Understanding

Glaucoma

RNIB

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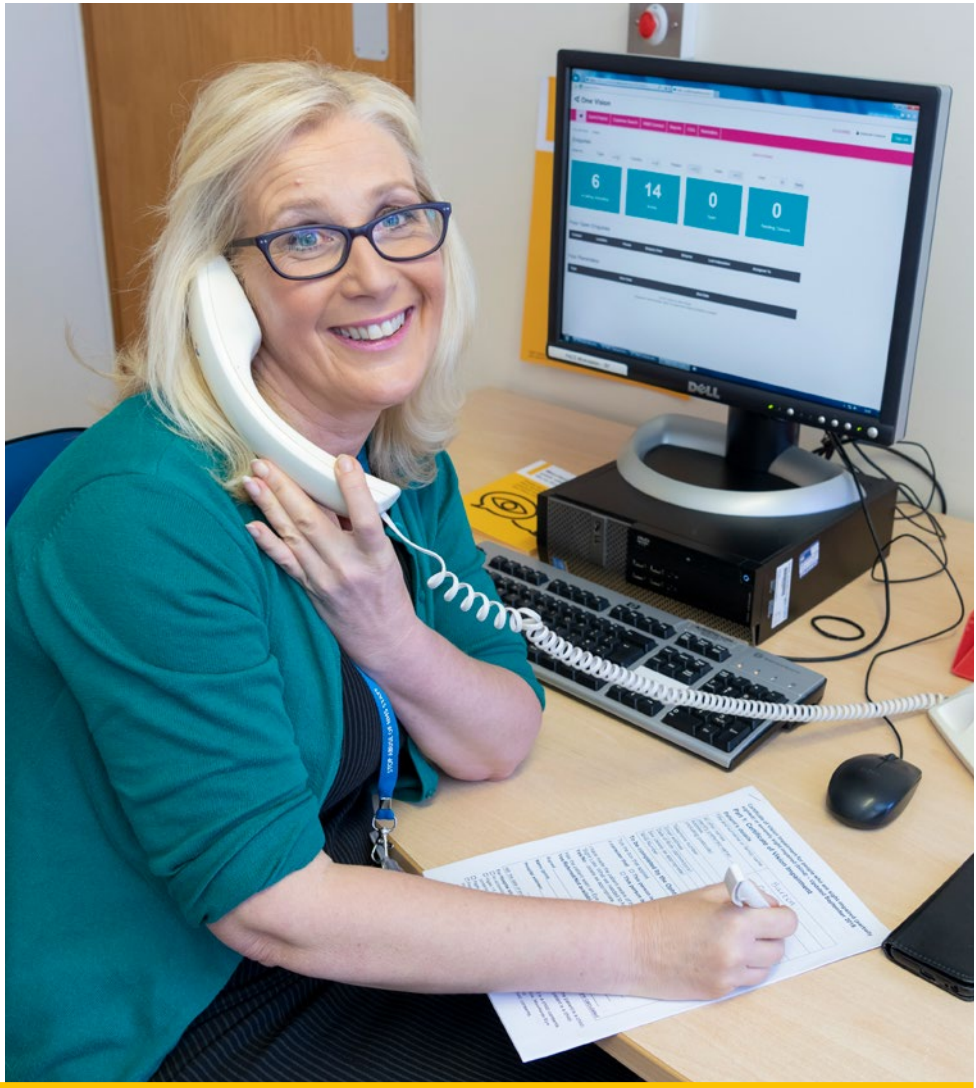

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RNIB's Understanding series

The Understanding series is designed to help you, your friends and family understand a little bit more about your eye condition.

The series covers a range of eye conditions, and is available in audio, print and braille formats.

Contact us

We're here to answer any questions you have about your eye condition or treatment. If you need further information about glaucoma or on coping with changes in your vision, then our Helpline is there for you.

Just give us a call on **0303 123 9999** or email us at **helpline@rnib.org.uk** and we'll be happy to speak with you.

