

Vision problems after stroke

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



About 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 loss after a stroke can affect your daily life in many ways. You could find it more difficult do things like reading, shopping or watching television. You may need support for returning to work, such as help with travel or new ways of doing your job.

Sight loss is linked to an increased risk of emotional problems like anxiety and depression, and this can affect your ability to take part in rehabilitation. Sometimes the practical and emotional difficulties that sight loss causes are not apparent in hospital, and you may only become aware of them when you return home.

Assessing vision

You should have your vision assessed before leaving hospital, and any sight problems should be treated. When you have an assessment, the healthcare team should ensure you have your glasses or other aids you may use with you. If you notice new vision problems after you go home, tell your GP, or local optician or specialist stroke nurse. They can refer you to the hospital eye clinic for an assessment.

If you had sight problems before your stroke, it is important to carry on with any treatment like eye drops, and keep having regular sight checks. This includes conditions like cataracts, age-related macular degeneration, diabetic retinopathy or glaucoma. 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.

Eye tests for people with communication or cognitive problems

Depending on someone's communication difficulties, some opticians are able to conduct eye tests using pictures, symbols or numbers. If this isn't possible, there is a tool called a retinoscope that uses light reflections to determine someone's prescription, without the need for language. See 'Other sources of help and information' for organisations that can help you find an eye professional with experience in this area.

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 areas of visual problem, and you may have one or more:

- Reduced central vision and other visual field loss.
- Eye movement problems.
- Visual processing problems.
- Other sight problems.

Reduced central vision and other 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 that 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 can't process the images from one area of vision. Where the visual field loss happens depends on where the stroke occurred in your brain. It almost always affects the same side of the visual field in both eyes (this is called 'homonymous' visual field loss). How much visual field is lost varies between people. The most common type is homonymous hemianopia, which means losing the left or right half of the visual field of both eyes. A less common type is scotoma, when there is a small patch of vision loss, often near the centre of vision.

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

If just one eye is affected, often with combined central and peripheral vision loss, it may be due to damage to the blood supply to the eye itself (see 'Retinal vessel occlusion' at the end of this section).

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. People with hemianopia often have difficulty reading, and may bump into things on the affected side. You might only notice the field loss if you look in a mirror and can only see one side of your face. When reading, it can be difficult to locate the start of a line if you have left-sided field loss. If you have right-sided field loss, it's harder to see ahead along the line of text. It can be difficult to get around, particularly in unfamiliar or crowded places.

Will visual field loss recover?

Visual field loss can improve, usually within the first month after a stroke. Around 15% of people recover completely and 30% have a partial recovery. For about half, the field loss will be permanent but there are techniques to help you make the most of your remaining vision.

Techniques for better vision

An eye specialist can assess your eye problems and advise you on what will work best for you. The missing area of vision can't be restored, but you can get help to make the most of your vision. The technique that seems to help most is visual scanning training. Using special lenses and optical aids may help some people.

Visual scanning training

This encourages you to look to your left and right sides in a systematic way. It is used to help you be more aware of your visual field loss and reminds you to look into your blind side. Eyesearch and Readright are free online therapies designed to improve the speed and accuracy of eye scanning and reading (see 'Other sources of help and information' for further details). Other options include using line guides when reading, having good lighting, and using edge markers on books and newspapers.

Widening your field of view with optical aids

This involves using a plastic prism on your glasses. The prism is worn on either one or both lenses). It creates an image of part of the side of visual field loss (your blind side) and reflects it over to your good side. This acts as a prompt or cue for you to look towards your blind side or may help you to notice things on that side.

Vision restorative treatment

There are some treatments available privately that aim to restore part of the lost area of visual field, using computer-based therapy. These are not available through the NHS, but if you wish to try this treatment it's a good idea to get advice from your stroke nurse or eye specialist first.

Making the most of your sight

Ask your orthoptist or optometrist (optician) about low vision aids such as magnifiers. An eye health specialist or GP can give you a referral 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 anti-glare glasses or overlays, to reduce excessive glare. 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 the stroke. With support, and by learning techniques like visual scanning, people can regain confidence and become more independent.

Visual hallucinations

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

Visual hallucinations are caused by sight loss, and they are not a symptom of a mental health problem. They often start after a sudden loss of vision.

They can improve over time, and may eventually stop. 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, optician 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' at the end of this guide. RNIB publishes a guide to Charles Bonnet Syndrome available at rnib.org.uk and Esme's Umbrella is a campaign group raising awareness of the condition.

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.

The retina is a light-sensitive area of nerves at the back of your eye. If the blood supply is blocked, it can cause sudden loss of sight. Some people have brief periods of sight loss before having permanent vision loss.

It's possible to treat a blockage in a retinal artery if you are seen at a hospital within four hours. However, the retina is very sensitive to loss of blood supply, and it may not be possible to avoid permanent sight loss.

If you notice any sudden loss of vision, you should visit your local hospital emergency department straight away.

With a blockage in a retinal vein (vessel carrying blood away from the retina), your sight can become dim or blurry over a few days.

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 the fine nerve control that is needed to move your eyes. We have listed the main ones below:

Impaired eye movements

These may affect your eyes' ability to move from looking at one object to another or to follow a moving object, like someone walking past. These problems can make reading more difficult and can also affect your general mobility. For example if you are unable to look around quickly, walking outside is likely to be more challenging.

Inability to move both eyes together

If the nerve control to your eye muscles is affected, one of your eyes may not move correctly. This may cause you to have blurred vision or double vision (diplopia). This is sometimes called a squint or strabismus.

