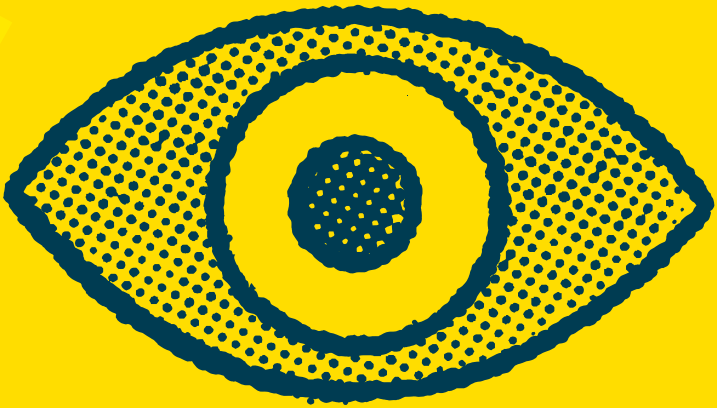
Glaucoma UK

Secondary glaucoma

caused by uveitis



Glaucoma UK helpline

If you have questions about anything to do with glaucoma, contact our helpline on:

01233 648 170

Monday to Friday 9.30am to 5.00pm

Calls are charged at your standard network cost.

Other ways to find out more

Email: **helpline@glaucoma.uk**

Visit our website: **glaucoma.uk**

Help us keep our services free

Glaucoma UK is the UK's only charity solely focused on ending preventable vision loss from glaucoma. Everyone who needs help and information about glaucoma should be able to get it for free. That's why there's no charge for our booklets and services. We rely on donations, and every contribution truly matters.

If you'd like to contribute to the cost of this booklet or help fund our services, please go to **www.glaucoma.uk/donate** or call **01233 648 164**. We really could not continue without our amazing supporters. Thank you.

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Key points

Uveitis is inflammation (irritation) of part of your eye known as the uvea.

Inflammation can affect your eye's drainage system, causing fluid to build up inside your eye and increasing eye pressure.

High eye pressure can damage the nerve that connects your eye to your brain. Damage to this nerve is called glaucoma.

Glaucoma can lead to vision loss, but with early diagnosis and treatment, most people with glaucoma keep good vision.

The most common treatment for glaucoma caused by uveitis is eye drops.

Talk to your eyecare professional about any side effects you get.

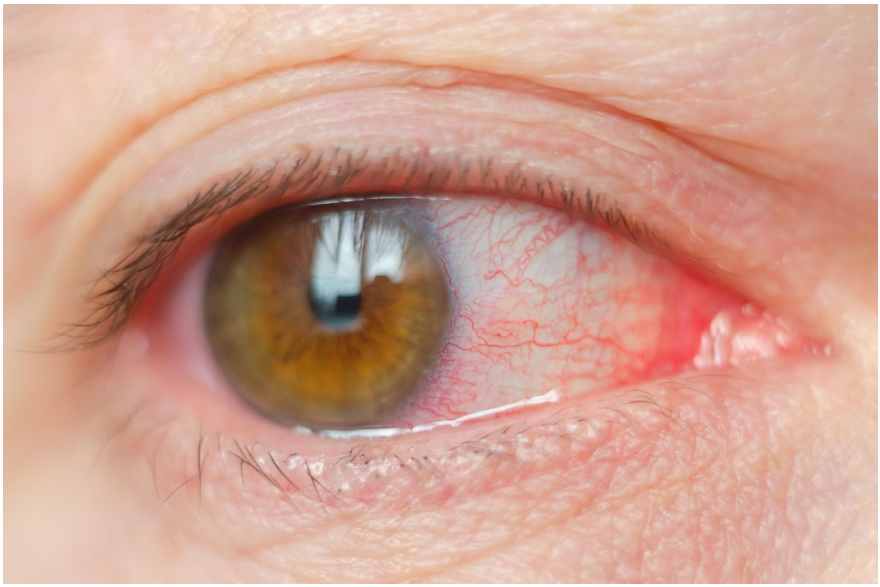
Protect your vision by using any prescribed eye drops every day and going to all your eye clinic appointments.

What is uveitis?

Uveitis is inflammation (irritation) of part of your eye known as the uvea. Inflammation causes redness, heat, pain and swelling.

Inflammation is part of your body's normal response to injury and infection. Your body sends white blood cells, proteins and other substances to heal the injury or fight the infection.

