

# Nutrition and the eye

by Bennett Romanoff, MD

It used to be thought that taking nutritional supplements, vitamins, and minerals, was just for children, older adults, as well as pregnant and nursing women. The American Medical Association now recommends taking daily multiple vitamins for all adults as well as children and pregnant women. There is no perfect substitute for a well-balanced, well-rounded diet. It is a well-known fact that very few Americans eat a balanced diet in our fast-food, over-the-counter, processed, hormone- and antibiotic-laced food society.

Approximately 50% of Americans are overweight, including 30% of our youth! This is a direct reflection of the dietary habits that have evolved over the past two generations.

Because of these known facts, it has become more important than ever to supplement our diets with well-rounded natural multiple vitamins with appropriate minerals included. It has been shown in studies that doing so can improve the quality of life and help us to maintain our natural immune defenses. It has also been shown that supplements help us with concentration, short-term memory, and other mental activities.

Our vision is one of the most important senses that we have. Just as it is vital to have a well-rounded, balanced diet for our bodies, it is also essential to maintaining good ocular health. Scientists and ophthalmologists agree that age-related vision loss is often caused by poor nutrition, smoking, exposure to ultraviolet radiation (UVR), and in some cases genetics as well as other uncommon factors. Unfortunately, we cannot change our genetics, but we can certainly control and modify the other causes of age-related vision loss.

Anyone who really cares about their vision should never smoke and should avoid secondhand smoke. Smoking, which indirectly could be considered a very bad dietary habit, is a main cause of cataracts and has been shown to be a causative factor of age-related macular (AMD)

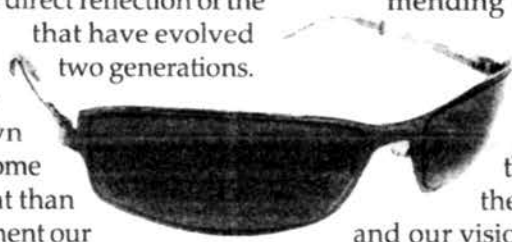
degeneration. Smokers often get cataracts at a much younger age than non-smokers as well as AMD. UVR is the main cause of cataracts in non-smokers and is a main contributing cause of AMD. It is relatively easy to block virtually all UVR with Transitions and/or polarized glasses when outdoors. I educate my patients that UV-protecting glasses are "sun block" for the eyes.

Since so few Americans eat a good, well-balanced, nutritious diet, it is very important to use well-rounded, competent, natural vitamins to maintain good general as well as ocular health. I have been routinely recom-

mending ocular nutrition to all my patients for nearly a decade based on a multitude of new research that has demonstrated the benefits to our eyes and our vision.

In 2001, a 10-year study on AMD called the AREDS Study (Age Related Eye Disease Study) demonstrated that a combination of antioxidants, including vitamins A, C, and E, zinc, copper, and selenium, clinically reduced the risk of vision loss overall by 19% in AMD patients. This study was the first of its kind to show the huge benefits of vitamins and minerals in people at risk. Since 3% of adults over the age of 60 get AMD, it has been estimated that 600,000 Americans may avoid vision loss over the next 10 years just by taking AREDS certified vitamins. The National Eye Institute has now gone on record stating that AREDS quality vitamins are the only known established method of treating AMD. The AREDS 2 study will be completed in 2013. In that study, Omega-3 fatty acid, lutein, and zeaxanthin are being studied. Science Based Health has already included these supplements in the AREDS 2 certified vitamins. With the baby boomer generation approaching this age group, it is vital that they get on board with the best nutrition possible!

Genetics is now known to play a role in AMD. I recommend that all relatives of a patient with AMD take preventative vitamins to pos-



sibly reduce their risk in developing AMD. We have no studies that have conclusively proven that taking preventative vitamins gets rid of risk, but they do give the possibility to reduce risk. I always recommend natural vitamins as opposed to synthesized vitamins. Synthesized vitamins are usually sold in drug stores and supermarkets and are usually dosed one per day. The penetrance and subsequent bioavailability is greatly reduced compared to natural vitamins. Natural vitamins are usually dosed at 2 to 4 capsules per day. In my office, I prefer Science Based Health vitamins since that company constantly is changing the formula of the vitamins and minerals based on the latest research. Their product line includes both preventative and therapeutic grades of nutritional supplements as well as vitamins for dry eye and diabetic patients. Other companies also produce natural vitamins.

In a recent issue of *Archives of Ophthalmology*, a new research study has shown that having one meal of fish per week and at least four servings of nuts per week significantly reduced the incidence of AMD. Eating more fish or nuts per week did not necessarily give any added benefit.

Lutein and zeaxanthin are a class of nutrients called carotenoids. They are essential for macular health. It is a known fact the macula, the center of vision on the retina, is very rich in carotenoids. As we age, the levels of these nutrients decline, reaching very low levels by the age of 60. This is also the age when AMD often starts to occur. Lutein is found in dark green leafy vegetables whereas zeaxanthin is found in orange and yellow fruits and vegetables. Again, most Americans do not regularly eat enough of these vegetables. Taking nutritional supplements helps to re-establish healthy levels of these carotenoids in the macula, which is beneficial.

Almost all vitamins have high levels of beta-carotene, a precursor of vitamin A. It is important to note that smokers should not take these high doses of beta-carotene. Numerous studies have shown that a high dose of beta-carotene in smokers increases the risk of lung cancer above and beyond the high risk of lung cancer that all smokers already have. Science Based Health, as well as a few other companies, makes a natural vitamin for smokers that is

beta-carotene free.

Dry eye syndrome affects many older people, especially menopausal women. The tear film is, simplistically put, a sandwich of mucus, water, and oil. Most artificial tears only help by replenishing the water layer. Fish oil supplements are an excellent source to replenish the oil layer. It is often more difficult to find a product that replaces both the oil and the mucous layers. HydroEyes, made by Science Based Health, contains fish oil, black currant seed oil, as well as mucin complex. Mucin complex

helps to replenish the mucous layer of the tear film. I have often seen dramatic improvement in dry eye symptoms in patients who have taken this product.

There are no definitive studies that show nutritional supplements slow the growth of or prevent cataracts, a clouding of the human lens. There is a growing amount of circumstantial evidence that

suggests that diets and/or nutritional supplements high in vitamins C, beta-carotene, E and the minerals zinc, selenium, and copper may help to protect the human lens from free radical damage. UVR and smoking cause significant aging and free radical damage of the human lens. Hopefully more studies will be done in the future to give more direction on this subject.

The subject of nutrition of the eye is evolving, and much more needs to be known. Just in the past 10 years, we have learned a plethora of new information and thought. My best advice is to keep informed, eat a good, well-rounded diet rich in fruits and vegetables daily, and always take an appropriate nutritional supplement. Before starting nutritional supplements, first consult with your primary care provider to make sure that there are no health concerns that may be affected by nutritional supplements. ❧

*Dr. Bennett Romanoff is Chief of Ophthalmology at Flower Hospital, a Clinical Assistant Professor of Ophthalmology at the University of Toledo College of Medicine, and an instructor of Ophthalmology in the Family Practice residencies with Flower and Toledo Hospitals. Since setting up his practice in 1978, Dr. Romanoff has helped thousands of patients in Northwest Ohio achieve better quality of vision with up-to-date treatments and solutions.*

