



ISSUE #93
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Book on CD

A recorded copy of "Macular Degeneration, "The Complete Guide to Saving and Maximizing Your Sight", by Lylas G Mogk, M.D. is now available on CD.

Sight Into Sound is making it available upon request.

Call 713-622-2767 or email carol.pierce@sightintosound.org

Free DVD

Hallucinations:
Am I going
Crazy?

AMD and Charles Bonnet Syndrome.
DVD available on request with detailed information! Call: 888-633-3937

The OrCam Device

From the "Eye of the Cure" Blog

There's another new device for the visually impaired, a form of assistive technology that's neither disease-specific nor requires an implant. And it's already on the market, at a relatively low price.

It's called OrCam. The device is comprised of a mini camera and bone-conduction earpiece

which are strapped to the user's eyeglasses. With help from a smartphone-sized computer, it recognizes and identifies objects, signage and writing.

This breakthrough technology helps people see with their ears. For more information and to see a video presentation, go to OrCam.com.



Clinical Trial Information

Nat'l Eye Institute
800-411-1222 or
www.nei.nih.gov

Clinical trials have guidelines called "inclusion" and "exclusion" criteria. These criteria (age, gender, type and stage of disease, etc.) keep participants safe and ensure researchers will be able to answer the questions they plan to study.

C3 Gene Variant Linked To Macular Degeneration

Researchers report that a change in the C3 gene, which plays a role in inflammation and in the body's immune response, also contributes to macular degeneration.

After sequencing DNA from 10 regions of the genome that had been previously linked to AMD in previous genetic studies, the researchers turned up two gene variants: one in the C3 complement gene, and an alteration that had been identified in previous studies of macular degeneration. The two gene variants together contribute to a three-fold increased risk for macular degeneration by interfering with inactivation of inflammation in the retina.

The study was carried about by an international team at The Genome Institute at Washington University School of Medicine in St. Louis and the University of Michigan School of Public Health in Ann Arbor. The results were published online Sept. 15 in the journal Nature Genetics.

Resource Consultant

For assistance identifying agencies in a specific area, call

Dan Roberts
Resource Consultant

toll free at:
1-888-866-6148

Resources

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866-504-7300

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Listening
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(Books on Tape)

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Independent
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800-537-2118

Maxi Aids
800-522-6294

Enhanced Vision
888-811-3161

EyeSmart
<http://www.get-eyesmart.org/>
eyesmart

Questions to Liz



**Liz Trauernicht - CEO
MD Foundation**

What is a Non-Mydriatic Camera?

A significant amount of evidence finds that very bright light, especially blue light, can damage the macula. Traditional slit lamp devices used during eye exams produce high light levels, which may be problematic for people with macular degeneration.

Before these devices can be used effectively, the pupil of the eye must be dilated (the mydriatic process), then the retina is subjected to the strong light for at least 20 seconds at a time.

On the other hand, non-mydriatic retinal cameras, such as those made by Optos, Canon, and Nidek, do not require the pupil to be dilated, and they use low light levels to produce highly sensitive digital photographs and videos (Ophthalmology. 2001; 108:572–585).

Fundus photos that flash bright lights into the eyes are still necessary for a thorough retinal exam, but the risk of unnecessary light exposure from slit lamps can still be avoided.



These cameras make it possible to photograph very fine and subtle changes not visible with a standard high-intensity slit lamp. For anyone needing multiple eye exams, non-mydriatic cameras would seem to be safer for the retina than slit lamps.

Other benefits of using a non-mydriatic camera for eye exams are:

- less time spent in the clinic
- no need to wear dark, vision-hindering lenses afterward
- no need for additional assistance, such as a driver,

MD Foundation recommends that, before scheduling an appointment, patients ask their eye care doctors if non-mydriatic retinal cameras are an option.

For a video demonstration, see the **MacularNews.org** report from AAO 2013 posted on Dec 5, 2013.

Exclusive Online Videos Featuring World's Leading Eye Researchers



Dr. David Seftel, Director of Research Development for the Macular Degeneration Foundation, is interviewing the world's foremost scientists and medical practitioners who are actively investigating cures and treatments

for Macular Degeneration and related eye diseases.

Visit **MacularNews.org** for the latest news and register to receive an email notice when new videos are first posted.

Donations

The Macular Degeneration Foundation, Inc. is a tax-exempt, non-profit organization.

Please visit our website at eyesight.org to make a tax deductible donation.

Checks may be mailed to:

Macular Degeneration Foundation, Inc.,
P.O. Box 531313,
Henderson, NV 89053

Call: 888-633-3937 (USA)
Call: 702-450-2908 (Intl)
Email: liz@eyesight.org

Disclaimer - Articles in the Magnifier are for information only and are not an endorsement by the Macular Degeneration Foundation editorial staff.

