



**Macular
Degeneration
Research**

News

FALL 2024

UNRAVELING THE MYSTERIES OF BLOOD CIRCULATION

New research highlights the vital role of blood flow in the eye's choroid, which is crucial for maintaining healthy vision. The choroid supplies oxygen and nutrients to the retina while removing waste. Despite its importance, how these tiny blood vessels regulate blood flow remains a mystery.



Albert Gonzales, PhD

Albert Gonzales, PhD, a Macular Degeneration Research grant recipient, aims to unravel this mystery.

Macular degeneration leads to central vision loss due to cell death in the macula, the area of the eye that's responsible for detailed color vision. This condition, which primarily affects older adults, is linked to protein deposits called drusen. Reduced oxygen supply and increased waste buildup in the macula may worsen the condition.

Blood flows to the choroid through tiny capillaries. Traditionally, researchers believed this flow was passive. Dr. Gonzales challenged this assumption, demonstrating that capillaries actively adjust blood flow to meet the cells' energy needs.

"We aim to demonstrate that the capillary network actively senses and responds to tissue needs," Dr. Gonzales explains.

He examines how choroidal blood flow changes in response to light. Initial results suggest certain light wavelengths reduce choroidal blood flow and encourage waste clearance. Macular degeneration could disrupt this process.

"Dysfunction in fluid movement can harm tissue function, leading to waste accumulation," he explains. "Our research could offer new perspectives on macular degeneration." Ultimately, this work might lead to drugs treating macular degeneration through the vascular system.

This kind of scientific progress is only possible thanks to your generosity.

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A variety of resources are available for people living with macular degeneration. To receive a copy of our Resource List, which has information about government programs, transportation assistance, and other special services, please call Macular Degeneration Research at 855-345-6637 or visit our website at brightfocus.org/MDRresources.

Macular Degeneration Research is a BrightFocus Foundation Program

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PRESIDENT'S CORNER

Thanks to special people like you, cutting-edge research is being conducted by scientists at the top of their field, and the frontier of science continues to expand. It is only a matter of time before the next Macular Degeneration Research-funded researcher makes the next big discovery.

In this issue, you'll learn about Dr. Albert Gonzales, who is working to understand the vital role of blood flow in the eye's choroid, which is crucial for maintaining healthy vision. You'll read about how losing your sight can affect your mental health. And you'll meet Wyncia, an artist living with macular degeneration.

We'll continue to keep you updated on the scientific studies and advancements made possible by your support of Macular Degeneration Research. Thank you!

Stacy Pagos Haller
President

AN ARTIST'S JOURNEY WITH MACULAR DEGENERATION: WYNCIA'S STORY

Eight years ago, at age 64, Wyncia was diagnosed with macular degeneration in both eyes—one dry and the other transitioning from dry to wet. This was her first age-related medical condition, and it altered her perspective on aging.

Initially terrified and fearing the worst, she bought books on Braille. However, Wyncia learned that macular degeneration can develop slowly, especially if it is detected early.

She listened to our monthly Macular Chats and learned that building a personal connection with an eye doctor is crucial, especially for those receiving shots. Wyncia is an artist, so she shared with her doctor a painting she'd made of her granddaughter to convey the importance of her vision. Although her color distinction has diminished, Wyncia continues to paint, and her works have become darker over time.

