



MEETING THE DIETARY & HEALTH NEEDS OF THE GROWING U.S. HISPANIC POPULATION: A FOCUS ON DAIRY

SUMMARY

The Hispanic (Latino) population is the largest and fastest growing ethnic minority group in the United States. This population group includes persons of Mexican, Puerto Rican, Cuban, or other Hispanic origin, regardless of race, each with its distinct characteristics (e.g., beliefs, customs, behaviors).

Hispanic Americans experience higher rates of some diet-related chronic diseases such as overweight/obesity and diabetes compared to non-Hispanic whites. Hispanics are also at risk of coronary heart disease, hypertension, and osteoporosis. In an effort to eliminate health disparities among different population segments, health professionals have become increasingly aware of the need to learn more about factors influencing Hispanics' susceptibility to disease and effective interventions to improve their health. This *Digest* focuses on the role of dairy foods in U.S. Hispanics' health.

Although data are limited, findings indicate that on average Hispanics in the U.S.

consume fewer servings from the Milk Group than non-Hispanic whites, and fail to consume the recommended number of servings of low-fat or fat-free milk or milk products a day. Hispanics have low intakes of several shortfall nutrients provided in the U.S. diet by dairy foods such as potassium, vitamin A, and vitamin D.

Research indicates an association between higher dairy food intake, as well as some nutrients in dairy foods, and reduced risk of

certain diet-related chronic diseases in adults, including those affecting Hispanics in general and some subgroups. However, relatively few studies have specifically focused on the role of dairy foods/nutrients in preventing or managing health conditions in Hispanics.

A variety of factors – acculturation (i.e., assimilation into mainstream U.S. culture), lactose intolerance, taste, and attitudes may impact Hispanics' consumption of milk and other dairy foods. Foreign-born or less acculturated Hispanics consume more traditional Hispanic foods made with dairy foods than U.S.-born Hispanics or those more acculturated. With acculturation, Hispanics' consumption of milk decreases, while that of cheese, particularly American-style cheeses, increases. Although lactose intolerance may impact some Hispanics' consumption of dairy foods, a new study suggests that the prevalence of this condition among Hispanics may be much lower than previously reported. The majority of Hispanics prefer the taste of whole and reduced-fat milk to that of low-fat milk.

Health professionals can help Hispanics consume a healthful diet meeting recommendations of the 2005 Dietary Guidelines and *MyPyramid* by providing culturally sensitive and appropriate nutrition education messages and interventions. To improve dairy food consumption, health professionals can support Hispanics' traditional healthful eating patterns that typically include dairy foods, but encourage low-fat and fat-free milk instead of whole milk choices; educate Hispanics about dairy's nutrient package and health benefits; and teach them that low-fat or fat-free milk or milk products are just as nutritious as their full-fat counterparts. **D**



The Dairy Council Digest® is available on-line. www.nationaldairyCouncil.org

INTRODUCTION

The Hispanic (also called Latino) population is the largest and fastest growing ethnic minority group in the United States (1,2). As of July 1, 2009, this minority population reached 15.75% (48.4 million) of the estimated total U.S. population, and is projected to reach approximately 30% (132.8 million) by July 1, 2050 (1,2). In 2009, almost 26% of children in the U.S. younger than 5 years and 22% of those under 18 years were Hispanic (1). Among Hispanic subgroups, Mexicans are the largest at 66%, followed by Puerto Ricans (9%), Cubans (3.4%), Salvadorans (3.4%), and Dominicans (2.8%), with the remaining 15.4% of Central American, South American, or other Hispanic origin (1).

As a group, Hispanic Americans experience higher rates of some chronic diseases such as obesity and type 2 diabetes compared to non-Hispanic whites (3-5). Eliminating health disparities among different population segments is an overarching goal of both Healthy People 2010 and 2020 (6).

Understanding U.S. Hispanics' health risks and disease burden, factors influencing their disease risk, specifically diet, and effective interventions to improve their health is relevant to reduce health disparities in this rapidly growing, diverse minority group. Of interest is U.S. Hispanics' intake of dairy foods and dairy food nutrients and how their consumption may improve Hispanics' health. This *Digest* addresses questions regarding U.S. Hispanics' risk of chronic diseases; their intake of dairy foods and dairy food nutrients; dairy intake and risk of diseases affecting Hispanics; factors influencing their dairy food intake; and how health professionals can help Hispanics meet dietary recommendations for dairy consumption.

