

NEWS

Macular Degeneration Research



BETTER HEALTH THROUGH RESEARCH

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Genetic Screening Not Yet Ready for Prime Time?

Researchers say DNA tests don't successfully predict AMD risk

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It may be many years before genetics can precisely predict our risk of contracting age-related macular degeneration (AMD) or a host of other diseases, concludes new research by the University of Pittsburgh Graduate School of Public Health. The findings may put the brakes on using personalized DNA testing to gauge individuals' future health.

"Our study indicates that even though we can paint a picture of our genetic makeup with current tests, this may not be enough to help us understand our individual risk of disease," said the study's senior author, Daniel E. Weeks, Ph.D.

Dr. Weeks and his colleagues focused on diseases that have been tied to genetic variations, including AMD, type 2 diabetes, prostate cancer, cardiovascular disease and Crohn's disease. Despite these genetic correlations, the researchers were not

able to reliably predict disease, either in computer models or in real-life cases.

Current approaches to genetic testing can lead to mistakenly labeling people as high-risk even if they have no risk. Dr. Weeks recommended developing new studies that will better define the interplay between genetic and environmental factors.

"With more study, our hope is that genetic testing will benefit people and encourage positive lifestyle changes and guide clinical decisions. In the meantime, we need to take a step back and proceed with caution and allow the insights gained from these new association findings to be used to explore the basic biological causes of disease," said Dr. Weeks.

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 1-800-437-2423 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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President's Corner

No magic bullets

In the fight to end age-related macular degeneration (AMD), it can be tempting to place all our eggs in one basket, hoping that one lucky strike will carry us to our final destination.

This issue of **Macular Degeneration Research News** reminds us why it's so important to resist that temptation. A University of Pittsburgh study has found that genetic testing, as it stands now, cannot accurately predict or reduce an individual's risk for AMD.

The news is sobering, but no reason for pessimism. As scientists learn more about the interplay between genes, environment and lifestyle, they will develop ever more accurate models for gauging AMD risk.

In the meantime, significant progress is being made on any number of fronts: diagnostics, remediation, nutrition and exercise. As the old saying goes, all roads lead up the same mountain, and with the help of our supporters, Macular Degeneration Research stands ready to follow each road to its natural end point – until we reach the summit ... and a cure!



Brian K. Regan, Ph.D.

The "Dark Side" of the Retina

New imaging tool may accelerate AMD diagnosis by years

Using an imaging technique borrowed from astronomy, scientists have been able for the first time to peer into a living retina and see the near-invisible "dark cells" that safeguard light-sensing cells. The breakthrough, reported in *Investigative Ophthalmology and Visual Science*, could help doctors identify the onset of age-related macular degeneration (AMD) and other eye diseases years before symptoms emerge.

"Dark cells," known as retinal pigment epithelial, or RPE, cells, recharge the eyes photoreceptor's cells after they have been exposed to light. In AMD, for reasons still unknown, the RPE cells fail to perform this function, and both types of cells die.

"We know these dark retinal cells are compromised by macular degeneration, and now that we can image them in the living eye, we might be able to detect the disease at a much earlier stage," said David Williams, director of the Center for Visual Science at the University of Rochester.

For many years, scientists believed it was impossible to get a clear image of RPE cells. Williams and his team achieved the feat by focusing on the toxic chemicals that the cells absorb from photoreceptors.

"These nasty chemicals fluoresce — they glow just a little under the right conditions," said Williams. "It's an incredibly dim glow, but when we use adaptive optics, we can take pictures of these chemicals in individual RPE cells."

In the coming years, Williams and his team hope to piece together the process by which RPE cells begin to malfunction, obtaining a clearer picture of AMD's progression and giving doctors better tools for early diagnosis.



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.

bbb.org/charity

A Retirement Plan that Gives Back

Charitable gift annuities benefit givers and receivers alike



If you want to advance the work of Macular Degeneration Research and ensure a steady stream of income for yourself or your loved ones, you may want to consider a charitable gift annuity.

A charitable gift annuity essentially is a contract under which you transfer cash or other assets, such as stocks or bonds, to Macular Degeneration Research. In exchange, you receive a fixed sum of money, paid out over a lifetime period.

An annuity can be set-up for one or two people – for example, a husband and wife, an aunt and a niece, or a father and a daughter. Married couples often choose a charitable gift

annuity to help ensure that both spouses can enjoy an income they can rely on for life.

What do annuitants receive?

- Security of fixed payments for life;
- Flexible payments on your schedule (annual, semi-annual, quarterly or monthly);
- Income tax benefits; and
- Attractive payment rates.

For more information on this unique way of giving, contact Gayle Handiboe, Development Manager, at gandiboe@ahaf.org or 1-800-437-2423.

Thank you for thinking of Macular Degeneration Research!