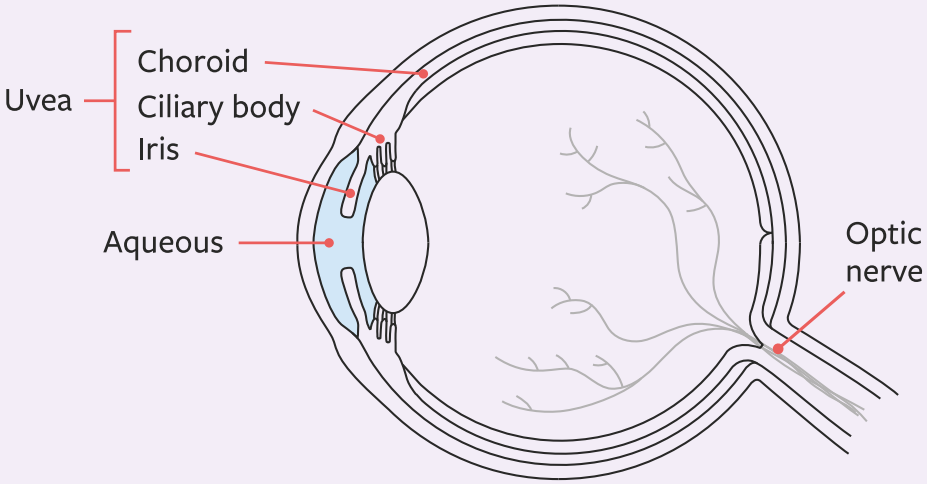
But sometimes inflammation goes on too long or happens in a healthy part of your body. This can be harmful.



The uvea has three parts:

- **Iris.** The iris is the coloured part of your eye. It controls how much light reaches the light-sensitive layer at the back of your eye (the retina).
- **Ciliary body.** The ciliary body is a ring of muscle behind your iris. It does two things:
  - changes the shape of your lens to focus your vision;
  - makes the watery fluid (called aqueous) that fills the front of your eye.
- **Choroid.** The wall of your eye has three layers, and your choroid is the middle one. Your choroid has lots of small blood vessels that bring oxygen and nutrients to your eye.

Uveitis may affect one or both eyes.



Symptoms

Symptoms of uveitis can include:

- Eye pain
- A dull ache that may get worse when you try to focus on something
- Red eyes
- Feeling uncomfortable or finding it hard to see in light
- Blurry, cloudy or reduced vision
- Seeing small shapes that seem to float over your vision (floaters)

Which symptoms you get depends on where the inflammation is and how bad it is.

Causes

Causes of uveitis can include:

- Over-active immune response in your eye
- Infection
- Eye injury
- Eye surgery

Sometimes there's no obvious cause for uveitis.

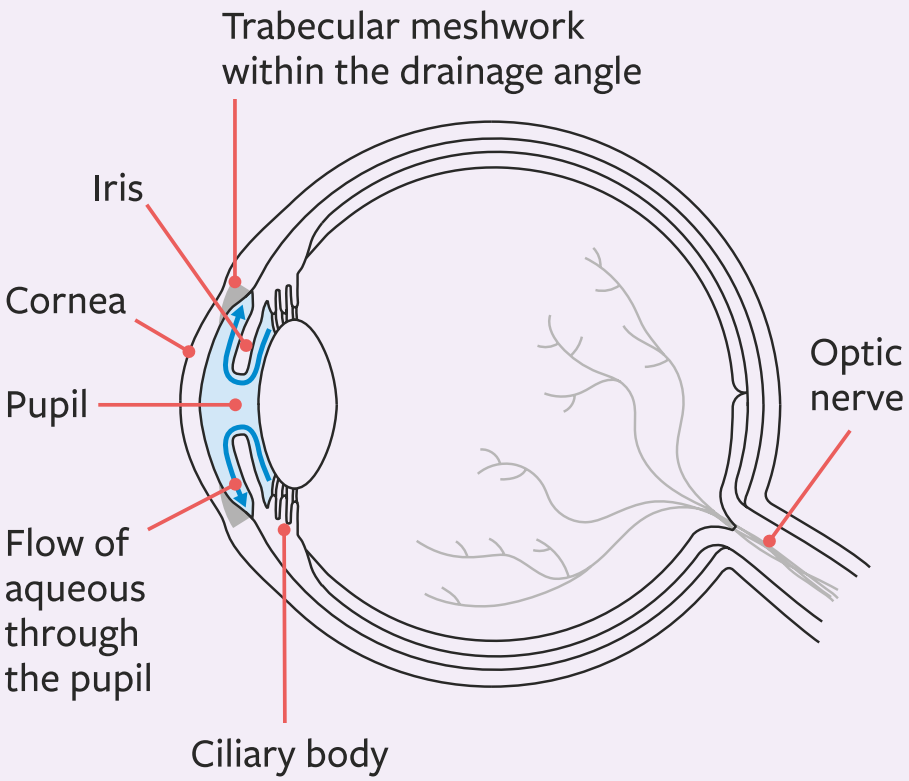
What is glaucoma?

