



Understanding Glaucoma



About BID Services

BID Services is a charity dedicated to removing barriers and empowering people who are D/deaf, hard of hearing, sight impaired, deafblind, or living with other disabilities to live full and independent lives.

We deliver a wide range of specialist services across the country, including information, advice and guidance; community services with welcoming social groups and activities; children and young people's services; awareness training and British Sign Language courses; communication support and interpreting services; assessment and rehabilitation for people with sight loss or who are deafblind, including mobility training and independent living skills; hearing aid clinics; and assistive technology and equipment assessments and training.

Self refer online

If you need support or you know someone who does, you can make a referral on our website:

www.bid.org.uk/contact-us

Use the camera on your smartphone to scan this QR code and self-refer online, or go to the end of this booklet for alternative contact information.



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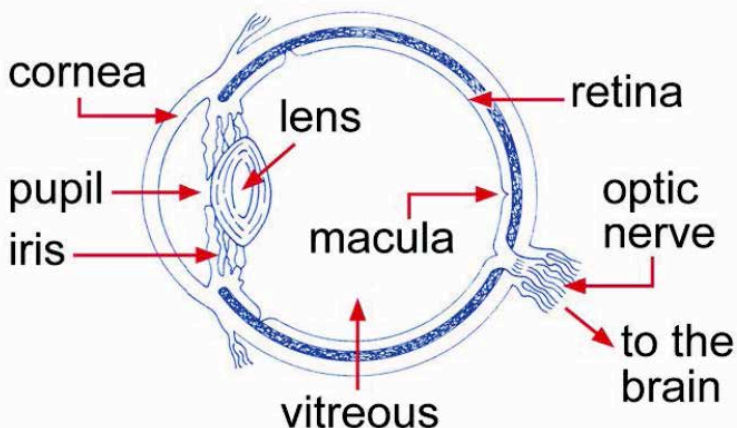
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About glaucoma

Glaucoma is the name given to a group of eye conditions, which cause optic nerve damage and can affect your vision. Glaucoma damages the optic nerve at the point where it leaves your eye.

How your eye works

When you look at something, light enters the front of your eye and is focused by the lens onto the retina. The retina is a delicate, light-sensitive layer that changes light into electrical signals. These signals travel through a network of nerves to the optic nerve and then to the brain. The brain interprets them so you can see the world around you. The place where the nerves leave the eye is called the optic disc.



Causes of glaucoma

Glaucoma can be caused by raised pressure in the eye, a weakness in the optic nerve, or a combination of both. Eye pressure is not the same as blood pressure.

A certain level of pressure is needed to keep the eye in shape. However, too much pressure can damage the optic nerve. The amount of damage depends on how high the pressure is and how long it lasts, and whether there is a poor blood supply or other weakness of the optic nerve. A really high eye pressure can damage the optic nerve immediately, while lower pressure may cause slow, gradual loss of sight if it is not treated.

How eye pressure can rise

Fluid inside the eye (called aqueous) is constantly produced behind the iris. It flows through the pupil into the front of the eye and drains away through tiny channels called the trabecular meshwork.

These drainage channels return the fluid to the bloodstream. Normally, the amount of fluid made and drained stays balanced. If the fluid cannot drain properly, or too much is produced, the pressure in the eye will rise.

Different types of glaucoma

There are four main types of glaucoma:

1. Primary open angle glaucoma (POAG) also known as chronic glaucoma
2. Acute angle closure glaucoma
3. Secondary glaucoma
4. Developmental glaucoma.

Primary open angle glaucoma

Primary open angle glaucoma (POAG), also called chronic glaucoma, is the most common type. It develops slowly over time.

In POAG, fluid does not drain from the eye as well as it should, causing pressure to rise. The eye may look normal, and you may not notice any early changes in your sight. It is usually painless, but damage can still occur.

POAG mainly affects peripheral (side) vision first. This loss happens gradually and is often not noticed at first. Over time, the affected area spreads. If left untreated, you will gradually lose the ability to see things at the side, above and below where you are looking. Your central vision can also be affected, leading to "tunnel vision" and increasing loss of sight.

