

ABSTRACT

Background:

Docosahexaenoic acid (DHA) plays an important role in neural function. Decreases in plasma DHA are associated with cognitive decline in healthy elderly adults and in patients with Alzheimer's disease (AD). Higher DHA intake is inversely correlated with relative risk of AD. The potential benefits of DHA supplementation in age-related cognitive decline (ARCD) have not been fully examined.

Objective:

Determine effects of DHA administration on improving cognitive functions in healthy older adults with ARCD.

Methods:

Randomized, double-blind, placebo-controlled, clinical study was conducted at 19 U.S. clinical sites. Four hundred eighty-five healthy subjects, aged ≥ 55 with MMSE > 26 and a Logical Memory (WMS III) baseline score ≥ 1 standard deviation below younger adults, were randomly assigned to 900 mg/day of DHA orally or matching placebo for 24 weeks. The primary outcome was the CANTAB[®] Paired Associate Learning (PAL), a visuospatial learning and episodic memory test.

Results:

Intention-to-treat analysis demonstrated significantly fewer PAL six pattern errors with DHA vs. placebo at 24 weeks (diff. score -1.63 ± 0.76 ($-3.1, -0.14$, 95%CI), $p=0.03$). DHA supplementation was also associated with improved immediate and delayed Verbal Recognition Memory scores ($p<0.02$), but not working memory or executive function tests. Plasma DHA levels doubled and correlated with improved PAL scores ($p<0.02$) in the DHA group. DHA was well tolerated with no reported treatment-related serious adverse events.

Conclusions:

Twenty-four week supplementation with 900mg/d DHA improved learning and memory function in ARCD and is a beneficial supplement that supports cognitive health with aging.

Trial Registration: clinicaltrials.gov, Identifier: NCT0027813.