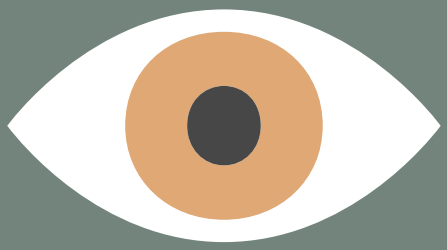
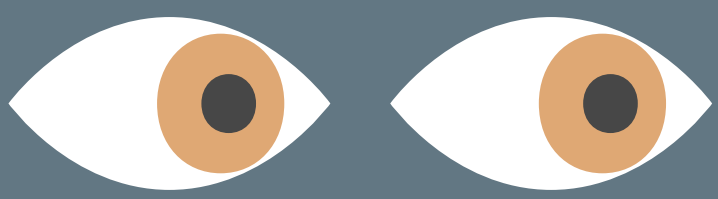
OPHTHALMIC OUTLOOK GROUP SURVEY



INSIGHTS & TRENDS

Glaucoma

by Ike K. Ahmed, MD, FRCSC



FUNDINGSLAND GROUP

Glaucoma

Glaucoma treatment encompasses a range of options designed to control disease progression and protect vision. Common approaches include medications to lower intraocular pressure (IOP), selective laser trabeculoplasty (SLT), and surgical interventions. These treatment options allow a personalized strategy that aligns with each patient's specific condition and needs.

We'll review data from the 2024 Ophthalmic Outlook Group Survey to gain insights into the clinical practice patterns and opinions of US ophthalmologists as they relate to glaucoma diagnosis and treatment.

Diagnosing Glaucoma

According to survey respondents, the top four tools for diagnosing glaucoma beyond IOP were retinal nerve fiber layer analysis with optical coherence tomography (OCT), visual field testing, and gonioscopy (**Figure 1**). Diagnosing glaucoma requires a multimodal approach, and these tools complement each other to provide a comprehensive assessment. Gonioscopy helps determine whether the angle is open or closed, OCT provides structural insights, pachymetry assesses the risk of glaucoma progression, and visual field testing evaluates functional loss. Current practice guidelines emphasize the importance of using all four tools in glaucoma diagnosis. While it's encouraging that most respondents use them, ideally 100% should be utilizing these essential diagnostic methods.

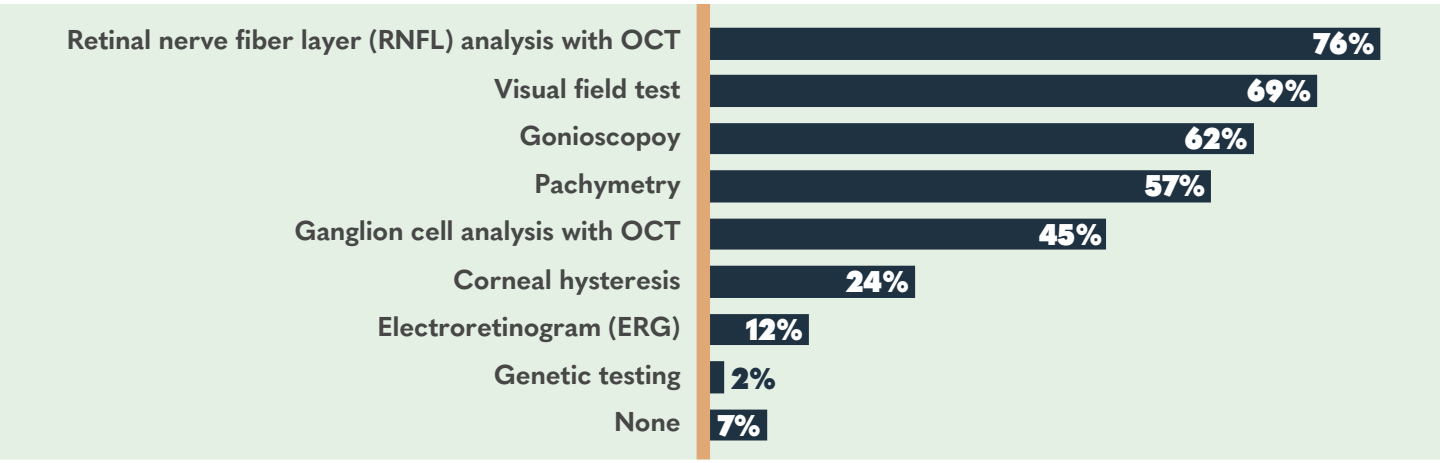


FIGURE 1. ***Beyond IOP, which of the following do you primarily use to diagnose early-stage glaucoma?*** *(Select all that apply.)*

