Glaucoma Australia
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Glaucoma News

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Our vision is for Australians to be free of glaucoma blindness

Glaucoma and Driving

Written by Dr David Wechsler

The important issue of driving in patients with Glaucoma comes up often. Most of us drive all the time without thinking too much about it, and for most people it is very difficult to go about our daily lives without it.

The fact that Glaucoma is asymptomatic until late in the disease means people can have serious visual impairment which puts them at increased risk of a car accident without actually being aware of it.

Blind spots ("scotomas") in the vision caused by Glaucoma are initially asymptomatic because our brains 'fill in the gaps'.

For those familiar with looking at visual field printouts which show blind spots as black patches, this is not what the patient actually sees.

What the patient actually sees is what they think is a view of the world as they normally would, but certain objects within that visual field are missing or not seen.

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From the CEO

Dear friends and supporters,

It is my privilege to share our April edition of *Glaucoma News*, filled with interesting and valuable articles to keep you on top of the latest glaucoma updates and developments.

Our cover story on Glaucoma and Driving is written by Ophthalmologist and glaucoma specialist Dr David Wechsler who is also a board member for Glaucoma Australia.

Our team was kept busy during World Glaucoma Week (8 - 14 March) ramping up awareness and education efforts.

Our special line-up of speakers included Specsavers optometrist Nihaama Narayanan, from Specsavers Ballarat, who discussed the importance of early detection. I also shared our developing National Action Plan and what this means for Australians living with glaucoma and the eye health sector more broadly.

Demand for our SiGHTWiSE services continues to grow, keeping our 3 Orthoptists Natasha, Valerie and Lauren busy providing support and helping people understand their diagnosis and treatment plan.

I encourage you to reach out to them on 1800 500 880 as you navigate life with glaucoma and the changes it may bring.

Our services would not be available without the generosity of our donors, partners and supporters. We are deeply grateful.

Sincerely,

Adam Check
Chief Executive Officer

Cover Story

Glaucoma and Driving

Continued from page 1

If the blind spots from the corresponding parts of the vision in each eye overlap, then this can cause a blind spot even with both eyes open. This has been shown to increase the risk of collisions on the road.

The levels that are currently required for driving are set out in Austroads National guidelines ("Assessing fitness to Drive"). The guidelines are quite detailed (260 odd pages!) and are available online. https://austroads.gov.au/drivers-and-vehicles/assessing-fitness-to-drive.

This is reviewed from time to time by a panel of experts, and the latest version was released in 2022. Glaucoma Australia made a submission on behalf of Glaucoma patients at the time the guidelines were up for public consultation. These guidelines stipulate all conditions for driving, and there is a dedicated section on vision.

The act of driving is a complex set of behaviours that we perform automatically. For some people with glaucoma, the ability to 'see something out of the corner of your eye' which could prevent you from having an accident may be lacking.

Commercial drivers are subject to different regulations compared to those holding a private licence.

For private licence holders, the vision requirements for driving are:

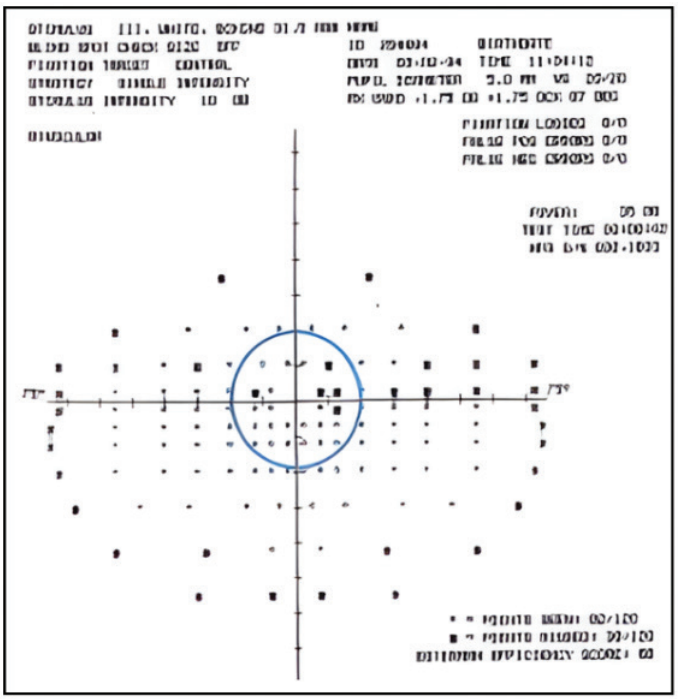
- Visual acuity of 6/12 or better with both eyes open (with or without glasses)
- Visual field of at least 110 degrees in horizontal extent
- No 'unacceptable scotoma' (cluster of 4 or more points) within the central 20 degrees of vision

- No significant double vision

The Esterman test is used to assess the visual field for driving. This is a specific setting on the visual field machine and is performed with **both eyes open**. It's important to note that this differs from the standard visual field test commonly used to assess glaucoma, which typically tests each eye separately.

