

Understanding glaucoma

Department of Ophthalmology

Information for Patients

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What is glaucoma?

Glaucoma is the name given to an eye disease, which causes permanent damage to the optic nerve and causes loss of your side vision (peripheral vision loss).

This usually happens because the pressure in your eye is too high, but can also be seen in patients with normal eye pressure.

If left untreated the damage can increase to tunnel vision (where you only have the centre of your vision) and even loss of the central vision. Going completely blind is rare.

Why does glaucoma occur?

The eye needs a certain amount of pressure to keep the eyeball in the correct shape. This pressure is usually determined by fluid which fills a chamber at the front of the eye, known as the aqueous.

If there is too much of this fluid in the eye or it does not drain quickly enough, the pressure in the eye builds up, which can lead to optic nerve damage and this leads to glaucoma.

Some people can have high pressure in the eyeball without glaucoma developing. This is known as ocular hypertension (OHT).

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or call 111 for non-emergency medical advice**

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There are different types of glaucoma, but the main 2 types are:

- Open angle glaucoma (OAG) - the aqueous fluid drains out of the eye too slowly.
- Closed angle glaucoma (CAG) - the drainage canals become blocked, causing an increase in eye pressure.

Who gets glaucoma?

In the UK, glaucoma affects approximately 2% of the population. There are different risk factors for the 2 types of glaucoma:

Open angle glaucoma (OAG)	Closed angle glaucoma (CAG)
Older than 40 years age	Increasing age
Family history	Family history
African racial origin	Asian racial origin
Short-sightedness	Long-sightedness
Diabetes	Female
High blood pressure (Hypertension)	
Increased eye pressure (IOP)	
Vascular disease (affecting your circulation) e.g. heart attack, stroke	
Thin cornea	

With one risk factor for glaucoma being family history, it is suggested that you tell your closest relatives: parents, children, brothers and sisters of your diagnosis. This is so they can be screened by their local optician every year, especially if they are over 40 years of age.

What are the symptoms of glaucoma?

To start with, glaucoma can have no symptoms. As glaucoma is slow to progress, many people do not realise they are missing small areas of sight until there are larger areas of missing vision.

OAG has no symptoms, but acute CAG can include symptoms such as:

- severe pain in and around the eye,
- a brow or headache,
- nausea,
- vomiting,
- haloes around vision and
- blurred vision, especially in dim or dusk lighting conditions.

Although there is no cure for glaucoma, timely diagnosis and appropriate treatment can help to try and stop further damage or vision loss.

How is glaucoma diagnosed?

A few tests need to be carried out in order to help diagnose glaucoma. Due to the importance of all these tests, please expect your appointment to take 2 to 3 hours on your first visit. These tests may include:

- **Visual acuity:** this is the level of vision you have wearing your distance spectacles and using a pinhole (a hand-held cover for your eyes). The pinhole helps determine the best vision your eye is capable of with an updated spectacle prescription.
- **Visual field:** during this test, you will be asked to look straight ahead as a light spot appears in different areas of your peripheral vision. This helps draw a 'map' of your vision.

Do not be concerned if there is a delay in seeing the light as it moves in or around your blind spot. This is perfectly normal and does not mean that your field of vision is damaged.

Try to relax and respond as accurately as possible during the test. Your doctor may want you to repeat the test to see if the results are the same the next time you take it. After glaucoma has been diagnosed, visual field tests are usually done 1 to 2 times a year to check for any changes in your vision.

After this, the eye doctor will then call you in to check the front of the eye using a large microscope called a slit lamp. They may put numbing drops into your eye and carry out 3 further tests:

- **Tonometry:** this measures your eye pressure, also known as your intraocular pressure (IOP). A small disposable device shall touch the eye to determine this. The normal IOP range is 12 to 21 mmHg; however, some people still have glaucoma in the normal IOP range.
- **Gonioscopy:** this finds out if the drainage angle where the iris meets the cornea is open or closed. A hand-held, mirrored contact lens is gently placed on the eye allowing the eye doctor to view the drainage angle.
- **Pachymetry:** this measures the thickness of your cornea (the clear window at the front of the eye). A probe is gently placed on the front of the eye. This measurement aids the eye doctor to find out whether treatment will be needed and whether the IOP readings are affected by this.

Following these checks, you will have more eye drops ready for more tests. These help to open your pupil wider in order to get a clearer view of your optic nerve and back of the eye. The dilating drops can cause blurry vision and light sensitivity for 4 to 6 hours and so we ask you not to drive or operate machinery for this time.