Choice and Timing of Treatment

Medications are the most common first-line treatment used by survey respondents for newly diagnosed glaucoma (**Figure 2**). More notably, only 30% of respondents reported using SLT as a first-line treatment.[1-7] I would have expected this figure to be reversed, with SLT at 60% and medications at 30%. There's certainly enough data to support SLT as a first-line treatment, and I anticipate its usage will increase. However, I believe the lower adoption rate is likely due to limited access to SLT lasers along with other operational challenges.

The survey revealed that, on average, 19% of patients who were prescribed more than two medications to control their glaucoma are non-compliant. This result is surprising, as the literature consistently reports much higher non-compliance rates, often closer to 70 to 80%. Practitioners may overestimate their own patients' compliance, but objective data—whether through pharmacy refill records or electronic monitoring—consistently shows that adherence is typically poor.

The widespread overestimation of adherence rates must addressed. It may also explain why 60% of respondents rely on medications as their primary treatment method. There's a lot of confidence in medication, yet poor compliance puts patients at risk for disease progression. This is a significant issue. These patients are likely to experience further deterioration, while those who remain stable may not need as much intervention.

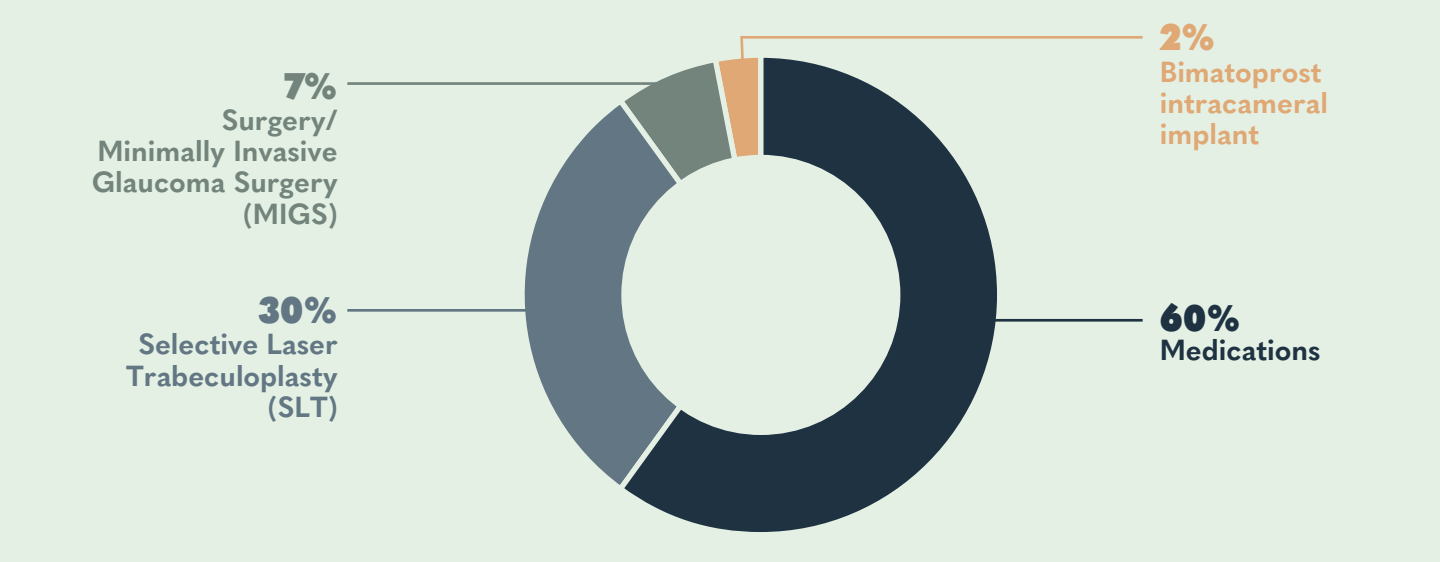


FIGURE 2. ***What is your typical first-line therapy for newly diagnosed glaucoma?***

1. *Gazzard, G., Konstantakopoulou, E., Garway-Heath, D., Garg, A., Vickerstaff, V., Hunter, R., ... & Zhu, H. (2019). Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial. The Lancet, 393(10180), 1505-1516.*
2. *Katz LJ, Steinmann WC, Kabir A, et al. Selective laser trabeculoplasty versus medical therapy as initial treatment of glaucoma: a prospective, randomized trial. J Glaucoma. 2012;21(7):460-468.*
3. *Katz LJ, Steinmann WC, Kabir A, et al; SLT/Med Study Group. Selective laser trabeculoplasty versus medical therapy as initial treatment of glaucoma: a prospective, randomized trial. J Glaucoma. 2012;21(7):460-468.*
4. *Freitas AL, Ushida M, Almeida I, et al. Selective laser trabeculoplasty as an initial treatment option for open-angle glaucoma. Arq Bras Oftalmol. 2016;79(6):417-421.*
5. *Alvarado JA, Iguchi R, Martinez J, et al. Similar effects of SLT and prostaglandin analogs on the permeability of cultured Schlemm canal cells. Am J Ophthalmol. 2010;150(2):254-264.*
6. *Nagar M, Ogunyomade A, O'Brart DP, et al. A randomised, prospective study comparing SLT with latanoprost for the control of intraocular pressure in ocular hypertension and open angle glaucoma. Br J Ophthalmol. 2005;89(11):1413-1417.*
7. *Kadasi LM, Wagdi S, Miller KV. Selective laser trabeculoplasty as primary treatment for open-angle glaucoma. R I Med J. 2013;99(6):22-25.*

