

## Can Antioxidant Supplement Prevent Dementia?

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### Commentary

We did a systematic study about antioxidant supplement in prevention of dementia. We searched the Web of Science, EMBASE, PubMed, Cochrane Library, and Google Scholar to identify studies about antioxidant supplement in prevention of dementia. There are two studies included in our study. We did not do a meta-analysis because of without available data and we made a descriptive analysis.

One study shows that the use of vitamin E combined with vitamin C supplements can reduce Alzheimer disease prevalence [adjusted odds ratio (0.22); 95% confidence interval (CI) (0.05-0.60)] as well as incidence [(adjusted hazard ratio (0.36); 95% CI (0.09-0.99)]. In addition, this study indicates that the use of vitamin E or vitamin C supplements alone, with multivitamins alone, or with vitamin B-complex supplements cannot lower the risk of Alzheimer disease [1,2].

Another study shows that dementia incidence is 4.4% (325 of 7338 men) but there are no differences among vitamin E, selenium, vitamin E combined with selenium, and placebo. Additionally, a Cox model shows that hazard ratios for incident dementia is 0.88 (95% CI, 0.64-1.20) for vitamin E, 0.83 (95% CI, 0.60-1.13) for selenium, and 1.00 (95% CI, 0.75-1.35) for vitamin E combined with selenium compared with placebo. This study indicates that vitamin E and selenium cannot prevent dementia [2].

In summary, antioxidant supplement cannot prevent dementia. However, vitamin E combined with vitamin C supplements may prevent dementia. Perhaps vitamin E combined with vitamin C produces a different pharmacological effect than antioxidant.

To our knowledge, our study is the first systematic review which determine whether antioxidant supplement prevents dementia or not. Although our study is without strong evidence to confirm that antioxidant supplement cannot prevent dementia, our systematic review can provide clinicians or patients with some

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important information and indicate the direction for later research. Elderly people may eat both vitamin E and vitamin C at the same time to prevent dementia in daily life rather than eat one of them alone. Further study is required to confirm whether antioxidant supplement can prevent dementia or not. In addition, further study should explore the mechanism of vitamin E combined with vitamin C in prevention of dementia.

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