

The Partially Sighted Society



Visual Problems Associated With Stroke

A stroke occurs when there is a sudden disturbance in the blood supply to the brain and is caused by either a blocked or leaking blood vessel.

Nearly all stroke patients need rehabilitation from different sources including GP's, Speech Therapists, Orthoptists and/or Low Vision Therapists

Visual Effects of Stroke

- 1. Field Loss - Homonymous hemianopia is the most common visual problem. It can vary from a complete hemianopia (loss of half a field of vision in each eye) to a quarter loss or even to small scotomas. Some people are unaware of their field loss and others turn their head and eyes to compensate. Homonymous means the same in each eye.**
- 2. Visual Inattention - The patient fails to notice (or neglects) information coming from one side of the visual field i.e. when looking at a page of writing they may only be aware of the words on the right hand side of the page, therefore indicating a left hemianopia.**
- 3. Eye Muscle Defects - Defects of the muscles around the eyes, resulting in squints (when one eye is turned in or out etc.) and double vision, nystagmus (uncontrollable oscillatory movements of the eyes) and poor convergence etc.**
- 4. Reduced Visual Acuity - Deterioration of vision and inability to read.**

5. Reduced Stereopsis (3-D vision) - This can occur either with or without the presence of a squint. Reduced stereopsis can affect the Occupational Therapists assessment and may lead to incorrect assessment of abilities.

Methods of Alleviating Visual Problems

1. Lighting - Direct task lighting on its own may be sufficient to allow normal reading again. Generally we would recommend a fluorescent task lamp (available from PSS, Doncaster). These lamps give a very white light and do not get hot like conventional anglepoise lamps. These are best positioned from the side of the person (not behind one shoulder) and the source of the light should be in front of the person and brought down close to the reading material. Therefore, all the light is on the page and not causing glare or reflections.

2. If the person has lost part of their visual field they can be taught to use compensatory head and eye movements, when reading, eating etc. or for mobility purposes. Prisms have occasionally been used for field loss but with poor success.

3. Reading - Each person will experience different reading difficulties and will prefer different solutions. If someone has a right sided hemianopia they may have difficulties in reading along a line of print but can easily find their way back to the start of the next line. Someone with a leftsided hemianopia may easily read along the line of print but may have problems locating the start of the next line each time. Often these people find a typoscope useful. A typoscope is a piece of matt black card with an oblong aperture in it. The aperture can vary in size depending upon what suits the person best. The typoscope is then placed over the print and is moved along the line whilst reading. This helps in several ways.

a) By absorbing the excess glare from the light.

b) By helping the person keep to the correct line and finding the next line each time.

c) Also by reducing the number of words that the person has to look at. Often if a stroke patient is presented with the whole page of writing they cannot read it - there is

too much information for the brain to sort out, however, when a typoscope is used, it isolates one or two words at a time and the individual is able to process small amounts of information and is able to read again.

Sometimes, the edge of black card is used to underline each line in turn or sometimes, patients prefer to move their index finger along the line as they read as a guide. With time, the patient can often do without the aid of the typoscope.

For those who have difficulty in seeing to either the left or right side, a marker should be placed down the appropriate side of the page e.g. if someone cannot find the start of each line (left hemianopia) a red strip of cardboard can be placed down the left margin (held in place by a paper clip) and the individual then moves their eyes over to the left each time until they locate the red and then they know that they have found the start of the line. A red elastic band can also be used in the same way. If there is a right hemianopia the red marker should be placed on the right hand margins.

Some people, particularly younger stroke patients find that rotating the page through 90 degrees helps. This means that the person is reading the line upwards or downwards rather than across and therefore their field loss does not interfere with the line of print that they are reading. Usually we recommend to start reading again 'little and often' and to begin with easy children's books first of all because the print is large, well spaced and has simple words and then to progress to adult large print books and then down to normal books and eventually newsprint.

The above techniques may be sufficient on their own to allow reading again. If not, magnification can be used in conjunction with them. If a typoscope is being used it is usually best to use some form of stand magnifier as this can be blu-tacked onto the card so that when the magnifier is moved along, the card moves with it. Eventually with time, the power of the magnifiers used can often be reduced and occasionally the person finds that magnification is no longer necessary.

4. For Diplopia (double vision) - this is the area for the Ophthalmologist and the Orthoptist. The Orthoptist can use fresnel prisms which can be attached to spectacles to join the double vision. The prisms can be altered as necessary if the double vision improves or deteriorates. Occasionally one eye may be occluded to prevent the diplopia if the prisms are not successful.

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