

Low vitamin D levels associated with longevity

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Low levels of vitamin D may be associated with longevity, according to a study involving middle-aged children of people in their 90s published in *CMAJ (Canadian Medical Association Journal)*.

"We found that familial longevity was associated with lower levels of [vitamin D](#) and a lower frequency of allelic variation in the CYP2R1 gene, which was associated with higher levels of vitamin D," writes Dr. Diana van Heemst, Department of Gerontology and Geriatrics, Leiden University Medical Center, Leiden, the Netherlands, with coauthors.

Previous studies have shown that low levels of vitamin D are associated with increased rates of death, heart disease, diabetes, cancer, allergies, mental illness and other afflictions. However, it is not known whether low levels are the cause of these diseases or if they are a consequence.

To determine whether there was an association between vitamin D levels and longevity, Dutch researchers looked at data from 380 white families with at least 2 siblings over age 90 (89 years or older for men and 91 year or older for women) in the Leiden Longevity Study. The study involved the siblings, their offspring and their offsprings' partners for a total of 1038 offspring and 461 controls. The children of the nonagenarians were included because it is difficult to include controls for the older age group. The partners were included because they were of a similar age and shared similar [environmental factors](#) that might influence vitamin D levels.

The researchers measured levels of 25(OH) vitamin D and categorized levels by month as they varied according to season. [Tanning bed](#) use, which can affect vitamin D levels, was categorized as never, 1 times per year and 6 times per year. The researchers controlled for age, sex, BMI ([body mass index](#)), time of year, [vitamin supplementation](#) and [kidney function](#), all factors that can influence vitamin D levels. They also looked at the influence of [genetic variation](#) in 3 genes associated with vitamin D levels.

"We found that the offspring of nonagenarians who had at least 1 nonagenarian sibling had lower levels of vitamin D than controls, independent of possible confounding factors and SNPs [single nucleotide polymorphisms] associated with vitamin D levels," write the authors. "We also found that the offspring had a lower frequency of common genetic variants in the CYP2R1 gene; a common genetic variant of this gene predisposes people to high vitamin D levels.

These findings support an association between low vitamin D levels and familial longevity." They postulate that offspring of nonagenarians might have more of a protein that is hypothesized to be an "aging suppressor" protein. More research is needed to understand the link between lower vitamin D levels, genetic variants and familial longevity.

More information: www.cmaj.ca/lookup/doi/10.1503/cmaj.120233

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