

Macular Degeneration Research NEWS



BETTER HEALTH THROUGH RESEARCH

FALL 2010

Three New Genes Linked to AMD Risk

Research supported by Macular Degeneration Research also suggests AMD-cholesterol linkages

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Researchers funded by Macular Degeneration Research have tied three new genes to the onset of age-related macular degeneration (AMD) and have uncovered persuasive evidence that AMD risk may be tied to the body's cholesterol pathway.

In a large-scale collaborative study, researchers with the National Eye Institute and the University of Michigan, Ann Arbor, analyzed the genomes of more than 18,000 people and found strong links between AMD risk and a gene called metalloproteinase inhibitor 3. The study also isolated two additional genetic risk factors in the pathway for high-density lipoproteins (HDL), which help transport cholesterol and other essential fats through the bloodstream.

Scientists have previously theorized that the buildup of oxidation products of cholesterol and other fats in the back of the eye may be tied to early-stage AMD. The authors of this most recent study caution that the relationship between AMD and HDL cholesterol levels in the blood remains unclear. Nevertheless, says Paul A. Sieving, M.D., Ph.D., director of the National Eye Institute, "This study increases our understanding of DNA variations that predict individual risks of AMD and provides clues for developing effective therapies."

Macular Degeneration Research is proud to have contributed \$750,000 in several grants, over many years, to the scientists who conducted the study. The contributions of Macular Degeneration Research's donors are gratefully acknowledged by the study.

A variety of resources are available for people who suffer from macular degeneration. For a list of agencies that offer counseling, training and other special services, please call Macular Degeneration Research at **800-437-2423** or visit our website at **www.ahaf.org/macular**.

Macular Degeneration Research is a Program of the American Health Assistance Foundation

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Chairman's Corner

New directions



I'm often asked how Macular Degeneration Research determines which scientists to support.

At one level, our decision-making process is very complex, weighing as it does a number of competing factors and operating within the finite limits of our resources. At another level, it's very simple. We want to learn something new because we know that's the only way we can move forward.

Whether we're learning about new genetic linkages – as reported in this issue of **Macular Degeneration Research News** – or devising cutting-edge new treatments or determining which behaviors can reduce the risk of developing AMD, we are operating on the principle that knowledge makes us stronger.

The more we understand about AMD, the better prepared we are to fight it. And the closer we come to making it both a treatable and – one day – a curable condition.

Brian K. Regan, Ph.D.

FDA Approves First Implantable Telescope for Advanced AMD

Treatment could significantly restore vision for blind patients

The U.S. Food and Drug Administration (FDA) has approved the first-ever telescope eye implant for patients with advanced age-related macular degeneration (AMD). Manufactured by VisionCare Ophthalmic Technologies, the device promises to give back some central vision to end-stage AMD patients.

“This is truly a breakthrough technology for AMD patients as their treatment options have been limited until now,” says Kathryn A. Colby, M.D., Ph.D., ophthalmic surgeon at Massachusetts Eye and Ear Infirmary in Boston and an assistant professor of ophthalmology at Harvard Medical School. “The clinical results from the pivotal FDA trial have proven we can place this tiny telescope prosthesis inside the eye to help patients see better and, for some, even to levels at which they can recognize people and facial expressions that they could not before.”

“Despite the past decade of advancements in macular degeneration therapies, retina specialists still did not have a treatment for the many wet and dry AMD patients who progressed to end-stage disease,” adds Julia A. Haller, M.D., ophthalmologist-in-chief of the Wills Eye Institute and chair of the Department of Ophthalmology at Jefferson Medical College. “Starting today, we can provide these patients with new hope.”

Smaller than a pea, the telescope would be implanted through outpatient surgery and would improve central vision by enlarging images over a wider area of the retina. AMD patients 75 or older with statutory blindness would be eligible for the procedure. To find more information about the implant and its safety profile, visit us at www.ahaf.org/macular.



Macular Degeneration Research is a program of the American Health Assistance Foundation, a charitable organization that complies with the 20 rigorous BBB Wise Giving Alliance Standards.

Research Roundup

Smoking bad; “good” cholesterol good

Smoking and low HDL (or “good” cholesterol) levels appear to enhance the risk of early-stage age-related macular degeneration (AMD), according to scientists with the University of Wisconsin in Madison. So does being a man.

Researchers assessed more than 2,810 individuals between ages 21 and 84 for levels of drusen, the yellow or white deposits that are an early marker for AMD, and found that men were generally at higher risk of developing early AMD than women. Heavy smokers and hearing-impaired people were also at greater risk. By contrast, having higher levels of high-density lipoprotein, or “good” cholesterol, was linked to lower risk.

