OBJECTIVE: The widely reported associations between various nutrients and cognition may occur through many biologic pathways including those of β-amyloid (Aβ). However, little is known about the possible associations of dietary factors with plasma Aβ40 or Aβ42. The aim of the current study was to evaluate the association between nutrient intake and plasma Aβ levels.

METHODS: In this cross-sectional study, plasma Aβ40 and Aβ42 and dietary data were obtained from 1,219 cognitively healthy elderly (age >65 years), who were participants in a community-based multiethnic cohort. Information on dietary intake was obtained 1.2 years, on average, before Aβ assay. The associations of plasma Aβ40 and Aβ42 levels and dietary intake of 10 nutrients were examined using linear regression models, adjusted for age, gender, ethnicity, education, caloric intake, apolipoprotein E genotype, and recruitment wave. Nutrients examined included saturated fatty acid, monounsaturated fatty acid, ω-3 polyunsaturated fatty acid (PUFA), ω-6 PUFA, vitamin E, vitamin C, β-carotene, vitamin B(12), folate, and vitamin D.

RESULTS: In unadjusted models that simultaneously included all nutrients, higher intake of ω-3 PUFA was associated with lower levels of Aβ40 (β = -24.7, p < 0.001) and lower levels of Aβ42 (β = -12.3, p < 0.001). In adjusted models, ω-3 PUFA remained a strong predictor of Aβ42 (β = -7.31, p = 0.02), whereas its association with Aβ40 was attenuated (β = -11.96, p = 0.06). Other nutrients were not associated with plasma Aβ levels.

CONCLUSIONS: Our data suggest that higher dietary intake of ω-3 PUFA is associated with lower plasma levels of Aβ42, a profile linked with reduced risk of incident AD and slower cognitive decline in our cohort.

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