Glaucoma is a group of common eye diseases where your optic nerve has become damaged.

Your optic nerve connects your eye to your brain, so damage to this nerve affects your vision. How glaucoma affects vision is different for each person, but most people keep good vision.

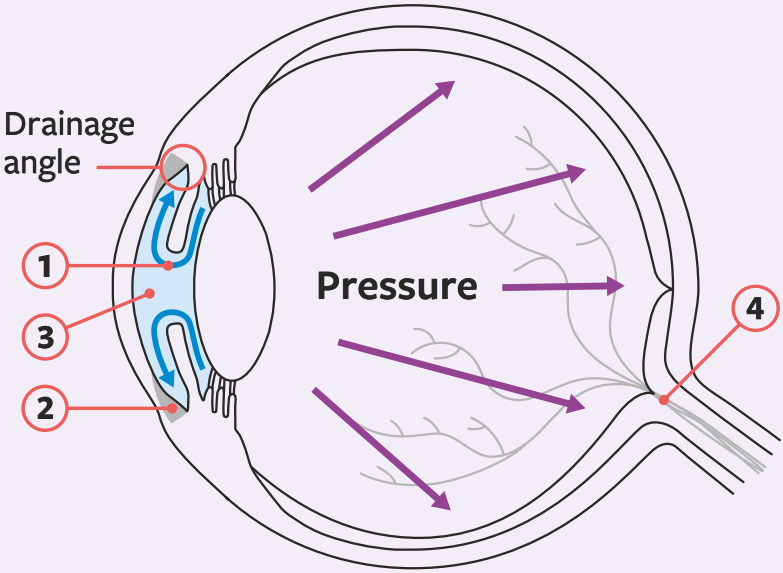
The front of your eye contains a watery fluid called **aqueous humour**, **aqueous fluid** or just **aqueous**. Aqueous helps your eye keep its shape and brings oxygen and nutrients to the front of your eye. Aqueous is made inside your eye and drains out through tiny drainage channels called the **trabecular meshwork**.

▼ **Structure of eye showing flow of aqueous**



If aqueous cannot drain out of your eye properly, it builds up which increases pressure inside your eye. This pressure is called eye pressure or intraocular pressure (IOP). High eye pressure can damage your **optic nerve**. Damage to your optic nerve is glaucoma.

▼ How eye pressure builds up and affects your optic nerve



1. Aqueous flows through the pupil

2. Poor drainage of aqueous through the trabecular meshwork

3. Too much aqueous stays in the eye, increasing pressure

4. Increased pressure damages the optic nerve

Glaucoma may be primary or secondary.

Primary glaucoma happens by itself, without an obvious cause, and it's likely due to genetic factors. Secondary glaucoma is when something else causes high eye pressure that damages your optic nerve.

Uveitis and steroids used to treat uveitis are examples of things that can sometimes lead to high eye pressure and glaucoma. Glaucoma caused by uveitis is called uveitic glaucoma.

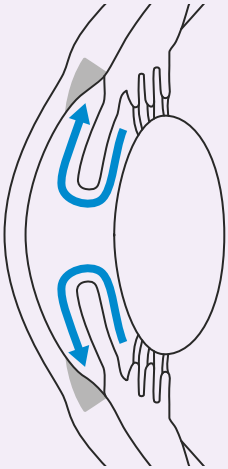
Glaucoma may be called open angle or angle closure glaucoma.

The angle refers to the angle between your iris and your cornea. Your cornea is the clear window at the front of your eye. This angle is known as your drainage angle because it's where your drainage channels are.

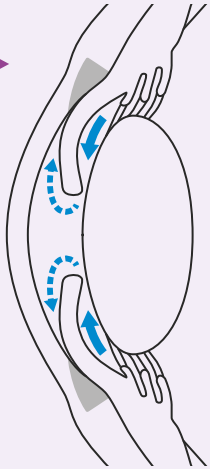
In **open angle glaucoma**, your drainage angle is open as it should be, but your drainage channels do not work well.

In **angle closure glaucoma**, your iris moves forward, closing your drainage angle and blocking your drainage channels.

Open angle ▶



Closed angle ▶



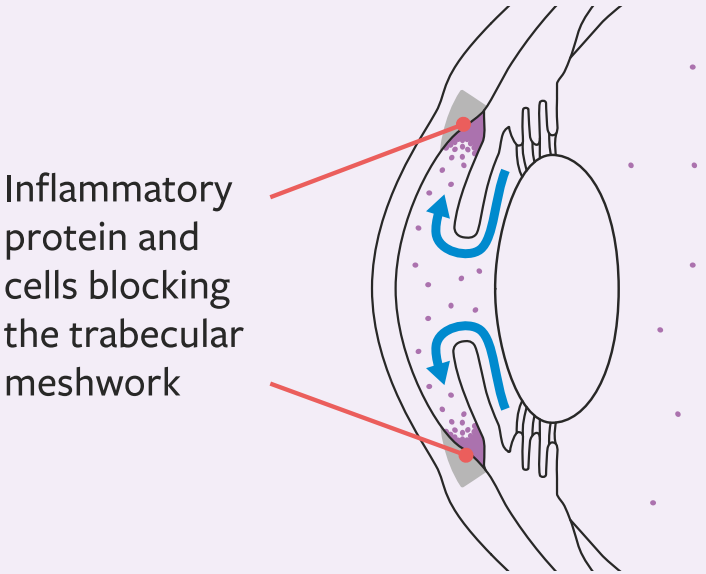
How can uveitis lead to secondary glaucoma?

Uveitis can cause increased eye pressure in a few ways, and they are not all fully understood.

Open angle glaucoma

- Protein and white blood cells may leak into aqueous, and block your drainage channels.
- Inflammation in your drainage channels can block them. Even a little inflammation can increase eye pressure.
- Steroids to treat uveitis sometimes affect your drainage channels.

▼ **Inflammation in the eye**



Angle closure glaucoma

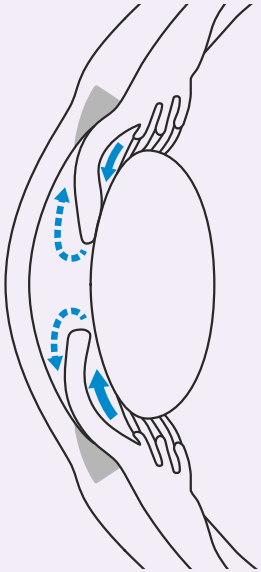
Inflammation in the front part of your eye can make your iris stick to other parts of your eye. This slows the flow of aqueous from where it's made behind your iris to your drainage channels. Aqueous builds up behind your iris, pushing your iris forward, and closing the drainage channels. This causes eye pressure to rise quickly.

High eye pressure can damage your optic nerve.

▼ Angle closure caused by the iris sticking to the lens

Iris pushed forward onto the trabecular meshwork

Iris sticking to the lens



Restricted aqueous flow through the pupil

Only some people with uveitis develop glaucoma, others do not.

Out of five people with long-lasting (chronic) uveitis:

around **one** develops glaucoma and **four** do not.

How might glaucoma affect what I see?

Glaucoma affects everyone differently. People who notice glaucoma vision loss often describe blurry, misty or blank patches in their vision.

Most people cannot tell they have glaucoma.

Glaucoma vision loss usually starts in your off-centre (peripheral) vision. Central vision is usually clear for much longer. You use central vision for detailed tasks like reading, watching TV and looking at faces. You use off-centre (peripheral) vision for driving, walking around and seeing things at the edge of your vision.

Your two eyes work together. If you have a gap in your vision in one eye, your other eye might make up for it. You might only notice misty or blurry patches when you close one eye. Even then, your brain might fill in the gaps, so what you see looks complete.

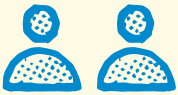
Examples of what you might see if you have full vision, moderate glaucoma and advanced glaucoma

Most people with glaucoma keep good vision for life.

If your glaucoma does lead to vision loss, you might start to notice for example that:

- You trip over things on the floor
- You find it harder to see things with poor colour contrast
- It's harder or takes you longer to find what you're looking for
- Cars seem to suddenly appear from nowhere
- It's harder to see in the dark

For every three people with uveitic glaucoma:



Two barely notice vision loss

One develops vision loss that affects day to day activities

Thanks to modern treatments, fewer people lose their vision due to glaucoma now than in the past.

Most people who have severe vision loss due to glaucoma were diagnosed late or had other underlying health or eye conditions. It's unusual to lose all vision due to glaucoma. But because vision loss is possible, it's important to go to all your eye clinic appointments and to use any treatment as prescribed.

What tests will I have?

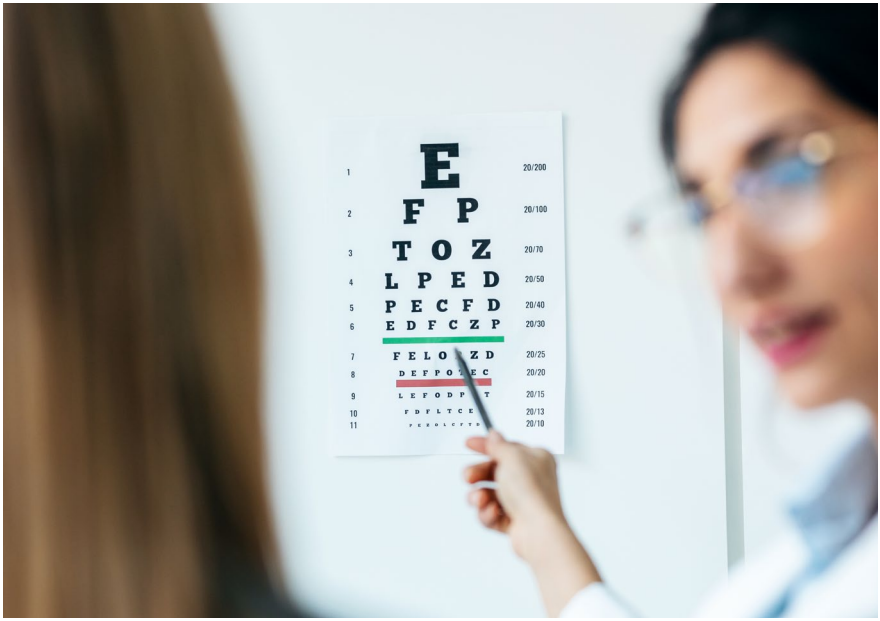
You'll have several tests for glaucoma.

You may have had some of these tests during routine visits to your local high street optician.

For example:

How well can you see detail at a distance?

This is called visual acuity.



▲ Visual acuity test

Where can you see things?

If you look at something straight ahead and keep your eye still, how far up, down, left and right can you see? Are there patches of vision loss?

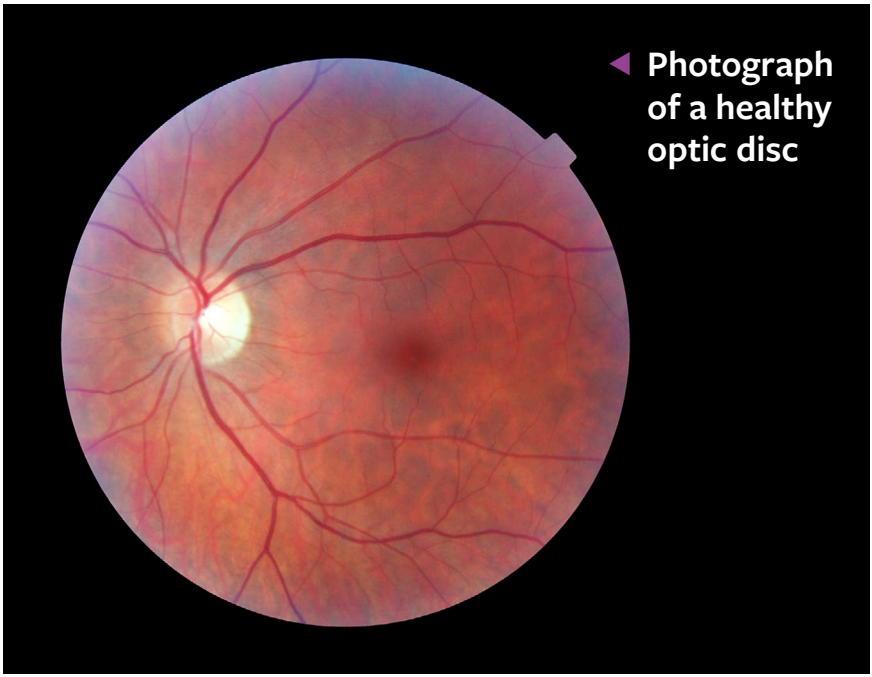
This is called your visual field. If you have glaucoma, you'll have patches of vision loss, usually starting in your peripheral (off-centre) vision.

▲ **Visual field test machine**

What's your eye pressure?

If your eye pressure is high, you are more at risk of glaucoma.

▲ **Tonometer for measuring eye pressure**



Are there any signs of possible damage to your optic nerve where it leaves your eye (the optic disc)?