WHAT DIET-RELATED CHRONIC DISEASES DISPROPORTIONATELY IMPACT U.S. HISPANICS?

While Hispanics are at higher risk for some diet-related chronic diseases than are non-Hispanic whites, their risk is similar or even slightly lower for other diseases.

As Hispanics continue to make up an increasingly larger proportion of the U.S. population and experience disproportionately higher rates of some chronic diseases, it is important to understand how their diet influences their health and well-being.



Interestingly, life expectancy for Hispanics in the U.S. is longer than for non-Hispanics, despite Hispanics' lower socioeconomic status (7). Factors responsible for this so-called "Hispanic paradox" are poorly understood.

Overweight/Obesity. Hispanics are at a disproportionately high risk of overweight and obesity, a risk factor for type 2 diabetes, hypertension, cardiovascular disease, stroke, and certain cancers, as well as premature death (3,8-12). The prevalence of obesity among Hispanic adults ranged from 21.0% to 36.7% compared to non-Hispanic white adults, whose obesity prevalence ranged from 9.0% to 30.2%, according to 2006-2008 data from the Behavioral Risk Factor Surveillance System surveys (12). In particular, Mexican American women, children, and adolescents are more likely to be overweight or obese than their non-Hispanic white counterparts (3,8-11).

Diabetes. The U.S. Hispanic population is at a disproportionately high risk of developing diabetes (90% to 95% of which is type 2 diabetes) and its complications (13-15). After adjusting for population age and gender differences, 2004-2006 national survey data indicate that the prevalence of diabetes for Hispanics aged 20 years and older is 10.4% compared to 6.6% for non-Hispanic whites (14). Diabetes rates are highest for mainland Puerto Ricans (12.6%) followed by Mexican Americans (11.9%) and Cubans (8.2%) (14). Also, Hispanics with diabetes are more likely to have poorly controlled diabetes than non-Hispanic white adults (16). Researchers forecast that diabetes among Hispanic adults will exceed 20% by 2031, the largest diabetes caseload among any U.S. ethnic group (17).

Coronary Heart Disease. Coronary heart disease, including stroke, is a leading cause of death for U.S. Hispanics (18). However, in 2007, Hispanic Americans were 10% less likely to have heart disease and less likely to die from this disease than non-Hispanic whites (3). In 2005, Hispanic adults were less likely to die from a stroke than their non-Hispanic counterparts (3). However, the incidence of stroke, especially among Mexican American males, is reported to be higher than among non-Hispanic white males (11).

Hypertension. The prevalence of hypertension (high blood pressure), a risk factor for heart disease and stroke, is similar for U.S. Hispanics (20.6%) and non-Hispanic whites (22.5%) (3). However, U.S. Hispanics have a higher rate of hypertension-related morbidity and mortality than other ethnic groups (19). Hispanics' lack of awareness and control of hypertension, as well as their higher prevalence of other cardiovascular disease risk factors such as obesity, may contribute to this discrepancy (19).

Osteoporosis. Although osteoporosis and low bone mass are lower in Hispanics than Caucasians aged 50 years and older, risk is increasing most rapidly among Hispanic women compared to other ethnic/racial groups (20). Experts predict that annual costs related to osteoporotic fractures among U.S. Hispanics will increase from an estimated \$754 million in 2005 to \$2 billion per year in 2025 (20).

WHAT IS KNOWN ABOUT U.S. HISPANICS' INTAKE OF DAIRY FOODS/DAIRY NUTRIENTS?

The 2005 Dietary Guidelines for Americans recommends consumption of three cups of low-fat or fat-free milk or equivalent milk products (cheese, yogurt) a day for Americans aged 9 years and older and two cups for children aged 2 to 8 years (21). Nutrient-rich dairy foods (milk, cheese, and yogurt) supply four of the seven nutrients adults' diets fall short of – calcium, potassium, magnesium, and vitamin A, and three of the five nutrients children's diets fall short of – calcium, potassium, and magnesium (21). Recently, vitamin D has been identified as a shortfall nutrient (22).

