Stroke Association

Finding **strength** through **support**

Vision problems after stroke

Read this online

Stroke Support Helpline: **0303 3033 100**
or email: **helpline@stroke.org.uk**

Almost two-thirds of people have vision problems after a stroke. This guide looks at the different ways your vision can be affected, and how you can get treatment and support.

Vision problems after a stroke can affect your daily life in many ways. You could find it harder to do things like reading, shopping and watching television. You may struggle to get around or feel less confident about going out. You may need support with returning to work, such as help with travel or new ways of doing your job.

It's not always obvious right away that your vision is affected. Different practical and emotional difficulties can emerge over time, especially after you leave hospital.

How do I know if I have a vision problem?

You will not always be aware you have a vision problem. This is why it's important to have your vision checked after a stroke. Things like visual field loss and visual processing problems may only be picked up by a test. You or other people might notice you're bumping into things, or that you're not aware of things happening to one side. To find out some of the signs of different types of vision problem, see later in this guide.

Diagnosing vision problems

You should have your vision checked before leaving hospital. If this does not happen, or you do not remember having your eyes tested, you can ask your GP to refer you to your local eye clinic or visit your local optician.

If you notice new vision problems after you go home, tell your GP, local optician or stroke therapist. They can refer you for further assessment. When you have a vision assessment, make sure you have any glasses you usually use with you.

If you had vision problems before your stroke, it's important to continue with any treatment like eye drops and your regular sight checks. This includes conditions like cataracts, age-related macular degeneration, diabetic retinopathy or glaucoma.

Eye tests can be adapted for people with communication difficulties or problems with memory and thinking (cognitive problems). Some tests use pictures, symbols or numbers.

Your vision, and the effects of a stroke, can change over time, so it's important to get advice if you notice any changes in your sight.

How can a stroke affect my vision?

Like the other effects of stroke, vision problems can improve over time, as the brain recovers. How you are affected depends on exactly where the stroke occurred in your brain. There are four main types of visual problem:

- **Vision or visual field loss,** where you have blurred or missing areas of your vision.
- **Eye movement problems**, where you have trouble with the nerve control of the muscles that focus and move your eyes.
- **Visual processing problems** where you struggle to understand visual information. It may mean you are not aware of things to one side of you, or you may not recognise things.
- **Other sight or eye problems**, including light sensitivity and dry eyes.

You may have more than one of these types of visual problem after a stroke.

Visual field loss

Your visual field is everything you can see – including straight ahead (central vision) and out to the side (peripheral vision).

Visual field loss means you are unable to see a section of your field of vision, usually because the vision areas of your brain have been damaged by the stroke. The eyes themselves work normally, but the brain cannot process the images from one area of vision.

It almost always affects the same side of the visual field in both eyes (this is called 'homonymous' visual field loss). The part of the visual field that is lost and how big it is depends on where the stroke occurred in your brain.

Types of visual field loss

- **Hemianopia** means losing the left or right half of the visual field of both eyes. It's sometimes called homonymous hemianopia.
- **Quantranopia** also will affect the left or right field of both eyes, but only one-quarter is lost.
- **Scotoma** is a small patch of vision loss, often near the centre of vision. It's a less common type of visual field loss.

Often people think the vision in one eye has been affected, but it is usually one side of the visual field of both eyes.

How do I know if I have visual field loss?

Some people with visual field loss may not be aware of the missing area of vision. You may become aware of it because of how it affects your everyday life.

Hemianopia can make reading difficult because it's hard to find the beginning or end of a line, or find the next line. You might only notice the field loss if you look in a mirror and can only see one side of your face, or if you can only see part of your TV or phone screen. It can be difficult to get around in unfamiliar or crowded places, as you may miss obstacles on the side of field loss.

Will visual field loss recover?
Visual field loss can improve and some people make a complete recovery. Many people will have a permanent visual field loss, but there are techniques to help you make the most of your remaining vision.

An eye or rehabilitation specialist can assess your eye problems and advise you on what will work best for you.

Visual scanning training
This encourages you to look to your left and right sides in a more efficient way. This is often how occupational therapists will teach you to cope with your field loss, and they can help you practise this in everyday tasks. There are also some free online therapies, such as EyeSearch and ReadRight, which are designed to improve the speed and accuracy of eye scanning and reading (see 'Other sources of help and information' on **page 11**).

Optical aids and other tools
You may be given a plastic prism to wear in your glasses, to help you see a little further to one side.