“AMD can begin in midlife...”

The Wisconsin study underscored that AMD can begin in midlife, although it occurs much more frequently in people aged 65 or older. “Accurate estimates of the prevalence of AMD among adults younger than 40 years are lacking,” the authors write. “Such information is important for understanding the relationships of risk factors to

AMD across the age spectrum and for identifying factors that might affect this disease earlier in life.”

Asians aren’t off the book for AMD

Although Asians have long been considered at lower risk for developing AMD, a study by the Singapore Eye Research Institute has concluded that Asians may be just as susceptible to the condition as Caucasians.

After surveying patients from Japan, China, South Korea, India and Singapore, researchers found that their chances of developing early-stage AMD are comparable to Caucasians and that, if anything, Asian men are slightly more likely to develop late-stage AMD than white men – perhaps because they are more susceptible to the abnormal development of blood vessels in the eye.

“Future studies should evaluate whether there are ‘Asian forms’ of AMD and discern other racial/ethnic differences in Asian susceptibility,” says study leader Tien Yi Wong, M.D., M.P.H., Ph.D. Dr. Wong adds, “Our meta-analysis could not adjust for important risk factors like smoking, common among many Asian men, nor did this study include all relevant Asian racial/ethnic groups.”

Questions and Answers

Can diet prevent AMD?

Some limited studies appear to indicate that eating a diet high in carotenoids, antioxidant vitamins such as C and E, and omega-3 fatty acids may reduce the risk of developing AMD. However, more research is required before definitive statements can be made.

Dark green, yellow and orange fruits and vegetables, especially those high in the carotenoids known as lutein and zeaxanthin, appear to provide the best protection for AMD. Lutein is found in spinach, collard greens, kale, broccoli, papaya, oranges, honeydew melon, mango, green beans, peaches, sweet potatoes, lima beans, squash, red grapes, and green bell pepper. Zeaxanthin is commonly found in yellow corn, squash, oranges, mango, kale, apricots, peaches, and orange bell pepper.

Foods abundant in vitamin C include green peppers, citrus fruits, tomatoes, broccoli, strawberries, yams, leafy greens, and cantaloupe. Vitamin E is found in eggs, fortified cereals, fruit, wheat germ, green leafy vegetables, nuts/nut oils, vegetable oils, and whole grains. Wild salmon, sardines, walnuts, and flaxseed oil are good sources of omega-3 fatty acids.

Can vitamin supplements help treat AMD?

The National Eye Institute’s Age-Related Eye Disease Study (AREDS1) found that taking a specific high-dose formula of antioxidants and zinc (500 milligrams of vitamin C, 400 International Units of vitamin E, 15 milligrams of beta-carotene, 80 milligrams of zinc as zinc oxide and two milligrams of copper as cupric oxide) may delay or prevent intermediate AMD from progressing to the advanced stage. There is no evidence, however, that this formula benefits people with early-stage AMD. A follow-up study (AREDS2) is currently being conducted.

Patients with intermediate AMD in one or both eyes or advanced AMD (dry or wet) in one eye should consider taking the formula. Consult a physician, though, before taking any supplements because they may worsen other medical conditions or may react negatively with some medications.

Become a Year-Round Force in AMD Research

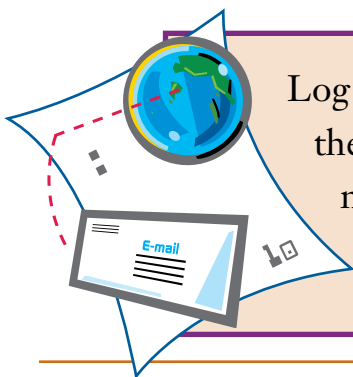


Monthly giving helps Macular Degeneration Research reduce overhead

Many of our donors find that the easiest and most efficient way to give to Macular Degeneration Research is to make monthly contributions of \$10, \$20, \$100 or more. Automatic payments are particularly effective because they save us the cost of stamps and envelopes – reducing our overhead and allowing us to allocate more of every dollar to the fight against AMD.

Becoming a monthly donor is easy to do, and you can change or cancel your monthly gift at any time. For more information on this unique way of giving, please contact Cristel Siaobungco at 800-437-2423.

Thank you for thinking of Macular Degeneration Research!



Log on to our website at www.ahaf.org and click on the Macular Degeneration Research link to learn more about what's new in the world of research, as well as important information about risk factors for macular degeneration. You can also follow us on Twitter (@_macular) or become a fan on Facebook!

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