Although data are limited, Hispanics in the U.S. generally consume less than the recommended number of servings of low-fat or fat-free milk or milk products a day (23-29). A study using 1993-1996 data found that Hispanic adults born in the U.S. consumed fewer servings of dairy foods (i.e., 1.6 and 1.5 servings for men and women, respectively) than Hispanics born in Mexico, or Central or South America (i.e., 1.9 and 1.8 servings for men and women, respectively) (25). Nutrient-poor beverages such as soda may be displacing milk. The 2009 National Youth Risk Behavior Survey found that



Limited data suggest that U.S. Hispanics consume less than the recommended daily servings of low-fat or fat-free milk or milk products, which may compromise their intake of some dairy food nutrients.

among high school students, only 11.6% of Hispanics consumed three or more glasses of milk a day (17% of non-Hispanic whites), while 28.1% of Hispanic students (29.0% of non-Hispanic whites) consumed soda at least one time during the day (29).

Dairy foods are identified as the primary source of calcium for Hispanics, with corn or flour tortillas, refried beans, and rice among other food sources of this nutrient (30,31). According to data from the National Health and Nutrition Examination Survey (NHANES) 2007-2008, mean calcium intakes of Hispanics and Mexican Americans aged 20 years and older are 914 mg/day and 913 mg/day, respectively, which is lower than that for non-Hispanic whites (968 mg/day) and slightly below daily calcium recommendations of 1,000 to 1,200 mg/day, depending on gender and age (32,33). This same study indicates that Hispanics aged 20 years and older have lower intakes of potassium (2,596 mg/day vs. 2,720 mg/day) and vitamin A (536 µg/day vs. 639 µg/day) compared to non-Hispanic whites, and that intakes of these nutrients are below dietary recommendations (32,33).

Although NHANES 2007-08 data indicate similar intakes of vitamin D (4.5 µg/day) for both Hispanics and non-Hispanic whites aged 20 years and older, this intake is below the recommended level of 5 to 15 µg/day, depending on gender and age (32,33). Other studies have reported suboptimal levels of vitamin D intake or vitamin D status among U.S. Hispanics (34-37). More research is needed to determine Hispanics' and Hispanic subgroups' intake of dairy foods and dairy food nutrients.

DOES DAIRY FOOD INTAKE INFLUENCE HISPANICS' RISKS FOR CHRONIC DISEASES?

A complex interaction among several factors such as genetics, the environment, and specific behaviors likely explains health disparities between Hispanics and other population groups and among Hispanic subgroups. Because Hispanics comprise multiple diverse populations with distinct racial, ethnic, and cultural characteristics, it is difficult to make general statements about their health and risk factors. Culture is a key determinant of health beliefs and

behaviors, social and psychological resources, and use of health care services.

Research findings show an association between higher dairy food intake, as well as some nutrients in dairy foods, and reduced risk of certain diet-related chronic diseases in adults, including several affecting Hispanics in general and some subgroups (38-40). However, relatively few studies have specifically focused on the role of dairy foods/nutrients in preventing or managing health conditions in Hispanics or Hispanic subgroups.

WHAT FACTORS INFLUENCE HISPANICS' DAIRY FOOD INTAKE?

Understanding factors that influence Hispanics' amount and type of dairy food consumed may provide opportunities for health professionals to improve Hispanics' dairy food intake to help them obtain the nutrients they need and reduce their risk of several chronic diseases.

Acculturation. Acculturation (i.e., assimilation into mainstream U.S. culture) is a key determinant of Hispanics' health status and health behaviors, including diet (41-43). However, the effect of acculturation on health behaviors and outcomes is complex and inconsistent (41,42). The relationship between acculturation and diet quality among Hispanics in the U.S. is influenced by a variety of factors such as years living in the U.S., country of birth including rural vs. urban, language use (i.e., predominately Spanish vs. English), education, income, and food security (42,43). In general, there is increasing evidence that Hispanics who are less acculturated retain certain favorable eating patterns characteristic of their country of origin and that diet quality may be compromised as they assimilate into the U.S. mainstream culture (42,44,45).

