

Ocular supplements may stay course of AMD, maintain eye health

Manufacturers draw on research from the National Eye Institute's first Age-Related Eye Disease Study to formulate eye health products.

by **Erin L. Boyle**

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Ocular supplements using the National Eye Institute's formula from the Age-Related Eye Disease Study 1 aim to provide high-potency antioxidants and zinc to patients at high risk of developing advanced age-related macular degeneration.

The 10-year gold standard Age-Related Eye Disease Study 1 (AREDS 1), published in October 2001, found that a combination of antioxidants and zinc can help reduce the risk of advanced AMD by 25% for high-risk patients with intermediate AMD in one but not both eyes, and reduce the risk of vision loss from advanced AMD by 19% for that

same group. An update to the study, AREDS 2, has just passed the enrollment deadline for study applicants.

Michael J. Cooney, MD, MBA, of Vitreous Retina Macula Consultants of New York, said in a telephone interview with OCULAR SURGERY NEWS that he has seen growth in the ocular nutritional market because of studies such as the first AREDS.

"I think there is a large future for ocular nutritionals for both macular degeneration and diabetic retinopathy, which are two main causes of retinal visual loss in the world," Dr. Cooney said. "And we know from the AREDS trial that the public health impact for macular degeneration is not small. About

300,000 cases of vision loss can be prevented over the next 5 years, just with the vitamins."

Ocular supplements

A visit to the nutritional supplement aisle of any pharmacy, or an online search of the Internet, reveals the variety of products available, including vitamins specifically for ocular health. These include several formulations of Bausch & Lomb's Ocuvite and Alcon's ICaps; ScienceBased Health's Ocular Protect, MacularProtect Complete and MacularProtect Complete-S; Rejuvenation Science's Ocular Factors; Vitamin Health's Viteyes AREDS formulas, and numerous other generic and store brands.

Bennett S. Romanoff, MD, has been recommending ocular nutritional supplements and multivitamins to his patients for about 1.5 years. In a tele-

phone interview with OCULAR SURGERY NEWS, he said he looks at overall ocular nutrition in two ways: preventive and therapeutic. In 2005, two genetic markers for AMD were discovered, showing that the disease could be inherited. Dr. Romanoff said he strongly encourages patients who have parents or grandparents with AMD to use preventive ocular nutrition.

"There's no question that these vitamins decrease the risk of progression," he said. "According to the Age-Related Eye Disease Study, [vitamins don't] prevent the disease, they don't cure the disease, but they do decrease the chance of that disease progressing."

According to the AREDS study, for individuals who do not have AMD, taking the supplements did not appear to provide them an apparent benefit. But Dr. Romanoff said the relatively small risk imposed by taking the supplements outweighs the possible chance that the multivitamins will have no impact on prevention. The study looked at participants for an average of 6.3 years, so long-term effects of taking ocular multivitamins are unknown, according to the NEI.

"Maybe we'll find out in the future that by taking good ocular nutrition, it just might decrease the chances of getting AMD," Dr. Romanoff said.

Johanna M. Seddon, MD, ScM, said in a telephone interview with OCULAR SURGERY NEWS that although there is no evidence based on a definitive study that taking multivitamins helps prevent ocular diseases such as AMD or cataracts, she still suggests patients be aware of the nutrients they ingest.

"I highly recommend a focus on good nutritional habits, eating a lot of fruits and vegetables, fish twice a week and other kinds of healthy lifestyle behaviors – don't smoke, don't be near people who smoke, watch blood pressure and cholesterol – so that they would have some sort of behavior modification that they would be at a lower likelihood of getting the disease," she said.

AREDS recommendation

The AREDS 1 recommended that ocular multivitamins contain 500 mg of vitamin C, 400 IU of vitamin E, 15 mg of beta carotene (often labeled as equivalent to 25,000 IU of vitamin A), 80 mg of zinc as zinc oxide, and 2 mg of copper as cupric oxide, according to information from the NEI. Copper was added to the AREDS formulation containing zinc to prevent copper deficiency anemia, according to the NEI.

Each commercially available supplement and vitamin product has different doses of the contents suggested by the AREDS 1, according to Dr. Romanoff. He said he tells his patients to carefully read the back of ocular multivitamin packages to ensure the product has adequate amounts of adequate amounts of lutein, the vitamins A, C and E, as well as zinc and copper.

"I believe that one has to be a very astute consumer when they're looking at these vitamins to see that they're getting the appropriate levels," he said, "if they have the objective of getting the most appropriate amount of vitamins that are mandated by these studies."

Physicians' role in recommending supplements

Dr. Cooney said recommending that at-risk AMD patients use ocular multivitamins has become a part of his practice's standard of care. He recommends Bausch & Lomb's OcuVite PreserVision to his patients because it was the original formulation used in the AREDS.

"We know that the exact formulation produced from Bausch & Lomb – at least their hard tablets – is the exact formula that was effective in AREDS," he said. "Different formulations of vitamins ... could in fact have an effect on absorption, and therefore may have an effect on a vitamin's efficacy."

Dr. Romanoff recommends **Science-Based Health** products to his patients, which are sold on the Internet and which he also stocks in his office. In addition to AMD eye health supplements, the company also sells other ocular nutritional supplements. He said the company's vitamin line is constantly changing in accordance with new scientific data about overall body health, ocular nutrition and AMD-related issues.

Future of ocular multivitamins and supplements

According to the NEI, AREDS 2, which is slated to begin this year, will examine the effects of oral supplements containing lutein, zeaxanthin, and combinations of ingredients, on the development of advanced AMD and on moderate vision loss. It will also look at the effects of the supplements on cataract development and examine refining the contents of the current AREDS formulation, the NEI said.

Lutein, a carotenoid found mostly in leafy green vegetables, is now being regularly used instead of beta carotene in formulations designed for cigarette smokers. In addition to having an increased risk of AMD, cigarette smokers who take beta carotene/vitamin A are predisposed to lung cancer, according to research.

According to Dr. Cooney, Bausch & Lomb's PreserVision with Lutein removes the beta carotene from the supplement, as do other products. He said lutein might be a more appropriate antioxidant than beta carotene for all patients.

"It's never been studied in a gold-standard trial to prove that, but there are theoretical reasons to think that formula is better than the beta carotene," he said. "Until clinical trials are done, we won't know that."

For Your Information:

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■ Alcon Labs, maker of **ICaps**, can be reached at 6201 South Freeway, Fort Worth, TX 76134; 817-293-0450; fax: 817-568-6142; www.alconlabs.com. Bausch & Lomb, maker of **Ocuvite PreserVision**, can be reached at 1400 Goodman St., Rochester, NY 14609; 585-338-5212; fax: 585-338-0898; Web site: www.bausch.com. Rejuvenation Science, maker of **Ocular Factors**, can be reached at 811 N. Catalina Ave., Suite 3208, Redondo Beach, CA 90277; 888-737-3588; fax: 310-374-9839; Web site: www.rejuvenation-science.com. ScienceBased Health, maker of **MacularProtect Complete**, can be reached at 3579 Hwy. 50 East, Carson City, NV 89701; 888-433-4726; fax: 888-433-6726; Web site: www.sciencebasedhealth.com. Vitamin Health, maker of **Viteyes**, can be reached at Vitamin Health, Inc., P.O. Box 26, Mobridge, SD 57601; 888-890-3937; Web site: www.viteyes.com. ■ **Erin L. Boyle** is an OSN Staff Writer who covers all aspects of ophthalmology.