

## Multivitamins, but Not Cocoa, Tied to Slowed Brain Aging

By: Pauline Anderson, Medscape Medical News



Taking a daily multivitamin for 3 years is associated with a 60% slowing of cognitive aging, with the effects especially pronounced in patients with cardiovascular (CVD) disease, new research suggests.

In addition to testing the effect of a daily multivitamin on cognition the COSMOS-Mind study also examined the effect of cocoa flavonols, but showed no beneficial effect.

The findings "may have important public health implications, particularly for brain health, given the accessibility of multivitamins and minerals, and their low cost and safety", said study investigator Laura D. Baker, PhD, professor, Gerontology and Geriatric Medicine, Wake Forest School of Medicine, Winston-Salem, North Carolina.

The findings were presented at the 14th Clinical Trials on Alzheimer's Disease (CTAD) conference.

### Placebo-Controlled Study

The study is a substudy of a large parent trial that compared the effects of cocoa extract (500 mg/day cocoa flavanols) and a standard multivitamin-mineral (MVM) to placebo on cardiovascular and cancer outcomes in more than 21,000 older participants.

COSMOS-Mind included 2262 adults aged 65 and over without dementia who underwent cognitive testing at baseline and annually for 3 years. The mean age at baseline was

73 years, and 40.4% were men. Most participants (88.7%) were non-Hispanic white and almost half (49.2%) had some post-college education.

All study groups were balanced with respect to demographics, CVD history, diabetes, depression, smoking status, alcohol intake, chocolate intake and prior multivitamin use. Baseline cognitive scores were also similar between study groups. Researchers had complete data on 77% of study participants.

The primary endpoint was the effect of cocoa extract (CE) vs placebo on Global Cognitive Function composite score. The secondary outcome was the effect of MVM vs placebo on global cognitive function.

Additional outcomes included the impact of supplements on executive function and memory and the treatment effects for prespecified subgroups, including subjects with a history of CVD.

Using a graph of change over time, Baker showed there was no effect of cocoa on global cognitive function (effect: 0.03; 95% CI, -0.02 to 0.08;  $P = .28$ ). "We see the to-be-expected practice effects, but there's no separation between the active and placebo groups," she said.

It was a different story for MVM. Here, there was the same practice effect, but the graph showed the lines separated for global cognitive function composite score (effect: 0.07; 95% CI, 0.02 - 0.12;  $P = .007$ ).

"We see a positive effect of multivitamins for the active group relative to placebo, peaking at 2 years and then remaining stable over time," said Baker.

There were similar findings with MVM for the memory composite score, and the executive function composite score. "We have significance in all three, where the two lines do separate over and above the practice effects," said Baker.

New Evidence

Investigators found a baseline history of CVD, including transient ischemic attack, congestive heart failure, coronary artery bypass graft, percutaneous transluminal coronary angioplasty, and stent, but not myocardial infarction or stroke as these were excluded in the parent trial because they affected the response to multivitamins.

As expected, those with CVD had lower cognitive scores at baseline. "But after an initial bump due to practice effect, at year 1, the cardiovascular disease history folks continue to benefit from multivitamins, whereas those who got placebo multivitamins continue to decline over time," said Baker.

Based on information from a baseline scatter plot of cognitive function scores by age, the study's modeling estimated the multivitamin treatment effect had a positive benefit of .028 standard deviations (SD) per year.

"Daily multivitamin-mineral supplementation appears to slow cognitive aging by 60% or by 1.8 years," Baker added.

To date, the effect of MVM supplementation on cognition has been tested in only one large randomized clinical trial — the Physicians Health Study II. That study did not show an effect, but included only older male physicians — and cognitive testing began 2.5 years after randomization, said Baker.

"Our study provides new evidence that daily multivitamin supplementation may benefit cognitive function in older women and men, and the multivitamin effects may be more pronounced in participants with cardiovascular disease."

For effects of multivitamins on Alzheimer's disease prevalence and progression, "stay tuned," Baker concluded.

Following the presentation, session co-chair Suzanne Schindler, MD, PhD, instructor, Department of Neurology, Washington University School of Medicine, St. Louis, Missouri, said she and her colleagues "always check vitamin B12 levels" in patients with memory and cognitive difficulties and wondered if study subjects with a low level or deficiency of vitamin B12 benefited from the intervention.

"We are asking ourselves that as well," said Baker.

"Some of this is a work in progress," Baker added. "We still need to look at that more in-depth to understand whether it might be a mechanism for improvement. I think the results are still out on that topic."

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