



From the COSMOS Trial Directors

Dear COSMOS Participant,

Thank you for your continuing dedication to COSMOS. Although COSMOS has now answered the question of whether daily cocoa extract or multivitamin supplementation reduces the risk of developing heart disease, stroke, or cancer, we will continue to send you annual health questionnaires for several more years to learn so much more about the COSMOS interventions and healthy aging in general! Please be on the lookout for your next annual questionnaire, to be sent at the beginning of January 2024. **Your response is important, regardless of which study pills you received in the trial and whether or not you have had changes in your health since you last completed a questionnaire.** The information that you provide will allow us to examine the long-term effects of the cocoa extract and multivitamin supplements compared with the placebos and to explore other health-related topics.

Please note that you may submit your annual questionnaire online or by postal mail. If you have not tried the online option, we encourage you to do so. If you have given us your e-mail address, we will send you an e-mail with a link to a secure website where you can fill out and submit your questionnaire. If you have not given us your e-mail address and would prefer the e-form option, please contact us at COSMOStrial@partners.org or 1-800-633-6913 at your earliest convenience.

Thank you again for being part of the COSMOS community and helping to ensure the long-term success of the study!



JoAnn Manson, MD
Professor of Medicine
Harvard Medical School
Brigham and Women's
Hospital



Howard Sesso, ScD
Associate Professor
of Medicine
Harvard Medical School
Brigham and Women's
Hospital

Cocoa extract, multivitamins, and cognition: new findings from COSMOS substudies

Vitamins, minerals, bioactive compounds, and other nutrients are important for normal brain function, and deficiencies in older adults may increase risk for cognitive decline. Two COSMOS substudies—

COSMOS-Web and COSMOS-Mind—tested whether daily use of cocoa extract or a multivitamin reduced the risk of cognitive decline. (The COSMOS findings for cardiovascular disease and cancer were covered in the 2022 newsletter,

— continued on page 2 —



COSMOS In One Word

In the last newsletter, we challenged participants to describe COSMOS in only ONE word. A big thank you to all who responded! (The artwork here includes a sampling of the responses. The font size of each word reflects the number of participants who used that word.)

— continued from page 1 —

as were the results of COSMOS-Mind [recapped below].

COSMOS-Web, a collaboration between COSMOS investigators and colleagues at Columbia University in New York City, enrolled 3,562 COSMOS participants aged 60 or older who completed annual online questionnaires to assess memory.

Cocoa extract. Supplemental cocoa extract did not affect memory in the overall study population but did significantly improve memory among participants who began the study with lower levels of dietary flavanol intake or with a less healthy diet. Improvement in these groups was seen after 1 year of supplementation and was sustained over the full 3 years of follow-up. (Dietary flavanol intake was assessed using a urine-based biomarker in about 1400 participants who provided a baseline urine sample; diet quality was assessed by analyzing responses to a detailed food frequency questionnaire completed by nearly all participants.) “Individuals who had low dietary flavanol intake or a less healthy diet at baseline appeared to receive memory benefits from the cocoa extract supplement, which contains dietary flavanols,” said COSMOS Co-Director Dr. Howard Sesso, who leads COSMOS with Dr. JoAnn Manson.

Tip: Cocoa, tea, apples, berries, grapes, and other fruits and vegetables are good sources of dietary flavanols. A healthy diet is one that is rich in fruits and

“Participants assigned to a multivitamin in COSMOS performed significantly better on a test of memory after 1 year of supplementation than did those assigned to placebo, an effect that was sustained over the 3 years of follow-up.”

vegetables; whole grains; nuts, legumes, and vegetable protein (such as tofu); and fish; and favors unsaturated fats (such as olive or canola oil) over saturated fats.

Multivitamins. Participants assigned to a multivitamin in COSMOS performed significantly better on a test of memory after 1 year of supplementation than did those assigned to placebo, an effect that was sustained over the 3 years of follow-up. The multivitamin intervention improved memory performance above placebo by the equivalent of 3.1 years of age-related memory change. “These results are consistent with the earlier positive findings for multivitamins and cognition from COSMOS-Mind [see next paragraph],” noted Dr. Sesso. “Taken together, the results of the two substudies support a potential role for the use of multivitamins for healthy cognitive aging.”

References: Brickman A.M., et al. *Proceedings of the National Academy of Sciences USA* 2023 Jun 6;

120(23):e2216932120; Yeung L.K., et al. *American Journal of Clinical Nutrition* 2023 Jul; 118(1):273-282.

COSMOS-Mind, a collaboration between COSMOS investigators and colleagues at Wake Forest University in Winston-Salem, North Carolina, enrolled 2,262 COSMOS participants aged 65 and older who completed annual telephone interviews to assess cognitive function. As reported in last year’s newsletter, the investigators found that daily use of multivitamins, but not cocoa extract, was associated with improved overall cognitive function during 3 years of follow-up. More recently, investigators studied whether the study supplements could reduce the risk of cognitive impairment or dementia. However, because very few participants developed these outcomes, the study was not well powered to address this question. Also, the investigators have not yet examined the effects of cocoa extract among those with higher versus lower diet quality at baseline.

References: Baker L.D., et al. *Alzheimer’s & Dementia* 2023 Apr; 19(4): 1308-1319; Sachs B.C., et al. *Alzheimer’s & Dementia* [e-published 2023 Apr 10].

To read the published papers on the above and other findings, please visit cosmostrial.org/results/.

We’d Like to Hear from You!

As always, we welcome your current photos (without pill packs!), stories (travel or otherwise), and reflections about participating in COSMOS. Please send these materials to COSMOStrial@partners.org or the postal address in the box at the right. We will include a sampling of responses in future newsletters.



COcoa Supplement and Multivitamin Outcomes Study (COSMOS)

Brigham and Women’s Hospital
900 Commonwealth Avenue, 3rd Floor
Boston, Massachusetts 02215

Telephone: 1-800-633-6913
E-mail: COSMOStrial@partners.org
Website: cosmostrial.org