GLEAMS

A publication for the friends & colleagues of
Glaucoma Research Foundation.

GLAUCOMA
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UPCOMING EVENT

Glaucoma 360

Glaucoma 360 is a series of three days of events uniting research, industry, and philanthropy to prevent vision loss from glaucoma and speed the cure.

January 29 | **Annual Gala**
January 30 | **New Horizons Forum**
January 31 | **Glaucoma Symposia**

Westin St. Francis
San Francisco, CA

Learn more and register:
www.glaucoma360.org

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ON THE COVER: Yang Hu, MD, PhD, Catalyst for a Cure scientist at Stanford University, working to discover neuroprotective cures for glaucoma.

The Important Role of Mental Health in Glaucoma

Glaucoma — a group of eye conditions that damage the optic nerve — can lead to vision loss if left untreated. The condition may also significantly impact a person's mental health. In addition, recent studies indicate that some aspects of mental health may, in turn, have a negative effect on glaucoma.

The presence of, or the possibility of, vision impairment from glaucoma can lead to feelings of uncertainty, vulnerability, and a diminished sense of independence. It is important to recognize that such feelings are common and to discuss them with your doctor. Most people who are treated for glaucoma maintain useful vision. It is important to continue regular monitoring with your eye doctor so that changes to treatment may be made, as needed, in order to preserve your vision.

The Mental Health Impacts of Glaucoma

Depression and Anxiety

Multiple studies have highlighted the connection between glaucoma and increased risks of depression and anxiety. The reasons for the association are multifold. Vision impairment can lead to reduced independence and difficulty performing daily tasks. These challenges can affect a person's mental well-being.

Social Isolation

Vision impairment and the fear of progressive worsening can lead people who have glaucoma to withdraw from social interactions, leading to feelings of isolation. In addition, individuals may have an increased fear of accidents, further contributing to limitations in their activities.

How Stress Affects Glaucoma

Recent studies have demonstrated that short-term stress causes short-term elevation in the eye pressure of people with and without glaucoma.

In contrast, meditation and yoga have been shown to significantly lower eye pressure, and potentially help protect the optic nerve from additional damage.

The mechanisms by which stress can induce higher eye pressures include excessive release of our body's own steroids and epinephrine.

Managing the Mental Health Effects of Glaucoma

Recognizing the mental health challenges associated with glaucoma is the first step toward managing them. Helpful strategies include counseling/therapy, support groups, comprehensive care including stress management, and regular eye check-ups.

SHAN LIN, MD
Co-Director of Research, Glaucoma Research and Education Group, Glaucoma Center of San Francisco

SUNITA RADHAKRISHNAN, MD
Co-Director of Research, Glaucoma Research and Education Group, Glaucoma Center of San Francisco

FEATURED STORY CONTINUED

Counseling and Therapy

Talk therapy and counseling can be beneficial for glaucoma patients. Discussing their fears, challenges, and feelings can help patients manage their emotions better.

Support Groups

Support groups provide a platform for patients with glaucoma to share experiences and coping techniques. Knowing that you're not alone in your journey can be immensely reassuring.

Comprehensive Medical Care

Combining eye care with general health care resources including stress management strategies such as meditation and breathing techniques ensures that a patient's overall well-being is prioritized. In addition, addressing systemic health issues is helpful in maintaining both eye health and mental health.

Regular Eye Check-Ups

Regular eye examinations and treatment adherence can help slow glaucoma's progression, indirectly reducing the associated psychological distress. With early diagnosis, treatment, and careful monitoring, glaucoma can be successfully treated, preventing it from causing permanent and significant vision impairment.

GRF NEWS

Cynthia Steel, PhD Joins Glaucoma Research Foundation

In August 2025, Glaucoma Research Foundation announced the appointment of Cynthia Steel, PhD, MBA as Chief Scientific Officer (CSO). Dr. Steel's relationship with GRF spans more than a decade. She first received a Shaffer Grant for Innovative Glaucoma Research, later served as an industry partner, and most recently contributed as a member of GRF's Research Committee.

