

Vitamin D may help explain racial differences in blood pressure

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High blood pressure, or hypertension, is more common and often more deadly in blacks than in whites, and a new University of Rochester study shows that low vitamin D levels among black people might be a powerful factor that contributes to the racial differences in hypertension.

The University of Rochester Medical Center findings, published online today in the [Journal of General Internal Medicine](#), are consistent with growing evidence that lower [vitamin D](#) status is associated with higher [blood pressure](#), and that people with darker skin generally produce less vitamin D.

"Our study confirms that vitamin D represents one piece of the complex puzzle of race and blood pressure," said lead author Kevin Fiscella, M.D., professor of Family Medicine at URMC. "And, since black-white differences in blood pressure represent thousands of excess deaths due to heart disease and stroke among blacks, we believe that simple interventions such as taking vitamin D supplements might have a positive impact on [racial disparities](#)."

Fiscella and colleagues analyzed data from the National Health and Nutrition Examination Survey, 2001-2006. Their sample included nearly 2,000 blacks and approximately 5,100 non-Hispanic whites, ages 20 and older. Researchers specifically compared the average systolic pressure and blood levels of vitamin D among the study participants.

Most vitamin D is produced by the skin in response to sunlight and

metabolized in the liver where it is converted to 25 hydroxyvitamin D or 25(OH) D, the form used to determine a person's vitamin D status through a blood test. Deficiency is usually defined as less than 20 nanograms per milliliter; lower than 15 Ng/ml is inadequate to maintain [bone health](#) and normal calcium metabolism.

Many people around the world have low concentrations of vitamin D. Genetic factors common to blacks, such as darker skin, reduce vitamin D synthesis. In addition, a higher incidence of lactose intolerance among blacks, which can eliminate vitamin-D fortified milk from the diet, contributes to lower dietary intake, previous research has shown.

Notably in Fiscella's data, 61 percent of blacks compared to 11 percent of whites had vitamin D levels in the lowest one-fifth of the population sample, whereas only 2 percent of blacks compared to 25 percent of whites had D levels in the highest group.

However, Fiscella noted some limitations to the study, and said that vitamin D did not fully explain the [racial differences](#) in blood pressure. "It is likely that other factors beyond vitamin D, such as psychological stress, medication adherence, and discrimination could contribute to this disparity," he wrote said in the JGIM article. "Further study using more refined measures of skin color is needed to tease apart the complex relationship between skin type, stress, vitamin D, and hypertension."

More information: Fiscella K et al (2011). Racial disparity in blood pressure: is vitamin D a factor? Journal of General Internal Medicine. DOI 10.1007/s11606-011-1707-8
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