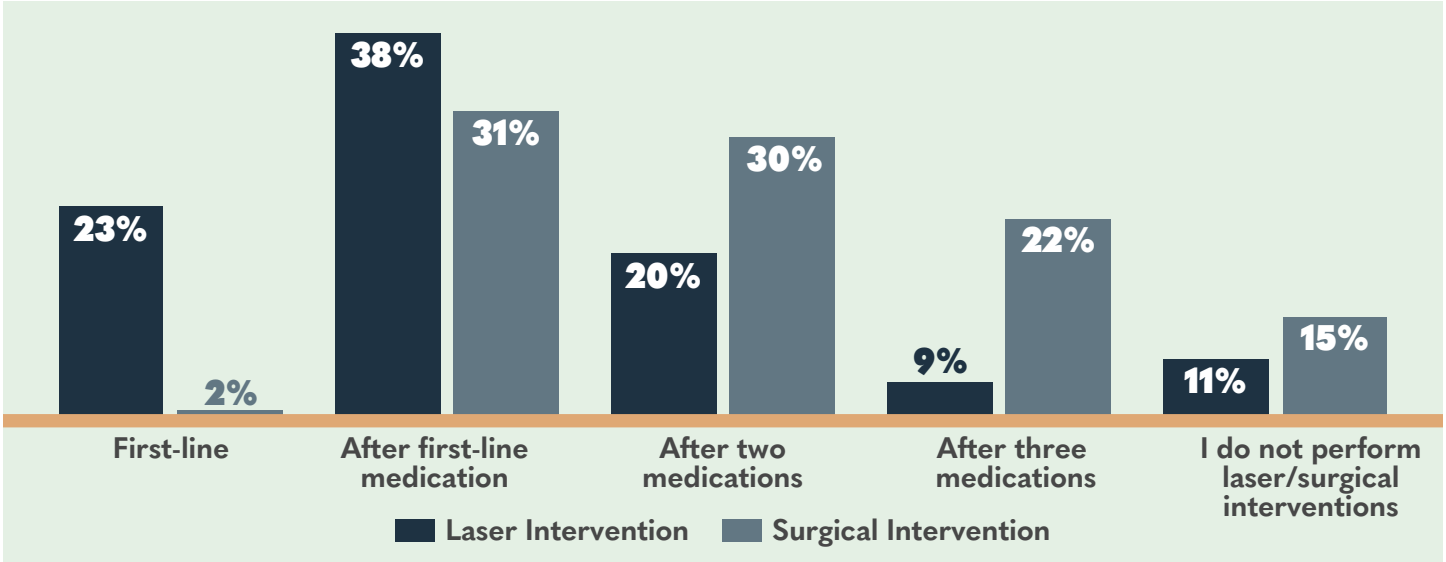


FIGURE 3. ***When do you usually initiate surgical/laser intervention for your glaucoma patients?***

Timing of Glaucoma Surgery

The earlier data focused on first-line treatments, but we recognize that initial treatments don't always deliver the desired results. This requires a shift to alternative approaches. **Figure 3** shows that respondents are far more likely to use laser inventions as a first-line or after a first-line approach. Additionally, respondents typically turn to surgical interventions after two to three medications. Expanding on this, a separate question found that 39% of respondents agree or strongly agree that surgery should be a last resort for managing mild-to-moderate glaucoma.

Any discussion of whether surgery should truly be treated as a last resort option requires nuance. It is generally advisable to exhaust medications and laser treatment before considering surgery. The exception, however, is when glaucoma surgery can be performed concurrently to cataract surgery. While it is worth trying other treatments first, we don't want to treat glaucoma surgery with the negative connotation conveyed by the phrase "last resort". Secondly, it's important to note how the definition of "last resort" has evolved. Previously, it might have meant trying four or five medications, but now it's recognized that more than two medications often provide limited benefit in pressure control, and surgery should be considered.

"After two medications, additional medications often provide limited benefit in pressure control, and surgery should be considered."

– Ike K. Ahmed, MD, FRCSC

MIGS Candidacy and Usage

On average, respondents believe that 16% of their cataract patients with clinically significant glaucoma are candidates for MIGS procedures. Interestingly, respondents report on average that they performed MIGS in a higher percentage of patients, 26%, though this may be explained by the interpretation of the question and the distribution of response options. Regardless, these numbers seem more aligned with the percentage of total cataract patients who are MIGS candidates, rather than just those with glaucoma. I would have expected the majority of patients with concomitant glaucoma and cataracts to be MIGS candidates

This raises the question of what defines a good MIGS candidate. Some patients with very mild glaucoma, who are on one medication might be viewed as not needing MIGS, although the data supports its use even for these patients due to the benefits of medication-free pressure control, stable visual fields, and potentially avoiding secondary surgeries. On the other hand, patients with more advanced glaucoma who may require more aggressive interventions, making them unsuitable for MIGS. Still, the majority of cataract patients with glaucoma are likely good candidates for MIGS. I hope this perspective becomes more widely adopted.

I believe that the biggest barriers to MIGS are learning curve and training and how to initiate conversations with patients. As those barriers are addressed directly and comfort with the procedures increases, we should see an uptick in both the percentage of patients who are seen as candidates and the usage of the procedure itself.