Eyes move constantly, or wobble

This can make it hard to focus on objects, or cause 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 its edge rather than into it.

How are these problems treated?

There are a number of treatment options. Exercises can help if you have difficulty moving your eyes to look at objects held close to your face. Prisms can improve double vision or allow you to see things to one side if you are unable to look in that direction. Like glasses, prisms are prescribed for each individual after a sight test.

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 choose which option works best for you.

Visual processing problems

Some vision problems after stroke are due to the brain having difficulty processing the information received from the eyes and other senses. 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 neglect

The commonest type of visual processing problem is visual neglect, which means that you are unaware of your surroundings to one side. You may not realise that you are missing things around you. For example, you may be unaware of objects and people on your affected side, and may ignore people or bump into things without realising they are there. Visual neglect can reduce your ability to look, listen or make movements towards part of your environment.

Neglect is more common in people who have had a stroke on the right side of the brain, which affects their awareness of the left side. The person is not aware that they are missing part of their vision. When neglect is severe it may be impossible to draw someone's attention round to their affected side. Visual field loss and neglect can occur together, which can make it harder to use strategies like visual scanning or patches.

How are visual processing problems treated?

Many people recover well from visual neglect. If you have neglect you might be able to learn scanning and awareness strategies. 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.

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 is important that this is treated early with lubrication drops or ointment to prevent more serious eye complications such as ulcers. Taping the lid closed at night is also very important if the eye does not always close fully.

Light sensitivity

Light sensitivity is common after a stroke. You might be bothered by bright light, or glare from light coloured surfaces. Some people find that a yellow or orange tinted overlay helps reduce glare.

Eye health professionals

- An **orthoptist** can assess and treat a range of eye 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 partially 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. They can provide you and your family or carer with information on practical aids and emotional support. ECLOs provide a bridge between the eye care professionals in hospital and other organisations that can provide you with support at home.
- **Visual rehabilitation officers** help you make use of your remaining vision and other skills to increase your independence.

Accessing an eye specialist

After a stroke, you should be referred to an orthoptist or ophthalmologist specialising in stroke and brain injury. They can assess you and arrange treatment for poor vision, 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 advice on using magnifiers or other visual aids. You can ask your GP or local optician for a referral.

If you have sight problems, there is a wide range of specialist equipment and household items available to help. These include clocks and watches with large numbers, big button telephones and large print books and calendars. Contact the Royal National Institute of Blind People (RNIB) for more information (see 'Other sources of help and information' at the end of this guide).

Driving

After a stroke or TIA, by law you cannot drive for one month. Whether you can return to driving depends on the type of stroke you had and the vehicle you drive.

If your vision was affected by the stroke, you must get a proper visual assessment before attempting to return to driving, even if you think your vision has recovered. This can take place in a hospital eye department. You should be given clear information about your condition and offered treatment if it is appropriate, which may help improve your vision to the level needed for driving.

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The DVLA (DVA in Northern Ireland) state that you cannot drive with:

- Double vision.
- Blurred vision.
- Visual field loss, particularly central vision.

For information and advice, read our guide 'Driving after stroke' or call our Helpline.

Employment and sight loss

If you are 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 how to return to employment after a stroke in our guide 'A complete guide to work and stroke', and The Royal National Institute of Blind People (RNIB) has advice and resources on sight loss and work.

Should I register my sight loss?

If you are assessed as being sighted 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, as well as entitling you to concessions such as council tax reduction, 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 (see 'Other sources of help and information').

Tips for coping with vision problems

- If you have double vision, try using a patch when reading or watching television.
- If you have lost your vision to one side, it is important to move your eyes and head towards the weaker side, for example on entering a room. The more you scan and move your eyes and head to that side, the quicker you will detect objects on that side and reduce your risk of bumping into objects or tripping.
- 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 where possible, have it positioned to your side and not behind you, as this causes shadows.
- Reduce the number of objects that are on your surfaces at home, particularly in the kitchen. If there is too much clutter, it can be more difficult to pick out individual items.
- Vision problems are not always obvious for other people to see. You might find it helpful to explain your sight problems to friends, family and colleagues to help them understand the support you need.
- 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 using public transport.

Where to get help and information

From the Stroke Association

Helpline

Our Helpline offers information and support for anyone affected by stroke, including family, friends and carers.

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

Read our publications

Get more information about stroke online at **stroke.org.uk**, or call the Helpline to ask for printed copies of our guides.

My Stroke Guide

The Stroke Association's online tool My Stroke Guide gives you free access to trusted advice, information and support 24/7. My Stroke Guide connects you to our online community, to find out how others manage their recovery.

Log on to **mystrokeguide.com** today

Other sources of help and information

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

British Association of Behavioural Optometrists (BABO)

Website: **babo.co.uk/find-a-behavioural-optometrist/**

Seeability – Find an Optometrist

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

Visioncall

Website: **vision-call.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: **020 7391 3299**

Support and information for people with visual hallucinations due to sight loss (Charles Bonnet syndrome).

Nystagmus Network

Website: nystagmusnet.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 and an emotional support service.

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**

Free postal lending library of unabridged books. Membership is open to children and adults who are blind or partially sighted, or have dyslexia.

Listening Books

Website: listening-books.org.uk

Tel: **020 7407 9417**

Postal audio library service with a small annual membership fee.

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: orthoaptics.org.uk

Tel: **020 3853 9797**

Provides information on the eye problems that occur following brain injury, including stroke. Search the site for 'Stroke and neuro rehabilitation' for useful resources.

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: 020 3770 5327

Professional body for eye doctors.
Offers a range of information on eye conditions.

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 care specialist in eye movement problems.

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.

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.

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