

Eating fish, nuts and olive oil may be associated with reduced risk of age-related blindness

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Regularly eating fish, nuts, olive oil and other foods containing omega-three fatty acids and avoiding trans fats appears to be associated with a lower risk for the eye disease age-related macular degeneration, according to two reports in the May issue of *Archives of Ophthalmology*.

By 2020, as many as 3 million Americans are expected to have late-stage age-related [macular degeneration](#) (AMD), according to background information in one of the articles. AMD is the leading cause of severe vision loss among individuals older than 65 in the developed world. Established risk factors include age, [genetic markers](#) and smoking (the only consistently reported modifiable risk factor).

In one report, Jennifer S.L. Tan, M.B.B.S., B.E., of Westmead Hospital, University of Sydney, Australia, and colleagues studied 2,454 participants in the Blue Mountains Eye Study, which began in 1992 to 1994. At that time, participants completed a food frequency questionnaire that was analyzed to determine their intake of various fatty acids. Digital photographs of the retina were used to assess the development of AMD five and 10 years later.

After adjusting for age, sex and smoking, eating one serving of fish per week was associated with a 31 percent lower risk of developing early AMD. The association was stronger among individuals with a lower intake of linoleic acid, an unsaturated omega-6 fatty acid found

primarily in vegetable oils. Eating one to two servings of nuts per week was associated with a 35 percent lower risk of early AMD.

"In conclusion, our findings support the hypothesis that increased intake of omega-three polyunsaturated fatty acids and regular consumption of fish and/or nuts in the diet may protect against the development of early AMD," the authors write. These fatty acids may protect the eyes by preventing the buildup of plaque in the arteries or reducing inflammation, blood vessel formation and oxygen-related cell damage in the retina.

Joint effects of protection against AMD were suggested between the consumption of these foods and other factors, such as smoking, intake of unsaturated omega-6 fatty acids or beta carotene and the ratio of total blood cholesterol to HDL or "good" cholesterol. "These findings also suggest that an appropriate balance among various nutrients is essential for maximizing nutritional benefit," they continue. Further studies are needed to determine whether changing an individual's diet or recommending supplementation could prevent or delay the development of AMD.

In the other report, Elaine W.-T. Chong, M.D., Ph.D., M.Epi., of the Centre for Eye Research Australia, and colleagues analyzed data from 6,734 individuals age 58 to 69. Between 1990 and 1994, participants' nutrient intakes were assessed from a food frequency questionnaire, and they were tracked for the development of AMD between 2003 and 2006. During the follow-up period, 2,872 cases of early AMD and 88 cases of late AMD developed.

Individuals who consumed higher levels of trans-unsaturated fats—found in baked goods and processed foods—were more likely to have late AMD, whereas those who consumed the most omega-three fatty acids were less likely to have early AMD. "[Olive oil](#) intake (100

milliliters or more per week vs. less than 1 milliliter per week) was associated with decreased prevalence of late AMD," the authors write. "No significant associations with AMD were observed for intakes of fish, total fat, butter or margarine."

Trans-unsaturated fatty acids have been shown to increase the risk of coronary heart disease through their effects on cholesterol levels and possibly through inflammation. In contrast, omega-three fatty acids are believed to protect against damage to the retina, thereby reducing risk for AMD. Although the primary fats found in olive oil (oleic acid and monounsaturated fatty acids) were not associated with AMD risk, olive oil contains other components that may have a protective effect, such as the antioxidants and anti-inflammatory compounds.

"Our findings suggest that people who follow a diet low in processed foods high in trans-unsaturated fatty acids and rich in omega-three fatty acids and olive oil might enjoy some protection from developing AMD," the authors conclude.

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