

Fatty acids protect brain function, cholesterol raises Alzheimer's risk

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Middle-aged adults who eat fatty fish regularly or take supplements of marine omega-3 polyunsaturated fatty acids are less likely to experience impaired cognitive function and speed, suggests new research from the Netherlands.

Higher dietary cholesterol however was associated with an increased risk of impaired memory and flexibility.

The study is the latest to investigate the relationship between dietary fats and early symptoms of dementia such as cognitive performance in ageing people.

Researchers at Tufts University in Boston, US last year found that boosting levels of docosahexaenoic acid (DHA) in the blood and eating about three fish meals each week can almost halve the risk of Alzheimer's disease in elderly men and women. Another study, published in the *British Medical Journal*, found that elderly people who eat fish or seafood even once a week are at lower risk of developing dementia, including Alzheimer's disease.

The cause of Alzheimer's, a debilitating disease which affects an estimated 12 million around the world, is still not known and it is expected to increase along with the numbers of elderly.

The new study, by researchers from the University Medical Center Utrecht and the University of Maastricht, not only demonstrated the benefits of omega-3s but also the impact of high cholesterol.

The researchers used data from a cross-sectional population-based study of 1,613 subjects ranging from 45 to 70 years old. Over a five-year period they tested for memory, psychomotor speed, cognitive flexibility (i.e. higher order information processing), and overall cognition. A self-administered food-frequency questionnaire was used to assess eating habits and risk was adjusted for age, sex, education, smoking, alcohol consumption, and energy intake.

Marine omega-3 polyunsaturated fatty acids (eicosapentaenoic acid and docosahexaenoic acid) were found to reduce the risk of impaired overall cognitive function by almost 20 per cent and speed by 28 per cent, reports the team in this month's *Neurology* (62:275-280). Fatty fish consumption also had a similar benefit on cognition.

Meanwhile higher dietary cholesterol intake was significantly associated with an increased risk (by 27 per cent) of impaired memory and flexibility. Increase in saturated fat intake also raised the risk of impaired memory, speed, and flexibility although not significantly.

Researchers speculate that DHA levels could be a risk factor for development of the disease. It is the most abundant fatty acid in the brain, which consists mostly of fat. About a fifth of that fat cannot be formed by the body however and people have to get it from their diet.

Another study in the same journal shows that free testosterone concentrations were lower in men who developed Alzheimer's disease, and higher levels of the hormone could also offer protection against the disease in older men.

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