African Americans Need Less Vitamin D and Calcium

Calcium and vitamin D are two of the cornerstones of bone health – vitamin D helps calcium get absorbed into the body where it provides the mineral strength in bone. Calcium metabolism is a very dynamic process and genetics play a strong role. Because of differences in genetics, African Americans may not require the same amount of calcium and vitamin D to maintain good bone health as other ethnic groups.

Ethnic differences in calcium metabolism and vitamin D

In 2010, researchers found that the level of vitamin D that triggers a kind of warning message to the body’s calcium metabolism in African American women is about 23% lower than the trigger level in Caucasian women. On average, in African Americans they found that the vitamin D level was 15 ng/mL compared to 24 ng/mL in Caucasians. These findings were confirmed in a 2011 study and suggest that African Americans can get by with a lower level of vitamin D than Caucasians.

The Woman’s Health Initiative also studied racial differences with vitamin D and bone health. Researchers looked at a variety of factors in women who had fractures. Caucasian women with the highest level of vitamin D (25(OH)D >30 ng/mL) had a 44% lower risk of fracture compared with Caucasian women who had the lowest level (25(OH)D <20 ng/mL). In contrast, African American women with highest level of vitamin D (25(OH)D >30 ng/mL) had the highest risk of fracture compared with African American women with the lowest level (25(OH)D <20 ng/mL). Interestingly, no equally dramatic associations were seen in any other racial or ethnic group in the study.

The contrast was found to be similar in men of African descent and Caucasians in another study. Caucasian men with greater vitamin D levels had fewer fractures while men of African descent with lower levels of vitamin D had fewer fractures.

Implications for adequate vitamin D and calcium levels

Historically, the levels of vitamin D that “ring alarm bells” for calcium metabolism have been derived from mathematical modeling or by determining at what vitamin D level there is change in fracture risk. However, newer studies suggest that the model may not hold true for African Americans. Combining all of the data, African Americans may not need as much calcium and vitamin D to maintain good bone health as other ethnic groups.

Calcium and vitamin D recommendations for African Americans

Calcium and vitamin D are still required for good bone health. Until more research is published confirming optimal levels, African Americans should target intake of calcium from food and supplements in the 1,000-1,200 mg/day range and not exceed 1,800 mg/day. Vitamin D intake of 600-800 IUs/day should be sufficient for African Americans.
to maintain optimal levels. The serum vitamin D target should be 20-30 ng/mL, as opposed to 40-60 ng/mL for Caucasians.

References: