We Support New Ideas

Glaucoma Research Society of Canada
News & Information

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2025 Mel Mitzel Research Excellence Award Winners

Dr. Cindy Hutnik (top left) and her team including Dr. John F. Trant, Dr. Lisa Porter and Jack Teplitsky, were the recipients of the 2025 Mel Mitzel Research Excellence Award.

This recognition is given to the grant recipient whose research project has received the highest scores from peer reviewers.

Here's a summary of their research project that won the Award:

Preventing Scarring After Glaucoma Surgery

Glaucoma surgeries often rely on creating a small drainage area called a bleb to relieve eye pressure. But after surgery, the body's healing response can cause scarring that blocks fluid drainage and threatens the success of the procedure. Doctors use a drug called Mitomycin C (MMC) to prevent scarring. While effective, MMC can damage healthy eye tissue and lead to serious complications like infection or vision loss.

Our research will explore a new, targeted approach using a special type of drug delivery system called an antibody-drug conjugate (ADC). These ADCs are designed to seek out and destroy only the cells responsible for scarring, called myofibroblasts, by recognizing a unique marker on their surface.

Dr Cindy Hutnik, Dr John F. Trant, Dr Lisa Porter, Jack Teplitsky, Western University, London, ON

President's Message

I'm pleased to let you know that the Society is having another successful year raising funds, making research grants, and increasing awareness about issues relating to glaucoma through its newsletters, website, and webinars.

I hope you were able to see Dr. Michael Balas' video presentation in June. It was made possible through the generous support of Thea Pharma Canada.

This year the GRSC awarded a total of $227,557 in grants for 13 research projects. These research grants are only possible thanks to your generous donations. Last October the Society raised $65,000 during our ***Walk for Research***. We hope to raise even more during this year's ***Walk*** which will take place on Sunday, October 26.

For your information, the audited financial statements for the year ended December 31, 2024, are on the Society's website.

We've also updated our website to make it easier for you to donate. Be sure to check out our ***How to Help – Charitable Options*** page for some giving options you may want to explore. The website has also been updated to provide more information about diagnosing, treating and dealing with glaucoma, particularly for new patients.

On behalf of the Board of Directors, I would like to invite you to attend our virtual ***Annual Supporters' Meeting*** on Wednesday, October 22 at 7 p.m. at which Dr. Ellen Zhou will present the 15th Annual Albert Waxer Lecture: ***Keeping Sight in Sight: The Critical Role of Medication Compliance.*** After her lecture, Dr. Zhou will join some of Canada's leading glaucoma specialists to answer your questions live! **Be sure to email your questions including those about eye drop & glaucoma medication use, prior to the meeting.**

We hope you can join us, but if you can't, you'll be able to watch the entire meeting on our website later.

James Parks, President

VR Device Shows Promise for Glaucoma Monitoring

A Toronto study found that glaucoma patients could reliably test their vision at home using a virtual reality device. While long-term compliance dropped over time, the home tests produced high-quality data and may help detect vision changes earlier than clinic visits.

Ophthalmology Science, March-April 2025

Gum Disease May Be Linked to Glaucoma Risk

A large Korean study found that people with periodontitis were more likely to have open-angle glaucoma, especially men, those over 40, and people with diabetes. While the exact connection isn't clear yet, the findings suggest oral health may play a role in eye health.

Journal of Glaucoma, August 2025

Join Us for Our Annual *Walk for Research* on Sunday, October 26!

*President Jim Parks walks with Board members Alfred Kwinter, Dr. Catherine Birt, and Treasurer Tom Gottlieb during our **2024 Walk for Research.***

Take part in a healthy 5K walk, connect with Society Board members and supporters, and contribute to advancing glaucoma research. **Every dollar raised goes directly to funding 2026 research project grants.**

Walk with us on the historic picturesque Toronto Belt Line Trail or in your own neighbourhood. Every step counts! The more participants we have, the more funds we can raise for crucial research.

Visit our website at www.glaucomaresearch.ca during September and October to get more details.

Not up for walking this year? You can still support the **2025 *Walk for Research*** by donating on our site.

If you have any questions, please contact Norlan Roberts, our administrator, at 416-483- 0200 or 1-877-483-0204.

ChatGPT Offers Helpful but Limited Answers

A study found that ChatGPT-3.5 gave generally accurate and coherent responses to common glaucoma questions, but experts noted gaps in detail and personalization. While useful for general information, ChatGPT isn't yet reliable enough to replace tailored advice from eye care professionals.
Ophthalmology Glaucoma, March-April 2025

Staying Active May Slow Glaucoma Progression

A long-term study found that people with glaucoma who reported higher levels of physical activity experienced slower vision loss over time. Even after accounting for disease severity, those who were more active had better outcomes. While more research is needed, this suggests that regular exercise could help protect vision in glaucoma patients.
Journal of Glaucoma, July 2025

Dr Rajiv Bindlish Answers Your Questions About Glaucoma

My doctor recommends that I switch to a preservative-free eye drops with less side-effects. Is it worth switching when I have to pay out-of-pocket for this medication?

Most medications contain preservatives that can dry out the surface of the cornea, causing a red eye and irritation. This is often why patients do not use their glaucoma medication regularly.

Preservative-free medications may result in less dry eye symptoms. If you have significant red eye, eye discomfort or ocular surface disease from using multiple glaucoma eye drops, it may be helpful to switch.

Are the OCT test and OCT angle test the same?

Optical coherence tomography (OCT) is a non-invasive imaging test that uses light waves to create detailed cross-sectional pictures of the angle, retina (macula) and optic nerve. OCT of the optic nerve and macula can help diagnose and monitor glaucoma progression.

The OCT angle test images the drain at the front of the eye and can help determine the type of glaucoma a patient may have and if certain angle-based treatments are necessary or possible. This test may not be covered in your province; however, your ophthalmologist may recommend it.

I had a trabeculectomy ten years ago and my bleb works well. But what can I do about a droopy eyelid on that eye?

An oculoplastic surgeon can do a lid lift (blepharoplasty) but there is a risk that the trabeculectomy could be exposed leading to significant complications.

You need to discuss the risks and benefits of such surgery with your glaucoma specialists prior to referral to an eye plastic surgeon.

Are you aware of any research about psychedelics helping the optic nerve?

Although there has been a lot of research about psychedelics helping with mental health issues, I'm not aware of any research on psychedelics helping the optic nerve in glaucoma.

Email Your Questions about Glaucoma to:

info@glaucomaresearch.ca

CPAP Therapy May Protect Eyes in Older Adults

Older patients using CPAP therapy for sleep apnea had lower rates of eye diseases including glaucoma, macular degeneration, and diabetic retinopathy compared to those not using CPAP. The study suggests CPAP may help reduce vision loss in seniors with sleep apnea, though more research is needed.

American Geriatrics Society Annual Meeting, May 2025

You're Invited

WEDNESDAY, OCTOBER 22, 2025 at 7pm ET

Please join us Online for our Annual Meeting of Supporters

Dr. Ellen Zhou Presents the 15th Annual Albert Waxer Lecture

Keeping Sight in Sight: The Critical Role of Medication Compliance

Daily glaucoma eye drops can help slow or prevent vision loss, but only when taken consistently. In this presentation, we will share findings from our study on patient compliance in Ontario, highlighting the factors linked to better compliance. We will also provide practical tips to support patients in staying on track with their glaucoma medications.

Dr. Ellen Zhou is a Glaucoma and Cataract Surgeon at Queen's University. She earned her undergraduate degree and completed combined MD-PhD training at McGill University. Dr. Zhou led multi-centre studies to advance understanding of patient adherence to glaucoma medications and to define the molecular signature of glaucoma. The latter earned the first prize in the 2025 Canadian Ophthalmological Society Award of Excellence.

Her research has been supported by multiple provincial and national grants, including those from Fighting Blindness Canada and the PSI Foundation of Ontario. In recognition of her research achievements and commitment to student advocacy, Dr. Zhou has been inducted into McGill University's Scarlet Key Society and awarded the Canadian Medical Hall of Fame Award. In 2024, she received the prestigious Mel Mitzel Research Excellence Award from the Glaucoma Research Society of Canada.

Following her lecture, Dr. Zhou will join some of Canada's leading glaucoma specialists to answer your questions live! Be sure to email your questions including those about eye drop & glaucoma medication use, prior to the meeting.

We hope you can join us!

To register for the 2025 Annual Supporters' Meeting, please check our website: www.glaucomaresearch.ca
or contact us at: info@glaucomaresearch.ca
(416) 483-0200 1-877-483-0804

How Your Donations Contribute to New Glaucoma Knowledge

The Glaucoma Research Society of Canada (GRSC) is the only non-profit organization in Canada exclusively dedicated to funding glaucoma research. A recent analysis examined the impact of GRSC-funded projects from 2010 to 2020, measuring their contribution to the scientific community in peer-reviewed publications and major ophthalmological conference presentations in North America.

Thanks to generous donor support, GRSC funded 135 research projects over this 11-year period, distributing a total of $2,220,822 in grants. Researchers found that:

- **62%** of funded projects resulted in at least one published, indexed scientific paper
- **50%** were presented at major national and international vision conferences
- altogether, GRSC funding led to **92 publications** and **85 conference presentations.**

The average cost to produce a single publication was $24,139.00 CAD, while the cost per conference presentation was $26,127.31 CAD. Researchers also noted a significant rise in research costs during the study period, attributed to factors such as inflation, pandemic-related disruptions, and supply shortages.

Despite these challenges, GRSC-funded research maintained a high level of output and impact, comparable to that of much larger international organizations with multimillion-dollar budgets. This impressive productivity underscores the value of GRSC supporters' contributions and their role in advancing the understanding of glaucoma.

The GRSC remains a vital force in Canadian glaucoma research, helping scientists and clinicians get closer to unraveling the disease's cause, and ultimately, to finding a cure.

(Full details of the research into the impact of 11 years of Glaucoma Research funding from the Glaucoma Research Society of Canada can be found in the June 11th, 2025 issue of the Canadian Journal of Ophthalmology titled "Impact of 11 years of glaucoma research funding: Glaucoma Research Society of Canada (2010–2020)" by authors William Herspiegel, Melina Moeinkhah, Dr. Anastasiya Vinokurtseva, Dr. Graham Trope, and Dr. Cindy Hutnik.)

Glaucoma Research Society of Canada Awarded $227,557 in Grants to 13 Research Projects in 2025

Studying Mast Cells and Glaucoma-Related Inflammation

We are exploring whether a type of immune cell called a mast cell plays a role in glaucoma by triggering inflammation in the eye. Our study will examine mast cells in donated human eyes from people who had glaucoma, comparing them to healthy eyes of similar age.

By identifying how these cells behave in different types of glaucoma, we hope to uncover new ways to treat or even prevent vision loss. If mast cells are found to drive harmful inflammation, targeting them could lead to innovative therapies that protect sight.

Dr Neeru Gupta, Dr Yeni Yucel, University of British Columbia, Vancouver, BC

Can Virtual Reality Make Glaucoma Testing Easier?

Glaucoma affects peripheral vision, so regular visual field tests are essential to track the disease. The current gold standard test uses a large machine in a clinic, which some patients find uncomfortable or hard to use.

Our study will compare a new virtual reality (VR) based visual field test, using a device called RetinaLogik, with the traditional Humphrey Field Analyzer. Researchers will test patients with early, moderate, and advanced glaucoma using both methods and ask them which one they prefer.