Some vision on the ‘good’ side is sacrificed, and not everyone can use them as some people find it gives them double vision, confusion or headaches.

If you find reading difficult, using line guides, having good lighting and using edge markers on books and newspapers may be helpful.

Retinal vessel occlusion

Retinal vessel occlusion is due to a blockage in one of the blood vessels to the retina (retinal arteries). It is also called an ‘eye stroke’ but unlike a stroke, it does not affect the brain. It affects one eye, rather than both eyes which are affected in hemianopia. All vision in one eye can be lost, or just the top or bottom half of vision.

Retinal vessel occlusion shares many of the risk factors for stroke, so you will be given tests and checks for conditions like high blood pressure, diabetes and high cholesterol. You should be advised on taking steps to improve your health such as stopping smoking, maintaining a healthy weight and eating a balanced diet.

Eye movement problems

A stroke can lead to a variety of problems with control of the muscles that move your eyes. These include:

Impaired eye movements

These may mean that one eye, or both of your eyes, do not move correctly. It can affect your eyes’ ability to move between objects, or to follow a moving object, like someone walking past.

If you’re unable to move both eyes together, it may give you blurred vision or double vision (diplopia).

Eye movement problems can make reading more difficult and can also affect your general mobility. For example, if you’re unable to look around quickly, walking outside may be more challenging.

Eyes move constantly, or wobble

This can make it hard to focus on objects and cause moving images and double vision. This condition is called nystagmus.

Impaired depth perception and difficulty locating objects

For example, when making a cup of tea, you may misjudge the position of the cup and pour water over the edge, rather than into the cup.

How are these problems treated?

There are a number of treatment options. Exercises can help if you have difficulty moving your eyes inwards, such as when you read.

Prisms can improve double vision. A patch over one eye can also be used to avoid double vision. This makes it easier to see, but using only one eye (monocular vision) can also cause some difficulty.

You can work with an orthoptist to find out which option works best for you.

Visual processing problems

Some vision problems after stroke are due to the brain having difficulty making sense of the information received from the eyes. This can happen in many ways, for example, difficulty recognising objects or people by sight, or recognising colours. It can cause difficulty when you try to reach for objects, or make it harder to see more than one object at the same time.

Visual inattention (also known as visual neglect)

The most common type of visual processing problem is visual inattention or neglect. This means you are unaware of things to one side of you. It’s often due to strokes on the right side of the brain, so the left side of visual space is affected. For example, you may be unaware of objects and people on your affected side. You may ignore people or bump into things because you do not realise they are there.

Visual inattention can also reduce your ability to look or make movements towards part of your environment. It can be mild or more severe. When neglect is severe, it may be impossible to draw someone’s attention round to their affected side.

Visual field loss and neglect can happen together, which can make it harder to use strategies like visual scanning or patches.

Processing problems can affect your ability to read. See **page 9** for more information on reading problems.

How are visual processing problems treated?

Many people recover well from visual inattention. Your occupational therapist should work with you to help you cope with inattention. There is a range of rehabilitation, and you might learn to scan to the affected side (like for visual field loss) and ways to make you more aware of one side, such as asking family and friends to approach from that side.

If you have problems such as difficulty recognising colours, faces, objects, complex scenes or text, you may be taught to use your other senses (for example, touch or hearing) to process the information in a different way and to help you to improve your awareness of the affected side.

Visual hallucinations (Charles Bonnet syndrome)

Visual hallucinations happen when the brain generates images in the missing area of vision. The images most often appear in your blind area. You might see simple patterns, or more complex images of people and places. For some people, it's the only time they notice the area of vision loss. It is also known as Charles Bonnet syndrome.

Visual hallucinations caused by sight loss are not a symptom of a mental health problem. They often start after a sudden loss of vision. They almost always improve with time as your brain gets used to the loss of vision. They can return or get worse if your sight gets worse, or if you are unwell due to an infection.

Hallucinations can be caused by other conditions affecting the brain, so if you start having them tell your GP, eye health specialist or specialist stroke nurse.

There is no medication or treatment for visual hallucinations, but you can find organisations that support people with hallucinations in 'Other sources of information' on **page 11**. RNIB publishes a guide at **rnib.org.uk** on Charles Bonnet syndrome. Esme's Umbrella is a campaign group raising awareness of the condition.

