

Omega-3 Alzheimer's benefits identified

By Stephen Daniells

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02/01/2008- **Increased intake of the omega-3 fatty acid docosahexaenoic acid (DHA) may boost the production of a protein known to destroy the plaques associated with Alzheimer's disease, reports a new study.**

Cells from mice, rats, and humans were used by the researchers from the University of California, Los Angeles (UCLA) to show that the DHA-induced production of the protein LR11 may cut the build-up of plaque from beta-amyloid deposits, reported to result in brain cell damage and the onset of Alzheimer's.

"Because reduced LR11 is known to increase beta-amyloid production and may be a significant genetic cause of late-onset Alzheimer's disease (LOAD), our results indicate that DHA increases in LR11 levels may play an important role in preventing LOAD," wrote the researchers, led by Greg Cole in the *Journal of Neuroscience*.

Currently, about 12 million people in the US plus the EU suffer from Alzheimer's, with some estimates predicting this figure will have tripled by 2050. The direct and indirect cost of Alzheimer care is over \$100 bn (€ 81 bn) in the US alone. The direct cost of Alzheimer care in the UK was estimated at £15 bn (€ 22 bn).

"Genetic polymorphisms that reduce LR11 expression are associated with increased AD risk," explained the researchers. *"However these polymorphisms account for only a fraction of cases with LR11 deficits, suggesting involvement of environmental factors."*

The new research investigated if fish oil and DHA could boost LR11 levels, since having high levels of LR11 have been reported to prevent plaque formation, while low levels in patients are believed to be a factor in causing the disease.

Cole and co-workers report that even low doses of DHA increased the levels of LR11 in rat neurons. Moreover, dietary DHA increased LR11 levels in the brains of rats or older mice genetically engineered to develop Alzheimer's disease.

The positive effects of DHA on LR11 levels and the apparent protection against Alzheimer's was also found when the researchers used human neuronal line.

Cole stated that he hoped the US National Institutes of Health (NIH) would conduct a large-scale prevention clinical trial using fish oil at the earliest stages of the disease. He added that the NIH needed to instigate this research since it was unlikely that a pharmaceutical company will do so, since fish oil in pill form is readily available and inexpensive.

In addition, he added that future research should focus on determining the optimal dose.

"It could be that a smaller amount might be helpful, especially in a place like the south of France, where people are already on a Mediterranean diet," said Cole.

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