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Increased vitamin D may protect against multiple sclerosis

By Stephen Daniells, 20-Dec-2006

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Higher levels of vitamin D in the body may reduce the risk of developing the neurological disease multiple sclerosis by as much as 62 per cent, Harvard researchers report.

Looking at 257 US military personnel with the disease and 51 healthy controls, the researchers reported that, for every 50-nmol/L (nanomoles per litre) increase in 25-hydroxyvitamin D the associated risk of MS decreased by 41 per cent for white/non-Hispanics.

Writing in the current issue of the *Journal of the American Medical Association*, lead author Kassandra Munger note that the inverse association with multiple sclerosis risk was particularly strong for high 25-hydroxyvitamin D levels younger people.

"If the association reported here reflects a true protective effect of vitamin D, increasing the vitamin D levels of adolescents and young adults could result in an important reduction in MS incidence," wrote lead author Kassandra Munger.

"Such an increase could be achieved using vitamin D supplements."

Vitamin D refers to two biologically inactive precursors - D3, also known as cholecalciferol, and D2, also known as ergocalciferol. The former is produced in the skin on exposure to UVB radiation (290 to 320 nm) and can also be consumed from oily fish. The latter is derived from plants and only enters the body via the diet.

Both D3 and D2 precursors are hydroxylated in the liver and kidneys to form 25- hydroxyvitamin D, the non-active 'storage' form, and 1,25-dihydroxyvitamin D, the biologically active form that is tightly controlled by the body.

Some evidence in the literature has indicated a potential protective effect of vitamin D against MS, said Munger, bu this has been inconclusive.

According to the authors, multiple sclerosis (MS) is among the most common neurological diseases in young adults affecting 350,000 individuals in the United States and 2 million worldwide.

The participants in the study were drawn from U.S. military personnel who have serum samples stored in the Department of Defense Serum Repository, and the controls were matched by age, sex, race/ethnicity, and dates of blood collection.

The researchers report that the main protective effects were observed for people of white ethnicity. When the seru vitamin D levels were classified into five groups (quintiles) ranging from lowest (less than 63 nanomoles per litre) t highest (more than 99.1 nanomoles per litre). The associated risk of MS for whites in the highest quintile was 62 p cent lower than those in the lowest quintile.

On the other hand, serum vitamin D levels were not linked to any effect on MS risk for African Americans and Hispanics. These two ethnic groups had lower 25-hydroxyvitamin D levels than whites.

"Although this association was not seen among blacks, their smaller sample size and substantially lower 25-hydroxyvitamin D levels may have reduced the power to detect an association in this group," said the researchers.

The results agree with previous results, said the researchers, which report a protective role for the vitamin. They also said however that while a direct role of vitamin D is indicated, other explanations cannot be discounted.

"Although unlikely, a genetic predisposition to both MS and circulating low 25-hydroxyvitamin D levels could appea as a protective effect of vitamin D on MS in out study.

"Additionally, we cannot exclude the possibility that some other effect of exposure to UV light, rather than vitamin production, contributes to protection," said the researchers.

Munger and her colleagues called for a prevention trial among first-degree relatives of individuals with MS, said to be at higher risk of developing MS, to further investigate the potentially protective role of the vitamin.

"Meanwhile, use of vitamin D supplements for MS prevention should not be undertaken until efficacy is proven," they concluded.

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"Serum 25-hydroxyvitamin D levels and risk of multiple sclerosis"

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