Acculturation may affect both the amount and type of dairy food consumed (44,46). Country of birth and language are associated with changes in dairy food consumption (44,46). Foreign-born or less acculturated

Several factors – acculturation, lactose intolerance, taste, and attitudes – may influence Hispanics' consumption of milk and other dairy foods.



Hispanics consume more traditional Hispanic foods made with dairy such as *licuados* or *batidos* (blended fruit and milk beverage often served at breakfast), dairy desserts (*flan*, *natilla*, *pastel tres leches*, *arroz con leche*), and *atole* (a corn-based drink sometimes made with milk) than U.S.-born Hispanics or those more acculturated (46). As Hispanics acculturate, their milk consumption decreases and U.S.-born Hispanics drink less milk than foreign-born Hispanics (46). According to a study of 1,245 women of Mexican descent, those born in the U.S. consumed less whole milk (type traditionally consumed by Hispanics) than those born in Mexico, and both Mexican-born and U.S.-born women who spoke predominately English consumed less whole milk than their counterparts who spoke predominately Spanish (44).

Cheese preferences also vary by country of origin and level of acculturation (46). Cheese consumption in countries such as Mexico is generally lower than in the U.S. where intake of this dairy food increases with acculturation (46). Foreign-born Mexicans are more accustomed to eating mild and creamy cheeses such as *queso fresco* and *queso blanco* and are less familiar with the firmer texture and sharper taste of Cheddar cheese than U.S.-born Hispanics (46). More acculturated Hispanics consume American-style cheeses such as Mozzarella, American, Cheddar, and Monterey Jack, whereas less acculturated Hispanics favor traditional cheeses such as *queso fresco* and *queso blanco* (46). Yogurt is a popular dairy food for all Hispanics. Unlike milk, yogurt consumption does not appear to decrease as Hispanic adults acculturate, although this may not be true for Hispanic children (46).

Lactose Intolerance. U.S. Hispanics' consumption of dairy foods may be influenced by their perceptions about and experiences with lactose intolerance. According to a recent expert panel convened by the National Institutes of Health (47), there is insufficient evidence to determine lactose intolerance prevalence rates. However, new research indicates that the self-reported,

age-adjusted prevalence of lactose intolerance among U.S. Hispanics (i.e., 10.05%) is far less than widely publicized in the past (i.e., 50% to 80%) (48). Avoiding milk and other dairy foods due to concerns about lactose intolerance may not only be unnecessary, but also could lead to nutrient shortcomings, which may predispose individuals to adverse health outcomes, concluded the NIH expert panel (47). Strategies are available to help individuals with lactose intolerance comfortably consume dairy foods (47).

Taste and Attitudes. Taste is an important factor influencing food choices and the decision to consume dairy foods. The majority of U.S. Hispanic consumers, particularly foreign-born and less acculturated Hispanics, prefer the taste of whole and reduced-fat milk to that of low-fat milk (46). However, with acculturation, this preference declines (46). A focus group study found that U.S. Hispanic adults liked chocolate milk with 2% fat or higher, but most (70%) did not like the taste of fat-free chocolate milk, although they recognized the health benefits of reducing fat consumption (49).

Some Hispanics have the misperception that whole milk is more nutritious than lower fat varieties (46). Although low-fat and fat-free milks contain less fat and fewer calories than whole milk, they are just as nutritious (50).

HOW CAN HEALTH PROFESSIONALS HELP ENCOURAGE AND IMPROVE HISPANICS' DAIRY FOOD INTAKE?

To help Hispanics consume a healthful diet meeting recommendations of the 2005 Dietary Guidelines (20) and *MyPyramid* (www.mypyramid.gov), health professionals need to provide culturally sensitive and appropriate nutrition education messages and interventions that take into consideration such factors as Hispanics' country of birth, acculturation (e.g., language), socioeconomic status, knowledge and health beliefs, and lifestyle (51).