The goal is to see whether the VR headset can match the accuracy of the standard test while offering more comfort and flexibility. If successful, this technology could make glaucoma testing more accessible, especially for patients who have trouble with traditional equipment or need testing outside of a clinic setting.

Dr Reann Post, Dr Brennan Eadie, Dalhousie University, Halifax, NS

Predicting Who Benefits Most from Laser Treatment for Glaucoma

Some people are at risk of developing primary angle closure glaucoma (PACG), which can cause sudden and serious vision loss. They are often diagnosed in an early stage when parts of the eye's drainage angle are already narrowing.

A common preventive treatment is laser peripheral iridotomy (LPI), which creates a tiny opening in the iris to improve fluid drainage. But LPI doesn't work for everyone; some patients still go on to develop glaucoma.

This study will review and analyze data from multiple sources to identify specific measurements of the eye's structure (biometric predictors) that can help doctors determine which patients are most likely to benefit

from LPI. Factors like the shape of the iris, lens position, and angle width may help predict whether the laser treatment will successfully prevent disease progression.
Andrew Mihalache, Patrick Ji, Dr Michael Balas, Dr David Mathew, University of Toronto, Toronto, ON

Studying Glaucoma Diagnosis Age and Medication Use Across Canada

Our nationwide study will analyze data from the Canadian Health Measures Survey to better understand when people are first diagnosed with glaucoma and how they manage the condition with medications. By examining both glaucoma-specific and non-glaucoma prescriptions, the research will shed light on the overall medication burden faced by Canadians living with glaucoma.

The study will also explore how factors like age, income, education, and eye health indicators relate to diagnosis age and treatment patterns. These insights will help identify gaps in early detection and guide future public health strategies, including policies around government-funded eye exams.
Dr Yaping Jin, Dr Yvonne Buys, Dr Ziad Butty, University of Toronto, Toronto, ON

Tracking Glaucoma Medication Use in Ontario

In glaucoma care, sticking to prescribed eye drop treatments is essential to prevent vision loss. Yet many patients stop using their medications within months of starting. In the first phase of our study, we analyzed data from over 74,000 Ontarians to understand how consistently patients used their glaucoma medications over a two-year period. We found that factors like sex and socioeconomic status influenced whether patients stayed on treatment.

In the next phase of this research, we will dig deeper to identify what drives long-term medication use, known as persistence, especially among older adults. By linking data from 31 health databases, we'll explore how hospital stays, coexisting health conditions, and other social and medical factors affect whether patients continue their glaucoma therapy.
Dr Matthew Schlenker, Dr Ellen Tianwei Zhou, Trillium Health Partners, Institute for Better Health, Mississauga, ON

Research Grant Renewal

Comparing Health Education & Meditation for Patients with Irreversible Age-Related Vision Loss & Their Caregivers

One out of every four Canadians aged 75 and older will experience irreversible age-related vision loss (IARVL). This condition impacts their ability to care for themselves, requiring support from caregivers. Alas, caregiving often leads to high stress and anxiety levels among caregivers.

IARVL is linked to elevated inflammation and cortisol dysregulation, which can harm the vascular and sympathetic nervous systems. Nervous system damage may contribute to conditions like glaucoma and optic neuropathy, which can lead to complete vision

loss. However, mind-body interventions, such as meditation, can trigger a relaxation response that reduces stress and enhances overall quality of life.

This study will assess the feasibility of providing meditation to glaucoma patients with IARVL and their caregivers.

It will also investigate whether meditation improves health-related quality of life, reduces depression and anxiety, enhances sleep quality, and lessens caregiver burden when compared to a health enhancement program.

Dr Monali Malvankar, Dr Cindy M. Hutnik, Western University, London, ON

Using Artificial Intelligence to Predict Vision Loss in Glaucoma

Glaucoma often progresses quietly, with vision loss becoming noticeable only after significant damage has occurred. That's why early detection and personalized care are so important.

But predicting how quickly a patient's vision will decline is difficult, since the disease behaves differently depending on factors like age, sex, and initial eye health.

