

Fish for brain health supported by trio of studies

14/11/2007 - **Omega-3-rich fish consumption may improve brain function across a broad demographic spectrum, suggest three new studies from around the world.**

The studies pull together data from New Zealand, the Netherlands, and Norway, and all suggest significant benefits of [fish](#) consumption, specifically the [omega-3](#) fatty acid content, and cognitive health.

The majority of science for the health benefits of fish and omega-3 consumption has focused on cardiovascular health, but the science for cognitive benefits is growing and almost as compelling as the heart health data.

Moreover, the number of studies reporting potential risk reduction of certain cancers, improved development of a baby during pregnancy, joint health, and improved behaviour and mood, are also growing.

Published in the November 2007 issue of *The American Journal of Clinical Nutrition*, the studies have been commended by an independent expert.

"These recent reports are novel in that they address the association of n-3 fatty acid intake and [cognitive function](#) in non-demented individuals and, thus, present a shift in the attention to earlier stages of cognitive decline with the hope of preventing progression to states of dementia and disability before they become irreversible," wrote researchers.

For the first study, Dutch researchers used data from the FACIT trial, involving 807 men and women (average age 60 at baseline) assigned to receive folic acid or placebo capsules for three years. A cross-sectional analysis studied all 807 participants, while a longitudinal analysis only focused on the 404 participants in the placebo group.

The researchers report that increased levels of omega-3 fatty acids in the plasma were associated with a 69 per cent lower decline in sensorimotor speed and a 60 per cent lower decline in complex speed over three years.

No effects were observed on memory, the speed at which the participants processed information, or their word fluency.

"In this population, plasma n_3 PUFA proportions were associated with less decline in the speed-related cognitive domains over 3 y. These results need to be confirmed in randomized controlled trials," concluded researchers.

Researchers in New Zealand investigated if a relationship existed between the fatty acid composition of serum lipids and the mental and physical well-being of 2416 people participating in the 1997 National Nutrition Survey.

Using data from a short-form 36 health questionnaire and blood samples, lead author Francesca Crowe from the University of Otago reports that the proportion of EPA in the blood, and the ratio of EPA to arachidonic acid (AA) was positively associated with physical well-being, and the EPA to AA ratio for mental well-being.

"The association between [EPA levels], the ratio of EPA to AA, and better self-reported physical well-being is biologically plausible," state the researchers.

"The synthesis of the inflammatory series-2 prostaglandins and series-4 leukotrienes from AA would be reduced in favour of the less inflammatory series-3 prostaglandins and series-5 leukotrienes synthesized from EPA."

"The association has strong biological plausibility and warrants further investigation," they concluded.

The final study examined the relation between consumption of seafood products and cognitive performance in 2031 elderly Norwegians.

The researchers report that consumption of at least 10 grams of fish a day performed significantly better in tests for cognitive performance than people who ate less than 10 grams of fish and fish products.

Moreover, the effect was dose dependent, with the best test scores occurring in individuals consuming about 75 grams per day.

Interestingly, there was no significant difference between the consumption of lean or fatty fish, suggesting that the effects were due to something other than omega-3 fatty acids.

"Because this and earlier studies have shown that fish intake is associated with better cognition, the next question is what component of fish makes it good for the brain?" asked researchers.

"Studies of n-3 fatty acids, niacin, and any other factor known to be enriched in fish are needed to answer this question," they concluded.

In the accompanying editorial, Rosenberg commended the research groups for addressing the association of fish and n-3 fatty acid intake with cognitive function in individuals not yet showing signs of impaired cognitive function.

"These studies of nutritional associations with brain function during the elongated prodromal period of age-related neurodegeneration and decline offer an opportunity for early intervention to maintain brain function and slow progression to dementia, which is costly economically and in terms of quality of life," concluded researchers.