

Dairy's Role in African-American Health: Benefits Beyond Bone Health

Less than 7 percent of African-Americans meet the 2005 Dietary Guidelines for Americans recommended three servings of dairy foods per day (NHANES data, Beydoun 2008).ⁱ According to a published report by the National Medical Association, all African-Americans should increase dairy consumption to three to four servings of dairy foods a day to reduce the risk of certain chronic diseases, including hypertension (high blood pressure) and obesity.ⁱⁱ Below is an overview of the latest research supporting the important role dairy's nutrients play in African-American health.

Lactose Intolerance

Some studies found a higher prevalence of lactose intolerance among African-Americans when participants were given a much larger amount of lactose than what is typically found in a glass of milk.ⁱⁱⁱ However, there is evidence that significantly fewer African-Americans are lactose intolerant than previously reported. According to a report by the National Medical Association, only about 24 percent of African-Americans consider themselves to be lactose intolerant.ⁱⁱ

Scientific evidence indicates that with careful management, most people with lactose intolerance can still consume three daily servings of calcium-rich dairy foods (milk, cheese and yogurt), especially with meals, as recommended by the 2005 Dietary Guidelines for Americans.

Scientific Support

- Lactose intolerance does not fully explain low dairy food intake in many African-Americans. Even though only 24 percent of African-Americans consider themselves to be lactose intolerant, the majority of African-Americans (86 percent) get just more than half of the recommended daily amount of calcium.^{iv}
- For those with lactose intolerance, the condition may be an obstacle to dairy calcium consumption. Individuals can manage their lactose intolerance through dietary approaches: drinking small amounts of milk with a meal, eating yogurt and eating some hard cheeses such as Cheddar or Swiss.^v A review of scientific literature found that individuals who are unable to digest lactose well can still drink an 8-ounce cup of milk without symptoms.^{vi}

Lactose Intolerance and Adolescents

- When African-American adolescent girls, identified as lactose maldigesters, consumed a dairy-rich diet for 21 days, they experienced an overall improvement in indicators of lactose digestion.^{vii}

Tips on how to incorporate dairy into your diet:^{viii}

- Drink smaller servings of milk with food
- Consume hard cheese like Cheddar or Swiss; one serving is 1½ ounces
- Eat yogurt with live and active cultures

Hypertension, Heart Disease and Stroke

High blood pressure or hypertension is a highly prevalent risk factor for heart disease, particularly among African-Americans. In fact, 39 percent of African-American men and 41 percent of African-American women have high blood pressure compared to 29 percent of Caucasian men and 28 percent of Caucasian women.^{ix} In 2004, age-adjusted death rates for heart disease were 32 percent higher among African Americans than among Caucasians.^x

Scientific Support

- The Dietary Approaches to Stop Hypertension (DASH) study – published in the *New England Journal of Medicine* – found that a low-fat diet that included 2-3 servings of dairy foods and 8-10 servings of fruits and vegetables significantly lowered blood pressure. Nearly two-thirds of the study participants were African-Americans because of a disproportionate burden of hypertension in minority populations.^{xi}
- A re-analysis of data from the DASH study looked more closely at the population subgroups and found that the low-fat, dairy-rich DASH eating plan was twice as effective among hypertensive African-Americans as a diet low in dairy foods. The DASH diet lowered the BP of this group an average of 13 mm Hg, a similar response to that produced by medication. Adherence to the study protocol was more than 95 percent and lactose intolerance was not cited as a barrier to dairy consumption among the participants.^{xii}
- Experts emphasize the importance of the entire diet and nutrient package of the DASH diet. In a separate study, researchers estimated that the DASH diet – if extended to the whole U.S. population – could result in a reduction of coronary heart disease (CHD) and stroke by 15 percent and 27 percent, respectively, with a population-wide adoption of the DASH diet. Specifically for African-Americans, authors estimated a 9 percent reduction of CHD events over a 10-year universal adoption of the diet.^{xiii}
- A review revealed that dairy is a beneficial component of a balanced diet as African-Americans strive for optimal health. Studies were identified that showed a 30 percent reduced risk of coronary heart disease, a 40 percent reduced risk of stroke and a 30 percent reduced risk of all-cause mortality in subjects with recommended food group intake levels.^{xiv,xv}

Obesity

The Surgeon General estimates that more than 69 percent of African-American women and 58 percent of African-American men are overweight or obese.^{xvi} Studies indicate that dairy foods may exert a significantly greater effect on managing body weight and body composition compared to calcium supplements or a low-dairy food diet.^{xvii, xviii} The current body of research also includes observational, animal and cellular studies conducted by leading research institutions throughout the country.

