

# Low vitamin D level predicts cognitive decline in older population

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Older adults with deficiencies in vitamin D experience more rapid cognitive decline over time than those with adequate vitamin D levels.

In a study published Sept. 15 in the *Journal of the American Medical Association-Neurology*, Joshua Miller, professor of nutritional sciences at the Rutgers School of Environmental and Biological Sciences, found that people with low levels of vitamin D experienced rates of cognitive decline at a much faster pace than people with adequate vitamin D status.

"There were some people in the study who had low vitamin D who didn't decline at all and some people with adequate vitamin D who declined quickly," said Miller. "But on average, people with low vitamin D declined two to three times as fast as those with adequate vitamin D."

Vitamin D - known for its importance for bone health—is obtained primarily through sun exposure and some foods. Researchers have also found that vitamin D has a major impact on how the body, including the brain, functions.

Miller's study—conducted with Charles DeCarli, Danielle Harvey and others at the Alzheimer's Disease Center at the University of California-Davis—was conducted between 2002 and 2010.

The 382 people involved were assessed for vitamin D levels and cognition once a year for an average of five years. They ranged in age from their 60s to their 90s, with the largest group in their 70s.

The study included people with normal cognition, mild cognitive loss, and dementia. Unlike previous studies of vitamin D and dementia, this group was racially and ethnically diverse, including whites, African Americans and Hispanics. Most (61 percent) had low vitamin D levels in their blood; 54 percent of the whites and 70 percent of the African-Americans and Hispanics had low blood levels of vitamin D.

While individuals with darker skin are more likely to have low levels of vitamin D because melanin, the pigment that makes skin dark, blocks the ultra-violet rays that help the skin synthesize vitamin D, the researchers found no difference in the rates of cognitive decline based solely on racial or ethnic lines. In other words, low vitamin D was associated with faster cognitive decline regardless of race or ethnicity.

Although taking too much vitamin D can be dangerous, Miller said these findings suggest that people over 60 should consult their physician about taking vitamin D supplements.

"Some people may have had melanoma or fear getting it," Miller said. "Or, they may live in climates where the sun isn't powerful enough, or do work that keeps them out of the sun. That's where supplements come in."

Meanwhile, he said, more research needs to be done including performing randomized controlled clinical trials.

"This will give us the additional information that we need to help determine whether vitamin D supplements can be used to slow the rate of [cognitive decline](#) and prevent dementia in [older](#)

adults," Miller said.

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