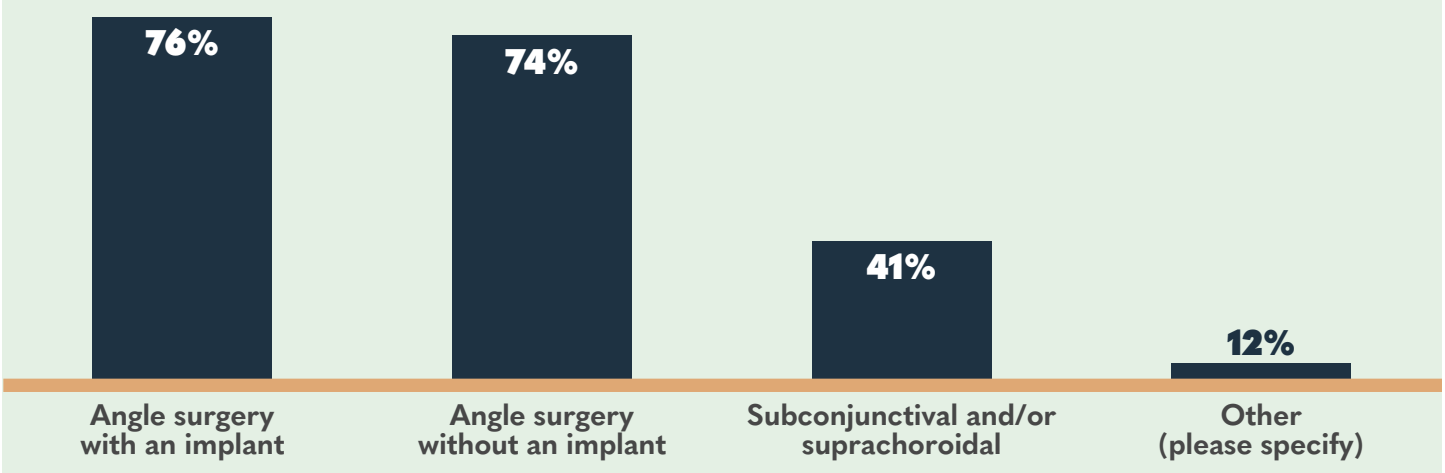
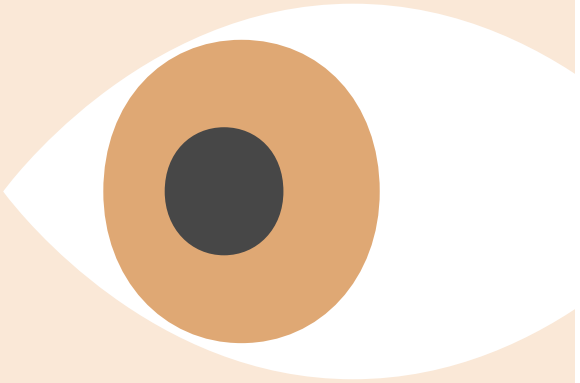


FIGURE 4. ***Which MIGS procedure do you perform?*** *(Select all that apply.)*

Angle Surgery vs Subconjunctival and Suprachoroidal Surgery

As shown in **Figure 4**, the most common MIGS procedures were angle surgeries, with or without an implant, followed by subconjunctival and/or suprachoroidal procedures (minimally invasive bleb surgery; MIBS). This distribution aligns well with patient candidacy for these procedures. MIGS is more suitable for patients with less advanced or moderate glaucoma, who represent a larger portion of the patient population. On the other hand, MIBS carries a higher risk profile and is typically reserved for patients with more advanced, aggressive glaucoma, where the potential benefits justify the increased risk. Unsurprisingly, the survey also revealed lower levels of confidence with subconjunctival and/or suprachoroidal surgery compared to angle surgery.

DID YOU KNOW?



35
number of patients per month considered as having glaucoma

19%
of cataract surgery patients are believed to have glaucoma

22
average number of MIGS procedures performed each year

19%
of glaucoma patients on two or more medications are believed to NOT be compliant

OPHTHALMIC OUTLOOK GROUP SURVEY

The Ophthalmic Outlook Group (OOG) Survey was launched in February 2024. The survey included 141 questions developed and reviewed with the OTDG leadership board. The survey questions explored doctors' understanding and current practice patterns across a number of areas of ophthalmic care, including cataract surgery, presbyopia, astigmatism, corneal disease, ocular surface disease, eyelid margin disease, glaucoma, corneal- and lens-based refractive surgery, and retina.

Nearly 200 optometrists responded to the survey which was closed in mid-April 2024. You can access interpretive reports on additional OOG topics as they are released by visiting oog.tfgeducation.com or scanning the QR code.