Your eyecare professional may scan or photograph the back of your eyes so that there is a record to compare against at future appointments. Signs of possible damage to your optic disc could be glaucoma.

Other tests you may not have had during routine visits to your local high street optician.

For example:

How thick is your cornea (the clear window at the front of your eye)? Knowing the thickness of your cornea helps the eyecare professional make sense of your eye pressure reading.

What does your drainage angle look like? Can aqueous flow freely through your eye and drain away? This check is called gonioscopy. In angle closure glaucoma, your drainage angle is narrowed or closed. In open angle glaucoma, your drainage angle is open.

These tests may be done by an optometrist, nurse or other eyecare professional.

An optometrist is an eyecare professional trained to measure vision and check eye health. An ophthalmologist checks the test results. An ophthalmologist is a doctor specialising in eye and vision care.

The ophthalmologist will tell you if you have glaucoma. If you do, they should tell you what type it is and how much vision loss, if any, you have. They'll talk to you about your treatment options and answer any questions you have.

Sometimes, test results are inconclusive, and the ophthalmologist needs more information to decide whether you have glaucoma. If so, they'll ask you back for another appointment to repeat the tests. They may say that you have suspected glaucoma. This may happen if your results are borderline, for example if your optic disc looks like it might have early signs of damage.

If you have glaucoma, you'll need to have regular appointments to check your eyes and how well treatment is working for you. These follow up appointments might be at a hospital or in a community setting such as a high street optician or GP practice.

What treatment might I have?

Often, treating uveitis will let your eye pressure return to normal, which helps slow or prevent future damage to your optic nerve.

Treatment for uveitis depends on the cause and which part of your eye is affected.

Treatment might include:

- Steroid eye drops
- Steroid injections
- Steroid tablets
- Antibiotics
- Antivirals
- Antifungals
- Drugs that alter how your immune system works (called immunomodulators)

Sometimes, you'll also need treatment to lower eye pressure.

There are lots of treatment options to lower eye pressure.

But treatment does not cure glaucoma, and any vision loss from glaucoma is irreversible. This can be difficult to come to terms with.

Our helpline is there for you to talk through how you're feeling as well as the practical side of things.

01233 648 170

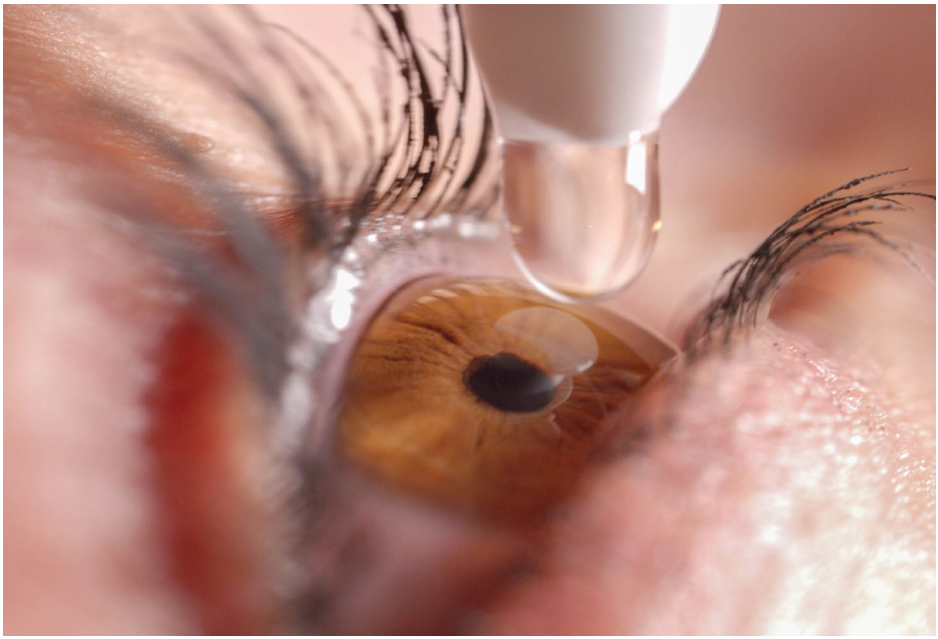
Monday to Friday 9.30am to 5.00pm

helpline@glaucoma.uk

Your eyecare professional will recommend the best treatment for you based on your test results. They'll also take account of other health conditions you have and your preferences.

Eye drops

Eye drops are a common treatment for glaucoma. Some eye drops reduce the amount of aqueous made inside your eye. Others help aqueous drain out of your eye. You may need to use one or more kinds of eye drops.



