

INFORMATION SHEET – VISUAL PROCESSING DIFFICULTIES

What are visual processing difficulties?

A person's visual ability to drive a car is more than just being able to see a number plate clearly at distance. Other factors such as peripheral awareness, eye-hand & foot coordination, multiple controls, depth perception, speed perception, and hazard perception are equally important.

Similarly, students use their vision to read what's on the board; process, understand and retain what they have read; and direct their pencil or pen precisely on their notebook!

But some people suffer refractive problems, such as long/short-sightedness, astigmatism, presbyopia (age-related reading difficulties), or eye-related pathology. Standard optometry is designed to address these issues.

Behavioural optometry is a specialisation that investigates how vision is processed rather than just the ability to see. It explores how the brain, eyes, and body co-operate to make sense of what we see.

Just as we are born with the ability to hear but not the ability to process language, the same is true of vision; processing what we see is a learned process. Vision and visual processing (making sense of our vision) develops as a child grows and typically becomes the most important source of information.

Up to 20% of the population have problems processing the images they receive from their eyes. It can impact students, workers and sportsmen. It's not a physical problem with the eyes; it's simply lack of development in the control and skill of their visual processing.

What are the treatments for visual processing difficulties?

For such people, the holistic approach that behavioural optometry offers may offer some explanations and solutions for their difficulties. This approach encompasses:

- *Tailored prescription:* Supports the visual system and triggers growth and development within the visual system;
- *Binocular Vision Assessment:* A battery of tests assesses how both eyes work together to provide single binocular vision, otherwise also known as eye teaming (see more in our *Information Sheet 14 – Behavioural Optometry Assessment*);
- *Vision Therapy/Training:* Specifically designed to help patients re-learn the 'language' of vision to improve visual processing;
- *Visual Stress Treatment:* Precision tinted lenses that reduce visual stress and perception distortions (see more in our *Information Sheet 24 – Visual Stress*);
- *Consultant Advice:* Advice on suitable working conditions and adjustments to improve vision.

How does vision therapy work?

A vision therapy is more than just doing eye exercises; it improves eye-brain communication and the visual system's effectiveness. The features of a typical programme are as follows:

- It is supplemental to the use of lenses, prisms, filters, and 3-D activities, among other things;
- It is a fully personalised treatment programme;
- It can be beneficial to patients of all ages;
- It is non-invasive;
- It is usually fun to do and adopts a game-like approach
- It retrains visual processing through the concept of neuroplasticity.

Vision therapy uses techniques to help a person be more aware of the visual and bodily feedback employed by the brain to build visual skills. They enable that person to judge, monitor, understand and develop their visual performance.

The activities used in a vision therapy program will vary depending on age, developmental level and visual need, amongst others. Vision therapy typically uses a game approach to make programmes fun and engaging.

Visual processing goals will vary from person to person depending on their priorities (which may change through their lifetime) but it's important for everyone to maximise their visual processing potential in order to get the most out of life.

How do visual processing difficulties relate to dyslexia?

Children diagnosed with Dyslexia often also have visual problems. Typically, these respond well to treatments such as eyeglasses, vision therapy or precision tinted lenses.

Research has indicated that although up to 15% of the population may be Dyslexic, fewer than one in ten are receive a formal diagnosis.

Some people with undiagnosed dyslexia will overcome early difficulties, but for the majority, learning difficulties will likely persist and can have lifelong consequences.

All children who struggle reading or learning should have a detailed evaluation of visual function, especially of the binocular vision system, whether or not they have a formal diagnosis of dyslexia.