Our study will use artificial intelligence (AI) to tackle that challenge. We are developing a machine learning model that can analyze a patient's first visual field test, along with basic information like age and sex, to predict how their vision might change over time.

By spotting patterns that traditional methods might miss, this AI tool could help doctors identify high-risk patients earlier and tailor treatment to slow or prevent vision loss.

Shayaan Kaleem, Dr Matthew Schlenker, University of Toronto, Toronto, ON

Enhancing Glaucoma Surgery with Amniotic Membrane

Glaucoma surgery often involves implanting a tiny device called the PreserFlo MicroShunt to help drain fluid and lower eye pressure. However, scar tissue can sometimes form around the device, reducing its effectiveness and leading to the need for additional treatments or surgeries.

Our study will test whether covering the MicroShunt with an amniotic membrane, a tissue known for its healing properties, can improve surgical outcomes. We believe the membrane may help prevent scarring and device failure by blocking certain cells that cause inflammation and fibrosis. If successful, this approach could make glaucoma surgery safer and more effective, reducing the need for extra medications or follow-up procedures.

Dr Lesya Shuba, Gurkaran Sarohia, Dr Marcelo Nicolela, Dr Brennan Eadie, Devin Betsch, Dalhousie University, Halifax, NS

Comparing Eye Drop Treatments for Glaucoma

This study will examine how different types of glaucoma eye drops affect the surface of the eye. Researchers will compare patients using preserved prostaglandin analogue (PGA) drops, those containing chemical preservatives, with those using preservative-free versions. The

goal is to find out which type causes fewer symptoms of ocular surface disease (OSD), such as dryness, irritation, and discomfort.

By measuring both clinical signs (like tear quality and corneal health) and patient-reported symptoms, the study hopes to guide doctors in choosing the best treatment for each patient. If preservative-free drops are found to be gentler on the eyes, this could lead to more personalized care and better long-term outcomes for people with glaucoma.
Xiang (Patrick) Ji, Xiaole Li, Andrew Mihalache, Dr Michael Balas, Dr David Mathew, University of Toronto, Toronto, ON

A New Approach to Regenerating the Optic Nerve

Glaucoma causes irreversible damage to the optic nerve, leading to the death of retinal ganglion cells. Once these cells are lost, the adult brain can't regrow their connections, making vision loss permanent. But researchers have discovered a promising new approach.

Two proteins in the brain, ALK and LTK, normally act as brakes on nerve growth. By blocking these proteins in lab-grown neurons and in mice with optic nerve injuries, scientists were able to restart nerve growth, allowing damaged cells to regrow their axons and reconnect with the brain.

This breakthrough suggests that drugs targeting ALK and LTK could help regenerate the optic nerve after injury, offering a potential new treatment for glaucoma and other neurodegenerative eye diseases.
Dr Liliana Attisano, Dr Philippe Monnier, University of Toronto, Toronto, ON

Research Grant Renewal

Enhancing Quality of Life Through Meditation and Breathing Exercises

Glaucoma patients often experience a reduced quality of life due to the stress associated with vision loss. Research has shown that practicing meditation and engaging in breathing exercises can alleviate stress and enhance overall well-being for many glaucoma patients.

With this grant, the team will continue their research with a feasibility study. Participants in the randomized controlled trial will complete 12 weeks of breathing exercises followed by meditation, facilitated virtually by experienced instructors. The study will analyze data collected after in-person follow-up clinic visits at the Ivey Eye Institute at Western University.
Dr Monali Malvankar, Dr Cindy M. Hutnik, Western University, London ON

Untangling the Effects of Diabetes on Glaucoma Monitoring

Diabetes can double the risk of developing glaucoma. In people with diabetic retinopathy (DR), fluid can leak into the retina and cause swelling known as diabetic macular edema (DME). This swelling thickens parts of the retina and can interfere with how doctors track glaucoma progression.

