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RCT suggests long-chain PUFAs with lutein and zeaxanthin could reduce cognitive decline

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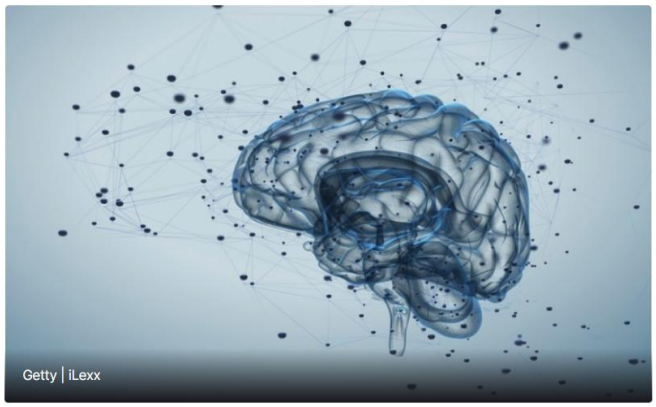

Supplementation with long-chain polyunsaturated fatty acids alongside lutein and zeaxanthin improved memory function in healthy older individuals with cognitive decline in a newly published RCT.

Arachidonic acid (ARA), docosahexaenoic acid (DHA), and eicosapentaenoic acid (EPA), are long-chain polyunsaturated fatty acids (LCPUFAs). Carotenoids, including lutein and zeaxanthin (LZ), are contained mainly in green vegetables.

ARA and DHA are abundant in the brain and are major components of phospholipids. Studies have suggested supplementing with high doses of DHA and EPA improve memory function in older individuals.

Similarly, LZ are antioxidant components in the brain and have been reported to have a protective effect on nerve cells, thereby affecting cognitive function. However, the efficacy of lutein and zeaxanthin on memory function is unclear due to inconsistent results from previous intervention studies.

Based on the fact that ARA, DHA, EPA, L, and Z (LCPUFAs + LZ) are present in the brain and several reports suggest memory function improvement, the authors of the current study hypothesised that a combination of these may improve memory function in healthy older individuals.

The Japanese researchers conducted a 24-week randomised, double-blind, placebo-controlled, parallel-group trial into the effect of LCPUFAs + LZ on memory function in healthy older Japanese individuals with memory complaints, without dementia.

They found no significant differences between groups. However, significant improvements were observed in the combined analysis of a subgroup of participants, who had cognitive decline.

The report concludes: "This study suggests for the first time that the combined intake of LCPUFAs and LZ could potentially improve memory function in healthy older Japanese individuals with cognitive decline without dementia."

The study

A total of 120 participants were enrolled from Tokyo and neighbouring regions, and randomly allocated to three groups: (1) a placebo group, receiving a placebo as a food supplement; (2) an LCPUFAs + X group, receiving a food supplement consisting of LCPUFAs (containing 120 mg ARA, 300 mg DHA, and 100 mg EPA per day) combined with compound X (whose contents are not shown because this compound is not the subject of this study); (3) an LCPUFAs + LZ group, receiving a food supplement consisting of LCPUFAs (containing 120 mg ARA, 300 mg DHA, and 100 mg EPA per day) combined with LZ (containing 10 mg lutein and 2 mg zeaxanthin per day).

Experimental food and funding for this study were provided by Suntory Wellness Ltd., which markets health food products that include LCPUFAs.

Both Wechsler Memory Scale-Revised Logical Memory II (WMS-R LM II) and Montreal Cognitive Assessment, Japanese version (MoCA-J) were used for screening.

Age, gender, and education were recorded as participant characteristics. Blood samples were collected for analysis of fatty acid and LZ at baseline, week 12, and week 24.

Neuropsychological tests were performed, and the amount of fatty acids taken from the diet was measured at baseline, 12, and 24 weeks. Each participant filled out the diary for recording supplemental intake and checking that there were no major changes in lifestyle.

The resulting data indicate no clear effect of LCPUFAs + LZ on memory function in healthy older Japanese individuals with memory complaints but this supplement did lead to improved memory function in participants with cognitive decline.

The authors say future interventional studies based on a detailed understanding of the cognitive function status of the participants at baseline will lead to appropriate judgments of the intervention's effect on memory function.

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