Other sight problems

Dry eyes

If you have weakness in your facial muscles and eyelid muscles, you may have difficulty closing the eyelids fully, or your eyes could stay open when you are asleep. This can lead to a dry eye and irritation. It's important this is treated early with lubrication drops or ointment to prevent more serious eye complications such as ulcers. You might be advised to tape the lid closed at night if the eye does not always close fully.

Light sensitivity

Light sensitivity is common after a stroke. It's sometimes called photophobia. You might be bothered by bright light, or glare from light coloured surfaces. Some people find that a yellow or orange tinted overlay or tinted sunglasses help reduce glare.

Healthcare professionals who can help

You can ask your GP, therapist or optician if you need help with a vision problem. There are a wide range of vision and stroke professionals who can help. They include:

- An **orthoptist** can assess and treat a range of vision problems, particularly eye movements.
- An **ophthalmologist** is a medical doctor who specialises in diagnosing and treating diseases of the eye. Only a consultant ophthalmologist can certify people as sight impaired.
- An **optometrist** (optician) tests sight, prescribes and dispenses glasses or contact lenses and can screen you for eye disease.
- **Support workers and eye clinic liaison officers** (ECLOs) can give additional support and provide information on practical aids and emotional support. ECLOs provide a bridge between eye health professionals in hospital and other organisations that can support you at home.
- **Vision rehabilitation specialists** help you make use of your remaining vision and other skills to increase your independence.
- **Occupational therapists** can assess how vision problems affect your ability to do everyday tasks and offer rehabilitation.

Accessing an eye specialist

After a stroke, you should be seen by an orthoptist on the stroke unit, or have a vision screening test done by someone from the stroke team. If a vision problem is found, you should be referred to an orthoptist or ophthalmologist. They can assess your vision to find out the nature and severity of the problems, and arrange treatment for double vision or visual field loss.

Ideally, this assessment should happen before you leave hospital, as visual problems can affect daily life and rehabilitation of other problems after stroke.

You might have a full vision assessment in an outpatient clinic. You may be referred to a low vision clinic where you can have an assessment and get advice.

If no referral was made before discharge from hospital, you can ask your community stroke team to refer you for a vision assessment, or visit your optician who can provide treatment or refer to the eye clinic where needed.

Assessments and treatments are available through the NHS for free. It's a good idea to check with your eye specialist first if you're considering using a private provider.

Rehabilitation

Rehabilitation is usually provided by your community rehabilitation team or your local vision rehabilitation service. The aim is to give you skills and resources to reduce the impact of your vision problem on daily life. A course of training and support, tailored to your goals, may be provided. This can include support for your daily living skills, for work or using technology. It can help you find the right emotional support too.

An occupational therapist or vision rehabilitation specialist can also advise if specialist equipment, such as special lighting or screenreaders, may help you. The charity RNIB also has information on equipment to help you live more independently. Their contact details are on **page 12**.

Should I register my sight loss?

If you are assessed as being sight impaired (partially sighted) or severely sight impaired (blind), you can choose to register your sight loss. This can make it easier to get practical help from social services. It can also entitle you to concessions such as a council tax reduction, reduced price TV licence, the Disabled Person's Railcard and local travel schemes. It can also help when claiming certain state benefits.

A consultant ophthalmologist can complete the request to issue you with a certificate and referral for support services. In England and Wales, this certificate is called the Certificate of Vision Impairment (CVI). In Scotland this is called the CVI (Scotland) form, and in Northern Ireland it is called A655.

To register your sight loss, contact your local social services or hospital eye clinic, and they will add you to the register. RNIB has more information on the benefits of registering your sight loss and how to do it.

Tips for coping with vision problems

Making the most of your sight

Ask your orthoptist or optometrist (optician) if you need new glasses, and if you would benefit from low vision aids. An eye health specialist or GP can refer you to the local low vision service, where you can get low vision aids and advice.

You may be given magnifiers for use with near objects and reading, or telescopes for distance. You can try using brighter lighting, and using colours to make household objects easier to find.

You might need someone to help you get around in the early days and weeks after your stroke. With support, and by learning techniques like visual scanning, people can regain confidence and become more independent.

