

THE POSITIVE AGING NEWSLETTER

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1. Association between carotenoids, n-3 fatty acids, and dementia severity

Carotenoids are fat-soluble antioxidants that may protect polyunsaturated fatty acids, such as n-3 fatty acids from oxidation, and are potentially important for Alzheimer's disease (AD) prevention and treatment.

Fasting plasma carotenoids were measured in 36 AD subjects and 10 control subjects by HPLC ([J Alzheimers Dis.](#) 2008 Feb; 13(1):31-8). Correlations between plasma carotenoid levels, red blood cell (RBC) n-3 fatty acids, and dementia severity were examined in AD patients. Moderately severe AD patients (MMSE=16-19) had much lower plasma levels of two major carotenoids: lutein and beta-carotene, compared to mild AD patients (MMSE=24-27) or controls. Among AD patients, variables (lutein, beta-carotene, RBC docosahexaenoic acid (DHA) and LDL-cholesterol) were significantly correlated with MMSE. A lower MMSE score was associated with lower lutein, beta-carotene and RBC DHA levels, and a higher LDL-cholesterol level. These variables explained the majority of variation in dementia severity (55% of variance in MMSE). Lutein, beta-carotene and beta-cryptoxanthin were positively correlated with RBC DHA in AD patients. The association between higher carotenoids levels and DHA and higher MMSE scores, supports a protective role of both types of nutrients in AD. However malnutrition is often the consequences of Alzheimer, and part of this difference could be a consequence of the disease. However these findings suggest targeting multiple specific nutrients, lutein, beta-carotene, and DHA in strategies to slow the rate of cognitive decline. This multidomain intervention must include global diet, physical exercise and cognitive exercise. Some intervention studies like the Mapt study (Multi-domain Alzheimer Preventive Trial) are in process.

2. Effect of fish oil on cognitive performance in older subjects

High intake of n-3 polyunsaturated fatty acids may protect against age-related cognitive decline. However, results from epidemiologic studies are inconclusive, and results from randomized trials in elderly subjects without dementia are lacking. The aims of the recent paper published by Ondine Vanderest et al, Netherlands [Neurology.](#) 2008 Aug 5;71(6):430-8 is to investigate the effect of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) supplementation on cognitive performance in a double-blind, placebo-controlled trial involving 302 cognitively healthy (Mini-Mental State Examination score > 21) individuals aged 65 years or older. Participants were randomly assigned to 1,800 mg/d EPA-DHA, 400 mg/d EPA-DHA, or placebo capsules for 26 weeks. Cognitive performance was assessed using an extensive neuropsychological test battery that included the cognitive domains of attention, sensorimotor speed, memory, and executive function.

The mean age of the participants was 70 years, and 55% were male. Plasma concentrations of EPA-DHA increased by 238% in the high-dose and 51% in the low-dose fish oil group compared with placebo, reflecting excellent compliance. Baseline scores on the cognitive tests were comparable in the three groups. Overall, there were no significant differential changes in any of the cognitive domains for either low-dose or high-dose fish oil supplementation compared with placebo.

In this randomized, double-blind, placebo-controlled trial, we observed no overall effect of 26 weeks of eicosapentaenoic acid and docosahexaenoic acid supplementation on cognitive performance. Long-term studies, or studies involving older and frail elderly persons are needed.

3. Obesity as risk factors for incident dementia: a systematic review and meta-analysis

While dementia affects 6-10% of persons 65 years or older, industrialized countries have witnessed an alarming rise in obesity. However, obesity's influence on dementia remains poorly understood. Beydoun et al, Baltimore, conducted a systematic review and meta-analysis ([Obes Rev.](#) 2008 May;9(3):204-18). PUBMED search (1995-2007) resulted in 10 relevant prospective cohort studies of older adults (40-80 years at baseline) with end points being dementia and predictors including adiposity measures, such as body mass index (BMI) and waist circumference (WC). There was a significant U-shaped association between BMI and dementia ($P = 0.034$), with dementia risk increased for obesity and underweight. Pooled odds ratios (OR) and 95% confidence intervals (CI) for underweight, overweight and obesity compared with normal weight in relation to incident dementia were: 1.36 (1.07, 1.73), 0.88 (0.60, 1.27) and 1.42 (0.93, 2.18) respectively. Pooled ORs and 95% CI for obesity and incident Alzheimer's disease (AD) and vascular dementia were 1.80 (1.00, 3.29) vs. 1.73 (0.47, 6.31) and were stronger in studies with long follow-up (>10 years) and young baseline age (<60 years). Weight gain and high WC or skin-fold thickness increased risks of dementia in all included studies. The meta-analysis shows a moderate association between obesity and the risks for dementia and AD. Future studies are needed to understand optimal weight and biological mechanisms.