As CSO, Dr. Steel will lead GRF's scientific programs, direct research strategy, assess program impact, strengthen relationships with the global scientific community, and communicate complex research insights in accessible language for donors, patients, and stakeholders. An accomplished vision scientist specializing in trabecular meshwork cell biology, Dr. Steel has dedicated her career to translating laboratory discoveries into practical treatments for glaucoma.

"I am so excited to join the GRF team after so many years of collaborating," Dr. Steel said. "I am confident that my unique bench-to-bedside fluency will help shape GRF's scientific trajectory, and I am eager to guide its vision for the future with scientific mission-driven leadership."

Researcher Spotlight: Carla Siegfried, MD

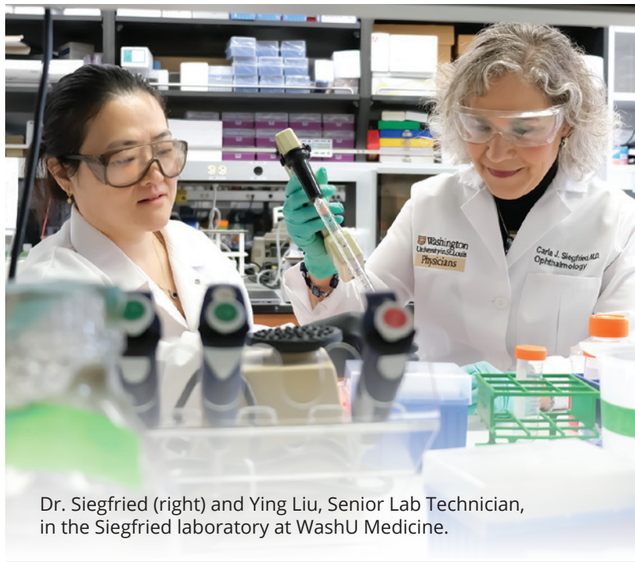
Carla Siegfried, MD started working in the field of glaucoma in the early 1990s, initially as a clinician treating glaucoma before expanding her interests to the study of glaucoma. She credits curiosity for leading her down the path of research.

Carla first became interested in glaucoma when she was a resident at University of Illinois. "I liked the long-term aspect of it. I loved the continuity of care," she told us. "It's through that long term relationship with our patients that we can really get to know our patients and help them with their journey battling this chronic disease."

She acknowledges her "incredible mentors" for motivating and inspiring her as a researcher. "Dr. Bernard Becker was the 'father of glaucoma' in the Midwest just as Dr. Shaffer was on the west coast," she said. "Dr. Becker inspired an incredible legacy of glaucoma specialists who are now spread across the country."

For her research project exploring the role of oxygen and antioxidant levels in the eye, Dr. Siegfried was awarded the 2018 Shaffer Prize for Innovative Glaucoma Research. The Shaffer Prize, presented annually by Glaucoma Research Foundation, recognizes a researcher whose project best exemplifies the pursuit of innovative ideas in the quest to better understand glaucoma.

Last year Dr. Siegfried delivered the keynote address at New Horizons Forum in San Francisco. Her topic, "Glaucoma Racial Disparities: Applying Innovation from Bench to Clinic to Community," also originated from her Shaffer Research Grant. More recently, she presented the 2025 Weston Lecture on the importance of studying racial disparities to optimize treatments for glaucoma.



Dr. Siegfried (right) and Ying Liu, Senior Lab Technician, in the Siegfried laboratory at WashU Medicine.

> "Innovative research really can move things forward. We can make things better for our patients by improving our understanding of this very complex disease."

Carla Siegfried, MD
The Jacquelyn E. & Allan E. Kolker, MD Distinguished Professor of Ophthalmology
Vice Chair for Diversity, Equity & Professionalism at Washington University in St. Louis

In Appreciation

We are incredibly grateful for the generous and loyal support from all our donors. Following is a listing of recent contributions and pledges at the $1,000 level and above. Please note these are new contributions and pledge payments between **July 1, 2025** and **October 31, 2025** and will not reflect a donor's cumulative giving for the year.