Encouraging Hispanics to consume three servings per day of low-fat or fat-free milk or equivalent milk products (cheese, yogurt) may help reduce their risk for several chronic diseases, while providing all the nutrients of full-fat dairy foods.



The following are some strategies that health professionals can use to help Hispanics meet current dietary recommendations to consume three servings per day of low-fat or fat-free milk, yogurt, or cheese.

- Reinforce traditional healthful eating patterns that typically include dairy foods such as milk in coffee-based beverages, vegetable soups, and desserts, but advise use of low-fat and fat-free milk instead of whole milk.
- Educate Hispanics about dairy's nutrient package and health benefits and that low-fat or fat-free milk or milk products are just as nutritious as their full-fat counterparts.
- Promote milk drinking (e.g., at meals such as dinner) and its benefits over alternative, less nutritious beverages.
- Encourage consumption of cheeses made with lower fat milk, including lower fat varieties of Hispanic-style cheeses (e.g., *queso oaxaca*, *queso fresco*) and others that are traditionally made with low-fat milk (e.g., *enchilado*, *queso añejo*). It is important to warn Hispanics (and others), particularly pregnant women, the elderly, and those with compromised immune systems, about the serious food-related illnesses associated with Mexican-style cheeses (e.g., *queso fresco*, *queso blanco*, *panela*, *asadero*) made from raw (unpasteurized) milk (52-54). These cheeses should not be consumed unless labeled as made from pasteurized milk.
- Teach individualized strategies to manage lactose intolerance such as consuming small amounts of milk at a time, preferably with food, yogurt with live and active cultures, natural cheeses (e.g., Cheddar), and lactose-free dairy foods (e.g., lactose-free milk). Explain that lactose-free dairy foods contain the same nutrients as their regular counterparts, just without the lactose.

CONCLUSION

To learn more about Hispanics' health and factors influencing their health (e.g., acculturation, diet, physical activity, etc.),

the National Heart, Lung and Blood Institute has initiated a six-year study called the Hispanic Community Health Study/Study of Latinos (55,56). This study involves 16,000 Hispanics aged 18 to 74 years from each of four communities in the U.S. (55,56). A bilingual study website is available for the public and participants (www.saludsol.net). **D**

REFERENCES

- Centers for Disease Control and Prevention. *Highlights in Minority Health & Health Disparities*. September/October 2010. www.cdc.gov/omhd/Highlights/Highlight.htm.
- U.S. Census Bureau News. *Facts for Features. Hispanic Heritage Month 2010: Sept. 15-Oct. 15*. July 15, 2010. www.census.gov.
- U.S. Department of Health and Human Services, Office of Minority Health. *Hispanic/Latino Profile*. <http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=2&lvlid=54>.
- Centers for Disease Control and Prevention. Office of Minority Health and Economic Disparities. *Hispanic or Latino Populations*. www.cdc.gov/omhd/Populations/HL/HL.htm.
- Fryar, C.D., R. Hirsch, M.S. Eberhardt, et al. NCHS Data Brief 36(Apr.): 1, 2010. www.cdc.gov/nchs/data/data/briefs/db36.pdf.
- U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. *Healthy People 2010*. www.health.gov/healthypeople.
- Arias, E. *United States Life Tables by Hispanic Origin*. Vital Health Stat. 2 (152), 2010. www.cdc.gov/nchs/data/series/sr_02/sr02_152.pdf.
- Ogden, C.L., M.D. Carroll, L.R. Curtin, et al. *JAMA* 295: 1549, 2006.
- Ogden, C., and M. Carroll. Prevalence of obesity among children and adolescents: United States, Trends 1963-1965 through 2007-2008. *Health E-Stat*, June 2010. www.cdc.gov/nchs/data/hestat/obesity_child_07_08/obesity_child_07_08.pdf.
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. *Health, United States, 2009*. Hyattsville, MD, 2010. www.cdc.gov/nchs/data/hsus/hsus09.pdf.
- American Heart Association. *Heart Disease and Stroke Statistics – 2010 Update*. Dallas, TX: American Heart Association, 2010.
- Pan, L., D.A. Galuska, B. Sherry, et al. *Morbidity & Mortality Weekly Report* 58(27): 740, 2009.
- Caballero, A.E. *Curr. Diabetes Report* 5: 217, 2005.
- Centers for Disease Control and Prevention. *National Diabetes Fact Sheet, 2007*. www.cdc.gov/diabetes/pubs/pdf/ndfs_2007.pdf.
- American Diabetes Association. *Diabetes Statistics*. www.diabetes.org/diabetes-basics/diabetes-statistics.
- Kirk, J.K., L.V. Passmore, R.A. Bell, et al. *Diabetes Care* 31: 240, 2008.
- Mainous, A.G., R. Baker, R.J. Koopman, et al. *Diabetologia* 50: 934, 2007.
- American Heart Association. *Statistical Fact Sheet – Populations 2010 Update. Hispanics/Latinos and Cardiovascular Diseases – Statistics*. www.americanheart.org/statistics.
- Aranda, J.M., Jr., R. Calderon, and J.M. Aranda, Sr. *Prev. Cardiol.* 11(2): 116, 2008.
- National Osteoporosis Foundation. *Fast Facts*. www.nof.org/node/40.

