Long-Term Multivitamin Supplementation and Cognitive Function in Men: A Randomized Trial

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BACKGROUND: Despite widespread use of multivitamin supplements, their effect on cognitive health—a critical issue with aging—remains inconclusive. To date, no long-term clinical trials have studied multivitamin use and cognitive decline in older persons.

OBJECTIVE: To evaluate whether long-term multivitamin supplementation affects cognitive health in later life.

DESIGN: Randomized, double-blind, placebo-controlled trial of a multivitamin from 1997 to 1 June 2011. The cognitive function substudy began in 1998. Up to 4 repeated cognitive assessments by telephone interview were completed over 12 years. (ClinicalTrials.gov: NCT00270647)

SETTING: The Physicians' Health Study II.

PATIENTS: 5947 male physicians aged 65 years or older.

INTERVENTION: Daily multivitamin or placebo.

MEASUREMENTS: A global composite score averaging 5 tests of global cognition, verbal memory, and category fluency. The secondary end point was a verbal memory score combining 4 tests of verbal memory, which is a strong predictor of Alzheimer disease.

RESULTS: No difference was found in mean cognitive change over time between the multivitamin and placebo groups or in the mean level of cognition at any of the 4 assessments. Specifically, for the global composite score, the mean difference in cognitive change over follow-up was −0.01 SU (95% CI, −0.04 to 0.02 SU) when treatment was compared with placebo. Similarly, cognitive performance did not differ between the multivitamin and placebo groups on the secondary outcome, verbal memory (mean difference in cognitive change over follow-up, −0.005 SU [CI, −0.04 to 0.03 SU]).

LIMITATION: Doses of vitamins may be too low or the population may be too well-nourished to benefit from a multivitamin.

CONCLUSION: In male physicians aged 65 years or older, long-term use of a daily multivitamin did not provide cognitive benefits.

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