If you need a visual assessment for your driver's licence and forms completed, it's a good idea to let your eye care provider know in advance, as this may require an additional visual field test.

Here is an example of an Esterman test done for driving. We have marked the area showing how far the horizontal vision needs to reach, as well as the central area where large blind spots are not allowed.



In this case, the patient's horizontal field was 110 degrees, but they did not meet the vision requirements because of a large blind spot within the central 20 degrees when tested with both eyes open.

The current guidelines stipulate the Esterman test be used in visual field assessment. While no system is perfect it provides a reliable, standardised way to assess whether someone meets the legal vision requirements for driving.

It focuses on the parts of the visual field most important for safe driving, particularly the ability to detect hazards and see to the sides while looking straight ahead.

Understandably, it can be very difficult for patients who don't meet these requirements. Being told you are unfit to drive can be upsetting and confronting, especially when it affects your independence. It's helpful to know that clinicians aren't judging you or your driving ability. Instead, we use clear, objective guidelines to check if your vision meets the safety standards needed for driving as determined by the licencing authorities.

In some cases, it may be helpful to voluntarily raise any vision concerns that could impact on your driving. Doing so early can help manage expectations and may allow for a smoother transition, rather than facing a sudden and unexpected outcome.

That said, it's not uncommon for patients to be unaware of their responsibility to report vision issues to the driver licensing authority, even though there is a legal obligation to do so in many regions, including NSW. Other states also have mandatory reporting obligations on practitioners.

Some common misconceptions and frequently asked questions:

1. Do different states have different rules with regards to vision and driving?

No - the Austroads guidelines apply and are the same across all states and territories. However, because licenses are issued by the individual states, the **process** for how these rules are assessed may differ in each state.

For example, in NSW everyone aged 75 and over receives a letter each year asking them to have medical certification that they are fit to drive.

This can be done by their GP, who handles the general medical clearance. However, a special vision section on the form can be completed by an Ophthalmologist or Optometrist if the GP has insufficient information to assess vision.

Additionally, **anyone with an eye condition (like glaucoma) must declare it when renewing their licence**. If they do, they'll need a medical review every two years, even if they're under 75.

2. How come someone can drive with only one eye, and I have two eyes but still don't meet the requirements?

Someone with one healthy eye can still meet the vision requirements for driving. That's because one eye on its own can usually see clearly and has a wide enough field of vision.

It's a common misunderstanding that each eye only sees one side - left eye sees left, right eye sees right. In reality, each eye sees most of the visual field, with a large overlap in the middle.

If one eye is lost but the other is healthy, the person will still see almost everything, except for a small missing area on the far edge, on the side of the blind eye.

With glaucoma, the problem is different. Even when both eyes are open, vision can be worse if the glaucoma is advanced than someone with just one healthy eye.

That's because the areas of vision loss in each eye can overlap, creating bigger blind spots in the overall field of vision.

3. How come I can read the chart perfectly and not be fit to drive?

Being able to read the chart tests **visual acuity** - that's your sharp, central vision used for reading and seeing fine detail. But that's only one part of what's needed for safe driving.

Glaucoma usually affects your **peripheral (side)** vision first, not your central vision. So, even if someone has significant vision loss in their outer field of vision, they might still read the chart perfectly.

To be fit to drive, you need both:

- Good visual acuity (sharpness), **and**

  A wide enough horizontal field of vision— what you can see out to the sides when looking straight ahead.

In glaucoma, it's often this **loss of peripheral** vision that becomes the problem, and people don't always notice it themselves.

- Dr. David Wechsler is a practising Ophthalmologist and Glaucoma Sub-specialist in Sydney.

  He has partnered with Glaucoma Australia for educational and promotional activities aimed at optometrists, pharmacists, and patients since entering practice in 2007. He also serves on the Ophthalmology expert advisory panel. ●

Glaucoma Implant's Investment Success

Written by Centre for Eye Research Australia

The Centre for Eye Research Australia (CERA) has welcomed a landmark investment in Melbourne biotechnology company PolyActiva, which will fast-track the development of innovative eye implant technology to treat glaucoma.