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THE POWER OF PLANNED GIVING

How Your Legacy Can Drive the Next Discovery

Imagine a world without vision loss from glaucoma. By including Glaucoma Research Foundation (GRF) in your estate plans, you can help make that vision a reality. A planned gift — through your will, trust, or retirement account — creates a legacy that fuels discoveries long into the future.

A Gift That Gives Back

Planned giving is one of the most meaningful ways to support the causes you care about — and it can also offer valuable tax advantages. By naming GRF as a beneficiary in your estate or retirement plan, you may reduce estate taxes while ensuring your legacy advances life-changing research and patient education.

Your foresight helps ensure GRF's mission endures — supporting pioneering scientists, advancing innovative treatments, and accelerating progress toward a cure for glaucoma.

The Blanche Matthias Society

The Blanche Matthias Society honors donors who have included GRF in their estate plans. It was named for Blanche Matthias, whose generous bequest more than 40 years ago helped establish the Foundation and launched a tradition of visionary philanthropy that continues to this day. Members of this special community carry forward Blanche's legacy of hope and discovery.

Fuel Discovery Through Tax-Smart Giving

There are many ways to make a lasting impact beyond your lifetime:

- **Donor-Advised Funds (DAFs):** Recommend a grant from your DAF for immediate or recurring support
- **IRA Giving (Qualified Charitable Distributions):** If you are 70½ or older, you can donate up to $108,000 per year directly from your IRA without paying income tax on the withdrawal
- **Gifts of Stock or Securities:** Contributing appreciated assets can help you avoid capital gains tax while supporting GRF's mission

To learn more about leaving a legacy or joining the Blanche Matthias Society, visit **glaucoma.org/legacy** or contact Nancy Graydon at (415) 986-3162 ext 231 or **ngraydon@glaucoma.org**.

Your legacy gift helps ensure that the discoveries we fund today will protect vision tomorrow.

TOGETHER FOR SIGHT

Bausch + Lomb and GRF Partner to Raise Glaucoma Awareness

Each January, Glaucoma Research Foundation (GRF) leads a nationwide effort to shine a light on glaucoma, the leading cause of irreversible blindness worldwide. This year marks the fourth consecutive year that GRF is partnering with Bausch + Lomb to amplify that message through our annual Glaucoma Awareness Month campaign.

Through this partnership, we're uniting innovation, compassion, and action to reach millions with a shared goal: protecting sight and empowering people to take charge of their eye health.

Your Eyes Say Thanks

The *Your Eyes Say Thanks* campaign inspires people to make eye health an essential part of self-care. The campaign features powerful patient stories, educational videos, and expert resources for people at every stage of their glaucoma journey, all available on our dedicated landing page at **glaucoma.org/your-eyes-say-thanks**

Throughout the month, GRF and Bausch + Lomb will also share important messages about early detection, treatment options, and hope for a cure.

Double Your Impact

As part of this year's campaign, Bausch + Lomb has generously funded a $25,000 matching gift challenge. Every donation made during January will be doubled, helping GRF accelerate promising research, expand education programs, and support patients and caregivers worldwide.

Your gift will go twice as far in fueling discovery, and in showing gratitude for the vision you treasure.

We're deeply grateful to Bausch + Lomb for their continued partnership and leadership in advancing glaucoma awareness and innovation.

Join us this *Glaucoma Awareness Month* by visiting **glaucoma.org/your-eyes-say-thanks** to learn more, share the message, and take part in the matching gift challenge.

Together, we can protect sight and accelerate hope.

Your Blood Pressure and Glaucoma

Is your blood pressure related to glaucoma?

In short, the answer is yes, but the relationship between blood pressure, intraocular eye pressure and glaucoma is not as obvious as you might think. Glaucoma is a complex disease resulting in the loss of nerve fibers that normally send visual signals from the eye to the brain. In most instances, glaucoma worsens when pressure inside the eye is high. Elevated intraocular pressure can injure sensitive nerve fibers, resulting in progressive and permanent vision loss.