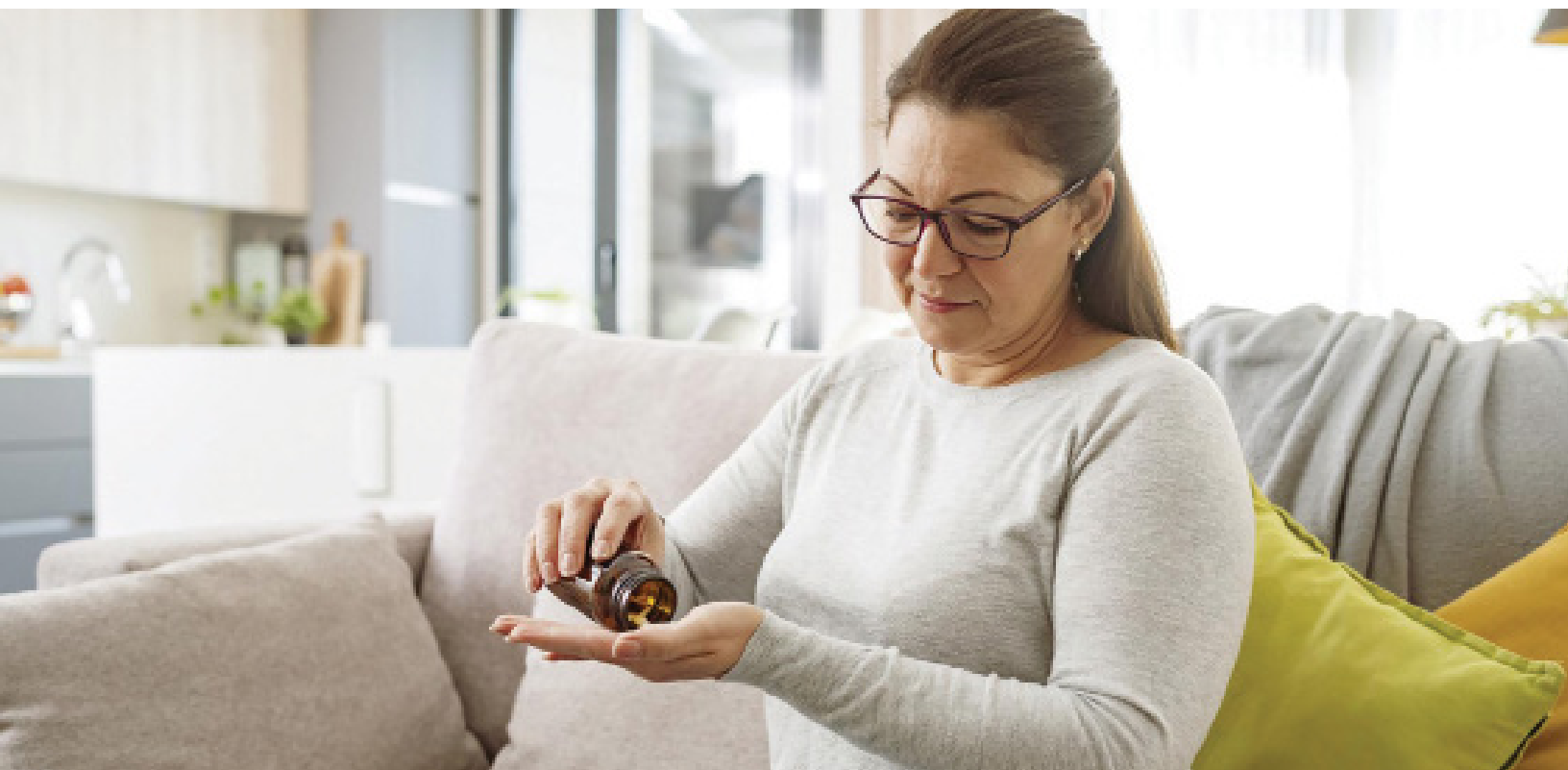
It is important to understand that macular degeneration progression varies. Instead of succumbing to fear, Wyncia recommends gathering information and staying calm. Learning about the link between high blood pressure, high blood sugar, and macular degeneration progression has been beneficial to her. And she believes raising awareness is crucial, as many people are unaware of this disease unless it runs in their family.

Fortunately, early detection and slow progression have helped maintain Wyncia's vision. And she shared her biggest tip with us: "Find community. You're not in this alone."



Early detection and slow progression have helped preserve Wyncia's vision.

Please share this newsletter with others who may be interested!



Researchers are investigating whether aspirin increases macular degeneration risk.

DOES ASPIRIN INCREASE THE RISK OF PERMANENT VISION LOSS FROM MACULAR DEGENERATION?

Aspirin is a versatile drug used to reduce pain, fever, and the risk of heart attacks or strokes. However, a 2012 study raised concerns about aspirin increasing the risk of macular degeneration.

The Beaver Dam Eye Study, which followed nearly 5,000 participants over 20 years, found a slight increase in late-stage wet macular degeneration risk in regular aspirin users. Similarly, the 2015 Blue Mountains Eye Study reported higher macular degeneration risk in older adults who used aspirin regularly. However, both studies had limitations and could not conclusively link aspirin to macular degeneration.