November | December 2010

- U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005*. 6th Edition. Washington, DC: U.S. Government Printing Office, January 2005. www.healthierus.gov/dietaryguidelines.
- 2010 Dietary Guidelines Advisory Committee. *Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010*. www.cnpp.usda.gov/DGAs2010-DGACReport.htm.
- U.S. Department of Agriculture, Agricultural Research Service. *Data Tables: Food and Nutrient Intakes by Hispanic Origin and Race, 1994-96*. Table Set 16. February 1999. www.barc.usda.gov/bhnrc/foodsurvey/home.htm.
- U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. *The Healthy Eating Index: 1999-2000*. CNPP-12. www.cnpp.usda.gov/Publications/HEI/HEI99-00report.pdf.
- Sharma, S., S.P. Murphy, L.R. Wilkens, et al. *J. Am. Diet. Assoc.* 104: 1873, 2004.
- Boeckner, L., C. Pullen, S. Walker, et al. *J. Am. Diet. Assoc.* 106: 1870, 2006.
- Storey, M.L., R.A. Forshee, and P.A. Anderson. *J. Am. Diet. Assoc.* 106: 1992, 2006.
- Beydoun, M.A., T.L. Gary, B.H. Caballero, et al. *Am. J. Clin. Nutr.* 87: 1914, 2008.
- Eaton, D.K., L. Kann, S. Kinchen, et al. *Morbidity & Mortality Weekly Report* 59 (no. SS-5), June 4, 2010.
- Looker, A.C., C.M. Loria, M.D. Carroll, et al. *J. Am. Diet. Assoc.* 93: 1274, 1993.
- Novotny, R., C. Boushey, M.A. Bock, et al. *J. Am. Coll. Nutr.* 22: 64, 2003.
- U.S. Department of Agriculture, Agricultural Research Service. *What We Eat in America, NHANES 2007-2008. Nutrient Intakes from Food: Mean Amounts Consumed per Individual by Race/Ethnicity and Age, in the United States, 2007-2008*. August 2010. www.ars.usda.gov/ba/bhnrc/fsrg.
- Institute of Medicine of the National Academies. *Dietary Reference Intakes. The Essential Guide to Nutrient Requirements*. Washington, DC: The National Academies Press, 2006.
- Yetley, E.A. *Am. J. Clin. Nutr.* 88: 558s, 2008.
- Mansbach, J.M., A.A. Ginde, and C.A. Camargo, Jr. *Pediatrics* 124: 1404, 2009.
- McKinney, K., C.R. Breifkopf, and A.B. Berenson. *Clin. Endocrinol.* 69(4): 535, 2008.
- Hannan, M.T., H.J. Litman, A.B. Araujo, et al. *J. Clin. Endocrinol. Metab.* 93: 40, 2008.
- Huth, P.J., D.B. DiRienzo, and G.D. Miller. *J. Dairy Sci.* 89: 1207, 2006.
- Huth, P.J., V.L. Fulgoni, III, D.B. DiRienzo, et al. *Nutr. Today* 43(6): 226, 2008.
- Nicklas, T.A., and M. Van Loan (Eds). *J. Am. Coll. Nutr.* 28(7): 69s, 2009.
- Lara, M., C. Gamboa, M.I. Kahramanian, et al. *Annu. Rev. Public Health* 26: 367, 2005.
- Ayala, G.X., B. Bagueo, and S. Klinger. *J. Am. Diet. Assoc.* 108: 1330, 2008.
- Perez-Escamilla, R. *J. Am. Diet. Assoc.* 109(6): 988, 2009.
- Montez, J.K., and K. Eschbach. *J. Am. Diet. Assoc.* 108: 473, 2008.
- Wilson, T.A., A.L. Adolph, and N.F. Butte. *J. Am. Diet. Assoc.* 109: 1012, 2009.
- Dairy Management, Inc. *Understanding the Dairy Opportunity Among Hispanic Consumers*. Prepared for the Innovation Center for U.S. Dairy. January 2010.
- Unice Kennedy Shriver National Institute of Child Health and Human Development and NIH Office of Medical Applications of Research. NIH Consensus Development Conference. *Lactose Intolerance and Health*. February 22-24, 2010. <http://consensus.nih.gov/2010/lactosestatement.htm>.