Ask your eyecare professional how long you need to use your eye drops for.

With secondary glaucoma caused by uveitis, your eye pressure might settle after a few weeks or months. If it does, you may be able to stop using your eye drops. But you might need to use eye drops for life. Always talk to your eyecare professional before stopping or changing your glaucoma eye drops.

Like all medicines, eye drops can have side effects. Red, sore or itchy eyes are common side effects of using eye drops. If you get these:

- ask your eyecare professional about using a preservative-free eye drop or if another treatment may be suitable;
- keep using your eye drops unless your eyecare professional tells you to stop;
- try using lubricating eye drops to soothe your eye.

If you get side effects that worry you, contact your eye clinic as soon as you can.

Putting your eye drops in every day is one of the most important things you can do to protect your vision.

Minimally Invasive Glaucoma Surgery (MIGS)

In minimally invasive glaucoma surgery (MIGS), your eye doctor inserts a tiny device or makes a small cut into your eye. It helps aqueous drain out of your eye.

Your eye doctor may suggest MIGS if:

- your eye pressure is too high even after eye drops;
- you struggle with eye drops;
- you're having cataract surgery.

MIGS is minor surgery with fewer risks and faster recovery than other kinds of glaucoma surgery. But MIGS tends to lower eye pressure less.

Surgery

If your glaucoma is severe or getting worse, your eye doctor may recommend surgery.

The most common kind of surgery for glaucoma is called a trabeculectomy. Another type is shunt or tube surgery. Glaucoma surgery creates a new route for aqueous to flow out of your eye.

Uveitis can sometimes cause cataracts (cloudy lens). If this happens, your eye doctor may replace the lens in your eye with an artificial lens. Artificial lenses are thinner than natural lenses, so replacing your lens creates more space in your eye. This can help lower eye pressure, as well as getting rid of the cataract.

Surgery is effective at lowering eye pressure, but like all surgery it comes with some risks. Talk to your eye doctor about the pros and cons for you.

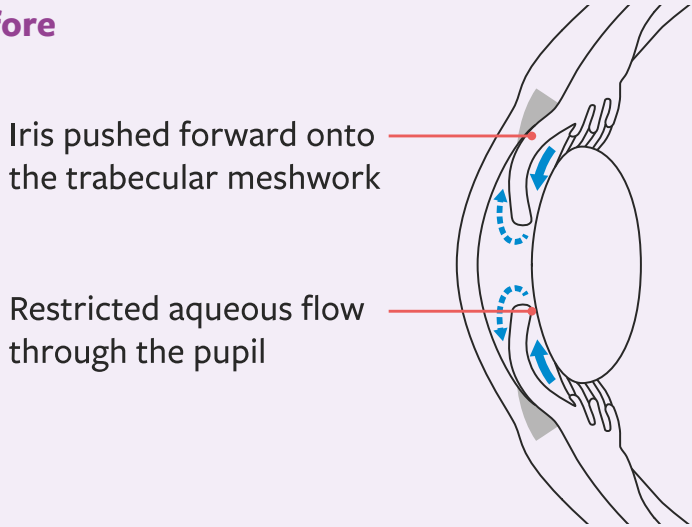
Laser treatment

If you have angle closure glaucoma caused by uveitis, your eye doctor may suggest a type of laser treatment called laser iridotomy.

Your eye doctor aims a laser beam at your iris to make a small hole in it. This helps aqueous flow through your eye, and helps to keep the drainage angle open. Laser iridotomy is effective, but there is a risk that it may cause inflammation in your eye. Your eye doctor may monitor you carefully after laser iridotomy to check for this.

▼ Laser iridotomy helps aqueous drain out of your eye

Before



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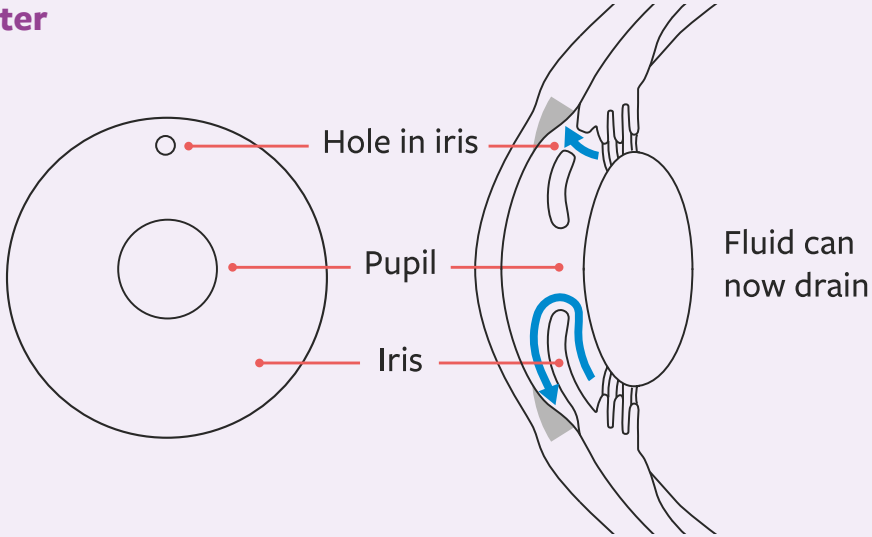

