

Can Taking a Multivitamin Improve Your Memory?

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✓ Fact Checked

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STORY AT-A-GLANCE

- › It was once a widely held belief that brain function was expected to decline with age, but it is now known that memory loss and brain fog are not normal. Data show that older adults taking an over-the-counter multivitamin had memory improvements after just one year
- › An initial improvement in memory without continued and cumulative improvements over a three-year follow-up may suggest that a multivitamin may have addressed underlying nutrient deficiencies in the participants
- › As I have written for many years, real food is medicine and processed food is inherently unhealthy. Compounding the challenge of eating some processed foods is the declining nutrient value found in grains, fruits and vegetables
- › Choline deficiency is common, but the nutrient is crucial to regulate mood and memory. Other components vital to memory and cognitive health include B vitamins, vitamin D, magnesium, omega-3 fatty acids and a strong gut microbiome

It was once a widely held belief that brain function was at its best during early adulthood and slowly declined as you age, leading to lapses in memory and brain fog. After all, who hasn't walked into a room and forgotten exactly why they went there in the first place? A 2023 study¹ demonstrated that older adults taking a multivitamin supplementation may experience memory improvements.

While it's not uncommon to have difficulty recalling names and phone numbers, according to the Alzheimer's Association,² between 12% and 18% of people 60 years and

older have mild cognitive impairment (MCI). This is the early stage of memory loss or loss of other cognitive abilities.

Older people must maintain memory and cognitive abilities to live independently. When asked, nearly 90% of Americans 50 and older wanted to stay at home as they age.³ Yet, the same survey also showed that very few of those asked were aware of how to safely maintain their independence.

Unfortunately, for many over the age of 50, they may say they're having a "senior moment" when they can't remember or forget something. Yet the truth is that the majority of memory issues people in that age group have are not related to age and aging. As the featured study finds, multivitamin supplementation may help reduce the challenges associated with short-term recall.

Multivitamin Supplements Were Effective in Older Adults

Using multivitamin supplementation has a history of controversy. The results in past studies have been mixed. Some have shown benefits and others show little to no changes. However, the 2023 study⁴ published by scientists from Harvard Medical School and Columbia University showed memory improvement and slowed cognitive decline.⁵

Data was gathered from the COcoa Supplement and Multivitamin Outcomes Study Web (COSMOS-Web), which was an ancillary study of COSMOS. In this group of 3,562 older adults, participants either received a multivitamin supplement (Centrum Silver) or a placebo.⁶

The researchers identified the primary outcome measure as a change in episodic memory after one year of taking the vitamin. They identified secondary outcome measures as further changes over three years of follow-up. The participants were evaluated at baseline and each year using a battery of neuropsychological tests administered over the Internet.

The data showed that participants taking the multivitamin supplement had better immediate recall at the first year point, which was maintained during follow-up.

However, the data did not show any significant effects on the secondary outcome measures. The researchers estimated that the effect of the intervention improved performance by "the equivalent of 3.1 years of age-related memory change."

The COSMOS study⁷ was sponsored by Brigham and Women's Hospital and included funding from Fred Hutchinson Cancer Center, Mars, Inc. and Pfizer, who supplied the multivitamin and placebo. According to the study writers, the companies were not involved in collecting or analyzing the data.

The goal of the COSMOS study was to evaluate cocoa extract supplementation with and without a standard multivitamin against the risk of developing cardiovascular disease and cancer. The larger study enrolled 21,442 participants⁸ and found the cocoa flavanol supplementation did not show a significant impact in reducing the total number of cardiovascular events.

However, the data did show cocoa reduced death from cardiovascular disease by 27%⁹ and had no significant effect on the total number of cancers.¹⁰ When the data was evaluated further, they also found daily multivitamins potentially reduced lung cancer by 38%.

Food Is Foundational to Good Health

An earlier study by the same group of researchers discovered those who took a daily multivitamin for three years experienced broader cognitive benefits than was measured in the feature study,¹¹ including improvements in episodic memory, executive function and global cognition.

The Physicians Health Study II¹² also examined the results of participants taking a multivitamin against those who took a placebo in 5,947 male physicians and found no differences in cognitive ability.¹³ However, the Physicians Health Study did not establish baseline measurements at the start against which they could have compared the effects.¹⁴

The first measurement of cognitive ability was done roughly at 2.5 years after the start of the study, which Howard Sesso, co-author and associate professor of medicine at Brigham and Women's Hospital said may have been too late. "They might have already had improvements, and these just persisted."

An initial improvement in memory ability without continued and cumulative improvements may suggest that a multivitamin could have addressed underlying nutrient deficiencies in the participants. These studies did not address this question and further research is needed to determine if that is the case.

However, as I have continued to write for many years, **real food is medicine** and processed foods are inherently unhealthy. Ultraprocessed foods increase your risk of early death and I believe that processed fats may be an even larger contributor. **Omega-6 linoleic acid** is a pernicious metabolic poison that accounts for between 20% and 30% of total calories in the average diet.

Compounding the challenges of eating processed foods is the fact that researchers have documented a declining nutrient value in the whole food people are eating. One of the largest studies was published in 2004,¹⁵ in which the researchers found a reliable decline in six nutrients across 43 foods.