Organizations That Can Help

National Eye Institute
800-411-1222
www.nei.nih.gov

AMD Alliance
amdalliance.org
416-486-2500
x-7505

Association for Macular Diseases
212-605-3719
macula.org

Foundation Fighting Blindness
888-394-3937
blindness.org

MD Partnership
888-430-9898
amd.org

Prevent Blindness America
800-331-2020
preventblindness.org

Macula Research Foundation
610-668-6705
mrvf.org

MD Support
816-761-7080
Mdsupport.org

EARS
Free Tapes to live life with confidence and dignity.
800-843-6816

Definitions

Ophthalmologist

a practitioner in the medical science of surgery and care of the eye and its related structures. An M.D. degree is required.

Retina specialist

a medical doctor trained as an ophthalmologist, who has received additional training in diseases and surgery of the retina and vitreous.

Optometrist

a degreed (O.D.), independent, primary health care provider skilled in the co-management of eye health and vision care, including examination, diagnosis, treatment, management of diseases/disorders, prescription of eyeglasses/contact lenses, and provision of low vision aids and therapy.

Optician

a person who designs or manufactures ophthalmic appliances or optical instruments ("ophthalmic optician") or deals in prescriptions ("dispensing optician").

Artificial Retina News

ARGUS II SECOND SIGHT

finally gets FDA approval to begin patient treatment with the first retinal prosthesis. A miniature video camera housed in the patient's glasses captures a scene. The video is sent to a small patient-worn computer (i.e., the video processing unit – VPU) where it is processed and transformed into instructions that are sent back to the glasses via a cable. These instructions are transmitted wirelessly to an antenna in the implant. The signals are then sent to the electrode array, which emits small pulses of electricity. These pulses are intended to bypass the damaged photoreceptors and stimulate the retina's remaining cells, which transmit the visual information along the optic nerve to the brain. This process is intended to create the perception of patterns of light which patients can learn to interpret as visual patterns. The original version used 16 electrodes and the latest version has 60 electrodes. See Issue 91 of The Magnifier for complete story.

NATCORE ARTIFICIAL RETINA

www.natcore.com
Natcore Technology was recently issued a U.S. patent for the first self-powered artificial retina. This implant could allow normal visual acuity and restoration of color vision. The Natcore retina comprises an array of carbon nanotubes, grown vertically on a substrate. The nanotubes are coated with a semiconducting material, in effect wrapping a solar cell around them, with the tips of the nanotubes exposed and arranged to extend into the ganglion nerves. When light enters the eye and is focused by the lens onto the artificial retina, a voltage buildup causes the nerves to fire, acting like a

synapse and sending a signal to the brain. The coated carbon nanotubes act like rods or cones, the eyes' photoreceptors that convert light into signals that can stimulate biological processes. The Natcore device would be surgically implanted. It would be a flat round disc with a diameter of approximately 4mm, roughly the size of a pencil eraser. For more information go to www.natcoresolar.com 732-576-8800

THE BOSTON RETINAL IMPLANT PROJECT

This implant is based on the same principal as the ARGUS II, but is promising a more successful visual experience by using more than 256 electrodes which is expected to give patients a more refined visual image. Users of this retinal implant will also be able to adjust the implant according to their needs.

In The News

High Dose Stem Cell Transplant Performed

Stem Cells (STEM) has announced the first patient to receive a high dose of one million purified human neural stem cells (HuCNS-SC®) in their Phase 1/2 clinical trial. This followed an independent review by the Data Safety Monitoring Committee, which found no safety issues with proceeding to the high dose.

The 16-patient trial is designed to evaluate the safety and efficacy of HuCNS-SC cells as a treatment for dry AMD. Subjects will be evaluated over a one-year period, with a four-year observational study to follow.

Retina Foundation of the Southwest and the Byers Eye Institute at Stanford are currently participating in the trial, with three more centers to join within the next nine months.

Talking Books Service Has Gone Mobile

Talking Books is a service of the National Library Service (NLS), Library of Congress. People who are certified as legally blind, or otherwise unable to comfortably read print, may access over 50,000 titles in audio format at no cost.

Until now, participants have been sent audio materials on tape, playable on special machines provided by a cooperating local library. Now, however, the books may be downloaded through a free application onto portable iDevices, making the service much more accessible.

The app provides access to Braille and audio materials directly from the NLS Braille and Audio Reading Download (BARD). With BARD Mobile, audio materials may be played on an iPhone, iPad, or iPod Touch. If the device is connected to a refreshable Braille display through Bluetooth, Braille materials can also be accessed.

Before using the BARD Mobile app, a user must be registered with a library in the NLS network. To apply, find a cooperating library at www.loc.gov/nls/find.html or call 1-800-NLS-READ.

MD Support and Prevent Blindness America Establish New On-Line Resource

The new resource provides an extensive list of searchable resource directories, a database of 1,500 municipal paratransit services, a library of self-help guides and workbooks, and up-to-the-minute news.

This marks the first time in Internet history that two major organizations have joined in such a dramatic way to bring both education and support to the entire global low vision community.

