



Research to Prevent Blindness

NEWS

FALL 2013

GUIDE TO EYE HEALTH

Eye Supplement Update

For patients with age-related macular degeneration (AMD) who take nutritional supplements known as the AREDS formula to slow the progression of the disease, the results of a recent study conducted by the National Eye Institute call for one change: substituting the antioxidants lutein and zeaxanthin for beta-carotene. That's because the study showed an association between beta-carotene (part of the original formula) and risk of lung cancer among former smokers.

Here is the new AREDS2 formula, which is safe for everyone regardless of smoking status: Vitamin C (550 mg), Vitamin E (440 IU), Lutein (10mg)/ Zeaxanthin (2mg), Zinc (80 mg zinc oxide), Copper (2 mg cupric oxide).

Calcium, Iron and Glaucoma

Researchers have reported that taking large doses of calcium or iron supplements may significantly increase your risk of developing glaucoma. And taking both calcium and iron further increases that risk. The amount above which consumption of calcium or iron influences glaucoma has yet to be determined, and the relationship between calcium, iron and glaucoma requires further research. As a precaution, patients taking large-dose calcium and iron supplementation for specific conditions, such as osteoporosis, might want to mention this to their ophthalmologist.

For more Eye Health information go to www.rpbusa.org

What Else Do We Lose With Vision Loss?

There is an area of the science of blindness prevention that examines the consequences of vision loss beyond loss of sight. The goal of these studies is preserving quality of life. Investigators are revealing that loss of independence is connected to (and may even begin with) vision loss, that loss of health may have roots there as well -- and they are exploring modifications people can make to manage their lives in unfamiliar territory. These findings are particularly important to the growing elderly population and retiring baby boomers who may be starting to experience symptoms of age-related eye diseases.

Some of the earliest signs of diminishing independence caused by low vision may surface as changes in mobility or driving behavior (well before a driver is asked to give up his or her license). Driving is a primary mode of transportation in the U.S., and especially important to those living alone and trying to maintain contact with others.

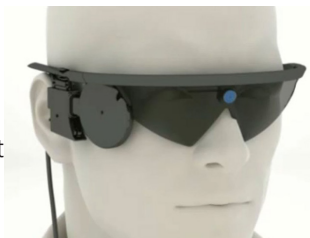
Studies have shown that:

- loss of contrast sensitivity from conditions such as cataract, AMD, corneal disease and glaucoma can cause the elderly to stop driving at night;

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Update on the Argus II Retinal Prosthesis

The Argus II, an implantable artificial retina system developed with support from RPB and other government and private sources, was approved by the Centers for Medicare and Medicaid Services for payment for both inpatient and outpatient settings. It also will be getting software upgrades that improve resolution and image focus, allow for zooming, and enable color recognition. Future versions will contain more electrodes, which may allow users to read finer print and recognize the faces of loved ones.



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EYE RESEARCH BRIEFS

New Urine Test to Detect Eye Disease

Retinitis pigmentosa, or RP, an inherited, degenerative disease that results in severe vision impairment and often blindness, may soon be detectable through a urine test, according to RPB researchers. The test may be especially beneficial to young children whose retinal degeneration has not fully developed, because the urine profiles are more accurate than blood profiles and easier to obtain. The same research may also result in treatments for RP.

Glaucoma Meds May Alter Eye Structures

According to researchers, glaucoma patients who are just starting widely used anti-glaucoma eye medications known as prostaglandin analogues (PGAs, such as bimatoprost, latanoprost and travoprost) should be aware that PGAs can cause changes to the structures supporting the eye, including deepened upper eyelid creases, hollowing of the lower lid fat pads, upper eyelid drooping with upper eyelid muscle dysfunction, and lower lid retraction. Taking the drops in one eye could cause a visible difference in the appearance of the two eyes. In those patients who already have loss of vision in the lower visual field, the development of upper eyelid drooping could compromise visual function completely. They suggest that if the PGA is not adequately lowering intraocular pressure, it is reasonable to replace it with a non-PGA anti-glaucoma medication.



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What Else Do We Lose With Vision Loss? *(continued from front)*

- people who have lost visual acuity to age-related macular degeneration (AMD) restrict travel to nearby locations;
- people with visual field loss due to glaucoma suffer from fear of falling and restrict how much they travel outside the home;
- vision impairment is associated with poor balance and falling, which can limit mobility.

When vision loss from glaucoma or AMD is extreme, essential activities of daily living—preparing meals, grocery shopping, managing one’s own money, using a telephone, housework, taking medications—can no longer be performed without the help of someone else.

Perhaps the most dramatic finding to come out of these RPB-supported investigations is the potential for low vision to reduce physical activity—an important predictor of health—which can be cut in half if visual acuity is less than 20/40.

“That’s a drop-off in physical activity greater than that brought about by stroke, arthritis or COPD,” says Pradeep Ramulu, MD, MHS, PhD, Associate Professor, Ophthalmology, Johns Hopkins University School of Medicine. “Physical activity is one of the few things I know of that improves just about every aspect of health. It helps with strength and fitness, with sleep, mood and stress, and reduces risk for diabetes and heart disease.”

According to Ramulu, many vision-related limitations may be self-imposed: “For example, most people with vision loss are capable of walking, but they can become fearful.” So, in addition to seeking cures and treatments for the underlying eye conditions, researchers are exploring modifiable risk factors that may help a person remain independent, particularly in the home.

In a study of the association between vision loss and falling, participants’ homes are being evaluated for “riskiness.” “We are trying to look at and quantify the scope of the disabilities created by vision loss,” says Ramulu. “If we can measure risk factors that are fixable—the amount of light in the house, the slipperiness of surfaces, the placement of furniture—then we can make recommendations on how to maintain the home.” According to Ramulu, accommodations for people with low vision traveling outside the home might include training in how to change one’s gait, how to scan a scene with your available vision, or tai chi to improve balance. “We want to give people evidence-based information on what needs to be fixed to overcome disabilities from vision loss.”



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