

Orthoptic Visual Processing Difficulties Clinic Information for Referrers



Visual Processing Difficulties Team
Department of Orthoptics

Visual Processing Difficulties Clinic

Welcome to the Orthoptic led Visual Processing Difficulties (VPD) Clinic. The clinic has run for many years at Warrington Hospital (formerly known as the specific learning difficulties clinic).

The aim of the clinic is to diagnose and treat visual problems which may interfere with a child's education. The clinic is not intended to replace the expertise of the teachers, the SENCOs, the Inclusion Teams or the Educational Psychologists and neither can we give any diagnoses of dyslexia or any other educational problems.

Our expertise lies in the area of Visual Processing Difficulties such as ocular motility problems, visual stress, deficiencies in eye tracking movements and visual perception difficulties. The child may well have some characteristics of dyslexia and an underlying visual problem (for example, over 50% of dyslexics will have visual stress). However treating one area of visual difficulty will not be a miracle cure for the dyslexia or a specific learning difficulty but it will help the child manage their problem in a better way.

The clinical assessment is broken up into 4 sections. **In the first section** we assess the ability of the child to use their eyes together as a pair and the focussing mechanisms of the eyes. For example, a child may be struggling to see clearly for near (accommodation insufficiency). This can be treated with exercises or glasses. The child may have a squint which is interfering with what they see and causing double vision. It is very important to get a baseline visual assessment before progressing onto the more specialised areas.

The second part of the assessment looks specifically at saccadic eye movements. These are the very small eye movements required for reading. A difficulty with a child's voluntary saccades can lead to **tracking eye movement problems**. The child will mix words up, reverse letters, numbers or words, they will find it very hard to copy from any source and they will lose their place when reading, skipping lines or re reading the same line twice.

Tracking eye movement problems will severely affect a child's reading and comprehension. They may exhibit signs of 'head bobbing' when reading (so the head is making the movements rather than the eyes) rubbing their eyes and feeling uncomfortable when reading or fatigue with prolonged reading. Tracking problems can be treated with a series of exercises aimed at improving these eye movements.

The third part of the assessment looks at **Visual Stress**. This leads to difficulties with fine vision tasks such as reading. This eye condition is known to affect reading ability. It is triggered by 3 things, Patterns or stripes, flickers from lights or VDUs and glare from light sources. The child will show signs of visual stress such as excessive eye rubbing, blinking, and watering and general signs of discomfort. They may complain that the words shimmer or move about on the page or are blurred or even that the words jump out at them or the white spaces between each word may make patterns or 'rivers' running down the page. The condition affects about 50% of dyslexics, as well as epileptics, migraine sufferers, people with ME and MS, stroke and others.

Visual stress (also known as Meares-Irlen syndrome or scotopic sensitivity) is thought to be stimulated by the stripy effect of the writing which overstimulates the visual cortex in the brain and produces symptoms. An overlay is prescribed with a tint unique to each child. The

overlay is thought to redistribute the wavelengths of light entering the eye to the brain and dampen down these symptoms of visual stress.

Like dyslexia, it is not curable but can be treated, and significant improvements can be made. The symptoms will have been present throughout life but some people experience symptoms after a minute of reading; others find the symptoms take longer to appear. The degree of symptoms can also vary from person to person with more marked symptoms creating barriers to successful reading. Symptoms can tend to come on as soon as a child has to start looking at smaller print.

The final part of the assessment looks at **Visual Perception**. We diagnose and provide exercises for children who have any of these difficulties. This section is broken down into 7 subsections.

Visual discrimination

This is the ability of the child to be aware of the exact characteristics and distinctive features of forms including shape, orientation, size, and colour. It gives us the ability to notice subtle differences and to identify if something does or does not belong. In reading, this skill helps children distinguish between similarly spelled words, such as was/saw, then/when, on/one, or run/ran. It also helps when developing sight word vocabulary. Visual discrimination problems may result in a child confusing words with similar beginnings or endings and even entire words. When someone with a visual discrimination deficit reads passages, there are often gaps of whole words or lines. There are also times when random words are inserted that aren't written in the text they are reading.

Visual Memory

This is the ability to remember what is seen and to recall images of objects, shapes and symbols. If visual memory is poor the child will have problems developing their sight word vocabulary, difficulty with spelling (as they will not see that the word is incorrectly written) and they will have difficulty copying.

Visual Spatial relationship

Can the child spot the odd shape out if the odd shape has been rotated? If there is a poorly developed visual spatial relationship there will be letter confusion such as b and d, writing problems and difficulty spotting written errors.

Visual Form Constancy

This enables a person to correctly identify objects and shapes regardless of any change in their presentation such as size or rotation. This will impact on the ability to recognise the same word in different fonts or handwriting or a child may not recognise words from one page to the next.

Visual sequential memory

This is the ability to remember forms or characters in the correct order. This skill is particularly important in spelling. Letter omissions, additions, and/or transpositions within words are common for children who struggle with this skill. They often sub vocalize (whisper or talk aloud) as they write. Recognising and remembering patterns may also be a problem. Functionally, this skill would influence a child's ability to sequence letters or numbers in words or maths problems, remember the alphabet in sequence, copy from one place to another (e.g., from board to book, from one side of the paper to the other), retrieve words when out of order, and remember order of events after reading (which affects reading

comprehension). The child would also tend to forget homework and forget steps that are shown in an activity.

Figure Ground skills

This is the ability to discriminate a shape from the background information whilst maintaining the awareness of that shape. If it is poorly developed the child will have difficulty with smaller print, attention in a busy classroom or clutter on a desk.

Visual Closure

This enables a child to recognise objects if a part, or parts, are missing. The purpose is to see if the child can interpret and process visual information if it is incomplete. If visual closure is poorly developed, the child will have problems with reading fluency. There will be slow reading and word recognition will be slower and poorer.

General comments about the VPD clinic

- *"Without this help following my daughters diagnosis I am not sure that she would have improved the way she has with her school work. This I believe has allowed her to now go onto college and study A-levels"*
- *This service has been of great value to my daughter, it has enabled her to receive further support and understanding from teachers in school. It has also helped her to understand why she finds some tasks difficult and now she can improve her reading skills to help her. Thank you*
- *The support provided and advice given has helped my child's school understand his needs and better accommodate him. Ensuring he is seated in correct place, using coloured paper and overlay. This has reduced some of the stress my child feels at school when writing/reading. Highlighting this problem has been vital in understanding his problems and seeking solutions where possible.*
- *Thank you for all your help. I really feel it has made a huge difference to my Son's school work and most importantly his confidence. I am sure helping him so much at this age will make a difference to all his schooling.*
- *My child was continually assessed and we felt that her difficulties although maybe minor compared to other diagnoses, the department were thorough, consistent and approachable. My Daughter was made to feel important and was helped to achieve her potential at school. I feel that although she has been discharged should we have any difficulties in the future, the department would still be there for us for any support/advice. Thank you.*
- *Thank you for providing such a worthwhile and important service at Warrington. I will and already have recommended your service to others. My son is dyslexic, it is easy to get swamped and lost in a sea of trying to help but your report has proved pivotal in getting my Son's high school involved and the recommendations are clear and achievable. Thank you.*

Finally I would like to share some facts with you:

- 80% of children struggling with reading and writing showed poor binocular vision, poor tracking and poor eye movement control (Northway 2005)
- 80% of children with visual symptoms associated with reading have problems that Orthoptists can treat. (Fowler 2002)
- Of children who performed poorly (and below teacher's expectations) in their SATs, 60% had defective binocular vision. Compared with only 20% of the high achievers. **(Shayler03)**

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