Contrary to these findings, two large 2019 studies from controlled clinical trials

found that aspirin had no significant impact on macular degeneration risk in over 3,600 participants.

Researchers eagerly await final study results and believe the trial can significantly advance current knowledge and provide definitive answers.

While the research is inconclusive, it appears the benefits of aspirin for cardiovascular health generally outweigh potential macular degeneration risks. Consult your doctor for personalized advice. To minimize macular degeneration risk, maintain a healthy lifestyle, avoid smoking, and eat a diet rich in leafy greens, fruits, and fatty fish.



MACULAR DEGENERATION & MENTAL HEALTH

Coping with vision loss or caring for someone who has it can be challenging. Macular degeneration is a leading cause of vision loss in Americans age 60 and older, affecting central vision needed for daily tasks.

According to the CDC, 1 in 4 adults with vision loss report anxiety or depression. Older adults with chronic conditions impacting daily activities are also at higher risk for depression. Studies show macular degeneration increases the risk of depression more than other eye diseases. While new medications have improved many lives, daily challenges persist for others.

Macular degeneration–related mental health struggles arise from diagnosis anxiety, lifestyle changes, and sharing the diagnosis. Tasks become harder, and financial stress from treatment costs adds to the burden. Support is crucial to prevent feeling isolated.

To support your mental health if you have macular degeneration:

- Learn strategies to manage vision health
- Engage in low vision therapy
- Increase physical activity and eat a nutritious diet
- Take vitamins that support vision health
- Join the macular degeneration community for shared experiences and support
- Seek mental health counseling for coping strategies

Caregivers play a vital role in reducing the mental load by assisting with daily management and being part of the person's support network. Today and every day, prioritize your mental health. You are not alone in your journey with macular degeneration.

Register for Macular



Chats

Recently diagnosed with macular degeneration? Know someone who has it? Receive helpful information from our FREE monthly phone call with doctors, researchers, and experts in the field on timely topics. You can submit questions before or during the event. Transcripts and audio recordings are available afterward on our website.

To register, call 855-345-6237 or go to brightfocus.org/MDRchats.



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Macular Degeneration Research is a program of BrightFocus Foundation, a charitable organization that complies with all 20 rigorous BBB Wise Giving Alliance Standards.

RESEARCHER SPOTLIGHT: NARENDRA PANDALA, PHD

Dr. Narendra Pandala, PhD, at the University of Iowa, has a background in chemical and biochemical engineering. His research is focused on developing innovative biomaterials and therapies for macular degeneration. It targets the early stages of macular degeneration by addressing the loss of tiny blood vessels at the back of the retina.

Macular degeneration at later stages involves damage to the retina's central part, but Dr. Pandala's team aims to intervene earlier by using adult-derived stem cells to replace deteriorating choroidal endothelial cells.

Their approach involves creating a specialized biomaterial gel for precise injection of stem cells. This gel, designed to expand after injection, includes an immunosuppressant to protect the injected cells locally, avoiding the need for systemic immunosuppressants typically required in such treatments.

The team plans to validate their biomaterial using laboratory models that mimic cell loss in the eye. Success in developing this injectable stem cell delivery system could lead to clinical applications for early macular degeneration treatment and potentially halt further disease progression.

Their work not only targets the initial vascular damage in macular degeneration, but also offers a promising avenue for future research into early disease mechanisms. Ultimately, their strategy holds promise for a novel therapeutic approach that may be effective in the early stages of macular degeneration, potentially preserving vision and improving outcomes.

Thank you for enabling critical, science-advancing research like Dr. Pandala's through your support of Macular Degeneration Research.



Narendra Pandala, PhD





WILL YOUR EMPLOYER MATCH YOUR DONATION?

Did you know you can double your donation to Macular Degeneration Research through our matching donation program?

Many companies encourage their employees to practice philanthropy by offering matching gift programs that match their donations. Gifts from employees' spouses and retirees may also qualify for a match.

Simply go to our website and enter your company's name in the search field to find out if your current or former employer (if you're a retiree) will match your gift to one of our programs. Visit brightfocus.org/workplacegiving.

We're Here to Help

If you have questions, please contact us at **855-345-6637** or info@brightfocus.org.



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