More recent research has supported these declines, including a reduction in iron content in vegetables grown in Australia¹⁶ and a 23% decline in protein content in wheat with other notable reductions in manganese, magnesium, zinc, and iron.¹⁷

Choline Deficiency Connected to Memory and Cognition

July 15, 2020, the Dietary Guidelines Advisory Committee published the 2020-2025 report in which they found most Americans do not get enough choline in their diet.¹⁸ This is an essential nutrient that's vitally important, but rarely discussed. Although choline is often lumped with B vitamins, it's not technically a vitamin.¹⁹

Your body uses choline to support optimal health at all stages of life. Your brain and nervous system require adequate amounts to regulate mood, memory and muscle

control.²⁰ It's also involved in metabolism,²¹ reduces the risk for cardiovascular disease,²² improves cognitive performance²³ and helps manage anxiety.²⁴

Your body cannot make choline, so you must get it through your diet. A choline deficiency has widespread negative health effects. Because it's involved in fat metabolism, low levels can increase fatty deposits in the liver²⁵ and eventually lead to nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis. Choline is essential for brain development of a growing fetus and helps maintain proper homocysteine concentrations.²⁶

Other groups of people at an increased risk for choline deficiency include endurance athletes,²⁷ postmenopausal women,²⁸ vegetarians and vegans²⁹ and people who drink a lot of alcohol.³⁰ Grass fed beef liver is the richest source of dietary choline, containing 430 mg per 100 grams per cooked serving.³¹

Yet, liver doesn't appear on the plates of many Americans as many times as the second-highest source of choline — eggs. A single 50.3-gram egg contains 169 milligrams of choline,³² but much of that is found in the yolk.³³ This means if you are still following the outdated and misguided advice to only eat egg whites, you're missing out on a lot of the egg's nutrition.

Krill oil is another rich source of choline. A 2011 study³⁴ found 69 choline-containing phospholipids in krill oil and of those, 60 were phosphatidylcholine substances that reduce digestive tract inflammation³⁵ and lessen symptoms associated with inflammatory conditions such as ulcerative colitis and irritable bowel syndrome.

More Nutrients Crucial to Memory and Cognition

Interestingly, as important as choline is to brain health and as deficient as the Dietary Guidelines Advisory Committee believes U.S. citizens are, Centrum Silver does not contain choline.³⁶ According to Pfizer,³⁷ the ingredients in the vitamin responsible for brain health are zinc and B vitamins.

Experts agree that healthy lifestyle choices and a balanced diet are two of the most important components to support your brain health.³⁸ Yet, research has also suggested that when nutrient gaps are present, some supplements can potentially support your cognitive health.

- **B Vitamins** – In 2010, researchers from Methodist Hospital in Houston announced³⁹ that large doses of B complex vitamins may have a significant impact on brain shrinkage in elderly people, slowing the progression of dementia. Over the next decade research evidence continued to mount supporting the role B vitamins play in memory, mild cognitive impairment and dementia.

In 2021, researchers concluded that supplementation with B vitamins may delay or maintain cognitive decline and should "be considered as a preventive medication to MCI patients or elderly adults without cognitive impairment."⁴⁰

- **Vitamin D** – Vitamin D is a fat-soluble vitamin that is often called the "sunshine vitamin" because the body naturally produces vitamin D when exposed to the sun.⁴¹ It's naturally present in very few foods and has been linked to several health conditions. Research⁴² in 2017 found those with the highest serum levels of vitamin D had the lowest risk of mild cognitive impairment.

A 2016 study⁴³ of 1,291 participants from the U.S. and 915 from Amsterdam demonstrated that those with severe vitamin D deficiency had greater visual memory decline and a 2022 study⁴⁴ measuring vitamin D concentrations in brain regions demonstrated those who had higher concentrations had better cognitive function before they died.

- **Multi-strain probiotics** – Your gut health influences memory and cognition through the gut-brain axis that connects the gastrointestinal tract and the central nervous system. Supporting a strong gut microbiome can improve brain function and reduce perceived stress in healthy older adults.⁴⁵

Scientific evidence has also demonstrated that the gut microbiome is linked to cognitive performance⁴⁶ and 28 days of supplementation⁴⁷ with multi-strain

probiotics altered the gut microbiome and improved cognitive performance in female subjects under stress.

- **Magnesium** – Magnesium is another nutrient that plays an important role in several physiological functions and supports normal neural function. In a 2010 study⁴⁸ published in the journal *Neuron*, researchers wrote that increasing levels of brain magnesium using magnesium L-threonate enhanced learning, working memory and short and long-term memory in an animal model.

In a 2022 study⁴⁹ of over 2,508 participants who were 60 years and older, researchers found a positive association between those who had a high magnesium intake and global cognition, suggesting that high magnesium alone could improve cognitive ability in older adults.

- **Omega-3 fatty acids** – The crucial role that omega-3 fatty acids play in cognition and memory is likely related to the imbalance in the **ratio of omega-6 fats and omega-3 fats** commonly found in the Western world. Rather than a ratio range of 15-to-1 to 16.7-to-1 commonly found in the Western diet,⁵⁰ we need to aim for a ratio of 3-to-1 to 1-to-1.

Your body needs omega-3 fat for proper cell division and function, cognition and heart health. The long-chain fatty acids DHA and EPA present in fatty fish are essential to brain growth and development and have a significant influence over cognitive performance,⁵¹ Alzheimer's disease⁵² and dementia.

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