

Focusing in on Eye Health

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By

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I can see clearly now, the rain is gone,
I can see all obstacles in my way
Gone are the dark clouds that had me blind
It's gonna be a bright (bright), bright (bright)
Sun-Shiny day.—Johnny Nash

Unfortunately for millions of Baby Boomers impaired by a vision condition, this popular Johnny Nash song doesn't ring true. But let's not forget about the younger generations, which are also fast-becoming concerned about their eye health. They too are worried about whether or not they will be able to see clearly and enjoy the bright sun-shiny days ahead.

A great majority of "graying" consumers are actively taking steps to protect visual acuity and prevent cataracts and blindness, according to Philip Gowaski, sales and marketing manager, Chrysantis, West Chicago, IL. "The Natural Marketing Institute (NMI) indicates that 75% of the general population is concerned about preventing vision problems," he said. "Nearly 10% of adults in the U.S. reported that they have some sort of vision impairment. That increases to 15% when narrowed to adults aged 45 to 64. Indeed, ocular impairment is one of the top reasons elderly people lose their independence. Furthermore, the U.S. spends more than \$68 billion on direct and indirect healthcare costs related to visual impairment."

Fiona Taylor, director of marketing, InterHealth Nutraceuticals, Inc., Benicia, CA, says increased incidence of type 2 diabetes has also resulted in many more people becoming aware of eye health, especially since diabetes is a serious risk factor for blindness and other vision problems.

Even though the driving force behind the purchase of eye health products is Baby Boomers reaching the age where cataracts, glaucoma, age-related macular degeneration (AMD) and other ocular afflictions become more prevalent, it has become increasingly necessary to take measures to protect vision across all age-groups. This is particularly relevant in today's world when considering the adverse effects of UV light on the eye, as well as the use of screen-based equipment or visual display terminals (VDT) at work and leisure. These have created a market for products that can help consumers suffering from eye fatigue, or asthenopia.

Market Insights

According to *Nutrition Business Journal's* "2006 Supplement Business Report," InterHealth's Ms. Taylor said specialty formulas designed for specific conditions have been the trend in multi-vitamins, with eye health formulas being among the most notable examples.

Dietary supplements in the form of soft gels, capsules and tablets still seem to be the preferred delivery method, although experts agree consumer interest for eye health beverages and foods will gain momentum in the coming years. This will likely include powder and ready-to-drink beverages, as well as nutrition bars, effervescent products, oral strips, gummies, liquid drops, chewable formats and hard candies.

Sanjaya Mariwala, managing director, OmniActive Health Technologies, Mumbai, India, also speculated about various delivery forms. "More products in the form of interesting formulations for food and snacks are very likely to emerge and significantly expand the current size of the market," he said. "Several food companies are actively looking at lutein delivery forms with enhanced stability in their applications compared to options hitherto available in the market. Stable, water-dispersible forms with vegetarian ingredient systems, which are safe, food grade and Kosher/Halal are generating a lot of interest." Mr. Mariwala has also witnessed heightened interest in formulations of nutrients with a synergistic effect toward eye health, such as lutein and omega 3 oils, or multiple carotenoids in a complex, or lutein along with a specific combination of antioxidants.

An Eye on Ingredients

New pharmaceutical drugs for the treatment of advanced eye diseases have recently made a splash in the market.

Lutein & Zeaxanthin.

The carotenoids lutein and zeaxanthin continue to be stars in the eye health world due to consumer recognition and the large number of studies supporting their role in preventing eye health conditions such as AMD and cataracts.

In the macula, where the greatest exposure to light induced oxidation occurs, there is over two times as much zeaxanthin compared to lutein.

Lutein products are available in two forms, as natural lutein esters and “free” unesterified lutein. Over the years there has been some debate as to which is more effective. “Almost all supplementation studies—whether as lutein esters or free lutein—show a positive correlation with enhanced serum and tissue concentrations of lutein and zeaxanthin, and with markers of good eye health,” said Omni’s Mr. Mariwala. “And enough studies keep coming along to show that both forms of lutein in supplement form are relevant.”

Mr. Mariwala also pointed to research showing that lutein effectively filters out UV radiation, which can potentially damage the human eye, and that lutein and zeaxanthin are effective in quenching the effect of reactive oxygen species and free radicals that could cause further damage to the sensitive tissues of the eye’s retinal and macular regions.

“Lutein (along with its structural isomer zeaxanthin) are safe for human consumption even at maximum daily intake levels of 2 mg/kg body weight (i.e., around 90-150 mg per day for most adults),” said Mr. Mariwala. “This clears the way for higher dosages of lutein to be incorporated into supplements and nutritional foods over and above current levels.”

A Look at Major Research Initiatives

According to the National Eye Institute (NEI), AMD is a leading cause of vision loss in Americans 60 years of age and older. “Nearly two million Americans experience vision loss from advanced AMD, and another seven million with AMD are at substantial risk for vision loss,” explained Paul Sieving, MD, PhD, director of NEI. NEI reports that these statistics will double in numbers by 2030 because of the increasing longevity of the U.S. population.

AMD is a disease associated with aging that affects the macula and gradually destroys sharp, central vision. AMD occurs in two forms: wet and dry. Wet AMD, also known as advanced AMD, is caused by the abnormal growth of blood vessels under the macula, leading to rapid loss of central vision. Dry AMD, the more common form, occurs when the light-sensitive cells in the macula slowly break down, gradually blurring central vision in the affected eye.

Results from a landmark study—the Age-Related Eye Disease Study (AREDS)—were released six years ago and found that high-dose antioxidant vitamins and minerals (vitamins C and E, beta-carotene, zinc and copper) taken by mouth reduced the risk of progression to advanced AMD by 25%, and the risk of moderate vision loss by 19%. NEI now recommends that people at high risk for developing advanced AMD consider taking the AREDS formulation, though it also reminds consumers that the AREDS formulation is not a cure. In addition, the AREDS formulation will not re-store vision already lost from the disease. However, it may delay the onset of advanced AMD and may help people at high risk for developing advanced AMD keep their vision.

NEI is currently working on refining the results of the original study by conducting a new multi-center randomized trial, AREDS2, which will add dietary xanthophylls (lutein/zeaxanthin) and omega 3 LCPUFAs (DHA and EPA) to the study formulation. NEI will conduct this more precisely targeted study to see if the new combinations of nutrients can reduce advanced AMD progression even further. This objective will be accomplished by collecting and assessing data on approximately 4000 AREDS2 participants aged 50 to 85 years, who at the time of enrollment have either: 1) bilateral large drusen or 2) large drusen in one eye and advanced AMD in the fellow eye. AREDS2 started recruiting participants in October 2006 and hopes to complete recruitment by the end of this year. Once recruiting is finished, the study will be conducted over a period of five years.

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