Australia's new Minister for Industry, Innovation and Science Senator Tim Ayres, accompanied by the Member for Melbourne Sarah Witty MP, announced a $27 million investment in PolyActiva from the National Reconstruction Fund Corporation during a visit to CERA on 30 May.

PolyActiva is developing a device that could transform the treatment of glaucoma by replacing multiple daily eyedrops with a biodegradable implant which releases glaucoma drugs into the eye over a period of six to 12 months.

Funding from the NRFC, along with an additional $13 milllon from Brandon Capital, will enable PolyActiva to keep its technology and manufacturing in Australia, grow its highly skilled workforce and complete its Phase 2b clinical trial.

Irreversible Blindness

Glaucoma is the world's leading cause of irreversible blindness, affecting more than 80 million people globally. Senator Ayres said the investment in PolyActiva means that millions of people could one day access Australian technology to save their sight.

"Australia is the home of Cochlear, the home of ResMed and all of these fantastic medical technology capabilities and now it's permanently the home of PolyActiva," he said.

CERA Managing Director Professor Keith Martin congratulated PolyActiva on its latest funding success. PolyActiva's implant technology emerged from research conducted at the CSIRO, CERA and the Bionics Institute.

CERA also ran the Phase 1 clinical trial for the device and was a site for its Phase 2 trial. Professor Martin, an ophthalmologist and glaucoma specialist, was also Principal Investigator on the trial and has delivered the technology to clinical trial participants.

"CERA is extremely proud to have played a part in supporting PolyActiva and help them take an innovative research idea from bench to bedside," he said. *"Our research partnership with PolyActiva reflects CERA's commitment to partnering with industry in clinical research and to working with others to improve the lives of people living with vision loss and blindness."*

Professor Martin said PolyActiva's implant technology had the potential to revolutionise glaucoma treatment for millions of people worldwide.

"Glaucoma patients typically need to take multiple eyedrops a day to control their eye pressure and prevent vision loss," he said. *"However, many patients find the drops difficult to administer, forget to take them or find that they irritate their eyes.*

This means that less than half of all patients consistently use their drops which puts them at increased risk of vision loss."

PolyActiva CEO Vanessa Waddell said PolyActiva was on a mission to reduce glaucoma vison loss globally.

"This investment will ensure that we can complete our Phase 2b clinical trial and prepare for Phase 3 registration trial which will take us one step closer to a potential new therapy for glaucoma."

Meeting Glaucoma Scientists

During his visit to CERA, Senator Ayres met glaucoma researchers from the Visual Neurovascular, Visual Neuroscience and Genetic Engineering teams. He also met clinical research participant Tom Valenta, who lives with glaucoma and has taken part in studies at CERA for more than a decade.

Valenta, whose mother experienced serious vision loss from glaucoma, welcomed the investment in glaucoma research.

"Glaucoma research has meant that I have been able to control my glaucoma over many years and not lose my sight as my mother did," he said.

"Glaucoma is an inherited disease, and research gives me hope for the future, not just for me but for my children and grandchildren."

About PolyActiva

PolyActiva is a clinical-stage biotechnology company based in Melbourne pioneering a novel drug delivery technology designed to improve treatment outcomes for patients with ocular conditions.

PolyActiva's proprietary technology platform, PREZIA™, enables precise, consistent, customizable, and effective delivery of ocular therapies, aiming to address unmet needs in glaucoma and other eye diseases.

The company's lead product candidate, PA5108, is a biodegradable, latanoprost-releasing ocular implant offering a sustained alternative to traditional eye drop therapy for patients with glaucoma. For more information, visit polyactiva.com.

Glaucoma Treatment Side Effects

Written by Anna Delmadoros, Optometrist

Glaucoma treatments are designed to reduce eye pressure and protect your vision. However, like any therapy, they can cause side effects.

Awareness of potential side effects helps patients and caregivers recognise issues early, manage them appropriately and stay on track with treatment.

Glaucoma can be managed with eye drops, oral medications, laser procedures and surgery. Eye drops remain the mainstay of treatment and are generally well tolerated.

Most side effects involve the eyes (local) but can occasionally impact other parts of the body (systemic).

Glaucoma medications fall into five main classes: prostaglandin analogues, beta blockers, alpha agonists, carbonic anhydrase inhibitors and miotics. Each class works differently to reduce eye pressure, and each has its own side effect profile.

Combination drops contain two classes of medication in one bottle and can cause side effects from both components.