4. Physical frailty in older persons is associated with Alzheimer disease pathology

Buchman et al (Chicago) examined the extent to which physical frailty in older persons is associated with common age-related brain pathology, including cerebral infarcts, Lewy body pathology, and Alzheimer disease (AD) pathology ([Neurology.](#) 2008 Aug 12;71(7):499-504). They studied brain autopsies from 165 deceased participants from the Rush Memory and Aging Project, a longitudinal clinical-pathologic study of aging. Physical frailty, based on four components, including grip strength, time to walk 8 feet, body composition, and fatigue, was assessed at annual clinical evaluations. Multiple regression analyses were used to examine the relation of postmortem neuropathologic findings to frailty proximate to death, controlling for age, sex, and education.

The mean age at death was 88.1 years (SD = 5.7 years). The level of AD pathology was associated with frailty proximate to death ($\beta = 0.252$, SE = 0.077, $p = 0.001$), accounting for 4% of the variance of physical frailty. Neither cerebral infarcts ($\beta = -0.121$, SE = 0.115, $p = 0.294$) nor Lewy body disease pathology ($\beta = 0.07$, SE = 0.156, $p = 0.678$) was associated with frailty. These associations were unchanged after controlling for the time interval from last clinical evaluation to autopsy.

The association of AD pathology with frailty did not differ by the presence of dementia, and this association was unchanged even after considering potential confounders, including physical activity; parkinsonian signs; pulmonary function; or history of chronic diseases, including vascular risk factors, vascular disease burden, falls, joint pain, or use of antipsychotic or antihypertensive medications.

Physical frailty in old age is associated with Alzheimer disease pathology in older persons with and without dementia.

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5. The 1st conference clinical trials on Alzheimer's disease (CTAD)

The 1st conference Clinical Trials on Alzheimer's disease (CTAD) will take place in Montpellier on 17th -19th September, 2008. This conference is jointly organized by the Montpellier and Toulouse European Alzheimer's Disease Consortium (EADC) Centers. The aims of the meeting are to bring together the current leaders in clinical trials in Alzheimer's disease to discuss new results, drugs in development, and future methodological issues (disease modification, outcomes, biomarkers, health economics). A Clinical Trials Training Workshop will be organized. This will be a high-level training course designed for investigators and clinical research assistants involved in clinical trials. For additional information and communications please visit the meeting website at <http://CTAD2008.ams.fr> . Proceedings will be published in the JNHA Clinical Trials Section.

Journal of Nutrition, Health and Aging to be published by Springer

Heidelberg/Paris, September 2008

As of January 2009, the *Journal of Nutrition, Health and Aging (JNHA)* will be listed in the journals catalogue of the scientific publisher Springer. A forward-looking editorial policy has allowed for dynamic development of the journal since it was founded in 1997. This year for the first time, it was included in the International Science Index (ISI) and was given a remarkable opening impact factor of 1.47.

The *Journal of Nutrition, Health and Aging* publishes high-quality scientific articles, mainly on the interaction between nutrition and health in the aging process. The editors of *JNHA* aim to present the latest scientific findings on the fundamental importance of nutrition during aging. The journal is published ten times a year in English and targets researchers and clinicians.

"The partnership with Springer from 2009 should help *JNHA* become more visible, particularly on the international stage, since all the articles will be available on its electronic platform www.SpringerLink.com. This will no doubt increase the number of hits and downloads of articles and lead to a higher impact factor," the journal's editor-in-chief Professor Bruno Vellas explained. Vellas is also the President Elect of the International Association of Gerontology and Geriatrics (IAGG) and President of the Scientific Committee of the IAGG World Congress, which is to be held in Paris in July 2009 (<http://www.gerontologyparis2009.com>).

Guido Zosimo-Landolfo, Managing Director of Springer France, said, "Springer is pleased at the opportunity to support this renowned scientific journal in its development. Our most fundamental task as a publishing house in a partnership like this is to provide research and clinical scientists with up-to-date, high-quality scientific content; we do this mainly through our SpringerLink platform." The new cooperation with the editor-in-chief of *JNHA* will be managed by the Springer office in Paris.

JNHA is the official organ of several scientific associations: the International Association of Gerontology and Geriatrics (IAGG), the European Union Geriatric Medicine Society (EUGMS) and the International Academy of Nutrition and Aging (IANA).

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4rd IANA (International Academy on Nutrition and Aging) Meeting on: Advances on Nutrition and Age Related Disease will take place in Paris, July 5th, as an Iagg Paris 2009 preconference. Abstract have to be sent before January 30.

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