- **Optical Coherence Tomography (OCT):** this involves a harmless light being shone into your eye to provide an accurate photo of the optic nerve and back of the eye.
- **Optic nerve assessment:** this is carried out using a special lens with the slit lamp. You will have a bright light being shone into your eyes.

What is the treatment for glaucoma?

Of all the risk factors linked with glaucoma, the only factor we can change is IOP and so the main aim of treatment is to lower the IOP to safe levels to try and help stop further vision loss. Some patients may need a mix of treatments to help control their glaucoma. Types of treatments include:

- **Eye drops:** this is usually the first method of treatment. There are 4 types of drops which can be prescribed. Your eye doctor will decide the best type of drop for you. If eye drops alone do not control the IOP well enough, laser treatment or an operation may be needed.

The 4 types of eye drops are: prostaglandin analogues (for example, Latanoprost), beta blockers (for example, Timolol), carbonic anhydrase inhibitors (for example, Azopt), alpha agonists (for example, Brimonidine). As with all medication, there are known side effects linked with glaucoma eye drops. Your eye doctor or specialist nurse will advise you about these.

- **Laser treatment:** there are 3 types of laser treatment:
 - Selective laser trabeculoplasty
 - Cyclodiode laser
 - Laser peripheral iridotomy
- **Surgery:** a surgery, such as a trabeculectomy or tube surgery, can be performed if other treatments have been unsuccessful.

Can I still drive?

Most people can continue driving long term if the vision loss is not severe. **You need to inform the Driver and Vehicle Licensing Authority (DVLA) if you are diagnosed with glaucoma in both eyes.** The DVLA may arrange a special visual field test (Estermann) through an optician to ensure your sight meets the standards of the DVLA.

Tips to help you stay on track with your medication routine

- Make a schedule - write down the name, dosage and number of times your medication(s) should be taken each day.
- Use an alarm or smartphone to set reminders. There are many smartphone apps now available.
- Schedule medication(s) around daily routines like when waking up and at mealtimes. Remember that 2 times a day means every 12 hours, for example 7am and 7pm.
- Put your medication(s) and your schedule in a place where you will see them often, such as on the refrigerator door or above your desk at work.
- You may find colour coding your medication(s) will help you identify them easier.
- Take your medication(s) with you when you go out.
- If you forget to use your eye drops, put them in as soon as you remember instead of waiting until the next scheduled time. Get back on your regular schedule for the next dose.
- Always check with your doctor if you are not sure about any part of your medication routine. You may want to show your doctor how you put in your eye drops to be sure you are doing it in the best way.

Most important things to prevent glaucoma getting worse

- Use your eye drops correctly every day and at the time and frequency that you are told by the doctor.
- Attend all your appointments at the eye clinic. These appointments are very important to monitor your glaucoma and to check if it is getting worse. If you are unable to attend, you should always telephone to rearrange.
- Please bring a list of your current medications with you to each clinic appointment in case there has been any changes to your medication since your last visit. This allows us to give you the best treatment, based on what medication you may already be on.

Further information

If you would like to find out more information about glaucoma and your eye condition, please use the useful contact information below.

Royal National Institute of Blind people:

www.rnib.org.uk/

0303 123 9999 / email: helpline@mib.org.uk

The Royal College of Ophthalmologists (RCO):

www.rcophth.ac.uk/

020 7935 0702

International Glaucoma Association (IGA):

glaucoma.uk/

01233 648 170

Driver and Vehicle Licensing Agency (DVLA):

www.gov.uk/government/organisations/driver-and-vehicle-licensing-agency

0300 790 6801

The Partially Sighted Society (PSS):

www.partsight.org.uk/

0844 477 4966

VISTA:

www.vistablind.org.uk

0116 249 8839 / email: info@vistablind.org.uk

What to do if you have any concerns

If you want to discuss the procedure in more detail or have any other queries that cannot wait until your appointment, you can contact the glaucoma specialist nurse on **07950 857406**.

If you think you may have a problem after your treatment you should contact **Eye Casualty on 0116 258 6273**, or go to the **Eye Casualty Department** located in Windsor Eye Clinic, Level 1, Windsor Building, Leicester Royal Infirmary:

Opening times: Monday to Friday, 8.30am to 4.30pm

Saturday & Sunday, 8.30am to 12.30pm

If your problem happens outside of these hours and you feel that it is urgent, you should go to the main Emergency Department.

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Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

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