Macular Degeneration Research
News
BETTER HEALTH THROUGH RESEARCH SPRING 2008

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Say Yes to Whole Wheat, No to Processed Sugar

MDR-funded researchers find that limiting refined carbs may slow AMD

Eating fewer refined carbohydrates may stall the progression of age-related macular degeneration (AMD), according to a study funded by Macular Degeneration Research.

"It is surprising there is so little attention focused on the relationship between AMD and carbohydrates," says Allen Taylor, Ph.D., director of the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University. "Dietary changes may be the most practical and cost-effective prevention method to combat progression of AMD."

The findings of Taylor and his colleagues, published in the *American Journal of Clinical Nutrition*, build on their earlier study, likewise funded by MDR, which found that men and women older than 55 who eat foods with a higher-than-average glycemic index are at greater risk of developing advanced AMD.

Glycemic index is a scale that measures how quickly carbohydrates are converted to blood sugar, or glucose. Foods like white rice, pasta and bread have a high glycemic index because they trigger a faster rise and subsequent drop in blood sugar. By contrast, whole-wheat versions of rice, pasta and bread have a low glycemic index because they produce slower and less marked variations in blood sugar levels.

"Our data showed that those people in the high-glycemic-index group were at greater risk of AMD progression, especially those already in the late stages," says researcher Chung-Jung Chiu, DDS, Ph.D. "Participants who consumed the most refined carbohydrates were 17 percent more likely to develop blinding AMD than the group that consumed the least."

AMD is currently responsible for partial or total blindness in 7 to 15 percent of our elderly population, according to the Eye Diseases Prevalence Research Group. Public health officials estimate that the number of cases of AMD-related vision loss will double to 3 million by 2020 – opening the door to a possible public health crisis.

"Based on our data," says Taylor, "limiting refined carbohydrate intake, such as by limiting sweetened drinks or exchanging white bread for whole wheat, in at-risk elderly could reduce the number of advanced AMD cases by 8 percent in five years. This can equate to saving the sight of approximately 100,000 people."

The study authors say that clinical trials will be needed to flesh out the connections between AMD and diet.

Macular Degeneration Research is a Program of the American Health Assistance Foundation
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President's Corner

Healthy body, healthy vision

We haven't found a cure for AMD — not yet — but we're getting closer. And thanks to important work sustained by Macular Degeneration Research, we're learning something every bit as important: what *we* can do to reduce our risk of contracting this awful disease or, if necessary, slow the disease in its tracks.

In this issue of **Macular Degeneration Research News**, for instance, you can read about MDR-supported scientists at Tufts University who have amassed compelling evidence that simple changes in diet can have major impacts on eye health.

This dovetails with a mounting body of research that shows the benefits of a healthy lifestyle to eyesight. When we exercise and eat the right kinds of food — when we make the choice, day in and day out, to take care of ourselves — then every part of us benefits, including our vision. A simple but powerful lesson for anyone who lives in AMD's shadow.

Brian K. Regan, Ph.D.
President

Scientists Uncover Possible New Treatment for AMD

Laboratory findings show drug reduces blood vessel growth in eye

An experimental drug called endostatin has significantly reduced or eliminated the abnormal growth of blood vessels in the eyes of laboratory rats, according to a team of scientists from Harvard University and Japan.

The findings, published in the *FASEB Journal* (Journal of the Federation of American Societies for Experimental Biology), offer the possibility of more effective treatments for AMD.

Endostatin is a naturally occurring protein found in collagen. Researchers learned that mice without this protein were about three times more likely than other mice to develop advanced AMD. By administering endostatin to these at-risk mice, researchers were able to reduce the number of abnormal blood vessels to normal levels. In mice that already had normal levels of the protein, administering endostatin shrank the number of abnormal blood vessels to virtually nothing.

"This research proves once and for all that endostatin functions as the body's own natural inhibitor of new blood vessel growth as Judah Folkman of Harvard predicted," says Gerald Weissman, editor-in-chief of the *FASEB Journal*.

Scientists have also used endostatin with cancer patients to block the abnormal blood vessels that supply blood to tumors.