There are lots of other things you can try to help with your vision, including:

- If you have double vision, try using a patch when reading or watching television.
- When reading, use rulers and markers to highlight the beginning and end of sentences and to help you keep your position along a line of text.
- Make sure your lighting is good and you can change the level of lighting (for example, with a dimmer switch). Charity Guide Dogs has more information on lighting for people with vision problems at **guidedogs.org.uk**
- If you find things too bright, you can try sunglasses, anti-glare glasses or coloured overlays. You can also adjust the colour and brightness settings on your phone, tablet or laptop, to make them more comfortable.
- Reduce the number of objects on your surfaces at home, particularly in the kitchen. If there's too much clutter, it can be harder to pick out what you're looking for.
- Vision problems are not always obvious to other people. You might find it helpful to explain your sight problems to friends, family and colleagues, to help them understand the support you need. A white stick or cane also tells people you have a sight issue.
- If you lack confidence in going out and about, a visual rehabilitation officer can help you to learn strategies for safe travel on foot and public transport.

Reading problems after stroke

If you are finding reading difficult, ask your stroke nurse or local optician to refer you for some specialist advice about practical things you can try to improve your reading.

Three common stroke-related reading problems are:

Hemianopic alexia
This is when visual field loss interferes with text reading. You might be able to read accurately but slowly. There is a free practice-based app to help improve your reading at **readright.ucl.ac.uk**

Pure alexia
A stroke can damage a key part of the brain that lets you identify words on the page. You might read slowly, find it hard to recognise words, and sometimes mix up letters that look similar (such as p, b and d). There is a practice-based app for alexia called iRead-More, which you can download on the Apple or Google Play stores.

Alexia can also affect people with aphasia. You can find out more about aphasia at **stroke.org.uk/aphasia**

Neglect dyslexia
Damage to brain regions that deal with spatial analysis of the world can mean you get lost on the page. There is a free reading aid app that helps you with visuo-spatial challenges of text reading, by presenting text one line or even one word at a time. Find out more at Read-Clear at **makingreadingreal.org**

Employment and vision problems

If you're having problems with your work because of your vision, you can ask your employer to make reasonable adjustments to help you.

You can get information on your rights at work and returning to work after a stroke in our guide, 'A complete guide to work and stroke'. The RNIB also has information and resources on vision problems and work.

Driving

After a stroke or transient ischaemic attack (TIA), you must not drive a car or motorbike for at least one calendar month. There are different rules for bus and lorry drivers.

If your vision is affected, you must get a specialist visual assessment before attempting to return to driving, even if you think your vision has recovered.

You can also get individual advice about driving with vision problems and stroke from a driving assessment centre. Search for your local centre online at **drivingmobility.org.uk** or call **0800 559 3636**.

For more information about driving after stroke, visit **stroke.org.uk/driving** or call our Stroke Support Helpline.

Where to get help and information

From the Stroke Association

Stroke Support Helpline

Our Stroke Support Helpline is for anyone affected by a stroke, including family, friends and carers. The Helpline can give you information and support on any aspect of stroke.

Call us on **0303 3033 100**, from a textphone **18001 0303 3033 100** or email **helpline@stroke.org.uk**

Read our information

Log onto **stroke.org.uk** where you can find easy-to-understand information, videos and an online community to support you. Our website also has an accessibility widget, where you can access a screenreader tool and adjust the font, contrast and colours.

You can also call our Stroke Support Helpline to ask for printed copies of any our guides.

Other sources of help and information

Help with finding an optician for people with communication or cognitive difficulties

Specsavers

Website: **specsavers.co.uk/home-eye-tests**
Specsavers do home visits on request. You can also contact your local optician to ask if they do home visits.

Seeability – Find an Optometrist

Website: **seeability.org/find-an-optometrist**

Outside Clinic

Website: **outsideclinic.co.uk**

Free online therapy for vision problems

Eye Search

Website: **eyesearch.ucl.ac.uk**
A website from University College London Institute of Neurology. Provides free online therapy for people with visual search problems due to hemianopia and spatial neglect.

Read Right

Website: **readright.ucl.ac.uk**
Free online practice-based therapy to improve reading speeds in people with hemianopia from the University College London Institute of Neurology.

Organisations offering information, support and equipment

Esme's Umbrella

Website: **charlesbonnetsyndrome.uk**
Helpline: **0303 123 9999**
Support and information for people with visual hallucinations due to sight loss (Charles Bonnet syndrome). Helpline calls are answered by the RNIB Eye Health Team.

Guide Dogs

Website: **guidedogs.org.uk**
Information on sight loss support services, using canes and technology to help with everyday tasks.

NHS

Website: **nhs.uk/conditions/vision-loss**
Information on sight loss, lighting and other equipment to help you if you have low vision.