RNIB Helpline
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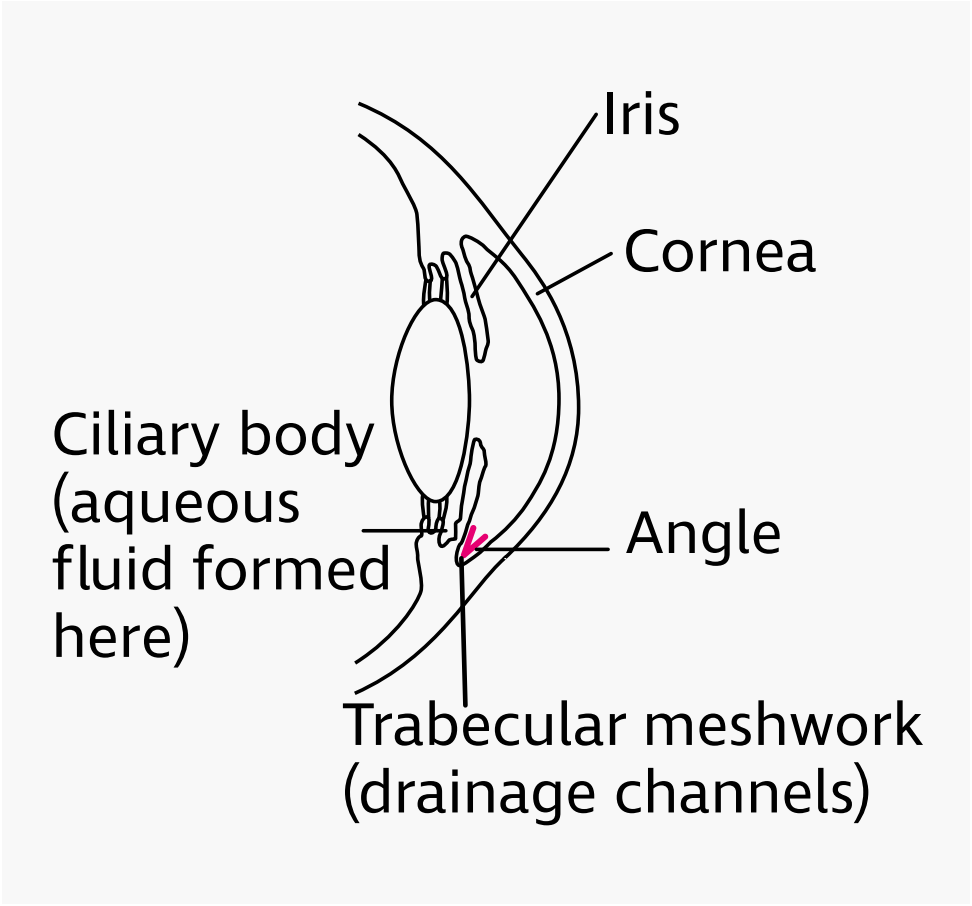
Or say, **"Alexa, call RNIB Helpline"** to an Alexa enabled device.

What is glaucoma?

Glaucoma is the name given to a group of eye conditions where there is damage to your optic nerve. This may be because your eye pressure is higher than normal, or because of a weakness in the structure of your optic nerve.

How the eye works

The anterior chamber of your eye (directly behind the front of your eye) is filled with a watery fluid called the aqueous humour. This fluid creates a pressure in your eye, which keeps it healthy and in the right shape. Your eye pressure is known as your intraocular pressure (IOP), and it is not connected to your blood pressure in any way. The aqueous fluid, which is inside your eye, is different from your tears.



Aqueous fluid is produced in a ring of tissue, called the ciliary body, behind the coloured part of your eye, the iris. It flows through the pupil and drains away through a spongy network of holes called the trabecular meshwork. The meshwork sits in the angle where your iris and cornea, the clear front surface of your eye, meet.

Usually, aqueous fluid drains away through the meshwork at the same rate as it's produced to keep your eye at the correct pressure. The normal range of eye pressure is roughly around 10 to 21mmHg (mmHg stands for millimetres of mercury and is the measurement used for eye pressure).

If the fluid cannot leave your eye as quickly as it's produced, your eye pressure will build up. This pressure can cause damage to your optic nerve at the point where it leaves the back of your eye. This damage is called glaucoma. Your optic nerve is important for sight because it's the pathway for the signals from your retina, the light sensitive cells at the back of your eye, to your brain. This pathway allows you to "see" the world around you.

If the optic nerve structure is weak, then an eye pressure within the normal range can also cause glaucoma.

What are the main types of glaucoma?

Primary glaucoma

These types of glaucoma occur without a known cause and aren't caused by any other eye condition.

- **Primary open angle glaucoma** where damage to the optic nerve occurs slowly over a long period of time due to your eye pressure increasing to more than 21mmHg. This is the most common form of glaucoma
- **Normal tension glaucoma** when an eye pressure of less than 21mmHg still causes damage to the optic nerve
- **Primary closed angle glaucoma** is caused when the angle, where the aqueous fluid drains from the eye, narrows or closes. It can be chronic (gradual onset) or acute (where damage to the optic nerve can happen very quickly due to a sudden rise in eye pressure).

Secondary glaucoma

Secondary glaucoma occurs as a result of another eye condition, an injury to the eye or due to medication.

Childhood glaucoma

Glaucoma which affects babies and children is rare. There are two main types of childhood glaucoma:

- **Primary congenital glaucoma** which occurs when the aqueous drainage system hasn't developed properly before birth
- **Secondary glaucoma** which is caused by another developmental anomaly of the eye, a syndrome or another eye condition.

Glaucoma UK have further information on childhood glaucoma and their contact details can be found at the end of this information booklet.

Who is at risk of getting glaucoma?

