Higher intake of fish and vitamin D levels linked to lower risk of age-related macular disease

May 14 2007

Individuals who have higher dietary intake of foods with omega-3 fatty acids and higher fish consumption have a reduced risk of advanced age-related macular degeneration, while those with higher serum levels of vitamin D may have a reduced risk of the early stages of the disease, according to two reports in the May issue of *Archives of Ophthalmology*.

Age-related macular degeneration (AMD) occurs when the macula, the area at the back of the retina that produces the sharpest vision, deteriorates over time. It is the most common cause of blindness among older adults in the United States, affecting more than 7 million individuals older than 40 years, according to background information in the articles. The prevalence of AMD is likely to increase as the population ages. There is currently no known way to prevent the condition, but research has begun to identify potentially modifiable risk factors and nutrient-based treatments.

The Age-Related Eye Disease Study Research Group assessed 4,519 individuals who were age 60 to 80 when they enrolled in 1992 through 1998. At that time, photographs were taken of their retinas to determine if they had AMD, and if so, to which of four stages the condition had progressed. The participants also completed a food frequency questionnaire that measured how often they consumed foods rich in certain vitamins, minerals and other nutrients, such as omega-3 fatty acids commonly found in tuna, salmon and other fish.

A total of 1,115 participants did not have any symptoms of AMD at the beginning of the study, and were compared with those who did, including 658 individuals with neovascular (severe) AMD. "Dietary total omega-3 long-chain polyunsaturated fatty acid intake was inversely associated with neovascular AMD, as was docosahexaenoic acid," or DHA, a fatty acid that previous evidence suggests affects the retina, the authors write. "Higher fish consumption, both total and broiled/baked, was also inversely associated with neovascular AMD." Eating more than two medium (4-ounce) servings of fish per week or more than one medium serving of broiled or baked fish was associated with the lowest risk for advanced AMD.

Omega-3 fatty acids may influence processes involved in the development of blood vessel– and nerve-related diseases of the retina, the authors write. For instance, DHA may protect the retina by influencing which genes turn on and off, while fatty acids overall may eventually form compounds that promote cell survival and proper blood vessel function, reduce inflammation and maintain energy balance.

"These results and those from other observational analytic investigations suggest that modifying diet to include more foods rich in omega-3 long-chain polyunsaturated fatty acids could result in a reduction in the risk of having neovascular AMD," the authors conclude. Clinical trials would provide further information about whether diet changes or supplements could prevent the development of advanced AMD.

In a related study, Niyati Parekh, Ph.D., R.D., of the University of the Medicine and Dentistry of New Jersey, New Brunswick, and the University of Wisconsin–Madison, and colleagues analyzed data from 7,752 individuals (including 11 percent with AMD) who were part of the National Health and Nutrition Examination Survey, a large study designed to represent the entire U.S. population. Participants were enrolled in the study between 1988 and 1994. They had physical

examinations that included blood and urine samples, photographs of the retinas, and interviews and questionnaires regarding sociodemographics, lifestyle habits and food intake.

"Levels of serum vitamin D were inversely associated with early AMD but not advanced AMD," the authors write. When participants were split into five groups based on level of vitamin D in the blood, those in the highest group had a 40 percent lower risk of early AMD than those in the lowest group. "Milk intake was inversely associated with early AMD. Fish intake was inversely associated with advanced AMD."

Source: JAMA and Archives Journals

Citation: Higher intake of fish and vitamin D levels linked to lower risk of age-related macular disease (2007, May 14) retrieved 9 April 2024 from https://medicalxpress.com/news/2007-05-higher-intake-fish-vitamin-d.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.