Usually, eye specialists monitor glaucoma by measuring the thickness of the retinal nerve fiber layer (RNFL). But in patients with DME, this layer may appear artificially

thick, making it harder to detect damage from glaucoma.

Our study explores whether another measurement, called the minimum rim width (MRW), could be a more reliable tool for tracking glaucoma in patients with both DR and DME. MRW reflects the thickness of the neuroretinal rim around the optic nerve and is located farther from the swollen macula, so it's less affected by retinal swelling.
Sung Uk Baik, Dr Balwantray Chauhan, Dalhousie University, Halifax, NS

Glaucoma Progression May Impact Driving Skills

In a driving simulation study, glaucoma patients with faster vision loss showed slower reaction times when responding to visual cues. This suggests that worsening visual fields may affect divided attention tasks while driving, potentially increasing safety risks.
Translational Vision Science & Technology, April 2025

Atrial Fibrillation May Speed Up Vision Loss

People with glaucoma who later developed atrial fibrillation (AFib) lost vision faster than those without the heart rhythm disorder, according to a long-term study. The findings suggest that AFib and other cardiovascular issues may worsen glaucoma independently of eye pressure. Managing heart health might be important to protect vision in glaucoma patients.
Journal of Glaucoma, December 2024

Glaucoma Linked to Higher Fracture Risk

A large analysis found that people with glaucoma, especially those with mild to moderate vision loss, face a significantly higher risk of fractures. The findings highlight the importance of falls' prevention and patient education to protect bone health in glaucoma patients.
Journal of Glaucoma, August 2025

Study Links Frailty and Increased Glaucoma Risk

A recent study found an association between frailty and increased glaucoma risk among middle-aged and older adults. The study emphasizes the importance of glaucoma screening for frail individuals and suggests that targeted healthcare strategies may help prevent or delay irreversible vision loss in this group. –
Ophthalmology Glaucoma, Jan-Feb 2025

Exposure to Air Pollution May Increase Glaucoma Risk

Using data from over 480,000 participants in the UK Biobank cohort, investigators report that higher exposure to fine particulate matter (PM2.5) seems to be linked to an increased risk of glaucoma. These findings highlight the public health impact of air pollution on possible glaucoma risk and underscore the need for further research into environmental interventions. –
Investigative Ophthalmology & Visual Science, October 2024

Legacy Gifts: Benefits of Including the Glaucoma Research Society of Canada in Your Will

Making a difference: Naming the Glaucoma Research Society of Canada (GRSC) as a beneficiary in your will, life insurance policy or retirement savings plan can help pay for research into finding a cure for glaucoma, the leading cause of irreversible blindness.

Tax benefits: Leaving a donation of stocks, bonds or cash in your will to the GRSC will bring your estate significant tax savings.

Simplicity & Flexibility: Naming the GRSC in your will can be easy with the help of a lawyer and will give you the chance to choose how to make your gift (e.g. whether to donate cash, securities, etc.)

Honouring a loved one: Some people name the GRSC in their will as a way to honour a loved one who suffered from glaucoma.

Encouraging others to do the same: By naming the GRSC in your will, you can also inspire others to do the same, helping to build a culture of philanthropy and giving.

Providing for the future: Making a bequest can help to ensure that the GRSC will continue to be able to fund this vital research. **Please discuss the best plans with your loved ones.** If you've already left a gift to the GRSC in your will or if you are thinking of doing so, please reach out to let us know or to discuss it further. Our contact information is adjacent, and if you prefer, we can put you in touch with our **Legacy Gifts Consultant, Martin Chasson, CA, CPA. Ask our office for details or consult your tax advisor.**

Contact Us at the Glaucoma Research Society of Canada

phone:
416-483-0200
1-877-483-0204 (toll-free)

e-mail:
info@glaucomaresearch.ca

mail:
1929 Bayview Avenue, Suite 215E
Toronto, ON M4G 3E8

website: www.glaucomaresearch.ca