recommendation for infants, children, and adolescents to 400 IU per day.<sup>11</sup> Dairy product consumption is associated with overall diet quality, and adequate intake of shortfall nutrients (calcium, potassium, magnesium, vitamin A) in addition to vitamins B12 and D, riboflavin, phosphorus, zinc, iron, and protein.<sup>8,10</sup>

Of concern is that Hispanic Americans, on average, consume less than the current recommended 3 to 4 servings of low-fat milk and milk products a day,<sup>12</sup> and consume more whole milk.<sup>13</sup> Understanding the factors that influence the amount and type of dairy consumed by the Hispanic population may offer opportunities for nutrition educators to improve intakes of dairy foods to help prevent and manage chronic disease. This report is a summary of current knowledge regarding Hispanic health as it relates to consumption of dairy foods, and to identify meaningful education strategies for helping Hispanic individuals meet dietary recommendations for low-fat and fat-free dairy foods.

## ACCULTURATION AND THE HISPANIC DIET

Multiple factors affect the health status of Hispanic Americans, including: lack of financial resources, language and literacy barriers, and limited access to health care and insurance.<sup>13</sup> Acculturation, the process by which an individual acquires a second culture in addition to their first culture, is an important factor in determining diet quality and health outcomes.<sup>14</sup> Evidence exists for an ever-growing trend towards biculturalism, the practice of maintaining some native customs, values, and traditions while integrating select customs and behaviors of a new country of residence.<sup>15</sup> A recent review of the relationship between acculturation and diet among Hispanics in the US suggests a differential influence of acculturation on diet, requiring specificity in dietary interventions by acculturation status and subgroup.<sup>16</sup>

Traditional Hispanic diets typically contain less total fat and more fiber compared to US diets,<sup>17</sup> and include a variety of vegetables (e.g., zucchini, tomatoes, onion and chiles); starches (e.g., rice, quinoa, potatoes, corn); fruits (e.g., mango, grapes, guava and quince); beans, seeds, and nuts.<sup>18,19</sup> Traditional meals also include meat, fish, poultry, eggs, and whole milk and cheese. The quality of the Hispanic diet has been shown to decline as US habits are acquired, including the adoption of the English language.<sup>20</sup> Researchers found that Hispanics born in Mexico, or Central or South America, tend to consume more traditional foods with diets that adhere more closely to US dietary



Map of the US with the top 10 cities displaying the largest Hispanic/Latino population according to the US Census Bureau.<sup>1</sup>

recommendations compared to those born in the US.<sup>12,21</sup> With increasing length of time residing in the US, Hispanics have nutrient profiles that more closely resemble those of non-Hispanics.<sup>21</sup>

## Dairy Consumption in the Hispanic Population

Compared with other food groups, dairy recommendations were found to be least likely to be followed among Hispanics.<sup>12</sup> On average, US born Hispanic adults consume 1.5–1.6 servings of the 3–4 recommended servings of dairy a day, while adults born in Mexico, Central or South America consume 1.8–1.9 servings a day.<sup>12</sup> Evidence suggests that level of acculturation can affect both the amount and type of dairy consumed by Hispanics.<sup>12,16</sup>

Low dairy consumption is a growing problem as nonnutritive beverages may be displacing milk and milk consumption. The 2007 National Youth Risk Behavior Survey found that among high school students, only 12.75% of Hispanics consumed three or more glasses of milk a day, down from 15.8% in 1999, while 61% of Hispanic youth were likely to consume one or more cans of soda a day.<sup>22</sup>



Research suggests that dairy foods are the main source of calcium in the diets of Hispanic-Americans,<sup>23</sup> with milk consumption as a primary determinant of calcium intake for youth.<sup>24</sup> Although recent nutrient intake data for Mexican Americans suggests that this population comes close to meeting daily calcium recommendations,<sup>25</sup> evidence of dairy consumption appears to contradict this evidence. Further research is needed to determine actual food sources of calcium and other dairy

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nutrients to evaluate adequacy and ensure bioavailability of calcium among this population and other Hispanic subpopulations.

## Barriers to Meeting Dairy Recommendations

The 2005 *Dietary Guidelines for Americans* recommend that adults and children ages 9 and older consume three cups of fat-free or low-fat milk or equivalent milk products every day.<sup>10</sup> Two important barriers that may be influencing the quantity and quality of dairy choices for US Hispanics are perceptions about and experiences with lactose intolerance, and a preference for higher fat dairy foods.



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A 2010 National Institutes of Health (NIH) consensus conference on lactose intolerance concluded that there is insufficient evidence to determine lactose intolerance prevalence rates.<sup>26</sup> However, a recent study found that age-adjusted, self-reported lactose intolerance rates for Hispanics are much lower (10.05%) than previously estimated from studies of lactose maldigestion.<sup>27</sup> Many individuals with real or perceived lactose intolerance avoid dairy and ingest inadequate amounts of calcium and vitamin D, which may predispose them to decreased bone accrual, osteoporosis, and other adverse health outcomes. According to the NIH, it is unnecessary to eliminate dairy completely to manage most cases of lactose intolerance.<sup>26</sup> Overcoming the barrier of lactose intolerance has been cited as a key strategy for reducing the risk of calcium-related chronic diseases, for which Hispanics are at greater risk.<sup>28</sup>