Common local side effects of glaucoma eye drops

Mild irritation, stinging, or redness is very common after instillation and usually short lived. This does not harm the eye and can indicate that the drop has successfully reached the eye surface. **Burning and stinging eyes** is more pronounced with carbonic anhydrase inhibitors. Intense or prolonged symptoms should be reported.

Temporary blurred vision is common after instilling eye drops, particularly with thicker formulations such as brinzolamide, which need to be shaken well before each use. Wait until vision clears before driving or working.

Persistent redness or irritation is common with all prostaglandin analogues, particularly at the beginning. These effects are variable but typically improve over time and using these drops at night helps minimise this.

A common eye drop preservative called benzalkonium chloride (BAK) can also irritate the eyes, especially with long term and multiple medication use. Preservative-free single dose formulations (highlighted in green in the table) or drops containing an alternative preservative to BAK (highlighted in blue) may help.

People with existing conditions such as dry eye or blepharitis may be more sensitive to irritation, and so additional treatments may be recommended.

Using expired or contaminated drops can also cause irritation. Always check expiry dates, store drops correctly, and discard bottles as directed.

Red, Itchy and swollen eyes/eyelids may indicate an allergy to the medication, preservative or an external factor unrelated to the drops. Allergic reactions to eye drops can develop weeks to months after starting treatment with alpha agonist eye drops, and less commonly with carbonic anhydrase inhibitors.

Changes in eye appearance such as longer eyelashes, darkening of the iris colour, eyelid skin darkening, or a sunken appearance of the eyes are common side effects of prostaglandin analogues. Gently wiping away excess drops on the skin and avoiding eye rubbing can reduce skin darkening. Discuss alternative treatment options with your ophthalmologist or optometrist if only one eye requires treatment, and these cosmetic changes are a concern.

Systemic side effects of glaucoma eye drops

While glaucoma eye drops act mainly on the eye, small amounts can enter the bloodstream through the tear duct and affect other parts of the body.

Although this is uncommon, it is important to recognise, especially in higher risk groups such as the elderly, people with lung or heart conditions, children and those taking other medications.

To reduce absorption into the bloodstream and the risk of side effects, gently close eyes immediately after instilling the drop. Avoid blinking or moving the eyes around and press the inner corner of the eye for two minutes. This prevents the medication from draining into the throat and can reduce the risk of throat irritation or altered taste. Potential systemic side effects include:

Dry mouth can occur with alpha agonists and carbonic anhydrase inhibitors

Fatigue, light headedness, drowsiness, headaches, sleep or mood changes can occur with alpha agonists, beta blockers or carbonic anhydrase inhibitors

Gastrointestinal upset is occasionally reported with beta-blockers or carbonic anhydrase inhibitors and is uncommon with prostaglandin analogues

Breathing difficulties such as shortness of breath or wheezing are more likely with beta blockers and less common with prostaglandin analogues - particularly in people with asthma or chronic lung disease

Slow heart rate, irregular heart rhythm or low blood pressure can occur with beta blockers, alpha agonists and rarely with carbonic anhydrase inhibitors and some prostaglandin analogues

Allergic or skin reactions are an uncommon side effect of all medications

If you experience serious symptoms, immediately contact your optometrist or ophthalmologist, general practitioner or emergency department if needed.

Other glaucoma treatments

Oral medications can be used to lower eye pressure, but they are typically reserved for short term situations and are more likely to cause systemic side effects; These include frequent urination, stomach upset, tingling in the fingers or toes, tiredness or mood changes.

Laser and surgical procedures are generally safe and valuable alternatives when medications are not sufficient or poorly tolerated. As with any procedure, the healing process may cause temporary local side effects, such as eye redness, discomfort, blurry vision, or light sensitivity. Most people recover quickly and serious complications such as infection are rare.

Key Takeaways

Glaucoma treatments are effective, though no treatment is completely free of side effects. Most are mild and manageable, but some can be more serious.

Share your full medical history with your eye care practitioner, use eye drops correctly and attend all scheduled follow-up appointments. Keep a symptom diary to track changes and report any new, intense, or persistent symptoms promptly - even if they seem unrelated.

Open communication with your eye care team is key, and if you are unsure about anything, speak with your eye care practitioner or contact Glaucoma Australia for advice. ●

Reference: eMIMS Australia retrieved November 25

Struggling with side effects? Our Orthoptist Patient Educators can help.

Orthoptists play an important role in helping patients manage the side effects of glaucoma eye drops, particularly when discomfort begins to affect adherence or quality of life.

Many commonly prescribed drops can cause stinging, redness, dryness, blurred vision, or eyelid irritation. Orthoptists assess these symptoms carefully, helping to distinguish between expected short-term effects and reactions that require review by an ophthalmologist.

