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‘Strong and Consistent Evidence’ Links Multivitamins to Memory and Cognitive Benefits

Analysis by Dr. Joseph Mercola | May 13, 2024

STORY AT-A-GLANCE

- Taking a daily multivitamin may improve memory and slow cognitive decline in older adults, according to a third major study on the topic
- The studies used data from the COcoa Supplement and Multivitamin Outcomes Study (COSMOS), with the latest showing those taking multivitamins perform better on cognitive and memory tests
- The COSMOS-Mind study found daily multivitamin supplementation translated to a 60% slowing of cognitive decline in those with a mean age of 73
- The COSMOS-Web study found taking a multivitamin improved performance by "the equivalent of 3.1 years of age-related memory change" compared to placebo
- The COSMOS-Clinic study, analyzed the effects of a daily multivitamin supplement on cognitive changes based on in-person visits, also found multivitamins had a positive impact on overall brain function over two years when compared to a placebo

Taking a daily multivitamin may improve memory and slow cognitive decline in older adults, according to a third major study on the topic. The studies used data from the COcoa Supplement and Multivitamin Outcomes Study (COSMOS), which evaluated whether cocoa extract supplementation with and without a standard multivitamin affected the risk of developing cardiovascular disease and cancer.

While the study, which involved 21,442 participants, found cocoa flavanol supplementation did not show a significant impact in reducing the total number of cardiovascular events, further evaluation revealed daily multivitamins potentially reduced lung cancer by 38% and "did appear to improve levels of several nutritional biomarkers."[1]

Three additional studies using subsets of COSMOS data focused on cognitive benefits, with the latest showing those taking multivitamins perform better on cognitive and memory tests.[2]

COSMOS-Mind — Multivitamins Linked to Slower Cognitive Decline

The COSMOS-Mind study involved 2,262 participants with a mean age of 73 and looked at how taking cocoa extract or multivitamins and minerals (MVM) for three years affected brain function.[3] Researchers called participants to test their thinking skills at the start of the study and then annually.

They measured overall brain function by looking at average scores from different tests, including memory and problem-solving activities. While the study found that cocoa extract didn't make a difference in overall brain function, significant benefits were found from the daily multivitamin, with three years of such supplementation translating to a 60% slowing of cognitive decline, which is equivalent to about 1.8 years.[4]

Improvements in global cognition, episodic memory and executive function were noted, with the effects most pronounced in people with cardiovascular disease. According to the study, which was published in the journal Alzheimer's & Dementia:[5]

> *"COSMOS-Mind provides the first evidence from a large-scale, long-term, pragmatic RCT [randomized controlled trial] to suggest that daily use of a safe, readily accessible, and relatively low-cost MVM supplement has the potential to improve or protect cognitive function for older women and men.*

An additional trial is needed to confirm these findings in a more representative cohort and to explore potential mechanisms for cognitive benefit. This work may ultimately have important public health implications for standard of care to improve or protect cognitive function in older adults."

COSMOS-Web — Multivitamins May Improve Memory in Those 60 and Over

The second study, COSMOS-Web, included men over the age of 60 and women over 65 who received either a multivitamin supplement or a placebo. The participants were evaluated at baseline and each year using neuropsychological tests over a period of three years.

Those taking the multivitamin supplement had better immediate recall at the first year point, which was maintained during follow-up. Effects were most pronounced in people with cardiovascular disease.

"When we start seeing that kind of consistency across well-designed studies, it certainly helps convince me — the ultimate skeptic — that we're on to something real," professor Adam Brickman of Columbia University, who worked on the first study, told Insider. "... I started taking multivitamins the day we ran the analyses and saw the results, and I take 'em every morning."[6]

"There is evidence that people with cardiovascular disease may have lower micronutrient levels that multivitamins may correct, but we don't really know right now why the effect is stronger in this group," Brickman said.[7]

The researchers estimated that taking a multivitamin improved performance by "the equivalent of 3.1 years of age-related memory change" compared to placebo[8] and could not only help maintain cognitive functioning but potentially enhance it later in life. The team concluded:[9]

> *"Vitamin supplementation is relatively inexpensive, accessible, and has a few adverse effects, and thus might be a potentially useful population health intervention ... Daily multivitamin supplementation, compared with placebo, improves memory in older adults. Multivitamin supplementation holds promise as a safe and accessible approach to maintaining cognitive health in older age."*

COSMOS-Clinic — Multivitamins Improve Memory and Slow Cognitive Aging

The third study, COSMOS-Clinic, analyzed the effects of a daily multivitamin supplement on cognitive changes based on in-person visits involving 573 people.[10] It, too, found multivitamins had a positive impact on overall brain function over two years when compared to a placebo. Specifically, they found a significant improvement in memory of past events, but not in the ability to plan or pay attention.[11]

The researchers, from Massachusetts General Hospital, Harvard Medical School and Brigham and Women's Hospital in Boston, also conducted a meta-analysis involving all three COSMOS studies, without repeating participants and spanning two to three years of taking multivitamins.

The meta-analysis "showed strong evidence of benefits for both global cognition and episodic memory," according to a press release. "The authors estimate that the daily multivitamin slowed global cognitive aging by the equivalent of two years compared to placebo."[12] Study author Chirag Vyas with Massachusetts General Hospital (MGH), said:[13]

> *"Cognitive decline is among the top health concerns for most older adults, and a daily supplement of multivitamins has the potential as an appealing and accessible approach to slow cognitive aging ... The meta-analysis of three separate cognition studies provides strong and consistent evidence that taking a daily multivitamin, containing more than 20 essential micronutrients, helps prevent memory loss and slow down cognitive aging.*

These findings will garner attention among many older adults who are, understandably, very interested in ways to preserve brain health, as they provide evidence for the role of a daily multivitamin in supporting better cognitive aging."

