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Eye Care Newsletter

Omni Eye Specialists • Madison Street Surgery Center
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Embracing Advanced Technology IOLS

The United States experienced the largest increase in births in the country's history after the American soldiers returned from WWII.¹ Sociologists have termed those born between 1946 and 1964 as "baby boomers." This group truly changed the course and mindset of the United States.

Boomers represent 28% of the U.S. population and using 1946 - 1964 as the boomer years, they represent the majority of the U.S. workforce which makes them the U.S. economic engine.² There are an estimated 76 - 78 million boomers that in the 1990s were working their way up to their peak earning and spending years. It is estimated that they hold \$13 trillion in assets, which is 50% of the U.S. asset base. This represents more than 80% of personal financial assets and more than 50% of the discretionary spending power. Their life expectancy has ballooned to 78.5 years for men and 82.5 years for women, and 74% are looking forward to retirement. Baby boomers continue to define the U.S., particularly in our country's consumer culture even in the midst of economic downturns.³

BABY BOOMERS AND HEALTH CARE TRENDS

The boomer's expectations are now being reflected in health care trends. The first of the baby boomers will turn 65 years old this year (2011)—reaching Medicare age. Suffering mainly from high blood pressure, arthritis, and diabetes, they comprised 50% of all doctor visits in 2001 (27 million visits were for diabetes). This was a 63% increase from 1992. 53% of the patients visiting doctors in 2001 were more than 45 years of age compared with only 42% in 1992.^{1,4} These individuals are usually

early adopters of innovations and are probably more apt to try to stay young (cosmetically and physically). 74% of boomers are currently working and most will work well into his or her 70s. Their health and vision demands will also expand.

More than 16 million seniors engage in social networking Web sites including Facebook, Twitter, and MySpace, spending an average of 204 minutes/month on the sites.⁵ Therefore, their demands for excellent vision will sustain if not increase with technological innovations.

PREPARING TO TREAT BABY BOOMERS

How prepared are you to meet this population's health care challenges? Have you remained current with technological advances in health care delivery? Are you embracing the newest ocular technologies? Are you referring to the eye providers that have access to these innovations thereby assisting your patients with the newest technologies, delivering excellence in eye care and providing your practice with good outcomes that represent the goals you desire for your patients?

As the baby boomers age, they will experience an increased incidence of glaucoma, diabetic eye disease, and cataracts, consistent with noted trends. Making this group aware of these ocular risks is a must. Embracing the newest innovations in IOLs so these "boomers" can sustain their visual needs well into their later working years, as well as into their retirement, will be very attractive if not essential for them to compete with the second wave of "babies." With the extensive access to information on the Internet as well as that gleaned through their social networking, these prospective patients are very well

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informed.

Adequate vision is not an endpoint most baby boomers are willing to accept. Early detection, effective intervention and multifunctional visual outcomes are what they anticipate. Strategic planning to meet this need with proper staffing, office ergonomics and services offered is needed to survive the health care reform that is being thrust upon our patients and ourselves as providers. Based on the statistics noted previously, physicians cannot wait to embrace new office diagnostic instrumentation access, therapeutic medication regimens and the newest technology in IOL designs for cataract surgery.

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Nutrition and Age-Related Macular Degeneration

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In the United States age-related macular degeneration (AMD) is the leading cause of blindness (visual acuity < 20/200) in elderly patients¹. Non-modifiable risk factors for disease include genetic susceptibility, race, eye color, female gender, and age. Modifiable risk factors include cigarette smoking, hypercholesterolemia, obesity, chronic exposure to ultraviolet light, and nutritional status². Prevention of disease has been focused on smoking cessation, maintenance of a healthy diet, and vitamin and mineral supplementation.

Cigarette smoking diminishes the body's antioxidant ability while vitamin and mineral supplementation is focused on increasing antioxidant potential³. Oxidative stress on the retina is thought to contribute to the pathogenesis of age related macular degeneration. The Age Related Eye Disease Study (AREDS) was a large-scale randomized controlled clinical trial that sought to evaluate the role of orally supplemented antioxidants in preventing AMD. The study was sponsored by the National Eye Institute of the United States National Institute of Health and published its results in 2001.

The key finding of AREDS is that taking a daily dose of vitamin C (500 mg), vitamin E (400 IU), b-carotene (15 mg), zinc oxide (80 mg), and cupric oxide (2 mg), (AREDS formula) results in a 25% risk reduction in progression from intermediate to advanced AMD after 5 years⁴. The study also found the AREDS formula decreased the risk of significant vision loss by 19% after 5 years. Evidence of an increased risk of lung cancer in cigarette smokers taking b-carotene⁵ led to an AREDS smoker's formulation devoid of b-carotene.

The AREDS formula of oral supplements is not recommended for all patients diagnosed with AMD, but rather those with intermediate stages of disease or advanced disease in one eye. The formula has not been demonstrated to be beneficial in patients with early, nonexudative age-related macula degeneration⁴. The staging of AMD is based on clinical exam.

Lutein and zeaxanthin are carotenoids which are naturally occurring plant pigments, also located in the macula, that have been studied in the context of AMD for their anti-oxidant potential. An observational epidemiologic study has described a 43% decreased risk of advanced AMD in the cohort of participants with highest dietary intake of carotenoids compared to the cohort with the lowest carotenoid consumption⁶. Another observational epidemiologic study found that women younger than 75 with stable diets high in lutein and zeaxanthin had a lower prevalence of intermediate AMD⁷. Lutein and zeaxanthin are found in dark green, leafy vegetables. Available commercial AREDS formulations also contain lutein with and without zeaxanthin.

Epidemiologic studies have also suggested an inverse relationship between the prevalence of AMD and dietary fish intake⁸. The rationale for this observation is the presence in fish of w-3 long chain polyunsaturated fatty acids. Dietary w-3 fatty acids components are found in high concentration in retinal photoreceptors and cannot be synthesized endogenously by humans. A meta-analysis evaluated the role of dietary w-3 fatty acids in the prevention of AMD. The study found bi-weekly fish intake was associated with a decreased risk of early and advanced AMD⁸. However the authors did not feel the evidence was strong enough to support broad prophylaxis against AMD with w-3 fatty acids.

In consideration of the numerous observational studies regarding nutritional supplementation in AMD and the relative lack of randomized case controlled derived data, the Age Related Eye Disease Study 2 (AREDS 2) should provide further direction for patients and practitioners. The study is a multicenter randomized trial evaluating lutein, zeaxanthin, and/or w-3 long chain polyunsaturated fatty acids (docosahexaenoic acid and eicosa-pentaenoic acid) dosed daily, on the progression to advanced AMD. The original AREDS formula will also be reassessed in AREDS 2 by the elimination of b-carotene and a lower dose of zinc⁸. The results of AREDS 2 are anticipated in 2012.

Current recommendations for patients diagnosed with age-related macular degeneration include smoking cessation and low-fat diets rich in green leafy vegetables and fish. There is not substantial evidence to support nutritional prophylaxis against AMD in the general population, but patients may consider diets rich in green leafy vegetable and regular intake of fish, given their ancillary health benefits unassociated with AMD. Decisions regarding AREDS formula supplementation should be made in consultation with a retina specialist.

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