Risk factors

Several things can increase your risk of developing POAG:

Age: It becomes more common as you get older. It is rare under 40, affects about 1 in 100 people over 40, and about 5 in 100 over 65.

Ethnicity: People of African origin have a higher risk. It may develop earlier and be more severe.

Family history: You are at higher risk if a close relative has glaucoma.

Short sight: Being very short-sighted increases your risk.

Diabetes: Having diabetes also increases your risk.

Detecting POAG

Most people should have an eye test at least every two years. Regular testing is especially important if you are at higher risk of glaucoma, such as being over 40 or having a family history.

Usually POAG is detected during an eye test by a high street optometrist (optician). Because it usually has no early symptoms, regular checks, every two years, are important.

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If you are over 40 and have a parent, child, brother or sister with glaucoma, you may be entitled to a free NHS sight test.

Your optometrist will decide which tests you need and explain their reasons. The tests are simple and painless. They may include:

1. Examining the back of the eye (retina and optic disc) using a light.
2. Measuring eye pressure with a machine or special instrument called a tonometer. This may involve having a few puffs of air in each eye to record the pressure.
3. Testing your visual field. This involves being shown a sequence of spots of light on a screen and you say which ones you can see.

If the results suggest glaucoma, you will usually be referred to a hospital eye specialist (ophthalmologist) for further checks and treatment if needed.



Types of Treatment

Your specialist will discuss with you which treatment approach is best to reduce your pressure and keep it stable.

Treatment for POAG aims to prevent further damage to your sight. It cannot reverse any damage that has already happened. The main goal is to lower the pressure in your eye. Some treatments also aim to improve the blood supply to the optic nerve.

You will be cared for by an ophthalmologist (eye specialist) and have regular check-ups to make sure your treatment is working.

Treatment usually starts with eye drops. These help by reducing the amount of fluid in the eye or improving how it drains. In most cases, drops successfully lower and control eye pressure, helping to protect against further damage and prevent sight loss. It is very important to use your drops exactly as prescribed, even if your vision seems unchanged. This helps prevent sight loss.

In some cases, the first drops you use may not work or might cause side effects, these are usually mild and are uncommon. If this happens, your

ophthalmologist would explore alternative drops with you. If you find it difficult to use your drops, or have problems with your hands, tell your specialist or GP. There are aids and support available to help.

If eye drops do not work well enough, your specialist may suggest laser treatment or an operation called a trabeculectomy to improve the fluid drainage from your eye.

Laser treatment

There are two main types of laser surgery that can be used to control eye pressure, laser trabeculoplasty and laser iridotomy.

Laser treatments are very successful. Laser trabeculoplasty helps to improve the drainage of aqueous fluid. Laser trabeculoplasty is the more common laser treatment for people with POAG.

The alternative is laser iridotomy, which creates a new drainage channel at the front of your eye. This new channel is usually made through the top of your iris, to allow aqueous fluid to drain through this channel as well. Laser iridotomy can sometimes be used for POAG, but is more commonly used to prevent someone having closed angle glaucoma.

Both types of laser treatment reduce pressure and will usually only need to be done once. They are minor surgical procedures which you recover from very quickly. Normally they are performed under local anaesthetic as an outpatient (meaning you wouldn't stay in hospital). You would normally use glaucoma drops in the long-term after laser treatment to continue to keep eye pressure stable.

Trabeculectomy surgery

If eye drops and laser treatment cannot lower your eye pressure and keep it stable, then trabeculectomy surgery may be considered. Only 5% of people with glaucoma require trabeculectomy surgery. This surgery creates a new, permanent drainage channel in the eye and lowers pressure. The new channel is made on the white part of your eye (the sclera), underneath your upper eye lid. Continued use of glaucoma drops is not normally needed following this surgery, but your ophthalmologist will let you know what would be best for you.

There are other types of surgery available for glaucoma. Your ophthalmologist will be able to discuss with you whether or not they are appropriate.

Acute angle closure glaucoma

Acute glaucoma is much less common than POAG. Acute angle closure glaucoma happens when there is a sudden and more complete blockage to the flow of aqueous fluid from the eye. This is nearly always very painful and causes permanent damage to your sight if not treated promptly.

