

Vitamin For the Brain

Cognition improves with daily multivitamin

Alzheimer's disease and dementia affect over 46 million people worldwide. Can a simple daily multivitamin reduce our risk of dementia? Do we think better if we take a Centrum Silver or does a multivitamin just give us "expensive urine"? Who benefits the most from taking multivitamins? This study provides some provocative evidence for us to decide.

Abstract



- Introduction: Dietary supplements are touted for cognitive protection, but supporting evidence is mixed. COSMOS-Mind tested whether daily administration of cocoa extract (containing 500 mg/day flavanols) versus placebo and a commercial multivitamin-mineral (MVM) versus placebo improved cognition in older women and men.
- Methods: COSMOS-Mind, a large randomized two-by-two factorial 3-year trial, assessed cognition by telephone at baseline and annually. The primary outcome was a global cognition composite formed from mean standardized (z) scores (relative to baseline) from individual tests, including the Telephone Interview of Cognitive Status, Word List and Story Recall, Oral Trail-Making, Verbal Fluency, Number Span, and Digit Ordering. Using intention-to-treat, the primary endpoint was change in this composite with 3 years of cocoa extract use. The pre-specified secondary endpoint was change in the composite with 3 years of MVM supplementation. Treatment effects were also examined for executive function and memory composite scores, and in pre-specified subgroups at higher risk for cognitive decline.
- Results: A total of 2262 participants were enrolled (mean age = 73y; 60% women; 89% non-Hispanic White), and 92% completed the baseline and at least one annual assessment. Cocoa extract had no effect on global cognition (mean z-score = 0.03, 95% CI: -0.02 to 0.08; P = .28). Daily MVM supplementation, relative to placebo, resulted in a statistically significant benefit on global cognition (mean z = 0.07, 95% CI 0.02 to 0.12; P = .007), and this effect was most pronounced in participants with a history of cardiovascular disease (no history: 0.06, 95% CI 0.01 to 0.11; history: 0.14, 95% CI -0.02 to 0.31; interaction, nominal P = .01). Multivitamin-mineral benefits were also observed for memory and executive function. The cocoa extract by MVM group interaction was not significant for any of the cognitive composites.
- Discussion: Cocoa extract did not benefit cognition. However, COSMOS-Mind provides the first evidence from a large, long-term, pragmatic trial to support the potential efficacy of a MVM to improve cognition in older adults. Additional work is needed to confirm these findings in a more diverse cohort and to identify mechanisms to account for MVM effects.

This is an interesting study. It was originally designed to see if taking daily cocoa extract which is rich in flavanols, would help preserve or improve cognition. This was compared to a group taking a multivitamin daily and a placebo group. The researchers found no difference in cognition for the cocoa extract-supplemented group as compared to the placebo group. But they did find a significant difference in the multivitamin group as compared to placebo. This group showed a benefit in global cognition, especially in people with cardiovascular disease (CVD). Benefits were also observed for memory and executive function. This is the first evidence from a large, long-term trial to show the potential efficacy of a multivitamin to improve cognition in older adults. A previous study of male physicians did not show any benefit to multivitamins but the current study had 60% women. Perhaps there is a difference here. It was interesting that the greatest benefit was in cardiovascular disease patients, where vitamin D deficiency is highly prevalent and predicts disease severity; vitamin K deficiency is linked to coronary artery calcification and increased CVD-related mortality; circulating levels of thiamine, vitamin C, and selenium are relatively low; and certain medications can reduce vitamin B12 absorption and bioavailability.

I haven't been a big proponent of multivitamin use based on past evidence. However, this study will change my practice. It seems that if a simple, inexpensive intervention could provide some benefit in cognition and delay or prevent dementia, it is worth taking. A multivitamin (likely with some extra vitamin D and K2) makes a lot of sense.

Baker, LD, Manson, JE, Rapp, SR, et al. Effects of cocoa extract and a multivitamin on cognitive function: A randomized clinical trial. Alzheimer's Dement. 2022; 1- 12. <https://doi.org/10.1002/alz.12767>