Diet may help preserve cognitive function

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According to a recent analysis of data from two major eye disease studies, adherence to the Mediterranean diet—high in vegetables, whole grains, fish, and olive oil—correlates with higher cognitive function. Dietary factors also seem to play a role in slowing cognitive decline. Researchers at the National Eye Institute (NEI), part of the National Institutes of Health, led the analysis of data from the Age-Related Eye Disease Study (AREDS) and AREDS2. They published their results today in the journal *Alzheimer's and Dementia*.

"We do not always pay attention to our diets. We need to explore how nutrition affects the brain and the eye" said Emily Chew, M.D., director of the NEI Division of Epidemiology and Clinical Applications and lead author of the studies.

The researchers examined the effects of nine components of the Mediterranean diet on cognition. The diet emphasizes consumption of whole fruits, vegetables, whole grains, nuts, legumes, fish, and olive oil, as well as reduced consumption of red meat and alcohol.

AREDS and AREDS2 assessed over years the effect of vitamins on age-related macular degeneration (AMD), which damages the light-sensitive retina. AREDS included about 4,000 participants with and without AMD, and AREDS2 included about 4,000 participants with AMD. The researchers assessed AREDS and AREDS2 participants for diet at the start of the studies. The AREDS study tested participants' cognitive function at five years, while AREDS2 tested cognitive function in participants at baseline and again two, four, and 10 years later. The researchers used standardized tests based on the Modified Mini-Mental State Examination to evaluate cognitive function as well as other tests. They assessed diet with a questionnaire that asked participants their average consumption of each Mediterranean diet component over the previous year.

Participants with the greatest adherence to the Mediterranean diet had the lowest risk of cognitive impairment. High fish and vegetable consumption appeared to have the greatest protective effect. At 10 years, AREDS2 participants with the highest fish consumption had the slowest rate of cognitive decline.

The numerical differences in cognitive function scores between participants with the highest versus lowest adherence to a Mediterranean diet were relatively small, meaning that individuals likely won't see a difference in daily function. But at a population level, the effects clearly show that cognition and neural health depend on diet.

The researchers also found that participants with the ApoE gene, which puts them at high risk for Alzheimer's disease, on average had lower cognitive function scores and greater decline than those without the gene. The benefits of close adherence to a Mediterranean diet were similar for people with and without the ApoE gene, meaning that the effects of diet on cognition are independent of genetic risk for Alzheimer's disease.

More information: Tiarnán D. Keenan et al, Adherence to a Mediterranean diet and cognitive

function in the Age-Related Eye Disease Studies 1 & 2, *Alzheimer's & Dementia* (2020). DOI: 10.1002/alz.12077

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