Nystagmus Network

Website: **nystagmusnetwork.org**
Information and support for people with nystagmus.

Partially Sighted Society

Website: **partsight.org.uk**
Tel: **01302 965 195**
Resources, products and support for people with sight loss.

Royal National Institute of Blind People (RNIB)
Website: **rnib.org.uk**
Helpline: **0303 123 9999**
Information about all aspects of sight loss, plus products such as large print and audio publications, and an emotional support service.

The Vision Group
Website: **liverpool.ac.uk/population-health/research/groups/vision/**
The VISION group has free written and audio resources for people with sight loss and their families. Many are written by stroke survivors who have visual problems.

Visionary
Website: **visionary.org.uk**
Helpline: **020 8090 9264**
Email: **visionary@visionary.org.uk**
UK network of local charities for blind and partially sighted people.

Audio books

Calibre
Website: **calibreaudio.org.uk**
Tel: **01296 432 339**
Lending library of audio books. Members can stream or download audio books or request a memory stick in the post.

Listening Books
Website: **listening-books.org.uk**
Tel: **020 7407 9417**
Audio library service providing audio books, magazines and newspapers.

Playback
Website: **play-back.com**
Tel: **0141 776 3395**
Provides a free service recording text to audio for people with sight loss. Also has an audio publication library.

Professional bodies

British and Irish Orthoptic Society
Website: **orthoptics.org.uk**
Tel: **0121 728 5633**
Provides information on eye problems after brain injury, including stroke. Search the site for 'Stroke and neuro rehabilitation' for useful resources.

The College of Optometrists
Website: **college-optometrists.org**
Tel: **020 7839 6000**
Professional body for optometrists in the UK.

Royal College of Ophthalmologists
Website: **rcophth.ac.uk**
Tel: **0300 030 2020**
Professional body for eye doctors.

Driving licensing agencies UK

Driver and Vehicle Licensing Agency (DVLA) England, Scotland, Wales
Website: **dvla.gov.uk**

Driver and Vehicle Agency (DVA) Northern Ireland
Website: **nidirect.gov.uk/motoring**

Glossary

Depth perception: the ability to see the world in three dimensions.

Diplopia: seeing two images of a single object (double vision).

Hemianopia: loss of vision on one side.

Homonymous hemianopia: losing half of the field of vision in both eyes.

Monocular vision: vision in only one eye.

Nystagmus: a condition where the eyes move constantly, or 'wobble'.

Ophthalmologist: a medical doctor specialising in eye conditions.

Optometrist (optician): a specialist who tests sight, prescribes glasses and contact lenses and screens people for eye disease.

Orthoptist: an eye health specialist who tests and treats eye movement problems, and problems with vision and visual co-ordination.

Photophobia: abnormally high sensitivity to light.

Prism: a plastic membrane which is applied to a person's glasses and which moves the position of objects when they are seen through the prism.

Ptosis: drooping of the upper eyelid.

Retinal vessel occlusion: a blockage in a blood vessel to the eye.

Scotoma: area of visual field loss.

Strabismus: the two eyes do not line up together (squint).

Visual field: the whole of your vision.

Visual neglect/inattention: the inability to notice things to one side.

Visual perception: how the images received by the brain are processed.

Visual scanning: training which encourages you to look in a systematic way to the right and left sides.

Notes

Vision problems after stroke

About our information

We want to provide the best information for people affected by stroke. That's why we ask stroke survivors and their families, as well as medical experts, to help us put our publications together.

How did we do?

To tell us what you think of this guide, or to request a list of the sources we used to create it, email us at **feedback@stroke.org.uk**

Accessible formats

Visit our website if you need this information in audio, large print or braille.

Always get individual advice

This guide contains general information about stroke. But if you have a problem, you should get individual advice from a professional such as a GP or pharmacist. Our Helpline can also help you find support. We work very hard to give you the latest facts, but some things change. We don't control the information provided by other organisations or websites.

You know more than most just how shocking and confusing having a stroke is. We're here to support you and your family find the strength and determination to get back to life.

Learn more about stroke support: **stroke.org.uk**

Version 5 Published November 2024
To be reviewed: April 2027
Item code: **A01F37**

JN 2425-158.2

Stroke Association is registered as a charity in England and Wales (No 211015) and in Scotland (SC037789). Also registered in the Isle of Man (No. 945) and Jersey (No. 221), and operating as a charity in Northern Ireland.