In acute angle closure glaucoma, the pressure in the eye rises rapidly. This is because the outer edge of the iris and the front of the eye (cornea) come into contact, which stops the aqueous fluid from draining away through the trabecular meshwork as normal. This can happen in one or both eyes, but it is rare for both eyes to have an attack at the same time.

Symptoms of acute glaucoma

In the early stages you may see misty rainbow-coloured rings around white lights. But for most people, a sudden increase in eye pressure is very painful. The affected eye becomes red, the sight deteriorates and you may even black out. You may also feel nauseous and be sick. Acute glaucoma is an emergency and needs to be treated quickly if sight is to be saved.

Some people can experience a series of mild attacks, often in the evening. Vision may seem

“misty” with coloured rings seen around white lights and there may be some discomfort in the eye. If you think you are having mild attacks, you should have your eyes tested as soon as possible and let the optometrist know that you are having these symptoms.

In some people, the angle between the cornea and the iris is narrow, meaning there could be more risk of developing closed angle glaucoma. Your optometrist may notice this during your eye test and may refer you to the hospital for further tests and treatment, even if you have no symptoms of acute glaucoma.

Treating acute glaucoma

If you are diagnosed and treated promptly, there may be almost complete and permanent recovery of vision. Delay in treatment may cause a permanent loss of sight in the affected eye. If you have an acute attack you need to go into hospital immediately, so that the pain and the pressure in the eye can be relieved. You will be given medication, which makes your eye produce less aqueous fluid and also improves its drainage to help relieve the pain.

An acute attack, if treated early, can usually be brought under control in a few hours. Your eye

will become more comfortable and sight will start to return. Your surgeon will probably suggest a procedure to make a small hole in the outer border of your iris to allow the fluid to drain away. This is usually done by laser iridotomy or by a small operation. Usually, the surgeon also advises you to have the laser iridotomy on your other eye because there is a high risk that it will develop the same problem.

This treatment is not painful. Depending on the circumstances and the response to treatment, you probably won't need to stay in hospital. Occasionally, the eye pressure remains a little raised and treatment is required as for chronic glaucoma (there is more information in the earlier section on POAG). Even though treatment brings the pressure down to near normal, you may also need to continue using eye drops to keep the glaucoma under control.

Can acute glaucoma be prevented?

Some people may have very mild or no symptoms of acute glaucoma, but when their eyes are examined their angles may be very narrow. In these cases, an ophthalmologist may recommend surgery to prevent an acute attack. If you have had an acute glaucoma attack in one eye, usually surgery will also

be performed on the other eye to avoid problems in the future.

Ocular hypertension

Ocular hypertension means high eye pressure. We all have eye pressure as it keeps the eye healthy and helps to maintain the shape of the eye. Most people's eye pressure is between 16-21 mmHg. Sometimes eye pressure can be a bit below or above this range, which may be completely normal for your eye and not need any treatment.

Eye pressure can go up and down slightly quite naturally, but it does not go up with your blood pressure. Therefore, stress does not cause high eye pressure or glaucoma. If your eye pressure is above 22 mmHg, you will generally be told that you have ocular hypertension. This is not the same as having glaucoma. A diagnosis of glaucoma means that the pressure in the eye has caused some damage to the optic nerve, but a diagnosis of ocular hypertension may mean your pressure is high, but there is no damage to your optic nerve.

Due to a change in NHS referral guidelines used by optometrists, more people are being seen at hospital with suspected ocular hypertension. Not everyone with ocular hypertension will develop glaucoma or need treatment but some will. Ocular

hypertension is treated with drops in the same way as chronic glaucoma (POAG) and your eye health should be monitored regularly at a hospital.

Low tension glaucoma

Low tension glaucoma means that your optic nerve is damaged like it is in other types of glaucoma, but your eye pressure is well within the normal range. If you have low tension glaucoma, your eye pressure will need to be reduced to keep your sight safe.

Low tension glaucoma is treated in the same way as glaucoma caused by high eye pressure.