Anyone can develop glaucoma, but some factors can put you at more risk. These include:

- **Your eye pressure (IOP):** People with eye pressure over 21mmHg are at greater risk of developing primary open angle glaucoma
- **Your age:** Glaucoma is more common as you get older. It occurs in up to two in 100 people over the age of 40, increasing to up to seven in 100 people over the age of 70
- **Your sex:** Primary closed angle glaucoma is two to three times more common in women
- **Your family history:** You're at a higher risk of developing primary open angle glaucoma if you have a close blood relative (a parent, brother, sister or child) with it. A brother or sister with the condition increases your risk of developing it by eight times. If you have a parent with it, your risk of developing it increases by two times. If you've been diagnosed with glaucoma, you should let these close family members know. If they're over 40, it's recommended they should see their optometrist (also known as an optician) every year for a free NHS eye examination

- **Your race:** Primary open angle glaucoma is two to three times more common in people with African Caribbean ethnic backgrounds. It's also more likely to develop earlier in life – before the age of 40, and there is a chance that it may develop more quickly. Being of East Asian origin can increase your risk of closed angle glaucoma
- **Your eyesight prescription:** Being short-sighted can increase your risk of developing primary open angle glaucoma. Closed angle glaucoma is more common in people who are long-sighted
- **Diabetes:** Having diabetes can increase your risk of developing primary open angle glaucoma by two times
- **Steroid medication:** Glaucoma can be a complication from long term use of steroid medication.

How is glaucoma diagnosed?

There are a few tests that your optometrist can carry out to check for glaucoma:

- **Examining your eye:** this involves looking at the health of your optic nerve at the back of your eye using a bright light to check for any changes. Some optometrists may also take a photograph of the optic nerve at the back of your eye
- **Eye pressure (IOP) measurement:** this is known as tonometry. Most optometrists do this using the "puff of air" test, known as non-contact tonometry. Although this test may make you jump, it's not painful and doesn't harm your eye in any way. Some optometrists may measure your eye pressure in a slightly different way called contact tonometry. This is done by using anaesthetic and yellow eye drops, a blue light and an instrument which gently touches the front of your eye. The anaesthetic eye drops numb your eye beforehand so it's not painful. This method of measuring eye pressure gives a more accurate reading than the "puff of air" test. Eye pressure measurements can vary during the day so your optometrist may want to repeat this test on another day or time if they are concerned

- **Visual fields test:** the test to measure your side vision is known as a visual fields test. This is to check for any missing areas of vision or blind spots. During this test, you'll be asked to focus on the centre of a screen and press a button each time you see a small flash of light in your side vision. This can take up to 10 mins on each eye and it can be difficult to concentrate. Some days your test results will be better than others, so sometimes you may be asked to repeat this test
- **Optical coherence tomography (OCT):** this is a way of imaging the inside of the eye using infrared light. It can give a quick but very detailed image of the structures at the optic nerve. This can show up any damage to the cells of the optic nerve and is a helpful way of spotting subtle changes from one year to the next. OCT can also be used to examine the drainage angle of your eye.

It's possible to have glaucoma even if you have normal eye pressure, so the results of all of these tests will be looked at together.

If your optometrist is concerned about the results of any of these tests, they may carry out further tests, or will refer you to another optometrist or an ophthalmologist (also known as a hospital eye doctor) for further tests.

As well as the above tests, the hospital or specialist optometrist clinic may carry out the following additional tests:

- **Corneal thickness (pachymetry):** this is measuring the thickness of your cornea, because this can help with the accuracy of your eye pressure readings
- **Examination of the front chamber (gonioscopy):** this is the examination of the area, or angle, in your eye where the aqueous fluid drains out, using a mirrored lens. This is to see if there is enough space for the aqueous fluid to drain or whether there is anything blocking that area.

The results of all of the tests are combined to get an overall picture of whether you have glaucoma or not, or how well your treatment is working. It is common for results to vary, and it may be recommended that tests are repeated before decisions on diagnosis or treatment are made.

What is a ‘glaucoma suspect’?

You may not be diagnosed with glaucoma straight away, but the results of some of these tests may show that you are at higher risk of developing the condition. You may be told that you are being monitored as a ‘glaucoma suspect’ which means that you don’t definitely have glaucoma but do need to be monitored to check for any worsening of the signs of glaucoma.

Being told you are a glaucoma suspect does not automatically mean that you will develop glaucoma. The risk will depend on many factors and more tests will need to be carried out to see if anything changes over time. Your eye health will generally be monitored over several visits. The results of this monitoring will show if you have glaucoma.

It’s important that glaucoma is picked up as early in its stages as possible, so that treatment can be started to prevent sight loss in the future.

Primary open angle glaucoma (POAG)

This is the most common type of glaucoma in the UK. It's also known as **chronic open angle glaucoma** which means the damage to your optic nerve and changes to your sight happen very slowly over time.

Will I have any symptoms?

You can't 'feel' primary open angle glaucoma; it doesn't cause any symptoms and the eye pressure doesn't cause any pain. You may not notice any difference in your vision because glaucoma affects your peripheral vision (side vision) first. As your peripheral vision is not as sensitive as your central vision, it's difficult to notice any early changes to your vision, even though your sight is being damaged.

