

Public release date: 11-Aug-2008

Contact: Karen Gardner

718-430-3101

[JAMA and Archives Journals](#)

Low vitamin D levels associated with increased risk of death

Individuals with low levels of vitamin D appear to have a higher risk of death from all causes, according to a report in the August 11/25 issue of *Archives of Internal Medicine*, one of the *JAMA/Archives* journals.

Several studies have suggested that vitamin D deficiency contributes to cardiovascular disease, cancer and death, according to background information in the article. The optimum blood level of 25-hydroxyvitamin D (25[OH]D) has been suggested to be 30 nanograms per milliliter or higher. Approximately 41 percent of U.S. men and 53 percent of U.S. women have levels lower than 28 nanograms per milliliter.

Michal L. Melamed, M.D., M.H.S., of the Albert Einstein College of Medicine, Bronx, N.Y., and colleagues analyzed vitamin D levels in 13,331 individuals who participated in the Third National Health and Nutritional Examination Survey (NHANES III), conducted by the Centers for Disease Control and Prevention. Vitamin D levels were collected between 1988 and 1994, and participants were tracked through 2000.

Over a median (midpoint) of 8.7 years of follow-up, 1,806 of the participants died. When they were divided into four groups (quartiles) based on their vitamin D levels, those in the group with the lowest level (less than 17.8 nanograms per milliliter) had a 26 percent increased rate of death from any cause compared with those in the group with the highest vitamin D levels. No significant associations were found when the researchers assessed vitamin D levels and risk of death from cardiovascular disease or cancer alone.

Low vitamin D levels may be associated with death through their effect on blood pressure, the body's ability to respond to insulin, obesity and diabetes risk, the authors note. Several lines of evidence support vitamin D's role in death risk, including the fact that cardiovascular events are more common in the winter, when vitamin D levels are lower, and that cancer survival is better if the disease is diagnosed in the summer when levels are higher.

"In conclusion, the lowest 25(OH)D quartile (less than 17.8 nanograms per milliliter) is associated with a higher risk of all-cause mortality in the general U.S. population," the authors conclude. "Further observational studies are needed to confirm these findings and establish the mechanisms underlying these observations. If confirmed, randomized clinical trials will be needed to determine whether vitamin D supplementation at higher doses could have any potential benefit in reducing future mortality risk in those with 25(OH)D deficiency."

###

(Arch Intern Med. 2008;168[15]:1629-1637. Available pre-embargo to the media at www.jamamedia.org.)

Editor's Note: Dr. Melamed and this analysis and co-author Dr. Michos were supported by grants from the National Institutes of Health. Dr. Michos is also supported by the P.J. Schafer Cardiovascular Research Fund. Co-author Dr. Post is supported in part by the Paul Beeson Physician Faculty Scholars in Aging Program. Dr. Michos has received consulting fees from Abbott Pharmaceuticals. Please see the article for additional information, including other authors, author contributions and affiliations, financial disclosures, funding and support, etc.
