

Ocular health update 2007

Age-related macular degeneration (AMD), a serious eye disease that is a leading cause of blindness in the elderly, can cause serious vision loss before a person is aware of it.

Often the disease progresses painlessly, with many patients being initially unaware they have a problem. Once symptoms begin to appear, permanent vision loss may have already occurred. Possible signs of AMD include a loss of central vision, seeing a dark spot in the center of the field of vision, distorted or blurred vision, and wavy vertical lines.

Currently, AMD impairs the vision of more than 15 million Americans – a number that is expected to balloon in the near future, given the aging of the U.S. population. Current estimates put AMD-related costs at \$575 million annually.

1988 was the beginning of a nutritional revolution in eye care. Daily zinc supplements were shown in a preliminary study to be the only effective means of retarding the severe visual loss from macular degeneration. There is no known cause for this condition that produces a slow or sudden painless loss of central vision due to deterioration of the central part of the retina. It is the leading cause of severe visual loss in people older than age 55.

In the breakthrough study conducted by David A. Newsome, M.D., of the Louisiana State University School of Medicine, 151 people with macular degeneration, aged 42 to 89, were assigned to receive either zinc tablets or an identical placebo. Their vision was checked by a team of physicians at six-month intervals for one to two years. "Although some eyes in the zinc-treated group lost vision," reported the investigators, "this group had significantly less visual loss than the placebo group after a follow-up of 12 to 24 months."

To this day, there is no effective drug treatment for the "dry" form of macular degeneration, and laser surgery can benefit only a small minority of patients.

We now know that smoking, diabetes, poor diet and high cholesterol can contribute to the risk of macular degeneration.

But did you realize you can inherit macular degeneration, just like baldness or heart disease?

A new study has found that a specific form of the apolipoprotein E gene, called APOE2, increases the risk of age-related macular degeneration well beyond the age of 65, whereas another form of APOE called E4, may confer some protection.

"The current study suggests that there is a genetic influence on the development of age-related macular degeneration, even in older people," according to Dr. Tien Y. Wong, from the Centre for Eye Research, University of Melbourne.

In the future, genetic testing early in life may help us better identify individuals at risk of macular degeneration so they might undertake a more aggressive preventive program. Early use of nutritional supplements, along with lifestyle measures, might help stem the tide of this sight-robbing disease for those with strong family histories of macular degeneration.

The results of the Age-Related Eye Disease Study (AREDS), released in 2001, found that high doses of beta-carotene, vitamins C and E, zinc, and copper lowered the risk of progression to advanced age-related macular degeneration (AMD) by 25 percent

as well as reduced the risk of moderate vision loss by 19 percent. Now the National Institutes of Health (NIH) has announced that a new study, AREDS2, will evaluate the benefits of the previously studied supplements with the addition of the omega-3 fatty acids EPA and DHA from fish oil, lutein and zeaxanthin. The findings of observational studies have suggested that these nutrients may be protective against macular degeneration.

“Nearly two million Americans have vision loss from advanced AMD, and another seven million with AMD are at substantial risk for vision loss,” commented Paul A. Sieving, M.D., Ph.D., who is the director of the National Eye Institute at NIH. “In the AREDS study, we found a combination of vitamins and minerals that effectively slowed the progression of AMD for some people. Now, we will conduct this more precisely targeted study to see if the new combination of nutrients can reduce AMD progression even further. This study may help people at high risk for advanced AMD maintain useful vision for a longer time.”

Lutein and zeaxanthin are members of the carotenoid family, a family best known for another one of its members, beta-carotene. They are natural fat-soluble yellowish pigments found in some plants and algae. They serve as light gathering pigments and protect the eye against the toxic effects of ultraviolet radiation and free radicals. Lutein and zeaxanthin are found in the macula of the human retina, as well as the lens of the eye. They are thought to play a role in protection against age-related macular degeneration and age-related cataract formation. They also may be protective against some forms of cancer.

