Ophthalmology Department

Stroke and Visual Impairment

Stroke can affect anyone of any age. It occurs as a result of a cerebral haemorrhage (bleed within the brain) or ischemia (blockage usually within a blood vessel). This results in oxygen deprivation to the brain causing damage to different areas.

Common problems post stroke are: communication problems due to dysarthria (difficulty speaking), depression, emotional problems, fatigue, physical problems (as a result of weakness down one side of the body), visual problems and others. These problems can result in a reduced quality of life post stroke.

Visual Impairment

Visual impairment is experienced by approximately 30% of all stroke patients. Symptoms associated with visual impairment are: blurred vision, reading difficulties, diplopia (double vision), visual field defect, difficulties with visual perception (interpretation of the surrounding environment) and oscillopsia (objects appearing to move).

Visual Inattention

Visual inattention also known as visual neglect or spatial inattention is when a person ignores everything on one side of their visual world. It commonly affects people who have had a right sided stroke and they ignore things on their left side. Right sided visual inattention can occur but is less common and tends to affect people in different ways.

More general neglect can also occur where one half of the body is ignored, mainly the left side.

The severity of visual neglect can vary from mild to severe.
Hemianopia (loss of vision to one side) may also be present.

Signs of visual inattention

The person affected may:

- Be unaware of anything or anyone on their affected side.
- Only eat one half of the food on their plate.
- Struggle to read because half the page is missing.
- Bump into people and objects on their affected side.

How will visual inattention affect someone following a stroke?

Most people with visual inattention are symptom free as the brain is unaware that the affected side exists and the patient is unaware that anything is wrong.
Visual inattention can affect a person in all aspects of their daily life.

This includes:

- Ability to walk without bumping into objects.
- Losing their sense of direction.
- Crossing roads unsafely by not checking for oncoming traffic on the affected side.
- All aspects of self-care such as washing, dressing, shaving, - may only dress, wash and shave unaffected side.
- Reading – only read text on unaffected side.
- Telling the time as they only read one side of the clock face.

Can visual inattention be cured?

The mechanism for recovery of visual inattention is complex and still not fully understood.

In many people there is frequently good recovery from visual inattention. However, when it is present continued input from health care professionals and carers is important to promote awareness of the affected side.

Treatment for visual inattention

Orthoptic treatment involves getting the individual affected to look to their affected side.

This is done by using exercises and encouraging the person to look or scan for objects on their affected side.

Strategies to help with reading and other tasks may be discussed. Occasionally prisms, eye patches, mirrors and games may also be used.

What can be done at home to help someone with visual inattention?

- Encourage visitors to sit on their affected side.
- Hold their hand on the affected side to draw their attention to this side.
- Put interesting things more over to the affected rather than the unaffected side.
- Put a line or tape down the left hand side of books or newspapers so the person knows where the line starts.
- Put colourful lights on the patients left side to draw their attention.
- Play any games, puzzles etc including computerised games that will encourage the person to attend to their affected side.

Can someone with visual inattention drive?

People with visual inattention are unable to drive as they are not aware of anything on their affected side. However, each stroke is different and depending in how well the visual inattention and other stroke related problems recover some people able to return to driving.

Visual Field Loss Following Stroke

Visual Field

Visual field is a term used to describe everything you can see when you are looking straight ahead (central vision) and out to the side (peripheral vision). Each eye has its own field of vision.

Visual Field Loss

Visual field loss is when you are unable to see a section of your field of vision which can be central or peripheral. Visual field loss following stroke or head injury usually affects both eyes but can be in only one eye if there has been damage to the eyes blood supply. Often this results in central vision loss. Where this visual field loss happens depends on where the stroke occurred in the brain. Usually the part of your vision lost is the same side as any weakness in your face, arms or legs

Types of visual field loss

There are different types of visual field loss that can occur following a stroke.

These include:

- Homonymous hemianopia - loss of half of your field of vision the left half or right half of both eyes. This is the most common type of visual field loss following stroke.
- Quadrantanopia - loss of the upper or lower quarter of your field of vision.
- Scotoma - small patch of vision loss.

Signs of visual field loss

- Difficulty reading.
- Bumping into things on one side - the affected side.
- Only seeing one side of your face in a mirror.
- Finding crowded areas difficult as people or objects suddenly appear to your blind side.

Treatment

Recovery of field loss can occur but depends on the area of the brain affected and how much damage has been done. Some patients experiencing field loss unfortunately will not improve. Recovery usually occurs within 3-6 month post stroke.

Visual field loss cannot be restored but different strategies can taught to help adjust and cope with visual field loss. This is patient dependent and your Orthoptist would decide on the best treatment/management option for you.

Strategies that may be used can include:

- Visual scanning training – this encourages you to look to your left and right side. It is used to help you become more aware of your visual field loss. Eyesearch and Readright are free online therapies to improve speed and accuracy of eye movements.
- Referral to Low vision clinic – if you are struggling to read a referral to the low vision clinic may be made in order to help with reading. You may be shown the option of using line guides when reading, having good light and using edge marked on books and newspapers.

Eye-Search - **https://www.eyesearch.ucl.ac.uk/**
Readright - **http://www.readright.ucl.ac.uk/**

Eye Movement Problems

Sometimes a stroke can affect the way you control your eyes causing eye movement problems.

These problems can include:

- Squint (turning eyes): A misalignment or turning of the eye. The eyes do not look in the same direction and may drift horizontally or vertically. This may be present all of the time or some of the time. If the squint has occurred recently you may experience double or jumbled vision and loss of depth perception.

- Eye movement problems: This can consist of difficulty scanning and tracking. Tracking problems are when the eyes have difficulty following a moving target. Scanning eye movement defects are when the eyes have difficulty in looking between two different objects. These types of defects can cause difficulties with reading, mild dizziness when moving about and difficulty in concentrating on visual tasks.