Because you may not notice a problem until your glaucoma is more advanced, it's important to have regular eye examinations as this is the only way to know if you have it. The earlier your glaucoma is picked up and treated, the more your sight can be protected.

How can primary open angle glaucoma affect my sight?

If there is damage to your optic nerve, blind spots can begin to form in the outer edges of your vision. You may miss things in your peripheral vision, but often you will have no symptoms until the condition is advanced.

Without treatment, sight loss can slowly progress so that your field of vision becomes very narrow, your night vision becomes poor and it can appear as if you're looking through a tunnel. Finally, if left untreated, your central vision may be affected too, causing blind spots to appear when you look straight ahead.

Unfortunately, once sight loss occurs, it can't be reversed as there are currently no treatments which can restore the damaged nerve. This means that it's important that your glaucoma is picked up and treated early to prevent optic nerve damage in the first place and to avoid sight loss.

Primary open angle glaucoma usually affects both eyes, but one eye may be affected more than the other.

What is the treatment for primary open angle glaucoma?

All treatment for glaucoma aims to lower your eye pressure to prevent damage to your optic nerve and your sight. Damage to the optic nerve can occur at different eye pressures among different people. Even if your eye pressure is at a normal level to begin with, treatment will still be aimed at lowering this pressure to a level which is safe for you – your ophthalmologist may call this your 'target eye pressure'.

First line treatments

Eye drops

Treatment to lower your eye pressure may start with eye drops, and for many people with glaucoma, this is all the treatment they will ever need. But these drops will need to be used long term or for life.

The eye drops work by either reducing the amount of aqueous fluid that your eye produces, or by helping the aqueous fluid drain away more quickly. There are different types of eye drops that can be prescribed for glaucoma. Your ophthalmologist will decide on the type of eye drops to prescribe, depending on your medical history. They will monitor your eye pressure at regular check-ups to make sure the drops are working.

It may take time to find the right drop or combination of drops to control your eye pressure. If you've just started using eye drops, or if you have recently changed your type of eye drops, your eye pressure would normally be checked within a few months of starting the new drops to find out how well they're working.

Taking the drops will not cause any change in your sight, so it can be difficult to understand why you need to put them in every day. Your drops are preventing any future damage to your sight so it's very important to keep using them. If you don't use your drops then your eye pressure will remain too high and damage your optic nerve, which will cause you to lose your sight.

If you have been prescribed eye drops, it's important to use them as recommended. It's important to tell your ophthalmologist if your eye drops are causing you any problems. Like all medications, all drops do have side effects, such as eye irritation, change in colour of the iris, or red eye and some aren't suitable for people with certain underlying health conditions. Usually only a small number of people experience side effects. The risk of side effects is very small compared to the risk of losing your sight if you don't use the drops.

If you're having a problem with a particular type of eye drop, it may be possible for your ophthalmologist to suggest an alternative drop. Preservative-free eye drops may be an option if you're sensitive to any of the preservatives added to the drops.

Some people find it difficult to squeeze the bottle the drop comes in or aim their drops accurately. There are lots of aids that can help you with this. Some help to hold the bottle steady above your eye, while some help you squeeze the bottle. You can speak to your ophthalmologist, GP or pharmacist about which aids would be suitable for you, depending on the type of eye drop bottle you have been prescribed.

Glaucoma UK have further information on eye drop dispensing aids and their contact details can be found at the end of this information booklet.

SLT laser treatment

When you are first diagnosed with glaucoma, you may be offered laser treatment as your first treatment option. If you have already started on drops as treatment for your glaucoma, the ophthalmologist will only recommend laser treatment if the drops are not controlling your eye pressure properly.

The type of laser treatment used is called 360° Selective Laser Trabeculoplasty (SLT). Your ophthalmologist is the best person to advise you whether this is likely to work in your eyes and will discuss the benefits and risks of choosing between laser and drops as the first choice.

360° SLT is a gentle laser that is applied to the pigmented cells in the trabecular meshwork. This causes the body to react, so it rebuilds the meshwork which helps it to work and drain fluid better, lowering your eye pressure. You may need to have this procedure repeated if it works well to start with, but the effect wears off. If it doesn't work well first time, usually you will be recommended to use drops to lower your eye pressure instead.

SLT is done in the outpatient clinic. You will have drops put in the eye that lower your eye pressure and make your pupil very small. Your eye will be numbed using anaesthetic drops and a special contact lens placed on your eye. You will be asked to place your chin on the chin rest of the machine. The laser will be applied in short pulses for around 10-15 minutes. You may notice clicking sounds and see some flashes in your vision. It is not painful, but it may feel a little uncomfortable. After the treatment, your eye pressure will be checked, and

you will usually be given drops to use at home for around five days to help the eye recover from the treatment. It can take up to eight to 12 weeks after the laser treatment for your eye pressure to stabilise.

