

Study links vitamin D, race and cardiac deaths

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Vitamin D deficiency may contribute to a higher number of heart and stroke-related deaths among black Americans compared to whites, according to a University of Rochester Medical Center study.

The journal *Annals of Family Medicine* is publishing the study in the January-February edition, which goes online Jan. 11, 2010.

Researchers sought to understand the well-documented disparity between blacks and whites in cardiovascular deaths. They turned to vitamin D because growing evidence links low serum levels of D to many serious illnesses including diabetes, hypertension, kidney and heart disease.

Lead author Kevin Fiscella, M.D., said a complex host of genetic and [lifestyle factors](#) among blacks may explain why this population group has lower vitamin D levels across the lifespan than other races.

People get vitamin D through their diets, sun exposure, and oral supplements. Genetic factors common to blacks sometimes preclude vitamin D absorption, such as a higher incidence of lactose intolerance, which can eliminate vitamin-D fortified milk from the diet, and darker skin pigment that significantly reduces vitamin D synthesis.

"Therefore, our study suggests that the next step would be to intervene to boost vitamin D levels safely, with supplements," said Fiscella, a national expert on disparities in health care and a professor of Family Medicine

and Community and Preventive Medicine at URMCI.

With funding through The National Heart Lung and Blood Institute, Fiscella and colleagues studied a sample of more than 15,000 American adults. The data included measurements of blood levels of vitamin D and death rates due to cardiovascular disease. Researchers also looked at other factors that contribute to heart health, such as [body mass index](#), smoking status and levels of C-reactive protein.

Overall, the analysis showed that, as expected, a [vitamin D deficiency](#) was associated with higher rates of death among all people in the sample. In fact, those adults with the worst deficiency had a 40 percent higher risk of death from cardiac illness. This suggests that vitamin D may be a modifiable, independent risk factor for heart disease, Fiscella said.

Most striking, however, was that when researchers adjusted the statistics to look at race, blacks had a 38 percent higher risk of death than whites. As vitamin D levels rose, however, the risk of death was reduced. The same was true when researchers analyzed the effect of poverty on cardiovascular death rates among blacks, which suggests that vitamin D deficiency and poverty each exert separate risk factors, the study said.

A review article published in September 2009 in The American Journal of Medicine, noted that Vitamin D deficiency is a worldwide health problem. In the U.S., inadequate Vitamin D has been reported in about 36 percent of otherwise healthy young adults and about 57 percent of general medicine hospitalized patients.

Vitamin D is metabolized in the liver and converted to 25 hydroxyvitamin D or 25(OH) D, the form used to determine a person's status through a blood test. Deficiency is usually defined by levels of less than 20 nanograms per milliliter; 30 ng/ml is viewed as sufficient. The mean blood level in the study sample was 29.5 ng/ml.

Most of the body's tissues and cells have vitamin D receptors, making it a potent regulator of cell activity and growth. A deficiency contributes to inflammation associated with heart disease, many cancers and poor bone health.

Fiscella cautions, however, that not all observational studies of vitamin deficiency are borne out by subsequent clinical trials. For example, previous observational studies of vitamin E and beta-carotene that were associated with poor heart health did not hold up in later clinical studies. The need to further assess the vitamin D connection to heart disease is convincing, however, particularly among blacks, he added.

Other at-risk people include the obese and the elderly, (particularly housebound or nursing home residents), because [vitamin D](#) levels decline with age. And although more sun exposure can boost levels of D, skin cancer is also an increasing risk to many people. Therefore, medical authorities usually recommend increased dietary intake and/or supplementation as the best way to correct a deficiency.

Provided by University of Rochester Medical Center

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