Meet the Board

IKE K. AHMED
MD, FRCSC

ZAINA AL-MOHTASEB
MD

ASHLEY BRISSETTE
MD, MSC, FRCSC

J MORGAN MICHELETTI
MD, FACS

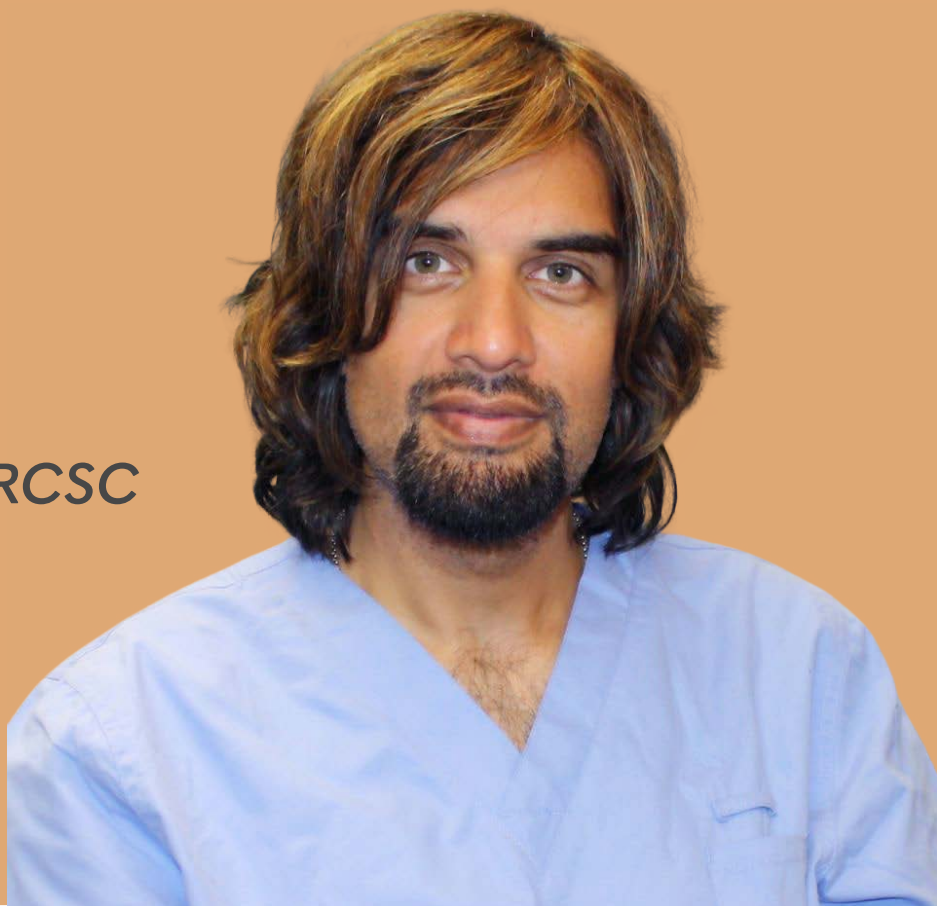
LISA NIJM
MD, JD

RISHI SINGH
MD

DAGNY ZHU
MD

Meet the Author

Ike K. Ahmed, MD, FRCSC



Dr. Ahmed is a fellowship-trained glaucoma, cataract, and anterior segment surgeon with clinical and research focuses on managing glaucoma, complex cataracts, and intraocular lens complications. He is an Assistant Professor and Director of the Glaucoma and Advanced Anterior Surgical Fellowship at the University of Toronto, Canada, and has a clinical practice at the Eye Center and serves as the Director of the Alan S. Crandall Center for Glaucoma Innovation, both in Salt Lake City, UT.

Dr. Ahmed has developed advanced microsurgical devices and techniques in glaucoma surgery and complicated cataract extraction and is actively involved in research and medical education at a national and international level. He has received research grants to study various topics related to glaucoma such as medications, laser and surgical devices/techniques, angle closure, and imagingas well as cataract surgical techniques and devices and intraocular lens designs.

He has done pioneering work in innovative glaucoma surgery, developing and coining the term "Microinvasive Glaucoma Surgery (MIGS)" as a new genre of surgical approaches and devices. He also performed the first laser cataract surgery in Canada. He has received numerous awards and in 2024 *The Ophthalmologist* magazine Power List named Dr. Ahmed the most influential ophthalmologist worldwide.