

EYE HEALTHCARE

Dyslexia and schoolvision

Introduction

Over the past number of years, many aids and treatments of visual dyslexia have been presented - but more recently, the revelation of Schoolvision has emerged, which takes some of the already used techniques and adds in the new knowledge, to significantly improve reading speeds, in this whole process aimed at stabilising the dominant eye.

In the UK there is very little consistency in how Optometrists deal with children with reading and learning difficulties, whether they have been diagnosed with dyslexia or not. The standard NHS examination looks at the health of the eye and each eye's individual prescription - but little is done on the evaluation of how the two eyes work as a pair, never mind finding the faults that exist or subsequently treating them.

The basis of Schoolvision

The whole concept of stable eye dominance and its importance was discovered in early studies in sports, namely clay pigeon shooting and tennis. Shooting is an 'aiming' sport (involving central vision) and the latter an 'anticipation' sport, where depth

judgement is the most important to assess positioning in the 3-D spatial environment. It was subsequently found that the exact same principles of Sportvision could be applied to reading - and hence Schoolvision emerged.

Eye Dominance

When we go to read some text, just one eye (the dominant eye) should take over the job of aiming at the words, but if both eyes try to do the same job, the words and letters appear to shift out of order sending confused messages to the brain which in turn causes difficulty with reading and spelling. Without stable eye dominance, attention will continually swap from one eye to the other. At the moment of swapping, the letter or word will shift position in space. You can demonstrate this by aiming at a distant object with your finger. When you close one eye everything remains stable. When you close the other eye, either your finger or object will appear to move. When this happens unintentionally while reading, you lose your place in the sentence or paragraph and individual words become difficult to learn or spell because the letters won't stay in the right order.

Principles applied

In addition to stabilising the dominant eye, most individuals presenting with dyslexia also show a weakness of the 'up close' focussing muscles (accommodative insufficiency), and to prevent the print blurring, must work their accommodation muscles much harder than is normal. In addition to this, the individual generally shows some weakness of the muscles to the outside of the eyeball (extraocular muscles) - so it is important to ascertain which muscles are at fault, and in what eye. Generally, individuals with binocular vision instability will also display light sensitive issues, so different depths (saturation) of different tints (hue) will need to be selected, avoiding those with peak spectral sensitivity e.g. yellow, pink and edging toward the blue, teals and greys. Hence prescribing therapeutic-spectacles (often for both distance and near) encompassing all of the above issues will benefit the individual immensely. Follow ups every 8-12 weeks over the therapy period will be necessary to invoke any lens changes necessary as the 'tightly knit' Accommodative / Vergence system begins to 'unwind' or "unravel" itself.

Visual Dysfunction

Dyslexia affects around 16% of the population, however it is thought over half will have a visual dysfunction which can cause underachievement in reading. Visual dysfunction may be due to:

- Uncorrected long sight, short sight or astigmatism.
- Accommodative insufficiency.
- Eye tracking difficulties.
- Poor eye motility.
- Convergence insufficiency.
- Ocular muscle imbalance.
- Eye dominance that is unstable.
- Pattern glare.
- Spectral sensitivity.
- Poor dynamic fixation.
- Contrast sensitivity issues.
- Fixation disparity / poor fusional reserves.

Factual Schoolvision

The evidence of the whole concept of Schoolvision comes from a research study of Year 7 pupils from the Moreton School in a deprived area of Wolverhampton (1996 - Geraint Griffiths) - showing that 60% of the pupils had predisposing signs of dyslexia. On the first screening it was apparent that at least 30% of the children tested had visual problems amenable to correction which were holding back their academic development. An extended study involving 14 of these pupils over a 3 month period showed a dramatic improvement. Positive behaviour and visual improvement were measured and recorded and reading speeds increased by over 100% in those pupils.

Conclusion

The principals of Schoolvision are simple, but yet the effect is profound. It's like revisiting the 'old optics' of 80-100 years ago, the ones that have been pushed aside and forgotten, as commercial gain and the 'conveyor belt' mentality took precedent in the whole optical industry. We all know we are on the right path here, when we see benefits to the children such as better school performance, increased reading speed, improved arithmetic, increased self-esteem / confidence, clearer writing, increased concentration, decreased tiredness and anxiety, reduction of headaches / migraines, calming effect (in children with hyperactivity) and the general reducing effect of disruption and delinquency.

Further useful information can be found at:

www.schoolvision.org.uk

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