Since the three trials used varied methods to assess cognition — including telephone, online and in-person assessments — and involved a large number of participants, they provide convincing evidence for the positive role of multivitamins in healthy brain aging. Study author Howard Sesso, with Brigham and Women's Hospital, added:[14]

"With these three studies using different approaches for assessing cognition in COSMOS, each providing support for a daily multivitamin, it is now critical to understand the mechanisms by which a daily multivitamin may protect against memory loss and cognitive decline with a focus on nutritional status and other aging-related factors.

For example, the modifying role of baseline nutritional status on protecting against cognitive decline has been shown for the COSMOS cocoa extract intervention. A typical multivitamin such as that tested in COSMOS contains many essential vitamins and minerals that could explain its potential benefits."

Multivitamins Improve Biomarkers of Nutrition in Men Aged 68 and Over

It's estimated that one-third of U.S. adults — and one-quarter of children and adolescents — use multivitamin and mineral supplements,[15] making them one of the most common supplements in the U.S. But despite their popularity, many wonder whether taking multivitamins really makes a difference in health.

A team of researchers from Oregon State University (OSU), who conducted a study involving 35 men aged 68 years or older, concluded, "Our evidence indicates that many older men could benefit from a daily multivitamin."[16]

The men took either a multivitamin/multimineral (MV/MM) supplement or a placebo for at least six months. The researchers were mainly looking to see if the supplements would change levels of certain nutrients in their blood, a sign of better vitamin and mineral status. They also wanted to see if these supplements would affect how cells use oxygen, which is important for energy and health.

Those who took the MV/MM supplements saw improvements in their blood levels of certain vitamins, such as B6, vitamin D, vitamin E and beta-carotene, showing that the supplements could indeed boost the amount of these nutrients in the body.

However, the supplements didn't make a significant difference in the levels of minerals like calcium and zinc. Interestingly, the supplements helped prevent a decrease in the rate at which certain immune cells used oxygen, which could be a good sign for overall health, particularly for metabolism and the immune system.

In contrast, the placebo group didn't see these benefits and even saw a drop in some vitamin levels, suggesting they were moving toward a less optimal vitamin status. While vitamin and mineral deficiencies weren't widespread in the healthy subjects that took part in the study, the researchers still found multivitamins to be worthwhile, explaining:[17]

> *"[T]he use of MV/MM supplements can improve or prevent declines in the status of several vitamins and may prevent declines in cellular bioenergetic status. Although MV/MM supplementation is a 'one-size-fits-all' strategy and does not target specific micronutrient needs, it is a cost-effective approach to improve micronutrient status in older men and may have an as yet unappreciated impact on maintaining metabolic function in cells."*

Can You Get Enough Vitamins and Minerals From Food Alone?

Ideally, people of all ages should strive to get their nutrition from whole, nutrient-dense foods — and it's certainly possible to get the vitamins and minerals your body requires via your diet. However, nutrient deficiencies are common, even among people who

believe they're eating a balanced diet. In the U.S., 31% of the U.S. population was found to be at risk of at least one vitamin deficiency or anemia.[18]

Beyond cognitive function, your body depends on essential nutrients for growth, development and health maintenance, and deficiencies in certain vitamins can impact your immunity, vision, wound healing, bone health and much more.

This is why, if you think you may be missing out on important vitamins in your diet, the best way to boost your intake is via organic, whole foods. But if you're not eating right, a high-quality multivitamin may help fill in any gaps and improve biomarkers of nutrition.[19,20]

"We're not suggesting that people should get their vitamin and nutrient intake from supplements — the primary source of that should be from whole and healthy foods," Brickman told Insider. "... I think that multivitamins, along with a lot of other things that we could potentially do as we age, might have a modest but meaningful effect on how we age, cognitively."[21]

He added in a news release, "Supplementation of any kind shouldn't take the place of more holistic ways of getting the same micronutrients."[22] When choosing a multivitamin, be sure to look for a manufacturer that has checks and balances in place to ensure the quality of the product.

And remember, since multivitamins contain both water- and fat-soluble vitamins, it's generally recommended to take half your daily dose in the morning, with breakfast, and the other half with your main meal.

Sources and References

- [1] COcoa Supplement and Multivitamin Outcomes Study, Multivitamin Findings
- [2, 10] The American Journal of Clinical Nutrition March 2024, Volume 119, Issue 3, Pages 692-701
- [3] Alzheimer's & Dementia September 14, 2022
- [4] Atrium Health, Wake Forest Baptist September 14, 2022
- [5] Alzheimer's & Dementia September 14, 2022, Discussion
- [6, 21] Business Insider October 11, 2023
- [7, 22] Columbia University Irving Medical Center May 24, 2023

- [8] The American Journal of Clinical Nutrition July 2023, Volume 118, Issue 1, Pages 273-282, Results
- [9] The American Journal of Clinical Nutrition July 2023, Volume 118, Issue 1, Pages 273-282, Discussion, Conclusions
- [11, 12, 13, 14] Mass General Brigham January 18, 2024
- [15] NIH, Multivitamin/mineral Supplements, Fact Sheet for Health Professionals
- [16, 19] Oregon State University June 14, 2023
- [17] Nutrients 2023, 15(12), 2691; doi: 10.3390/nu15122691, Conclusions
- [18] Nutrients. 2017 Jul; 9(7): 655., Abstract
- [20] Nutrients 2023, 15(12), 2691; doi: 10.3390/nu15122691