

Vitamin D levels associated with Parkinson's disease risk

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Individuals with higher levels of vitamin D appear to have a reduced risk of developing Parkinson's disease, according to a report in the July issue of *Archives of Neurology*.

Vitamin D is known to play a role in bone health and may also be linked to cancer, [heart disease](#) and [type 2 diabetes](#), according to background information in the article. "Recently, chronically inadequate vitamin D intake was proposed to play a significant role in the [pathogenesis of Parkinson's disease](#)," the authors write. "According to the suggested biological mechanism, Parkinson's disease may be caused by a continuously inadequate vitamin D status leading to a chronic loss of dopaminergic neurons in the brain."

Paul Knekt, D.P.H., and colleagues at the National Institute for Health and Welfare, Helsinki, Finland, studied 3,173 Finnish men and women age 50 to 79 who did not have Parkinson's disease at the beginning of the study, in 1978 to 1980. Participants completed questionnaires and interviews about socioeconomic and health background, underwent baseline examinations and provided blood samples for vitamin D analysis.

Over a 29-year follow-up, through 2007, 50 of the participants developed Parkinson's disease. After adjusting for potentially related factors, including physical activity and body mass index, individuals in the highest quartile (one-fourth of the study population) of serum vitamin D levels had a 67 percent lower risk of developing Parkinson's

disease than those in the lowest quartile of vitamin D levels.

"Despite the overall low vitamin D levels in the study population, a dose-response relationship was found," the authors write. "This study was carried out in Finland, an area with restricted sunlight exposure, and is thus based on a population with a continuously low vitamin D status. Accordingly, the mean [average] serum vitamin D level in the present population was about 50 percent of the suggested optimal level (75 to 80 nanomoles per liter). Our findings are thus consistent with the hypothesis that chronic inadequacy of vitamin D is a risk factor for Parkinson's disease."

The exact mechanisms by which vitamin D levels may affect Parkinson's disease risk are unknown, but the nutrient has been shown to exert a protective effect on the brain through antioxidant activities, regulation of calcium levels, detoxification, modulation of the immune system and enhanced conduction of electricity through neurons, the authors note.

"In intervention trials focusing on effects of [vitamin D](#) supplements, the incidence of Parkinson disease merits follow up," they conclude.

More information: Arch Neurol. 2010;67[7]:808-811.

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