

Lactose Intolerance

Dairy's Role in African-American Health

Benefits Beyond Bone Health

According to the recently published National Medical Association (NMA) Consensus Report, *The Role of Dairy and Dairy Nutrients in the Diet of African Americans*, all African Americans should increase dairy consumption to 3-4 servings of dairy a day to reduce the risk of certain chronic diseases, including hypertension and obesity. Below is an overview on the latest research supporting the important role dairy nutrients play in African-American health.

Lactose Intolerance

Scientific evidence indicates that most people can comfortably consume recommended servings of milk and other dairy foods, especially with meals. In addition, gradually increasing intake of lactose-containing foods can improve tolerance to lactose.

Lactose intolerance does not fully explain low dairy food intake in African Americans. Only about 24 percent of African Americans consider themselves to be lactose intolerant. Despite this, the majority of African Americans (86 percent) do not get the daily recommended amount of calcium.

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.

When African-American adolescent girls, who were lactose maldigesters, consumed a dairy-rich diet for 21 days, they experienced an overall improvement in lactose digestion. 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.

Hypertension

High blood pressure, or hypertension, is a highly prevalent risk factor for heart disease, particularly among African Americans. One in three African Americans suffers from hypertension and they develop it earlier in life and with more serious health consequences than Caucasians.

The DASH Difference

The Dietary Approaches to Stop Hypertension (DASH) study published in the *New England Journal of Medicine* in 1997 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. According to the study authors, because of the disproportionate burden of hypertension in minority populations, particularly among blacks, nearly two-thirds of the study participants were African American.

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.

A reanalysis of data from the DASH study looked more closely at the population subgroups and found that the low-fat dairy-rich DASH diet was twice as effective among

African Americans. The DASH diet lowered the blood pressure of this group an average of 13 mm Hg, a similar response to that produced by medications. African Americans experienced significant blood pressure benefits, without symptoms of lactose intolerance (when consuming 2-3 servings of dairy foods each day). The DASH eating plan " if extended to the whole U.S. population could potentially result in 27 percent reduction in stroke incidence, much of that in the African-American population. 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.

Hypertension in Adolescents

Increased calcium intake, especially calcium from dairy sources, also helps lower blood pressure in adolescents, who need 4 servings of dairy to get the 1,300 mg of calcium recommended to build strong bones.

Increasing calcium intake lowered blood pressure in African American teens, ages 15-18, whose diets were originally low in calcium. Calcium derived from food sources may have as much as twice the beneficial effect of supplements; this suggests it is the critical interactions among nutrients found in dairy foods, including calcium, magnesium and potassium, that may impact blood pressure.

Dwyer JH, et al. Dietary calcium, calcium supplementation and blood pressure in African American adolescents. *American Journal of Clinical Nutrition*. 1998; 68: 648-655.

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. Randomized clinical trials have found a significant relationship between calcium/dairy product intake and reduced body weight and/or fat in overweight and obese adults. These studies report that dairy foods exert a significantly greater effect on reducing body weight, fat and inches around the waist compared to calcium supplements or a low-dairy diet. The current body of research also includes observational, animal and cellular studies conducted by leading research institutions throughout the country.

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 3 servings of dairy per day on a weight loss diet (500 kilocalorie deficit per day) lost twice as much weight and fat while preserving lean body mass compared to participants who consumed less than 1 serving of dairy per day. The second clinical study, a 24-week study of 34 obese adults, found that those who consumed 3 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 1 serving of dairy per day. In both studies, 3 servings of dairy a day decreased circulating insulin levels, a link to diabetes. In addition, in the weight maintenance study, consuming 3 servings of dairy per day produced a significant decrease in blood pressure.

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.

Results from the CARDIA study indicate 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. This 10-year prospective study examined the dietary habits of more than 3,000 adults aged 18 to 30 years, about half of whom were African American. Increased dairy consumption was equally beneficial to African Americans and Caucasians, and both reduced-fat and full-fat dairy products were effective. 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.

African-American women 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.

Buchowski MS, et al. Dietary calcium intake in lactose maldigesting intolerant and tolerant African-American women. *Journal of American College of Nutrition*. 2002; 21(1):47-54.

Osteoporosis

While African Americans tend to have stronger and denser bones compared to Caucasians, they still need to take steps to prevent osteoporosis.

More than 30 percent of African-American women have low bone density or thinning of the bones.

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 suffer increased disability and decreased survival compared to white women. National Institutes of Health, Osteoporosis and Related Bone Diseases National Resource Center. January 2003.

Consuming an adequate intake of calcium or calcium-rich foods such as milk and other dairy products throughout life reduces the risk for osteoporosis.

NIH Consensus Development Program. Consensus Statements. *Osteoporosis Prevention, Diagnosis, and Therapy*. March 27-29, 2000. Vol. 17, No. 1.

Heaney RP. Calcium, Dairy Products and Osteoporosis. *Journal of the American College of Nutrition*. 2000; 19: 83S-99S.

Dairy's role in preventing osteoporosis and in strengthening bones has long been established and lauded by the nutrition and science community, including the American Dietetic Association (ADA), the National Institutes of Health (NIH), the American Academy of Pediatrics (AAP), National Institutes of Child Health and Human Development (NICHD), and many other reputable health organizations.