By monitoring ocular surface health and identifying early signs of intolerance, they help prevent minor irritation from becoming a reason for patients to stop or avoid treatment.

They also provide practical education that can significantly reduce side effects and improve confidence with treatment. This includes correct drop instillation techniques, advising on punctal occlusion to reduce systemic absorption, recommending preservative-free options where appropriate, and guiding patients on managing dry eye symptoms with lubricants.

Our Patient Educators are a phone call away on 1800 500 880 (Monday to Friday 9am – 5pm AEDT) to answer any questions you have.

Gwen's Story

After 4 years in Geraldton with my husband's job, I went to the optometrist and got glasses as I felt my eyesight had deteriorated.

They told me I had glaucoma and referred me to a specialist who I continue to visit regularly. I was 45 years old when I was diagnosed, and my sister also had glaucoma.

I have had a trabeculectomy early and have been on drops since which has kept it under control. I go to a glaucoma specialist regularly.

Share Your Glaucoma Story

Your story can help others feel less alone and inspire support for glaucoma education and care. We invite you to join the hundreds of patients who are sharing their journeys and making an incredible difference for our community.

Simply go to: glaucomaaustralia.typeform.com/ShareYourStory and complete the online survey in a few minutes.

Glaucoma Australia SiGHTWiSE Program

Let's get SiGHTWiSE

Glaucoma Australia's SiGHTWiSE patient support program offers FREE education, guidance and support to people living with glaucoma.

If you or someone you care for has been diagnosed with glaucoma, join our supportive community, and enjoy the sight-saving benefits of being SiGHTWiSE.

Enrol today

www.glaucoma.org.au/sightwise

Call our free support line

1800 500 880

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Q&A

Live Q&A with Professor Jamie Craig and Giorgina Maxwell on the use of the SightScore polygenic test to assess glaucoma risk in family members.

Professor Jamie Craig is an Ophthalmologist and distinguished Professor and Senior Consultant at Flinders University in Adelaide.

Giorgina Maxwell is a genetic counsellor for Seonix Bio supporting the expansion and integration of SightScore into care for family members of individuals with glaucoma.

Q What are the intervals for assessment of family members who have not been diagnosed with Glaucoma if they are over 50 years of age.

A These patients provide a good baseline assessment. If their findings are normal, with no signs of glaucoma, I recommend a thorough check every two years.

There's a common misconception that a single normal check means no further monitoring is needed, but glaucoma risk increases with age.

In the TARGETT study, about half of people who went for checks were found to have either signs of glaucoma or previously undiagnosed glaucoma. In such cases, clinicians usually recommend more frequent monitoring -sometimes every six months to a year - depending on pressure, optic nerve appearance or OCT results. If everything is normal, a two-yearly assessment is sufficient.

Q Does SightScore test for all types of glaucoma?

A The test is most strongly developed for primary open-angle glaucoma, and it's also effective in normal-tension glaucoma. We now have strong evidence supporting its role in pseudoexfoliation glaucoma and pigment dispersion syndrome, though these require special considerations.

We're only beginning to explore its use in angle-closure and mixed-mechanism narrow-angle glaucoma, so caution is advised. A separate PRS test for angle-closure is expected within 12 - 18 months.

Q At what age do you recommend getting tested?

A The timing for checks depends on family history. Generally, a first glaucoma check is recommended around age 40, or certainly by 50, which is when many people first see an optometrist.

If there's a family history, screening should start earlier– around age 40, or even younger if relatives developed glaucoma in their late 30s or early 40s. In families with severe disease, earlier checks are especially important.

The SightScore is available from age 18 and can help guide screening. Taking the test in young adulthood can be beneficial: if someone has a high score at, say, 30, it provides actionable information rather than waiting until 50.

Ultimately, the timing depends on individual and family circumstances, but earlier predictive testing can be useful for planning ongoing monitoring. ●

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We rely on the generosity of our corporate partners & donors to continue to fund our critical services. Your support is greatly appreciated.

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Leaving a gift in your Will is an incredibly forward-thinking way of giving that will benefit glaucoma patients for generations to come – your family, friends and neighbours who may be diagnosed in the future.

After looking after your loved ones, any gift is greatly appreciated and allows us to plan ahead, to invest in the research that will one day find a cure and continue to support and care for families impacted by glaucoma.

If you are considering leaving a gift in your Will to Glaucoma Australia, you can reach out to our Fundraising Manager for a confidential conversation on 1800 500 880 or via email at betty@glaucoma.org.au.