Food sources of lutein and zeaxanthin include corn, egg yolks and green vegetables and fruits, such as broccoli, green beans, green peas, brussels sprouts, cabbage, kale, collard greens, spinach, lettuce, kiwi and honeydew. Recently, high quality standardized extracts such as Flora-Glo Lutein and OPTISHARP zeaxanthin have been developed to for use in eye-protective nutritional supplements.

Did you realize you can fend off macular degeneration, America’s leading cause of blindness in individuals older than 65, by avoiding sugar and pastry?

Research has shown an association between the consumption of certain carbohydrates and the incidence of age-related macular degeneration.

More than 500 nurses who were part of the Nurses’ Health Study were monitored over a period of thirteen years. There was a direct correlation between the glycemic index of foods they reported they consumed and their risk of macular degeneration.

The glycemic index, or GI, is a measure of how rapidly the carbohydrates in food are released into the bloodstream. High glycemic index foods include sugar, white bread, cookies and soft drinks; more desirable are low glycemic index foods such as brown rice, squash and beans, carbs that are featured in my Salad and Salmon Diet.

Recent studies have shown that consumption of fish or fish oil supplements can slow the progression of age-related memory loss and reduce the risk of dementia. But can fish help the eye?

In terms of the relationship between omega-3 fatty acids and age-related macular degeneration (AMD), results of a population-based survey of vision (Blue Mountains Eye Study) found that consumption of fish was associated with a reduced risk of late age-related macular disease. Results of a prospective, follow-up study involving 72,489 subjects, of which 567 developed age-related macular degeneration, found that subjects who consumed four or more servings of fish per week had a 35 percent reduced risk of AMD, compared with subjects who consumed fish three times per month.

A significant protective effect was found particularly with tuna intake. The results of studies like these suggest that omega-3 fatty acids such as EPA and DHA may play an important role in helping to prevent dementia and age-related macular degeneration.

Fruits and vegetables are beneficial for the eyes, too, since they are rich in antioxidant nutrients such as lutein, zeaxanthin and beta carotene. And don't forget nuts and fish, rich in zinc and omega-3 fatty acids.

Decreasing night vision is a serious problem for older drivers. But happily, many of my listeners and patients have reported dramatic improvements in their night vision with the right supplement support.

A recent study suggests that night vision can be improved by supplementing a diet with lutein and OPTISHARP brand zeaxanthin. The study appeared in the *Journal of the College of Optometrists*.

The researchers found convincing evidence that participants in the study had significant improvement in their ability to see in dim light. Research also suggested that the combination of lutein and OPTISHARP zeaxanthin improves the image quality at the retina. Zeaxanthin and lutein are the only two carotenoids found in the macula of the eye and growing evidence indicates that zeaxanthin may be the perfect complement to lutein.

Other scientific studies have shown a positive relationship between the consumption of lutein and zeaxanthin and a lower incidence of age-related macular degeneration (AMD). Zeaxanthin and lutein are not synthesized in the body and must be obtained through foods and/or dietary supplements, such as OPTISHARP zeaxanthin.

Four hundred thousand cases of cataracts are diagnosed in the U.S. each year. The likelihood increases with age.

Lutein and zeaxanthin are the only carotenoids found in the lens, and research suggests they may help prevent cataracts.

77,000 female nurses, aged 45-71 years old, were followed for 12 years. The nurses with the highest intake of lutein and zeaxanthin had 22 percent lower rate of cataract surgery compared to those with the lowest intake. Specifically, high intake of spinach and kale, green vegetables rich in lutein, protected the eyes.

A similar study followed 36,000 male health professionals, aged 45 to 75. Those men with the highest consumption of lutein and zeaxanthin had a 19 percent lower risk of cataracts compared to men with the lowest consumption. Broccoli and spinach, vegetables rich in lutein, had the strongest association with a lower risk of cataracts.

Research has suggested a minimum of 6-10 mg per day of lutein is necessary to protect the eye and help prevent cataracts.