

Optimal vitamin D levels may vary for different ethnic and racial groups

August 14 2019



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When recommending vitamin D supplements, doctors should look at each individual patient as having different requirements and not rely on "one-size-fits-all" guidelines, according to a study by researchers at

Rutgers and the University of California, San Francisco.

The study, published in the journal *Metabolism, Clinical and Experimental*, highlights the need to gain consensus through improved tests for vitamin D levels that are currently available.

According to the Institute of Medicine, people with less than 20 nanograms of vitamin D per milliliter of blood are deficient. The Endocrine Society set a higher threshold of 30 nanograms. Neither guideline is more definitive than the other at this time.

"Recommendations based on earlier studies using a number of different tests for vitamin D levels persist and, not surprisingly, current guidelines vary," said author Sylvia Christakos, a professor at Rutgers New Jersey Medical School. "For example, it is not clear that the most optimal levels for vitamin D are the same for Caucasians, blacks or Asians alike. More laboratories are now implementing improved tests and efforts are being made to standardize results from different laboratories."

Vitamin D's main function is to help the body absorb calcium. Deficiency can cause delayed skeletal development and rickets in children and may contribute to osteoporosis and increased risk of fracture in adults.

Vitamin D supplements work best when taken with calcium for rickets and bone loss that occurs with aging. Elderly people who are vitamin D deficient benefit from supplementation as protection against fracture. However, studies did not show supplements to be beneficial as protection against fracture if the elderly person was already sufficient in the vitamin.

The researchers also noted that more vitamin D supplementation is not better. Previous studies have shown that very high doses of vitamin D

(300,000-500,00 iu taken over a year) seem to increase fracture risk. (The National Academy of Medicine recommends 400 iu/day for infants, 600 iu/day for people age 1 to 70 and 800 iu/day for people over 70; the Endocrine Society suggests doses up to 2,000 iu/day for adults.)

Although vitamin D supplementation has been shown to reduce overall mortality and some studies suggest that vitamin D might be beneficial for immune function, cancer and cardiovascular health, Christakos said a consistent benefit of vitamin D supplementation has yet to be shown. However, she noted, most studies have not discriminated between participants who are [vitamin D](#) sufficient or deficient.

More information: Sylvia Christakos et al, New developments in our understanding of vitamin metabolism, action and treatment, *Metabolism* (2019). [DOI: 10.1016/j.metabol.2019.06.010](https://doi.org/10.1016/j.metabol.2019.06.010)

Provided by Rutgers University

Citation: Optimal vitamin D levels may vary for different ethnic and racial groups (2019, August 14) retrieved 25 April 2024 from <https://medicalxpress.com/news/2019-08-optimal-vitamin-d-vary-ethnic.html>

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