No treatment

You may decide against having any treatment even if your eyecare professional recommends it. **This increases your risk of vision loss due to glaucoma.**

Whether or not you have treatment, you should go to follow-up appointments and routine eye tests.

What if my eye pressure stays high?

There are lots of treatments for glaucoma. For most people, there is at least one treatment that will lower eye pressure.

If one treatment fails to lower your eye pressure, your eyecare professional may try another. It may take time to find the right one for you. As your glaucoma changes, the best treatment for you may also change. Everyone is different.

Is it okay to drive with glaucoma?

Driving is important to many people, but you need to be safe on the roads.

You must tell the DVLA (in England, Scotland or Wales) or the DVA (in Northern Ireland) if:

You drive a car or motorcycle, and you have glaucoma in both eyes.

You drive a bus, coach or lorry, and you have glaucoma in one or both eyes.

The DVLA or DVA will ask you to take a special visual field test at a high street optician. This test checks you meet the minimum vision standards for driving.

Most people with glaucoma meet the minimum vision standards for driving.

You should also check with your motor insurer whether you need to tell them about glaucoma.

Further help and information from Glaucoma UK

We offer other free information booklets on a range of topics, including:

- **Different types of glaucoma**
- **Treatments such as eye drops, laser treatments and surgery**
- **Driving and glaucoma**

For a full list of available booklets and to order or download them, visit our website or contact our helpline.

As well as our information booklets, helpline and website, there are lots of other ways we can help you to live well with glaucoma.

Some examples of our services are:

- **Buddy scheme**
  If your eyecare professional recommends laser treatment or surgery, we can pair you up for a chat with someone who's already had the treatment.
- **Glaucoma support groups**
  Find out more about glaucoma, share information, and ask questions. Visit our website or call our helpline to see if there's a group near you and to find out about online groups.
- **Health Unlocked**
  Join our online forum and talk to other people with glaucoma. Visit **healthunlocked.com/glaucoma-uk** to get involved.

For more information, to get involved or to give us feedback contact our helpline, visit **www.glaucoma.uk/more** or scan the QR code.

About Glaucoma UK

Glaucoma UK is the charity for people with glaucoma. We raise awareness of the risks of glaucoma, and offer help and support to people living with the disease.

We fund high-quality research into prevention, diagnosis, treatment and, hopefully one day, a cure. We also work with professionals to influence policy and practice with the goal of improving services. Our aim is to end preventable glaucoma vision loss.

Raising awareness

Helping people understand why they may be at risk of glaucoma.

Providing support

Ensuring people can access reliable help and advice when and how they need it.

Influencing policy and professional practice

Advocating for glaucoma patients with those who develop policy, commission services and deliver care.

Supporting research and development

Funding high-quality research into glaucoma prevention, diagnosis, treatment and cure.

Keep in touch

We'd love to keep in touch.

Visit our website to sign up for our email newsletter to hear more about our work and how we can help you.

Join Glaucoma UK

Join Glaucoma UK and become a member of our supportive glaucoma community.

You'll receive exclusive benefits, including our magazine full of news and information about glaucoma.

Find out more at **www.glaucoma.uk/membership** or call **01233 648 164**.

Disclaimer

The information in this booklet was correct at the time of last review and is intended as a general guide only. Always ask an eyecare professional or doctor for advice specific to you.

A list of sources is available on request.

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Next review due November 2028.

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- Professor Anthony Khawaja, Honorary Consultant Ophthalmologist, Moorfields Eye Hospital NHS Foundation Trust
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- Volunteers on our readers' panel

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01233 648 170
Monday to Friday 9.30am to 5.00pm

Email: **helpline@glaucoma.uk**

Glaucoma UK is the operating name of the International Glaucoma Association. Charity registered in England and Wales No. 274681 and Scotland No. SC041550