Other treatment options

There are many other treatment options for primary open angle glaucoma that may be recommended by your ophthalmologist if the first line treatments are not appropriate for you.

Other types of laser treatment

Argon laser trabeculoplasty (ALT) is a type of laser that, like SLT, is applied to the trabecular meshwork to increase outflow of aqueous fluid from the eye and reduce your eye pressure.

Cyclodiode laser treatment is applied to the aqueous fluid producing cells inside the eye to reduce the production of aqueous fluid, and this reduces your eye pressure.

Surgery

In a very small number of people with glaucoma, where eye drops or laser treatments haven't been successful in keeping the eye pressure stable, or where the glaucoma is advanced, surgery may be an option.

Trabeculectomy

The most common surgery for glaucoma is called a trabeculectomy. This surgery creates a new permanent drainage channel in your eye for the aqueous fluid to drain away, lowering your eye pressure.

The new opening is made in the sclera (the white of your eye). The aqueous fluid drains out through the opening and forms a small reservoir, called a bleb, on the surface of your eye, which is hidden under your upper eyelid. The fluid then gets absorbed back into your bloodstream. Anti-scarring medicine is used on the eye during the operation to prevent the opening from closing up.

You will normally be checked frequently at the eye clinic in the weeks following your operation. During these visits, you may have further small procedures such as removing or adjusting stitches to fine-tune the eye pressure, or injections of anti-scarring medication.

After having a trabeculectomy, some people's eye pressure comes down enough so that eye drops may no longer be needed on the eye that has had the operation. Your ophthalmologist will be able to let you know if this is the case for you. You'll still be monitored regularly at the eye clinic

whether you need continuing treatment or not.

Aqueous shunt surgery

This is surgery to insert a tiny device into the eye, called a shunt or tube implant. This drains aqueous fluid out of the eye into a small 'bleb' on the surface of the eye. The shunt or tube allows more aqueous fluid to leave the eye, bypassing the eye's normal drainage system, and this lowers the eye pressure.

MIGS – minimally invasive glaucoma surgery

This is the name given to a range of implants, devices or techniques that aim to lower eye pressure by improving the drainage of aqueous fluid out of the eye. MIGS uses tiny incisions and/or microscopic equipment which have been designed to reduce the risk compared to other surgical procedures. If this is an option for you the ophthalmologist will explain what the specific treatment is and how it may benefit you.

Glaucoma UK have more information on the different types of MIGS available and their contact details can be found towards the end of this booklet.

Primary closed angle glaucoma

There are two types of closed angle glaucoma, chronic and acute. It happens when the outer edge of the iris is pushed forward by the aqueous fluid behind it. This causes the iris to make contact with the cornea, closing the drainage angle. This can stop the aqueous fluid from draining away altogether.

Some eyes naturally have a narrower drainage angle. This smaller angle can slow down, or even close completely, causing fluid to build up and eye pressure to rise.

Closed angle glaucoma can be chronic or acute. Chronic angle closure develops slowly, as the drainage angle gets narrower, and the eye pressure slowly rises. It usually has no symptoms but can be noticed when your eyes are examined. Acute closed angle glaucoma happens when the drainage angle closes suddenly, and this can cause your eye pressure to rise very high very quickly.

What are the symptoms of closed angle glaucoma?

In the early stages, some people may get a series of mild attacks. Your vision may seem misty, you may see rainbow-coloured rings around white lights, or your eyes may feel achy especially in the

evenings. If you have any of these symptoms, it's important to have your eyes examined as soon as possible and let your optometrist know.

However, for most people, there's no warning. A sudden increase in eye pressure is very painful, your eye becomes red and your sight gets worse. You may even black out, feel nauseous or be sick. It usually affects only one eye at a time and it's rare for both eyes to have an attack at the same time.

What is the treatment for closed angle glaucoma?

If you have an acute attack, you'll need to go to the hospital immediately to have treatment to lower your eye pressure quickly and prevent permanent sight loss. This treatment will be a combination of eye drops and a tablet or injection, which reduces your eye pressure quickly, and eases the pressure and pain. In most cases, if treatment is given quickly, your sight can recover almost completely.

Once your eye pressure is under control again, it's normal to need some further treatment to prevent you from having another acute attack. Usually, this is a laser treatment to make a small hole in your iris, a procedure known as a peripheral iridotomy.

The laser creates a channel for the aqueous fluid to flow through, which prevents the iris being pushed forward and prevents the angle from closing. The treatment is normally carried out on both eyes to prevent the same problem occurring in either eye in the future. It's generally a straightforward procedure from which people recover quickly and the holes can't be noticed by other people.

If you have a cataract as well, your ophthalmologist might recommend cataract surgery instead of laser iridotomy. Cataract surgery can also open up the angle.

What happens in the long term?

If an acute closed angle attack is treated quickly, it can usually be brought under control within a few hours. Your eye becomes more comfortable, and your sight can recover almost completely.