Hispanics purchase more whole and reduced-fat 2% milk, perceiving these to be more nutritious and wholesome,<sup>29</sup> and 63% of Mexican Americans consume whole milk compared to 59% for other Hispanics.<sup>13</sup> In a recent study of 893 US Hispanic adults aged 18–64 found a better taste acceptance and liking for reduced-fat milk (lactose-free, 2%) over fat-free (lactose-free) milk and soy-based milk-substitute beverages.<sup>30</sup> Acculturation may impact usage and attitudes toward milk consumption among Hispanics, with greater language acculturation and US birth associated with lower consumption of whole milk.<sup>16,31</sup>

## DISCUSSION

The disproportionate rates of chronic disease among a rapidly growing, diverse Hispanic population make understanding and addressing their health and nutrition status a critical issue for nutrition professionals. It has been estimated that if American adults, including Hispanics, increased their intake of dairy foods to the currently recommended 3–4 servings a day, the 5-year cumulative savings in health care costs would exceed 200 billion dollars.<sup>32</sup> Nutrient intake data indicate that the 2005 *Dietary Guidelines for*

Americans recommendation of 3 servings per day from the milk group is the minimum amount necessary to ensure adequate calcium intakes for all Americans older than 9 years, whereas 4 servings per day may be necessary to ensure adequate intakes of magnesium and potassium.<sup>8</sup> The 2010 Dietary Guidelines Advisory Committee has proposed the addition of vitamin D to the nutrients of concern for adults and children.<sup>33</sup> Milk and milk products play a critical role in planning eating patterns that conform to the *Dietary Guidelines* for nutrient adequacy and may help reduce the risk of several chronic diseases,<sup>8</sup> and subsequently help reduce or eliminate health disparities in the Hispanic population.

This report emphasizes the importance of reinforcing traditional healthful eating patterns that include dairy foods, while providing nutrition education on adopting healthful eating practices, such as transition to lower fat dairy foods. Nutrition education and counseling tailored to Hispanics has been shown to have a positive influence on nutrition knowledge and dietary intake behaviors.<sup>34</sup> Nutrition educators can focus on small steps to encourage positive dietary changes in this at-risk population. In doing so, nutrition education messages must consider the dynamics of acculturation, health literacy, and readiness for change. For those less acculturated, messages should stress maintaining healthful diet behaviors, such as continued use of milk in coffee-based beverages, while incorporating messages to improve dietary practices, such as the use of low-fat and fat-free milk and milk products. Acculturated Hispanics may benefit from messages that link desirable health outcomes, such as reducing the risk of diseases common to this population, to practical dietary changes. Examples of appropriate diet messages include choosing lower fat varieties of traditional cheese, or use of low-fat yogurt or lactose-free milk for individuals for lactose intolerance.

## IMPLICATIONS FOR RESEARCH AND PRACTICE

It is well documented that daily consumption of milk and other dairy foods improves the overall nutrient adequacy of the diet and may reduce the risk of several chronic diseases.<sup>8,10</sup>

Yet more information is necessary regarding actual intake of dairy foods among the Hispanic subpopulations. To learn more, the National Institutes of Health is conducting a multicenter epidemiologic study of 16,000 Hispanic/Latinos in the US to determine the role of acculturation in the prevalence and development of disease, and to identify risk factors playing a protective or harmful role in their health.<sup>35</sup> This study will provide valuable information to guide health professionals in recommending targeted dietary and lifestyle changes for preventing or managing health risks and conditions among the diverse Hispanic subgroups.

Presently, nutrition professionals can help encourage and improve dairy intake in Hispanic populations using culturally appropriate education strategies, such as:

- ◆ Advocate healthy traditional diets while incorporating healthful new dietary habits to combine the best of both dietary cultures.
- ◆ Encourage 3 to 4 servings per day of low-fat or fat-free milk, cheese and yogurt (i.e., 3 servings for children, adults, and

pregnant women; 4 servings for adolescents and adults over 50 years). Education should include visual portion size guidelines for milk, yogurt and cheese, and label reading tips for choosing lower fat dairy foods.

- ◆ Suggest the use of low-fat or fat-free milk when preparing traditional beverages and foods, such as *café con leche*, *chocolate caliente*, *batidos* or *licuados*, *horchata*, milk-based vegetable soups, and in traditional desserts, such as *flan*, *arroz con leche*, or *tres leches* recipes.
- ◆ Encourage use of cheese made with lower fat milk, including Hispanic-style cheeses available in lower fat varieties, such as *Queso Oaxaca* and *Queso Fresco*, and others that are traditionally made with low-fat milk, such as *Enchilado* or *Queso Añejo*.
- ◆ Explain that the nutrient package of vitamins and minerals found in low-fat and fat-free milk is the same as in whole milk, making lower fat choices just as nourishing.
- ◆ Teach strategies for dealing with lactose intolerance, such as trying lactose-free milk, consuming dairy foods with other foods in smaller amounts throughout the day, eating aged cheese, yogurt, kefir, and other fermented dairy products, and using lactose digestive aids. Explain that lactose-free milk is real milk and contains the same essential nutrients found in regular milk.
- ◆ Utilize culturally and linguistically appropriate nutrition education resources, such as *The Road to a Healthy Life (El Camino Hacia una Vida Saludable)*,<sup>36</sup> based on the 2005 *Dietary Guidelines for Americans*, or *Delicious Heart Healthy Latino Recipes*.<sup>37</sup>



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## CPE CREDIT AVAILABLE

One CPE applied for through the American Dietetic Association. Please go to LAHIDAN's website – [www.eatrightlahidan.org](http://www.eatrightlahidan.org) to access the test in order to receive one CPE.

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