Scientific Support

- Two randomized controlled studies were conducted in otherwise healthy obese African-American adults. The first clinical study, a 24-week study of 29 obese adults, found that those who consumed three servings of dairy per day while on a balanced, modestly reduced-calorie diet, lost twice as much weight and fat while preserving lean body mass compared to participants who consumed less than one serving of dairy per day. The second clinical study, a 24-week study of 34 obese adults, found that those who consumed three servings of dairy per day on a weight-maintenance diet (consumption of adequate calories to maintain weight) lost more total body fat and trunk fat and gained lean mass compared to participants who consumed less than one serving of dairy per day. In both studies, three servings of dairy a day decreased circulating insulin levels, an important factor when assessing risk of type 2 diabetes. In addition, in the weight maintenance study, consuming three servings of dairy per day produced a significant decrease in blood pressure.^{xix}
- CARDIA, a 10-year prospective study that examined the dietary habits of more than 3,000 adults aged 18 to 30 years, indicated that increased dairy consumption may protect overweight individuals from becoming obese or developing insulin resistance syndrome (also known as metabolic syndrome), which is associated with increased abdominal fat. Obesity and insulin resistance syndrome are major risk factors for type 2 diabetes and cardiovascular disease. Increased dairy consumption was equally beneficial to African-Americans and Caucasians, and both reduced-fat and full-fat dairy products were included.^{xx}

- A cross-sectional survey using data from NHANES (1999-2004) found that average consumption of dairy in African-Americans was less than one serving per day (0.97). According to the authors, this study showed an inverse association between some dairy foods and obesity as well as metabolic syndrome. Authors state differences in consumption of dairy foods and dairy-related nutrients among ethnic groups in the United States may account for the discrepancies in risk of obesity and other co-morbidities. The study found a statistically significant difference in body mass index (BMI) between non-Hispanic African-Americans and non-Hispanic Caucasians that may be explained by dairy-related nutrients like calcium and magnesium.^{xxi}
- Dietary intake of calcium was assessed in 50 premenopausal African-American women. Those who ate a diet rich in calcium from dairy foods had significantly lower body mass indexes (weight relative to height) than women who had lower calcium intakes.^{xxii}

Osteoporosis

Dairy's role in reducing the risk of osteoporosis and in strengthening bones has long been established and supported by the nutrition and science community, including the U.S. Surgeon General, the American Academy of Family Physicians, the American Dietetic Association, the National Institutes of Health, the American Academy of Pediatrics, the National Hispanic Medical Association, National Institutes of Child Health and Human Development, the National Medical Association and the School Nutrition Association. African-Americans can benefit from taking steps to reduce their risk of osteoporosis, such as: participating in physical activity and increasing consumption of low-fat and fat-free dairy foods.

Consuming an adequate intake of calcium or calcium-rich foods such as milk and other dairy foods throughout life reduces the risk for osteoporosis according to the National Institutes of Health.^{xxiii} In addition, the NIH agrees that vitamin D is necessary for calcium absorption and that this nutrient, with calcium, helps protect older adults from osteoporosis.^{xxiv}

Between 80 and 95 percent of fractures in African-American women over age 64 are due to osteoporosis, and African-American women who sustain osteoporosis-related fractures have decreased survival rates following hip-fractures compared to Caucasian women.^{xxv}

Scientific Support

- One review of the literature identified racial and ethnic disparities in awareness, prevention, diagnosis and treatment of osteoporosis. The author found studies that showed both lack of awareness of the risk of osteoporosis and also lack of awareness of preventive measures; while 41 percent of non-Hispanic Caucasian women reported familiarity with osteoporosis, only 25 percent of African-American women reported being closely aware of the disease. The author reviewed studies showing that minorities have a decreased likelihood of adopting bone-enhancing behaviors like dietary intake of calcium and physical activity. In addition, minority patients are two to three times less often tested for osteoporosis and also less often given drug treatment. Finally, the author found that African-American women with hip fractures are twice as likely as Caucasian women to die within the first year of the fracture.^{xxvi}
- A review of the calcium needs of adults over 65 years of age concluded that increasing daily calcium intake (e.g., from 1,300 to 1,700 mg/day) will reduce osteoporotic fracture risk by 30 percent to 50 percent.^{xxvii}

Osteoporosis and Adolescents

- Further support for a positive effect of calcium and dairy products on bone health in adolescents is provided by findings from a study of two groups of adolescent girls (15 to 18 years). Both calcium and dairy products improved bone mass accrual, leading to a higher peak bone mass. While calcium influenced volumetric bone density, dairy products had an additional impact on bone growth and bone expansion.^{xxviii}

Additional resources are available at www.nationaldairycouncil.org.