Occasionally, following all the treatments, eye pressure can remain high. In these cases, you may need to use regular eye drops in the long term to keep your eye pressure controlled and prevent damage to your optic nerve.

Normal tension glaucoma

This type of glaucoma occurs when your eye pressure is within normal range but causes damage to your optic nerve.

It's not entirely known why some people's optic nerve becomes damaged even though their eye pressure is at a normal level. It's thought that perhaps some people's optic nerve may just be weaker or have a more fragile blood supply and be unable to cope with an eye pressure within the normal range.

Normal tension glaucoma is treated in the same way as open angle glaucoma – by lowering your eye pressure to a level which is right for you, to protect your sight.

Ocular hypertension (high eye pressure)

Some people naturally have eye pressure above the normal range, but this pressure doesn't cause any damage to their optic nerve. This is described as ocular hypertension rather than glaucoma.

Different people can have different optic nerve strengths, and some people's optic nerves stay healthy at higher than normal eye pressures.

Most people's eye pressures are in the range of 10 to 21mmHg. If you have an eye examination and your eye pressure is higher than 24 mmHg, your optometrist will refer you to the eye clinic for more tests. These tests will check whether this higher eye pressure is likely to cause any problems to your optic nerve.

An ophthalmologist may diagnose you with ocular hypertension. This means that the pressure in your eye is high but that it is not causing any damage to your optic nerve. A high pressure may be completely normal for your eye.

If you have ocular hypertension, it can increase your risk of developing glaucoma, so this needs to be monitored. Sometimes you may be prescribed eye drops or offered SLT to help reduce your

eye pressure and reduce your risk of developing glaucoma. If this is the case, you'll be followed up at the eye clinic regularly to monitor your eye pressure.

You may be discharged from the eye clinic if you don't require treatment and tests show that there is no sign of glaucoma. However, it's important for you to visit your optometrist regularly for your eyes to be checked so that any future changes can be picked up. Your optometrist or ophthalmologist will be able to tell you how often you should have your eyes checked.

Secondary glaucoma

Secondary glaucoma is caused by the effect of another eye condition, an injury to the eye, or certain treatments, medications or operations.

Some causes of secondary glaucoma include:

- Pigment dispersion syndrome and pseudoexfoliation which is where pigment or flakes get deposited in the trabecular meshwork. This can increase eye pressure and lead to glaucoma
- Uveitis (inflammation inside the eye) can lead to high eye pressure and glaucoma
- Steroid medication can sometimes cause eye pressure to rise and lead to glaucoma
- Abnormal blood vessel growth at the iris in conditions such as diabetic retinopathy or retinal vein occlusion can cause glaucoma, known as neovascular glaucoma.

The treatment for these types of glaucoma is again aimed at reducing the eye pressure as well as treating the underlying cause or eye condition.

Managing your glaucoma

Having glaucoma may mean you need to make a few changes to your everyday life to prevent sight loss. For many people, this includes using eye drops daily and for most people having to attend regular eye clinic visits.

Keeping to your treatment

The most important thing you can do to protect your sight is to keep to the treatment that has been recommended for you. For many people with glaucoma, this involves putting in eye drops daily. It may help to make putting in your drops part of your daily routine, such as brushing your teeth, so that you don't forget. It's important to remember to use your drops regularly as prescribed, to prevent glaucoma from getting worse and causing damage to your sight.

Attending your appointments

It's very important to attend all your appointments at the eye clinic to make sure your eye pressure stays stable. This is because changes in eye pressure have no symptoms, and without regular checks you won't be able to tell that your treatment is working. It also gives you a good opportunity to ask your ophthalmologist any

questions you may have about your glaucoma treatment. How often you need to be seen at the eye clinic will depend on how well your treatment is working.

At your regular follow up appointments, you are likely to repeat many of the tests that were used to make the diagnosis originally. These tests are repeated to see whether there is any change in your glaucoma since your last visit. These will be carried out by either by a specialist optometrist, ophthalmic technician or by the ophthalmologist. These results are reviewed by the ophthalmologist or specialist eye care professional who will discuss with you remotely or face to face, the results and whether any changes to your treatment are needed.

Lifestyle factors

There have been several studies carried out into how certain lifestyle factors may affect eye pressure and glaucoma.

Certain activities such as weightlifting, head down yoga positions, or playing wind instruments have been found to increase eye pressure temporarily, but there's no evidence to show that this worsens glaucoma in the long term. A high caffeine intake has also been shown to be connected to an increase in eye pressure and possible increased

risk of glaucoma, so drinking tea and coffee in moderation may help. You should speak to your ophthalmologist if you are concerned about any activities affecting your eye pressure or glaucoma.

The general advice about having a balanced diet rich in fruit and vegetables can help your overall general health and eye health. Also keeping active, exercising and not smoking can help keep your body and eyes healthy. The most important thing you can do to protect your eyes from sight loss due to glaucoma is to keep to any medical treatment that has been prescribed for you.

