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Choline may help protect the brain from effects of ageing

By Nathan Gray, 30-Nov-2011

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Increased dietary intake of choline may be related to better cognitive performance and protection against memory loss, according to new research.

The study – published in the *American Journal of Clinical Nutrition* – points towards correlation between memory and dietary choline – found in such as saltwater fish, eggs, liver, chicken, milk and certain legumes, including soy and kidney beans – after researchers found that people with high intakes of choline performed better on memory tests, and were less likely to show brain changes associated with dementia.

The researchers, led by senior researcher Rhoda Au of Boston University School of Medicine, USA, said that their results do not mean that choline is the answer to staving off Alzheimer's disease, but noted that the findings do add to evidence that nutrition plays a role in the aging of the brain.

However, Au cautioned against looking to any one nutrient as a magic bullet against dementia.

Diet-dementia link

A number of studies have reported links between diet and nutrition and the risk of developing Alzheimer's disease.

The authors noted that choline is the precursor to the neurotransmitter acetylcholine, and as such has attracted attention as a possibly important nutrient to stave off cognitive decline. They added that the loss of cholinergic neurons is associated with impaired cognitive function – particularly memory loss and Alzheimer disease (AD).

Study details

Au and her colleagues analysed population data from the long-running Framingham study. Nearly 1,400 adults aged between 36 and 83 completed a food-frequency questionnaire and then underwent tests of memory and other cognitive abilities, including MRI brain scans.

In general, Au and her team found that men and women who reported high choline intake performed better on the memory tests than those who reported lower intake – however the researchers said that the differences in test performance were small.

"As far as your day-to-day functioning, it would not be an appreciable difference," said Au.

However, she added, the findings suggest that people with lower choline intakes are more likely to be on a 'pathway' toward mental decline than their counterparts with higher intakes.

In addition, the team found that people with higher choline intake at the outset were less likely to show areas of "white-matter hyperintensity" – areas believed to be a sign of blood vessel disease – in their MRI brain scans.

Au reiterated that none of the results prove that choline, per se, protects memory or unhealthy brain changes associated with aging. One possibility, she noted, is that some other nutrients present along with choline are responsible for the effects

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seen.

She added that further studies in humans are needed to back up the current findings.

Source: *American Journal of Clinical Nutrition*
Volume 94, Number 6, pages 1584-1591 , doi: 10.3945/ajcn.110.008938
"The relation of dietary choline to cognitive performance and white-matter hyperintensity in the Framingham Offspring Cohort"
Authors: C. Poly, J.M. Massaro, S. Seshadri, P.A. Wolf, E. Cho, E. Krall, P.F. Jacques, R. Au

Keywords: choline, dementia

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