According to the CDC, approximately half of US adults have [systemic] hypertension, or high blood pressure. This is also a complex disease process derived from pressure exerted by the blood volume itself on the vessel walls. The opposite of hypertension is called hypotension, or low blood pressure. Both [systemic] hypertension and hypotension can affect the health of your eyes. Furthermore, medical overtreatment of hypertension can lead to states of hypotension. This is particularly true while resting or sleeping, when blood pressure is naturally low. During these periods, hypotension is more common.

In patients with both glaucoma and periods of hypotension, optic nerve damage can occur.

In order to illustrate this relationship, imagine your blood vessel as a garden hose. Inside the hose is water, and the pressure exerted on the walls of the hose is determined by the flow of water from the spigot, as well as the stiffness of the hose itself. Now imagine you pinch the hose with your hands. This counter pressure is analogous to what your eyes exert back on the vessel walls. If you pinch too hard, water flow will reduce to a trickle or stop altogether. If the amount of blood flowing to your eyes is dramatically reduced, which can occur in periods of low blood pressure (hypotension) and high eye pressure (glaucoma), structures in the eye including the optic nerve can be damaged, and glaucoma can progress more rapidly. Therefore, it is important to be aware of this relationship.

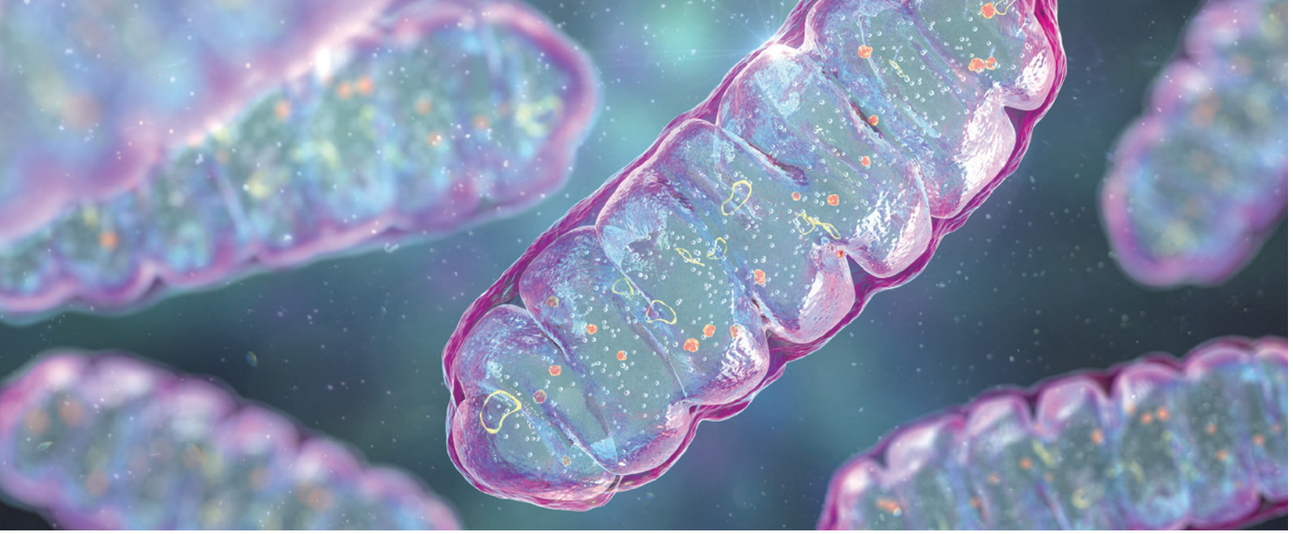
Talk with your primary care physician and your eye doctor about your glaucoma. It may be beneficial to monitor your blood pressure at times of rest such as when you first wake up. If blood pressure is too low at these times, some medications may need to be reduced or stopped. Talk to your eye doctor, as treating high eye pressure can improve the blood flow to the eye, and slow progression of glaucoma. These conversations will help optimize both your eye and overall health.