Driving

Many people with glaucoma can carry on driving, depending on how much of their peripheral vision has been affected. You are required by law to report a condition which may affect your sight to the Driver and Vehicle Licensing Authority (DVLA), including if you have glaucoma in both eyes, but not ocular hypertension. You are obliged to inform the DVLA even if you know that your vision meets the required standard.

The DVLA will need to assess your peripheral vision to see whether your sight meets their standards. They may also ask you to have these tests regularly to assess if it's safe for you to continue to drive.

Coping

It's completely natural to be upset when you've been diagnosed with glaucoma and it's normal to find yourself worrying about the future and how you will manage with a change in your vision.

It can sometimes be helpful to talk about these feelings with someone outside of your circle of friends or family. At RNIB, we can help with our telephone Helpline and our Sight Loss Counselling team. Your GP or social worker may also find a counsellor for you if you feel this might help.

Glaucoma UK is an organisation that supports people who have glaucoma, and their buddy service may help you if you want to speak to someone who has lived experience of the eye condition.

Your eye clinic may also have a sight loss adviser (also known as an Eye Care Liaison Officer or ECLO), who can be on hand to provide you with further practical and emotional support about your eye condition.

Further help and support

If glaucoma is picked up and treated early, you may not experience much of a change to your vision. You can carry on with everyday activities such as reading, watching television and using the computer – these things will not make your glaucoma worse.

If you do have some sight loss, there are a lot of things you can do to make the most of your remaining vision. This may mean making things bigger, using brighter lighting or using colour to make things easier to see. We have a series of booklets with helpful information on living with sight loss, including Starting out: Making the most of your sight. You can find out more about our range of titles by calling our Helpline.

You should ask your ophthalmologist, optometrist or GP about low vision aids and getting a low vision assessment. During this assessment with an optometrist, you'll be able to discuss the use of magnifiers and aids to help you to see things more clearly.

If your vision is affecting day-to-day activities, you should ask your ophthalmologist whether you're eligible to be registered as sight impaired (partially sighted) or severely sight impaired (blind).

Registration can act as your passport to expert help and sometimes to financial concessions. Even if you aren't registered, a lot of this support is still available to you.

Local social services should be able to give you information on staying safe in your home and getting out and about safely. They should also be able to offer you some practical mobility training to give you more confidence when you are out.

If you have questions about anything you've read in this publication, please get in touch.

RNIB Helpline

If you need someone who understands sight loss, call our Helpline on **0303 123 9999**, say "**Alexa, call RNIB Helpline**" to an Alexa-enabled device, or email **helpline@rnib.org.uk**. Our opening hours are weekdays from 8am – 8pm and Saturdays from 9am – 1pm

You can also get in touch by post or by visiting our website:

RNIB The Grimaldi Building,
154A Pentonville Road
London N1 9JE
rnib.org.uk

Connect with others

Meet or connect with others who are blind or partially sighted online, by phone or in your community to share interests, experiences and support for each other. From book clubs and social groups to sport and volunteering, our friendly, helpful and knowledgeable team can link you up with opportunities to suit you. Visit **rnib.org.uk/connect** or call **0303 123 9999**.

Other useful contacts

Glaucoma UK
Woodcote House
15 Highpoint Business Village
Henwood, Ashford
Kent TN24 8DH

Tel: **01233 648 170**
Email: **helpline@glaucoma.uk**
Web: **glaucoma.uk**

Driver and Vehicle Licensing Authority (DVLA)

Drivers' Medical Enquiries
Swansea SA99 1TU
Tel: **0300 790 6806**
Web: **dvla.gov.uk**

RNIB Booklet Series

About the Starting Out series

Essential information about living with sight loss. Titles include:

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Information to build confidence and independence. Titles include:

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- Age Related Macular Degeneration
- Cataracts
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- Eye Conditions Related to Diabetes
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- Nystagmus
- Retinal Detachment
- Inherited Retinal Dystrophies including Retinitis Pigmentosa
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For audio, print or braille versions of these booklets please contact our Helpline or visit **shop.rnib.org.uk**

For a list of information sources used in these titles and to provide feedback on the Starting Out and Confident Living Series, email **ckit@rnib.org.uk**. To provide feedback on the Understanding Series, email **eyehealth@rnib.org.uk**.

We value your feedback

You can help us improve this publication by letting us know what you think about it.

Is this booklet useful, easy to read and understand? Is it detailed enough or is there anything missing? We would also like your views on the pictures and diagrams, are they appropriate, helpful and are there places where a diagram might have helped?

Send your comments to us by emailing **eyehealth@rnib.org.uk** or by writing to:

Eye Health Information Service
RNIB
Eye Health Information
The Grimaldi Building
154A Pentonville Road
London N1 9JE

Information sources

RNIB and The Royal College of Ophthalmologists do all we can to ensure that the information we supply is accurate, up to date and in line with the latest research and expertise.