Eye movement problems may occur as a result of:

- Gaze palsies: This is when both eyes are unable to look in a certain direction. For example a patient with right horizontal gaze palsy is unable to move their eyes sideways to the right. To compensate for this they will often turn their face to the right in order to look to the right side.

- Nerve/muscle palsy: Each eye has 6 eye muscles that are responsible for moving the eye. A nerve palsy is when the nerve supply to the muscle is affected by the stroke resulting in the muscle not working effectively. This leads to a weakness of one or more of the eye muscles. The affected eye will not be able to move in the direction of action of the affected muscle(s). This may result in a person experiencing double vision when looking in specific direction and also noticing one eye not moving in a certain direction.

- Nystagmus (wobbly eyes): This is an involuntary movement of the eyes. The eyes can be seen to wobble or oscillate. The eyes may move from side to side, up and down or even in a circular motion. A person with nystagmus may notice oscillopsia which is when it feels as though their environment is moving or oscillating.

- Eyelid problems: Droopy eyelid (ptosis) – this may be total or partial or incomplete

- Double Vision: Double vision is when two images are seen of the same object. This may be constant, intermittent, or it may only occur when looking in a particular direction. The two images may be one on top of the other, side by side, or a combination of both. Double vision may be monocular i.e. only seen by one eye when the other eye is closed or binocular i.e. when both eyes are open. Binocular double vision is linked with a squint or eye movement defect. When one eye is closed the double vision will go away.

Signs of a squint or eye movement problem

- Eyes may not look straight
- One or both eyes might have difficulty in looking in certain directions.
- Closing of one eye (to avoid double vision).
- Head held in a certain position to avoid double vision, to reduce nystagmus or centralise their field of eye movement.
- Difficulty judging distance.
- They may feel dizzy or lose their balance.
- They may be more susceptible to trips or falls.
- Struggling with everyday tasks such as washing and dressing.

Symptoms of eye movement problems

- Double vision
- Eye strain
- Headaches
- Reduced/blurred vision
- Dizziness
- Oscillopsia
- Difficulty reading or watching TV

Recovery of squints and eye movement problems

Recovery of squints and eye movement defects is variable. It is difficult to say whether they will recover or when. Sometimes there is no recovery or only partial recovery. It can take 6 months to a year for squints and eye movement defects to recover or stabilise.

Treatment

There are different options available for treatment of eye movement problems. Treatment depends on the type of problem present and symptoms the person may be experiencing.

Treatment can include:

- Eye exercises - to improve eye movements and eye control.
- Prisms - to join double vision or to move images into a more central position.
- An eye patch - to remove double vision or help reduce symptoms for certain types of nystagmus.
- Compensation strategies such as using a head posture.
- Eye muscle surgery may be considered once the eye movement defect has become stable.
- Botulinum toxin – an injection into an eye muscle to improve the eye position.

Driving

Initially if you are having problems with your eyes it is advisable not to drive. It is illegal to drive with double vision, reduced vision and significant visual field loss.

You need to inform the DVLA if you have visual field loss or are using a prism or patch to eliminate double vision.

Each brain injury as a result of stroke is different and depending on recovery of eye problems, some people are able to return to driving. Following an Orthoptic assessment, treatment and a period of adaptation some people are able to drive with a prism or with one eye occluded/patched. The Orthoptist will advise you if you need to notify the DVLA about your eye condition. You will also need to notify your insurance company.

Support Available

You may be registered as partially sighted or blind if following the stroke you have significant vision loss or visual field loss. Registering your sight impairment can result in practical help from social services as well as entitling you to concessions. These concessions can include: council tax reduction, disabled persons railcard and local travel schemes.

In order to register you require a certificate of visual impairment which is provided by an Ophthalmologist if they have assessed and recognised that you are severely sight impaired (blind) or sight impaired (partially sighted).

Further information

If you would like to know more or have any questions or concerns, please contact the Orthoptic stroke service at Calderdale Royal Hospital on: 01422 222 218

Additional help and advice is available from:

The Stroke Association
Stroke House
240 City Road
London EC1V 2PR
Telephone: 020 7566 0300
Website: www.stroke.org.uk
Stroke helpline: 0303 303 3100

If you have any comments about this leaflet or the service you have received you can contact :

Orthoptic Department

Acre Mills Outpatient Department
Huddersfield
Telephone (01484) 343237

Calderdale Royal Hospital
Halifax
Telephone (01422) 222218

www.cht.nhs.uk

If you would like this information in another format or language contact the above.

Potřebujete-li tyto informace v jiném formátu nebo jazyce, obraťte se prosím na výše uvedené oddělení

Jeżeli są Państwo zainteresowani otrzymaniem tych informacji w innym formacie lub wersji językowej, prosimy skontaktować się z nami, korzystając z ww. danych kontaktowych

ਜੇ ਤੁਸੀਂ ਇਸ ਜਾਣਕਾਰੀ ਬਿਸੇ ਹੋਰ ਪ੍ਰਾਰੂਪ ਜਾਂ ਭਾਸ਼ਾ ਵਿੱਚ ਲੈਣਾ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਉੱਪਰੋਕਤ ਵਿਭਾਗ ਵਿੱਚ ਸਾਡੇ ਨਾਲ ਸੰਪਰਕ ਕਰੋ।

اگر آپ کو ی معلومات کسی اور فارمیٹ یا زبان میں درکار ہوں، تو
برائے مہربانی مندرجہ بالا شعبے میں ہم سے رابطہ کریں.

"إذا احتجت الحصول على هذه المعلومة بشكل مغاير أو مترجمة إلى لغة مختلفة فيرجى منك الاتصال بالقسم المذكور أعلاه"