

# Taking vitamin D could lower heart disease risk for people with dark skin

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New research suggests a simple step could help millions of people reduce their risk of heart disease: make sure to get enough vitamin D. Elucidating linkages between skin pigmentation, vitamin D and

indicators of cardiovascular health, the new study, combined with evidence from previous research, suggests vitamin D deficiency could contribute to the high rate of heart disease among African Americans.

"More darkly-pigmented individuals may be at greater risk of vitamin D deficiency, particularly in areas of relatively low sun exposure or high seasonality of sun exposure," said S. Tony Wolf, Ph.D., a postdoctoral fellow at the Pennsylvania State University and the study's lead author.

"These findings may help to explain some of the differences that we see in the risk for developing [blood vessel dysfunction](#), hypertension and overt cardiovascular disease between ethnic groups in the United States. Although there are many factors that contribute to the development of hypertension and cardiovascular disease, vitamin D supplementation may provide a simple and cost-effective strategy to reduce those disparities."

Wolf noted that the need for vitamin D supplementation depends on a variety of factors, including where you live, how much time you spend in the sun, your [skin pigmentation](#) and your age.

Wolf will present the research at the American Physiological Society [annual meeting](#) during the Experimental Biology (EB) 2021 meeting, held virtually April 27-30.

Melanin, which is more concentrated in darker skin, is known to inhibit the process our bodies use to make vitamin D in the presence of sunlight. As a result, darkly pigmented people may make less vitamin D, potentially leading to vitamin D deficiency.

For the study, Wolf and colleagues measured skin pigmentation, vitamin D and the activity of [nitric oxide](#) in the [small blood vessels](#) beneath the skin in 18 healthy adults of varying skin tones. Nitric oxide is important for blood vessel function, and reduced nitric oxide availability is thought to predispose an individual to the development of hypertension or

cardiovascular disease. Previous studies suggest vitamin D helps to promote nitric oxide availability.

Study participants with darker skin had lower levels of vitamin D and lower nitric oxide availability. In addition, the researchers found that lower levels of vitamin D were related to reduced nitric oxide-mediated blood vessel function. The results align with those of a separate study by the same research group, which found that vitamin D supplementation improved blood vitamin D levels and nitric oxide-mediated blood vessel function in otherwise healthy, young African American adults.

"Vitamin D supplementation is a simple and safe strategy to ensure vitamin D sufficiency," said Wolf. "Our findings suggest that promoting adequate vitamin D status in young, otherwise healthy adults may improve nitric oxide availability and blood vessel function, and thereby serve as a prophylactic to reduce risk of future development of hypertension or cardiovascular disease."

**More information:** Wolf will present this research in poster R3552 ([abstract](#)).

Provided by Experimental Biology

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