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New Evidence for Eye-Protective Effects of Omega-3-Rich Fish, Shellfish

Researchers at Wilmer Eye Institute, Johns Hopkins School of Medicine, wanted to know how the risk of age-related macular degeneration (AMD) would be affected in a population of older people who regularly ate fish and seafood, since some varieties are good sources of omega-3 fatty acids. A diet rich in omega-3s probably protects against advanced AMD, the leading cause of blindness in whites in the United States, according to the Age-Related Eye Disease Study (AREDS) and other recent studies. High concentrations of omega-3s have been found in the eye's retina, and evidence is mounting that the nutrient may be essential to eye health.

The new research, led by Sheila K. West, PhD, was part of the Salisbury Eye Evaluation (SEE) study.

Food intake information with details on fish and shellfish consumed was collected over one year using a validated questionnaire for 2,391 participants aged 65 to 84 years, who lived along Maryland's Eastern Shore. After dietary assessment was complete, participants were evaluated for AMD. Those with no AMD were classified as controls (1,942 persons), 227 had early AMD, 153 had intermediate-stage disease, and 68 had advanced AMD. In the advanced AMD group, the macular area of the retina exhibited either revascularization (abnormal blood vessel growth and bleeding) or a condition called geographic atrophy. Both conditions can result in blindness or severe vision loss.

"Our study corroborates earlier findings that eating omega-3-rich fish and shellfish may protect against advanced AMD." Dr. West said. "While participants in all groups, including controls, averaged at least one serving of fish or shellfish per week, those who had advanced AMD were significantly less likely to consume high omega-3 fish and seafood," she said.

The study also looked at whether dietary zinc from crab and oyster consumption impacted advanced AMD risk, but no significant relationship was found. Zinc is also considered protective against AMD and is included in an AMD-vitamin/nutrient supplement developed from the AREDS study. Dr. West speculated that her study found no effect because the levels of zinc obtained from seafood/fish were low compared to supplement levels.

A side note: fish and shellfish were part of the normal diet of the study population, rather than added with the intention of improving health. The links between fish consumption, omega-3s and healthy lifestyles were not widely known in the early 1990s when the dietary survey was conducted. In fact, some of the study participants who consumed the most seafood were also smokers and/or overweight, two factors usually associated with AMD and other health risks.

The research is published in the December issue of Ophthalmology, the Journal of the American Academy of Ophthalmology.