Secondary glaucoma

An increase in ocular pressure can also occur as a secondary effect of other eye conditions, operations, injuries or medications. This can lead to damaging your vision, and when this happens it is called secondary glaucoma. The treatment in each case is always aimed at reducing the pressure as well as treating the cause. If this is the type of glaucoma you have, your specialist will talk to you about the planned treatment.

Developmental glaucoma

Developmental or congenital glaucoma is a very rare condition, which affects young babies. It is usually identified in the early years and managed by specialist clinics.

Monitoring glaucoma and hospital visits

If you are diagnosed with glaucoma, you may need to visit the hospital frequently to start with. This is because your ophthalmologist will want to make sure you are responding to treatment and that your eye pressure is in the right range for you and it is stable.

If your eye pressure continues to be stable and you are not having any problems with treatment, then you will be able to go for check-ups less often.

With time, you may only need to be seen every six or twelve months. However, it is very important that you attend these appointments, as you will not be aware of any changes to the pressure, and you could permanently lose more sight if your current treatment becomes ineffective.

On each visit, you will have the pressure measured in the eye, your visual field tested and the back of your eye examined using drops to dilate your pupil. The effects of the drops usually wear off in about six hours, although sometimes it will happen overnight. It is not safe to drive until the effects of these drops have worn off.

The visual field test used in monitoring glaucoma

is much more detailed than the screening tests used by your optometrist. Some of the tests can take ten minutes per eye and this can get boring. It is important to be prepared for this, as accurate testing allows the specialist to make the right decisions about your treatment.

Changes in your glaucoma

Most people with glaucoma use drops for many years or for life. Using your drops regularly can help to keep your eye pressure under control and minimise the damage to your sight. Not using your drops could, in the long term, make your glaucoma unstable and lead to permanent sight loss, as sight loss in glaucoma is not reversible. When you have been on drops for a long time they may not be as effective as they were before, or you might develop sensitivity to them. The hospital will monitor you at your regular appointments and suggest different eye drops, or other treatment, if needed.

Coping

Being diagnosed with an eye condition can be very upsetting. You may find that you are worried about the future and how you will manage with a change in your vision. All these feelings are natural.

Some people may want to talk over some of these

feelings with someone outside their circle of friends or family. BID Services can provide support and practical advice. Your GP or social worker may also be able to help you find a counsellor if you think this would help you.

Help to see things better

Early detection and treatment of glaucoma usually prevents or slows down any further damage. People with glaucoma can carry on with everyday activities such as reading, watching television and using their computer.

You should ask your ophthalmologist, optometrist or GP about low vision aids and whether you are eligible to register as sight impaired (partially sighted) or severely sight impaired (blind). Registration help you access support and financial concessions. Even if you are not registered, a lot of this support is still available to you.

Local social services should be able to offer 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.

BID Services can provide information about low

vision clinics, equipment and help available or we can signpost to other local organisations. To find out what support is available near you, please get in touch. Contact details can be found at the end of this leaflet.

Driving

Most people with glaucoma carry on driving in the long term if the loss of visual field is not advanced, but you are required by law to report a condition which might affect sight. You only need to inform the Driver and Vehicle Licensing Authority (DVLA) if you are diagnosed with glaucoma in both eyes. The DVLA may carry out regular tests to assess if it is safe for you to drive.

To assess possible damage to your peripheral vision, you will need a special test to see whether your sight meets the standards of the DVLA. Ask your specialist about this.

You may like to obtain a leaflet about driving published by the International Glaucoma Association (IGA). The IGA supports patients by providing information, so they can cooperate fully in their treatment and prevent sight loss. It also promotes awareness and early detection of glaucoma, and supports and carries out research.



Useful contacts

The Royal College of Ophthalmologists

Tel 020 7935 0702

Website www.rcophth.ac.uk

Royal National Institute of Blind People (RNIB)

Tel 0303 123 9999

Website www.rnib.org.uk

Driver and Vehicle Licensing Agency (DVLA)

Tel 0300 790 6801

Website www.gov.uk/contact-the-dvla

International Glaucoma Association (IGA)

Tel 01233 64 81 70

Website www.glaucoma-association.com

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www.bid.org.uk/resources

If you require this booklet in an alternative format (e.g. large print, audio or Braille), please contact us.

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