-
- ⁱ Beydoun MA, Gary TL, Caballero H, Lawrence RS, Cheskin LJ and Wang Y. Ethnic differences in dairy and related nutrient consumption among US adults and their associations with obesity, central obesity, and the metabolic syndrome. *American Journal of Clinical Nutrition* 2008;87:1914-25.
- ⁱⁱ Wooten, WJ, Price W. Consensus report of the National Medical Association. The role of dairy and dairy nutrients in the diet of African-Americans. *Journal of the National Medical Association* 2005;96:1S-31S.
- ⁱⁱⁱ Byers KG, Savaiano DA. The myth of increased lactose intolerance in African-Americans. *Journal of the American College of Nutrition*. 2005;24(6 Suppl):569S-73S.
- ^{iv} Wooten, W, et. al. The Role of Dairy and Dairy Nutrients in the Diet of African-Americans. *Journal of National Medical Association*. 2004; 96(12):20S-24S.
- ^v Jackson KA, Savaiano DA. Lactose maldigestion, calcium intake and osteoporosis in African-, Asian-, and Hispanic-Americans. *Journal of the American College of Nutrition*. 2001;20(2 Suppl):198S-207S.
- ^{vi} Byers KG, Savaiano DA. The myth of increased lactose intolerance in African-Americans. *Journal of the American College of Nutrition*. 2005;24(6 Suppl):569S-73S.
- ^{vii} Pribila BA, et al. Improved lactose digestion and intolerance among African-American adolescent girls fed a dairy-rich diet. *Journal of the American Dietetic Association*. 2000;100(5):524-8.
- ^{viii} Adapted from the NMA consensus paper.
- ^{ix} American Heart Association. African Americans and Cardiovascular Diseases — Statistics U.S. 2008. Table: Age-Adjusted Prevalence Trends for High Blood Pressure in Americans Age 20 and Older by Race/Ethnicity, Sex and Survey. <http://www.americanheart.org/downloadable/heart/1197933296813FS01AF08.pdf>
- ^x CDC. National Center for Health Statistics , Health, United States, 2007 With Chartbook on Trends in the Health of Americans Hyattsville, Maryland: National Center for Health Statistics. 2007.
- ^{xi} Appel LJ, et al. A clinical trial of the effects of dietary patterns on blood pressure. *New England Journal of Medicine*. 1997;336:1117-1124.
- ^{xii} Svetkey LP, et al. Effects of dietary patterns on blood pressure. Subgroup analysis of the Dietary Approaches to Stop Hypertension (DASH) randomized clinical trial. *Archives of Internal Medicine*. 1999;159:285-93.
- ^{xiii} McCarron DA, Heaney RP. Estimated healthcare savings associated with adequate dairy food intake. *American Journal of Hypertension* 2004;17:88-97.
- ^{xiv} Reusser ME, DiRienzo DB, Miller GD, McCarron DA. Adequate nutrient intake can reduce cardiovascular disease risk in African-Americans. *Journal of the National Medical Association*. 2003;95(3):188-95.
- ^{xv} Kant et al. A prospective study of diet quality and mortality in women. *Journal of the American Medical Association* 2000;283:2109-2115.
- ^{xvi} Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity," December 2001. http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_glance.html.
- ^{xvii} Zemel M, et al. Effects of calcium and dairy on body composition and weight loss in African-American adults. *Obesity Research*. 2005;13(7):1218-1225.
- ^{xviii} Zemel MB, Thompson W, Milstead A, Morris K, Campbell P. Calcium and dairy acceleration of weight and fat loss during energy restriction in obese adults. *Obesity Research*. 2004;12(4):582-590.
- ^{xix} Zemel M, et al. Effects of calcium and dairy on body composition and weight loss in African-American adults. *Obesity Research*. 2005;13(7):1218-1225.
- ^{xx} Pereira MA, et al. Dairy consumption, obesity, and the insulin resistance syndrome in young adults: The CARDIA Study. *Journal of the American Medical Association*. 2002;287:2081-2089.
- ^{xxi} May A, Beydoun, Tiffany L, Gary, Benjamin H, Caballero, Robert S, Lawrence, Lawrence J, Cheskin and Youfa Wang. Ethnic differences in dairy and related nutrient consumption among US adults and their association with obesity, central obesity, and the metabolic syndrome. *American Journal of Clinical Nutrition*. 2008;87:1914-1925.
- ^{xxii} Buchowski MS, et al. Dietary calcium intake in lactose maldigesting intolerant and tolerant African-American women. *Journal of the American College of Nutrition*. 2002;21(1):47-54.
- ^{xxiii} NIH Consensus Development Program. Consensus Statements. *Osteoporosis Prevention, Diagnosis, and Therapy*. 2000;17(1).

-
- xxiv Dietary Supplement Fact Sheet: Vitamin D. Office of Dietary Supplements, National Institutes of Health. May 16, 2008. Found online at: <http://ods.od.nih.gov/factsheets/vitamind.asp> .
- xxv National Institutes of Health, Osteoporosis and Related Bone Diseases – National Resource Center. January 2003. http://www.niams.nih.gov/About_Us/Budget/2002sigitems.asp.
- xxvi Thomas PA. Racial and ethnic differences in osteoporosis. *Journal of the American Academy of Orthopaedic Surgeons*. 2007;15(Suppl 1):S26-30.
- xxvii Heaney, R.P. *Journal of the American College of Nutrition*. 2001;20.
- xxviii Matkovic, V., J.D. Landoll, N.E. Badenhop-Stevens, et al. *Journal of Nutrition*. 2004;134:701s.

Additional resources are available at www.nationaldairycouncil.org.
Call (312) 240-2880 for more information.



NATIONAL DAIRY COUNCIL