Researchers Study Worms to Identify Possible Cause for Macular Degeneration

Using roundworms, the University of Maryland School of Medicine researchers believe they have identified a new and distinct cause of macular degeneration. The discovery offers the potential to identify new ways to treat the disease.

“In order to find a cure for a disease, you have to fully understand what causes it, and we identified potential new contributors that were not known before,” says Bruce Vogel, PhD, Assistant Professor of Physiology and Scientist at the UMSOM’s Center for Biomedical Engineering and Technology (BioMET).

“Our findings suggest that complement factor H plays a role in maintaining the organization of photoreceptor cilia, and this process may be defective in age-related macular degeneration,” says Vogel. “We plan to continue this work to determine how this structural disruption affects vision and to determine whether we can reverse the disruption and restore photoreceptor function.”
A Reminder from Liz

Liz Trauernicht - Pres

A few easy adjustments to the living areas of a person with low vision can improve visibility and reduce the risk of an injury. Dr. Stewart Shofner of Nashville, TN shares with us 5 practical tips to assist those with low vision.

1. Lights

Make sure their home is well lit and bright with additional lamps or task lighting. Light switches that are sprayed with “glow paint” show up in the dark providing an extra measure of protection and convenience. Outdoor walkways, kitchen, bathroom and work areas all should be fully and evenly illuminated. Have flashlights nearby in case the power goes out.

2. Stairs

Mark stairs or slopes with brightly colored tape. Bright colors that contrast with the flooring work best. Handrails are imperative, even if only for a couple of steps.

3. Declutter

Remove unnecessary household clutter and be sure floors are clear and safe. Offer to help with organizing important items and packing up others to ensure items used daily are easily accessible.

4. Emergency Numbers

Create a list of important phone numbers in large print on bold-lined paper and program automatic dialing options if available. Include emergency contacts, doctors, family, and closest neighbor’s information near each phone and in the console or above the visor in every vehicle.

5. Upgrades

Suggest purchasing a large-screen television that produces high-contrast images. Ensure furniture is placed closer to the TV if upgrading is not in the budget.
Support Groups

Support is something we all need at one time or another. Human beings are social by nature and socialization is necessary for good mental health.

Likewise, trying to keep a problem locked within ourselves is difficult. It is much easier and healthier to “get it out” by talking with others, especially if they have been through the same experience. It may also result in gaining information that will furnish solutions and relieve fears.

Support groups are people who meet face-to-face, by telephone or on-line to share experiences, discuss common problems and seek solutions. Support groups have helped many work their way through the challenges of living with AMD. They are usually free, meet at convenient times, and welcome new members.

What group is best for me?

The support group best for you depends on your preferences. Some prefer simple, one-on-one conversations. Others enjoy interacting with a group. If you are computer literate, “Skype”, “Zoom” and “Chat Rooms” may be for you.

Where do I find a support group?

First, ask your eye specialist if they know of a group in your town. Second, you may call our Resource Director, Mr. Dan Roberts at 1-816-588-7747. For a complete list of local, state, national and international low vision resources, you may visit https://lowvision.preventblindness.org/resources/.
Understanding the Technical Stuff

by Keith Colgan
Macular Degeneration Foundation

The professionals we rely upon to develop treatments for conditions like macular degeneration use very big words to describe their research. We may not always know what they are talking about, but there is value in having a basic understanding of their work, being familiar with a few key terms, and knowing enough to appreciate their challenges. The following is a simplified explanation of the complement system.

We all know that our bodies have an immune system that protects us from infections. A special part of this protection is called the complement system, or just complement.

It was first identified in the late 1800’s as something in the blood of sheep that could be used in humans to treat anthrax.

Today, researchers describe it as a highly complex system that circulates in our blood waiting to be activated. When triggered, complement starts a chain reaction (known as a complement cascade) that attacks foreign and damaged cells by eating them, blowing them up, and hauling them away as waste (not a precise description, but the imagery comes close).

That’s very good news because we rely on it every day to stay healthy. Unfortunately, researchers have discovered that the complement system, which is meant to “complete” or “enhance” the immune system, has the potential to do us great harm.
How the Complement System Can Hurt Us

It is thought that the complement system may actually play a detrimental role in many diseases that involve the immune system. These include asthma, lupus, arthritis, heart disease, multiple sclerosis, the rejection of transplanted organs, Alzheimer's and macular degeneration.

Poor regulation of the complement system seems to be the problem. Scientists have good reason to believe that two of its ingredients named “factor H” and “C3” can get out-of-whack and do us harm.

Summary

The main role of complement is to recognize and facilitate the removal of waste products (like Drusen in the case of macular degeneration), dead cells, and bad things that invade the body and cause disease.

The complement system needs to be tightly regulated to avoid excessive activation.

Strong genetic links have been made between poor regulation of complement activation in the back of the eye and macular degeneration.

Scientists around the world are working hard to develop effective drugs and delivery systems to regulate the complement system. Apellis Pharmaceuticals, for example, has just submitted a New Drug Application to the US Food and Drug Administration for intra-vitreal pegcetacoplan, a targeted C3 therapy for the treatment of macular degeneration. According to their website, recent studies have provided evidence that pegcetacoplan meaningfully slows disease progression and has the potential to preserve vision longer.
Microcurrent Stimulation

Microcurrent Stimulation is the application of a small electrical current to tissues using electrodes placed on the skin. It has been used for years with FDA approval for the repair of injured soft tissues and for treating muscular-skeletal pain.

Several small studies have applied microcurrent stimulation to macular degeneration. They considered various levels of stimulation, frequencies, pulse rates and ways of applying the stimulation to the area around the eyes. Many have shown promising results with no adverse affects.

A new study in Korea, at the Korea University Ansan Hospital in Seoul, is currently underway. Study subjects will participate in the trial for 16 weeks. If determined to be safe and effective, microcurrent stimulation would be one-step closer to official approval by medical authorities.

Prozac for Dry AMD?

NIH - National Library of Medicine

An antidepressant best known as Prozac could offer the first treatment for macular degeneration according to new research from the University of Virginia School of Medicine.

UVA’s Bradley D. Gelfand, PhD, and collaborators have found early evidence that the drug fluoxetine (Prozac) may be effective against dry age-related macular degeneration. The drug has shown promise in lab tests and animal models. In addition, the researchers were encouraged by the results of examining two huge insurance databases encompassing more than 100 million Americans. That analysis concluded that patients taking fluoxetine (Prozac) were less likely to develop dry macular degeneration.

Based on their findings, the researchers are urging clinical trials to test the drug in patients with AMD. If successful, they believe the drug could be administered either orally or via a long-lasting implant in the eye.
Exclusive Online Videos Featuring World’s Leading Eye Researchers

The Macular Degeneration Foundation interviews the world’s foremost scientists, medical practitioners and inventors. Visit Eyesight.org for the latest news and register to receive an email notice when new videos are first posted.

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

The Macular Degeneration Foundation is pleased to have been invited to apply for participation in the Apellis Patient Advocacy Program.

We look forward to the association and working with organizations like Apellis Pharmaceuticals that are spear-heading the search for an effective treatment for Macular Degeneration.

Liz Traunicht
President - MD Foundation