Abstract


Associations between n-3 PUFA concentrations and cognitive function after recovery from late-life depression.


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BACKGROUND: Lower concentrations of n-3 PUFAs have been reported to be associated with cognitive impairment and dementia, but also with depression—itsel itself a potential risk factor for cognitive decline.

OBJECTIVE: The aims of this study were to investigate associations between n-3 PUFA concentrations in erythrocyte membrane or plasma and cognitive function in an at-risk sample of older people with previous major depression and to explore specificity with respect to cognitive domains.

DESIGN: A cross-sectional sample of 132 eligible participants who had recovered from major depression (mean ± SD age: 67.8 ± 6.6 y) were enrolled from outpatient psychiatric services. A series of cognitive tests and a structured questionnaire were administered. Fasting blood samples were collected for n-3 PUFA measurements.

RESULTS: Higher EPA and total n-3 PUFA concentrations and a lower ratio of arachidonic acid to EPA in erythrocyte membranes were associated with a higher cognitive composite score: independent of age and sex, but no longer significant after adjustment for education. No associations were found with plasma concentrations of any fatty acid. Considering individual cognitive tests, the strongest and most consistent correlations were found between immediate recall and concentrations of total n-3 PUFAs and α-linolenic acid (ALA) in erythrocytes, which were observed only in participants with recurrent depression.

CONCLUSIONS: Total erythrocyte n-3 PUFA concentrations are positively associated with cognitive function, particularly immediate recall, in older people with previous depression. Lower concentrations of n-3 PUFAs or ALA in erythrocyte membranes may be good predictors for cognitive impairment in older people with previous recurrent depression.

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