



**Information for Parents about
Orthoptists and the Visual Stress Clinic
at Caledonian University**



Orthoptists are specially trained in the use of binocular vision or how the eyes work as a pair and in how the eyes are controlled. A large proportion of Orthoptic work is concerned with squints and visual development of young children. They have a detailed knowledge of the eye and the muscle systems which control the eyes. Orthoptics is a recognised profession allied to health. Orthoptic practice is governed by the Health Professions Council (HPC). This means that all Orthoptists must achieve a certain standard in practice and keep themselves up to date with new developments ensuring that they act responsibly and ethically.



The Visual Stress Clinic at Glasgow Caledonian University has a team of specialist Orthoptists and Optometrists (opticians) dedicated to visual examination of children and adults with reading difficulty. They commonly see patients who are experiencing difficulty with control of their vision. Difficulty with the control of the eyes often results in unpleasant visual symptoms which commonly include,

- Blurring
- Movement
- Shimmering
- Flickering
- Fading
- Distortion of print
- Merging of print and background
- Double vision
- Patterns in print
- Colours in print
- Difficulty copying
- Losing the place when reading
- Reversing letters
- Difficulty organising and spacing print
- Headaches
- Sore eyes

Research has shown that people experiencing reading difficulties often experience these unpleasant symptoms and that these symptoms have a more detrimental effect in children with poor reading.

These symptoms will be worse if print is small and densely packed. They may also feel that the page is too bright to look at. The symptoms may be constant or intermittent. These symptoms may be caused by several visual difficulties.

The more visual symptoms a person has the more likely he/she is to have problems with reading. Visual

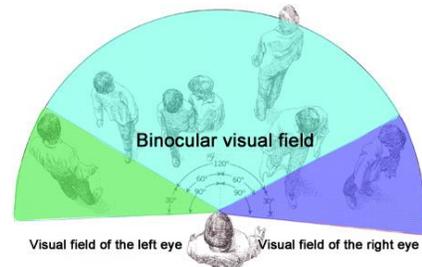
problems do not in themselves cause dyslexia or dyspraxia but they are a considerable additional barrier to learning to read and write. These symptoms may be worse under certain lighting conditions in particular fluorescent lighting. Equally visual problems can exist in children and adults who do not have dyslexia or dyspraxia etc. Additional symptoms may include headache or difficulties concentrating.

An Orthoptic assessment can help identify any visual causes of reading difficulty. Some of the key visual problems that affect reading are:

Binocular vision difficulties

Binocular vision difficulties are common in poor readers. Binocular vision involves the control and co-ordination of both eyes. Although each eye sees two separate images these images are blended in the brain into one single picture. There are many aspects of binocular vision which are crucial to comfortable and accurate reading.

The eyes are rarely completely straight. In most people the eyes drift slightly and this is controlled without the person even noticing. If the eyes drift too much this can cause headaches and discomfort especially when reading.



Some readers have problems with focussing and co-ordination of the eyes resulting in fatigue when doing close work. The presence of visual symptoms may indicate that a binocular vision problem is present.

The good news is that binocular vision problems are easily remedied for most people with some simple exercises and in some cases glasses.

Meares-Irlen Syndrome (MIS)/

Visual Stress

Meares-Irlen Syndrome (MIS)/ Visual Stress is caused by pattern sensitivity. Readers with MIS may complain of many of the visual symptoms detailed on the visual symptoms list above. They may appear to have sore eyes and will get tired easily when reading. In extreme cases they may avoid reading altogether. This condition is an exaggeration of a normal phenomenon but can affect up to 50% of struggling readers. It has been shown that patterns or strips can create uncomfortable visual distortions which can cause headaches. Print can also take on the appearance of stripy patterns and the illusion of stripes from the print

creates uncomfortable visual symptoms and distortions when reading.



This condition is treated firstly by using overlays, and subsequently by using precision coloured lenses. The colour required for an overlay may be different from that in lenses and as such a special assessment is needed to find the correct colour for spectacles. Each person has an individual colour preference and this colour will typically reduce visual symptoms and discomfort, increase reading speed, reduce headaches and possibly improve attention and concentration.

Eye Movements

Good eye movements are essential to reading. There is a lot of evidence that eye movements may be abnormally controlled or co-ordinated in people experiencing reading difficulty.

Saccadic eye movements are used in reading to change focus from one word to another. If they are poorly controlled then the reader may lose their place or miss words out. This may also cause problems when copying and the student may not be able to copy accurately especially if they have problems directing their gaze accurately. An Orthoptist can

determine if this is a reason why you find reading difficult.

Tracking ability

This ability is used when reading to search for information and follow a line of writing. The ability to do this improves with age and practice. If it is underdeveloped the student will have problems keeping their place when reading and copying. This can be improved with exercises and by using a ruler or window to keep the place. Copying can be improved by placing the material to be copied on the desk directly above, rather than to the side of the paper the student is writing on. Our team can assess tracking and advise if this is a problem.

Unstable fixation and poor ocular dominance

This treatment is carried out less commonly now but the need for this treatment used to be assessed using the Dunlop test. Although the test itself is less popular recent research has shown that occlusion (or covering one eye) can improve reading function and this is still a recognised form of treatment to improve ocular dominance and improve fixation (the ability of the eye to look steadily at something).