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IADSA SCIENTIFIC RESPONSE - IADSA SCIENTIFIC ALERT SERVICE

Issue: **Supplementation with docosahexaenoic acid (DHA) did not slow down the rate of cognitive and functional decline in patients with mild to moderate Alzheimer's disease**

Publication: **JAMA 2010; 304(17): 1903-11**
Title: **Docosahexaenoic acid supplementation and cognitive decline in Alzheimer disease: a randomized trial**
Authors: **Quinn JF, Raman R, Thomas RG, et al.**
Date: **November 3, 2010**

Summary of the study:

In a randomised, placebo controlled trial, individuals with Alzheimer's disease were randomly given DHA (2 grams/ day) or placebo over 18 months. Changes in cognitive/ mental and functional abilities were assessed with the Alzheimer's Disease Assessment Scale (ADAS-cog) and the Clinical Dementia Rating (CDR) sum of boxes. Rate of brain atrophy was also determined by volumetric magnetic resonance imaging (MRI) in a subset of participants. A total of 295 participants completed the clinical study, with 171 participants taking DHA supplement and 124 participants on placebo. There was no beneficial effect in the rate of cognitive and functional decline, compared to participants who received placebo. In addition, the MRI sub-study (DHA group: 53; placebo group: 49) showed DHA intake has no effect on total brain volume change.

Responses:

1. The underlying pathological mechanisms of Alzheimer's disease is currently not fully understood and there is no effective medication to treat or retard the progress of Alzheimer's disease.
2. It should be noted that the study looked at the use of DHA, an omega-3 fatty acids, as a treatment for people who already have Alzheimer's disease. As a nutrient, omega-3 fatty acids including DHA and EPA, should not be emphasised for treatment purpose only. It is highlighted that the benefits of fish oil, which is rich in omega-3 fatty acids, lie in long-term intake prior to onset of health conditions. Omega-3 fatty acids have neuro-protective effect and other benefits such as for cardiovascular health, eczema and for pregnant women.

3. The authors of the study stated that it remains possible that an intervention with DHA might be more effective if initiated earlier in the course of Alzheimer's disease in patients who do not have overt dementia.
4. Interestingly, a sub-group analysis showed that participants without the ApoE-e4 gene had a slower rate of decline in mental function following DHA intake while subjects with ApoE-e4 gene did not benefit from DHA intake.
5. In contrast, the recent MIDAS study reported positive finding¹. In healthy older adults, without Alzheimer's or dementia, supplementation with 900 mg per day DHA improved learning and memory.
6. Two other studies also showed benefits of DHA on mental function. Supplements containing DHA (240mg) and arachidonic acid (240mg) can improve cognitive dysfunction in ageing². Positive effects on cognitive decline were also observed within a sub-group of individuals with very mild Alzheimer's disease³.
7. For those who do not meet the dietary recommendations of 2 servings of fish each week or don't like eating fish, they should make up the dietary shortfalls with a fish oil supplement to enjoy the many health benefits.

10 November 2010

Reference

1. Yurko-Mauroa K, McCarthy D, Romb D, et al. Beneficial effects of docosahexaenoic acid on cognition in age-related cognitive decline. *Alzheimer's & Dementia* 2010; 6(6): 456-464
2. Kotani S et al. Dietary supplementation of arachidonic and docosahexaenoic acids improves cognitive dysfunction. *Neurosci Res.* 2006; 56(2): 159-64.
3. Freund-Levi Y et al. Omega-3 fatty acid treatment in 174 patients with mild to moderate Alzheimer disease: OmegAD study: a randomized double-blind trial. *Arch Neurol.* 2006; 63(10): 1402-8