This publication uses information from:

- The Royal College of Ophthalmologists' guidelines for treatment
- clinical research and studies obtained through literature reviews
- specific support groups for individual conditions
- medical textbooks
- RNIB publications and research.

For a full list of references and information sources used in the compilation of this publication, email **eyehealth@rnib.org.uk**

About The Royal College of Ophthalmologists

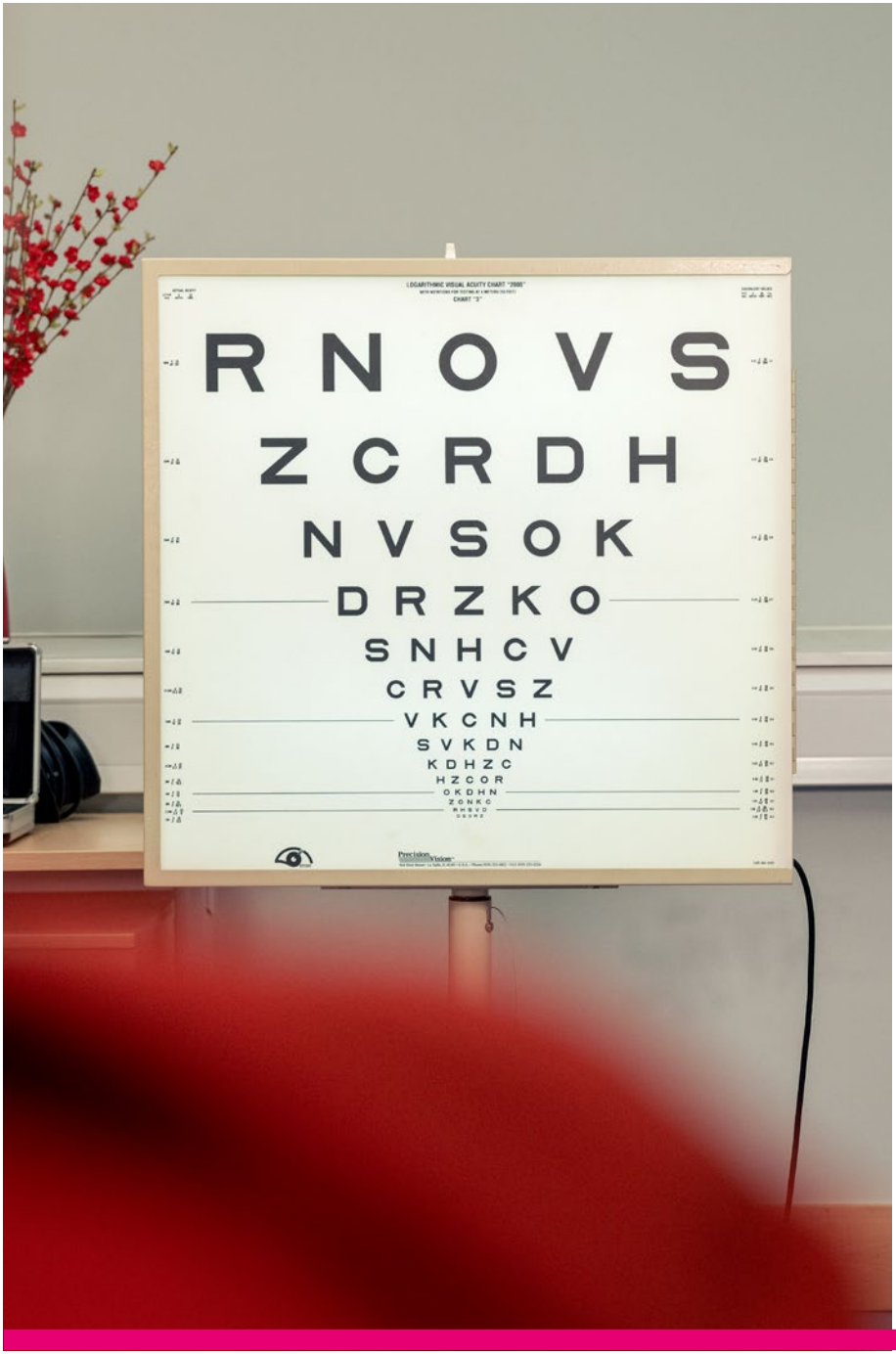
The Royal College of Ophthalmologists champions excellence in the practice of ophthalmology and is the only professional membership body for medically qualified ophthalmologists.

The College is unable to offer direct advice to patients. If you're concerned about the health of your eyes, you should seek medical advice from your GP or ophthalmologist.

rcophth.ac.uk

If you or someone you know is living with sight loss, we're here to help.

RNIB Helpline
0303 123 9999
helpline@rnib.org.uk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RNIB Helpline

Call: **0303 123 9999**

Email: **helpline@rnib.org.uk**

Or say, **"Alexa, call RNIB Helpline"** to an Alexa enabled device.

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