- Nicklas, T.A., H. Qu, S.O. Hughes, et al. *Nutr. Today* 44: 222, 2009.
- Thompson, J.L., P.D. Gerard, and M.A. Drake. *J. Food Sci.* 72(9): 666s, 2007.
- U.S. Department of Agriculture, Agricultural Research Service. *USDA National Nutrient Database for Standard Reference, Release 23*, 2010. www.ars.usda.gov/ba/bhnrc/ndl.
- Early, K.B., and E. Brzezinski. Mexican American Food Practices. In: *Cultural Food Practices*. C.M. Goody and L. Drago (Eds). Chicago, IL: American Dietetic Association, 2010.
- U.S. Food and Drug Administration. *Preventing Listeriosis in Pregnant Hispanic Women in the U.S.* www.fda.gov/Food/ResourcesForYou/HealthEducators/ucm062993.htm.
- U.S. Food and Drug Administration. *The Dangers of Raw Milk: Unpasteurized Milk Can Pose a Serious Health Risk*. www.fda.gov/Food/ResourcesForYou/Consumers/UCM079516.htm.
- Banerjee, A., M. Frierman, S. Hurd, et al. *Characterization of High Risk Food Consumption Practices Among the Hispanic Population. FoodNet 2000-2001*. Chicago, IL: Infectious Diseases Society of America, 2002. www.cdc.gov/enterics/publications/29_banerjee_2002.pdf.
- Sorlie, P.D., L.M. Aviles-Santa, S. Wassertheil-Smoller, et al. *Ann. Epidemiol.* 20: 629, 2010.
- National Heart, Lung and Blood Institute, National Institutes of Health. *Hispanic Community Health Study/Study of Latinos*. www.csc.unc.edu/hchs. **D**

RELATED RESOURCES

www.nationaldairycouncil.org

- Materiales en Español
- National Dairy Council. Lactose Intolerance: New Understandings. Dairy Council Digest 81(4), 2010.

Coming Next Issue:

ENSURING DAIRY FOOD QUALITY & SAFETY FROM FARM TO REFRIGERATOR

ACKNOWLEDGMENTS

National Dairy Council® assumes the responsibility for this publication. However, we would like to acknowledge the help and suggestions of the following reviewers in its preparation:

- Maria C. Alamo, MPH, RD, LD
President, Salud Consulting
Evanston, IL
- Cecilia Pozo Fileti, MS, RD, FADA
President, Latino Health Communications
Ann Arbor, MI

The *Dairy Council Digest*® is written and edited by Lois D. McBean, MS, RD.

COPYRIGHT NOTICE

Copyright © 2010, NATIONAL DAIRY COUNCIL®, O'Hare International Center, 10255 West Higgins Road, Suite 900, Rosemont, IL 60018-5616.

©2010 NFL Properties LLC. All NFL-related trademarks are trademarks of the National Football League.