Yes to Omega Fatty Acids, No to Trans Fats

Study finds new linkages between AMD and diet

A diet rich in fish, nuts and olive oil appears to reduce the likelihood of developing age-related macular degeneration (AMD), according to two Australian studies reported in *Archives of Ophthalmology*.

In one study, researchers found that one serving of fish per week lowered AMD risk by 31 percent while one to two servings of nuts per week lowered risk by 35 percent. Both fish and nuts are high in omega-three fatty acids, which scientists believe may halt the buildup of plaque in the arteries or inhibit inflammation and blood vessel growth in the retina.

An additional study found that people who eat larger amounts of trans-fatty acids, commonly found in baked and processed foods, are more likely to develop late-stage AMD. Conversely, people whose diets were most abundant in omega-three fatty acids — particularly olive oil — are at lower risk of early-stage AMD.



Log on to our website at www.ahaf.org/macular to learn more about what's new in the world of research, as well as important information about risk factors for macular degeneration.

Research Roundup

Exercise can boost your eye health

Vigorous cardiovascular exercise can significantly reduce the risk of age-related macular degeneration (AMD) and other eye diseases, say researchers with the U.S. Department of Energy's Lawrence Berkeley National Laboratory.

The researchers analyzed data for some 31,000 runners and found that, compared to people who ran less than 1.2 miles per day, people who averaged between 1.2 and 2.4 miles a day were 19 percent less likely to develop AMD, while people who ran more than 2.4 miles a day lowered their risk by 42 percent to 54 percent.

Study leader Paul Williams said that more research was needed to better understand the link between exercise and vision health.

Vitamin B and folic acid could safeguard women's vision

Taking regular supplements of vitamins B6 and B12 and folic acid appears to lower women's risk of AMD, reports a study by Brigham and Women's Hospital.

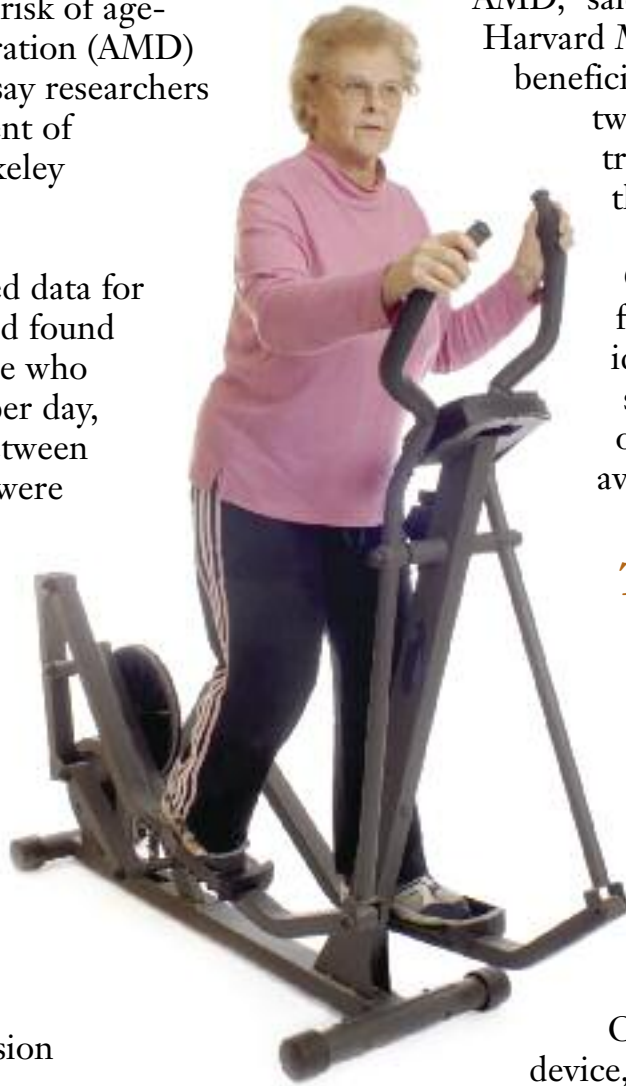
"Women taking the supplements had a 34 percent lower risk of any AMD and a 41 percent lower risk of visually significant AMD," said William G. Christen of Harvard Medical School. "The beneficial effects began approximately two years after the start of treatment and lasted throughout the trial."

Christen added that the findings "may be the first identified way — other than not smoking — to reduce the risk of AMD in individuals at an average risk."

Thumbs up for implantable telescope, down for Alcon drug program

An FDA advisory panel has recommended approval for an implantable telescope designed by VisionCare Ophthalmic Technologies. The device, said VisionCare CEO Allen W. Hill, is intended to "improve vision and quality of life for patients with untreatable, end-stage age-related macular degeneration."

In separate news, Alcon has announced it is no longer developing anecortave acetate as a treatment for lowering AMD risk. The company will continue studying the drug's usefulness in treating open-angle glaucoma.



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