RYAN F. BLOOMQUIST MD, PHD, DMD, MBA, MPH

Clinician scientist in the Department of Ophthalmology, Medical College of Georgia, Augusta University

KATHRYN BOLLINGER MD, PHD

Glaucoma specialist in the Department of Ophthalmology, Medical College of Georgia, Augusta University



THE ENERGY CRISIS IN GLAUCOMA

Targeting Mitochondria to Save Vision

Mitochondria, the “powerhouses of the cell,” are vital for producing energy. Tissues with high energy demands, like the Retinal Ganglion Cells (RGCs) that carry visual signals from the eye to the brain, rely heavily on them.

When mitochondria fail, RGCs face an energy crisis — a key event in the early stages of glaucoma. Dysfunctional mitochondria supply less energy, produce harmful free radicals, and contribute to cell death. Additionally, an early sign is a “traffic jam” of broken mitochondria along the RGC axon, starving the cell’s far reaches for power.

This understanding has led to new treatments focused on protecting RGCs by improving mitochondrial health. Nicotinamide (Vitamin B3) shows promise in clinical trials by fueling mitochondrial energy production. However, caution is advised: the high doses used are far above the recommended daily amount, and medical experts recommend against high-dose use unless under a doctor’s supervision in a clinical trial.

Another promising approach is gene therapy targeting the NMNAT2 protein. NMNAT2 activity is much lower in early glaucoma, potentially triggering the energy crisis. Dr. Yang Hu’s team at Stanford University is developing a gene therapy to restore NMNAT2 levels directly in RGCs. This exciting work, recognized by the Glaucoma Research Foundation’s Treatment Accelerator Initiative, aims to provide significant neuroprotection.

Protecting nerve cells is the ultimate goal of glaucoma treatment. By understanding how mitochondrial failure leads to early RGC death, we can better search for a cure. Remember these treatments are based on recent research and are not yet widely available. Always discuss any changes to your current treatment plan with your doctor first.

CYNTHIA STEEL, PHD, MBA

Chief Scientific Officer,
Glaucoma Research Foundation

WHEN VISION FADES, DETERMINATION SHINES

David Chute’s Fight for a Cure

Anyone diagnosed with glaucoma understands the urgent need for better treatments and ultimately, a cure. For longtime Glaucoma Research Foundation (GRF) supporter David Chute, that urgency is deeply personal. Diagnosed with glaucoma in his 30s, David has faced the disease’s challenges head-on while channeling his expertise and entrepreneurial spirit into creating new pathways for discovery.

David’s background in eye care as an advisor for CooperVision, a global leader in contact lenses, gave him a unique perspective when he learned that his intraocular pressures were dangerously high. Despite years of treatment with eye drops and surgeries, he gradually lost vision. “It feels like I’m hanging from a rope off El Capitan and the threads are breaking,” he says. “And there are millions of other people who face the same challenge.”

Determined to make a difference for everyone living with glaucoma, David connected with Glaucoma Research Foundation to explore a powerful question: What if the process of bringing new glaucoma treatments to patients could be faster and more effective?

Working with GRF and leveraging a visionary gift from The John and Daria Barry Foundation, David helped shape the Treatment Accelerator Initiative, a program designed to bridge the gap between laboratory breakthroughs and life-changing therapies. By helping scientists overcome financial and regulatory barriers, the initiative is turning promising discoveries into real hope for patients worldwide.

Beyond his work with GRF, David has spent his career helping inventors and startups bring their ideas to life. One project especially close to his heart provides affordable eyewear to communities across Africa and South Asia, helping more than 50 million people see clearly in 2024 alone.

Through his innovation and compassion, David exemplifies what’s possible when visionaries and donors unite. Together, we’re not only accelerating research, we’re accelerating hope.

> “Research by the Catalyst for a Cure Vision Restoration Initiative has identified three exciting potential neuroprotective therapies that, for the first time, could save retinal ganglion cells from degeneration.”
>
> **David Chute**

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