Log onto our website at **www.ahaf.org** then simply 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.

The "Eyeglass Exclusion"

Older Americans with vision loss need more help from Medicare

Thanks to scientific advances, seniors with AMD and other visual impairments can now choose from an array of special eyeglasses and magnifiers to restore some of their lost vision. But if they want Medicare to cover the cost of those assistive devices, they're out of luck.

Traditionally, Medicare has not reimbursed seniors for the cost of eyeglasses, and last year, according to the *Wall Street Journal*, the Centers for Medicare and Medicaid Services affirmed that this ban on coverage applies to all devices "that use one or more lenses to aid vision or provide magnification of images for impaired vision."

To compound the problem, managed-care plans generally follow the same policy, and supplemental Medigap plans don't cover items that aren't covered by Medicare.

Moreover, as America ages, more and more seniors are developing AMD – and are consequently demanding a change in the government's policy. Advocates point out that Medicare pays for the cost of prosthetic limbs and should do the same for those who have lost eye function.

If you can't afford a prescribed low-vision aid, visit Lighthouse International at its website: www.lighthouse.org. The organization provides a list of nonprofit groups that, depending on your financial situation, can offer assistive devices at low or even no cost.

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.

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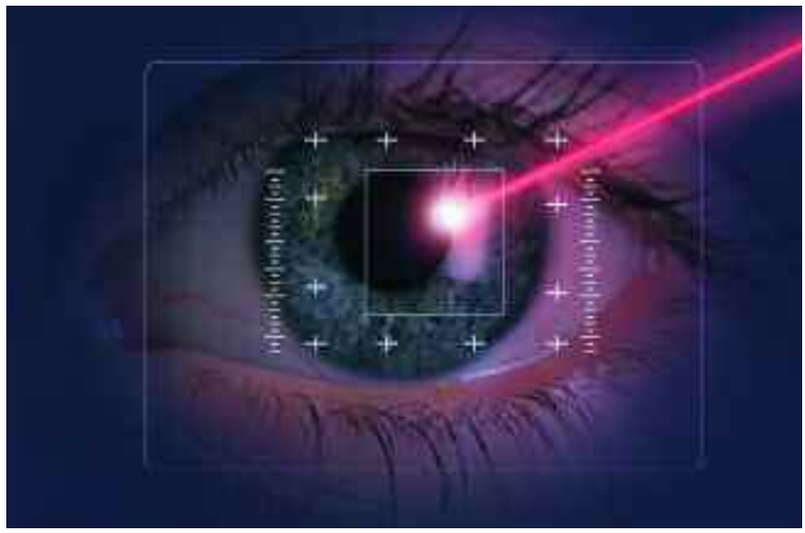
Cutting-Edge Technology Offers New Hope for the Blind

Micro-camera able to "wake up" dormant retinal cells

A camera about one-third the size of a tic tac® can be implanted directly in the human eye and connected to a damaged retina, providing limited vision for people rendered blind by AMD and other diseases, according to researchers at the University of Southern California.

Although AMD destroys the retina's photoreceptor layer, the retina's inner layers are still able to receive incoming signals and send output signals through the optic nerve to the brain's visual cortex. By electronically stimulating these cells, scientists have been able to restore some measure of vision in blind test subjects.

Building on those findings, researchers have recently begun designing retinal prostheses that can stimulate those still-functioning retinal cells. An earlier prototype was implanted in a pair of glasses, making it difficult for subjects to move their heads.



The USC prototype, because it is implanted directly in the eye, allows for more natural movements.

Although preliminary results have been promising, researchers caution that human FDA trials are at least two years away.

Gifts that Live On

Bequests allow you to leave your mark on the future

A written will is the only way to guarantee that your last wishes will be followed after your death. It is also a perfect way to honor your loved ones — and to recognize your favorite charity.

By leaving a bequest to Macular Degeneration Research, you will receive immediate and lasting recognition — and the knowledge that you are helping us fulfill our mission for future generations.

For more information on how you can include Macular Degeneration Research in your estate planning, please call Gayle Handiboe, Manager of Development, at 1-800-437-2423 or email her at ghandiboe@ahaf.org.