See lowvision.preventblindness.org or mdsupport.org

Are You Missing Out on Benefits?

April Issue of AARP by Joan Rattner Hellman

If you're struggling to pay for health care, food, or utilities, help may be closer than you realize.

Older Americans miss out on more than \$20 billion worth of benefits every year. A nationwide campaign launched by the National Council on Aging and the National Association of Area Agencies on Aging aims to help older adults learn about two easily accessed resources that can connect them to needed support.

BenefitsCheckUp (benefitscheckup.org)

Eldercare Locator (1-800-677-1116 or eldercare.gov)

Riding the AMD Roller Coaster

Why do we see on some days worse than on others?

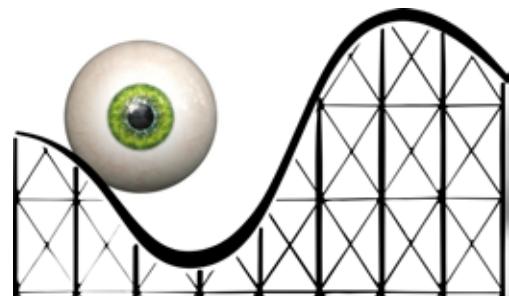
by Dan Roberts:
Editor and Chief of Prevent Blindness America

Gradual vision loss is to be expected with age-related macular degeneration (AMD). Even though it is expected, however, slow deterioration of our view of the world can cause fear, depression, and chronic stress in those of us who must constantly deal with it.

To compound the emotional response, we can become overly sensitive to changes in our already compromised vision. We might think that every visual anomaly is a sign of further degeneration of our retina, but such is not always the case. In addition to the unfortunate normal course of the disease, several factors can cause our vision to diminish. These conditions are usually treatable, or at least manageable, after which our vision may improve. In other words, they do not cause permanent harm to the retina. If, however, vision does not improve when things return to normal, and if we see new symptoms like dim spots or distortion, that's when we need to call our eye specialist.

So, unless changes in our eyesight are persistent and severe, complete exams are necessary no more often than every 6-12 months. For that

matter, the eye doctor's use of a slit lamp, plus the bright light flashes from fundus photos, can actually cause damage to the photoreceptor cells if used frequently over time. OCT scans can be done with little risk, but, without additional information from the photos and slit lamp exams (or better yet, use of a non-mydriatic camera), those alone would be of little value to a person with dry AMD.



Visual changes are more noticeable to us than they are to people with normal vision. We are walking closer to the edge of the cliff, so it doesn't take much to topple us over. We are also more aware, thus more concerned, about losing our vision. Simple things like going to an unfamiliar place or waking up to a cloudy day, can diminish our visual perception and cause us undue concern.

Riding the AMD Roller Coaster: Continued ...

Lighting

We see worse on a cloudy day than on a sunny day. On the other hand, we see poorly on a sunny day if we encounter glare. The kinds of task lamps and ambient lighting in our homes can also affect our vision. To maximize our vision, we need to learn about proper lenses and lighting instruments.

Emotions

Emotional stress can raise blood pressure and increase adrenaline levels, both of which are risk factors for retinal disease.

Hormones

Hormonal changes, such as during pregnancy or menopause, raises levels of glucocorticoids, which have been linked to central vision loss.

Sleep

A poor night's sleep cuts short the visual cycle, during which the sight cells are allowed to recover from the effects of daylight.

General Health

Even a simple cold can lower resistance levels and decrease the effectiveness of the immune system. And to compound the problem, side effects of certain medications can decrease visual acuity.

Environment

We become accustomed to our normal environment, to the extent that we often use our memories more than our eyesight to get around. Then, when we make a trip to an unfamiliar place, memory cannot serve us, forcing us to remember that our vision is not as good as it used to be.

Other Ophthalmic Conditions

Dry eye, cataract, inflammation, or infection can also deteriorate our eyesight. We need to consider all possible reasons for our changing vision. It may be something that can be corrected. And we must always consider the chance that an improved spectacle prescription might still help us see better.

Fear, depression, and stress are normal reactions as our eyesight diminishes, but it is helpful for us to know that some vision loss is only temporary. We must also keep in mind that, even as our sight cells gradually cease to function from the effects of the disease, AMD alone will never affect more than the center 35% of our visual field. We have an amazing ability to adapt, and almost all of our normal daily activities can still be accomplished in spite of vision loss. Remembering this, and staying in touch with good information and support, will go a long way in helping us ride the AMD roller coaster.

TALKING BOOKS

The National Library Service provides qualifying individuals a bimonthly large print catalog of recorded books and magazine at no charge.

Patrons may order talking books by contacting their local cooperating library. Contact information is online at www.loc.gov/nls/find.html.

You may also call our Resource Service Consultant, Dan Roberts, at 1-888-866-6148 to locate the library contact phone number for your state.

AUDIO NEWSLETTER

You may also listen to this newsletter online at MacularNews.org