

Visagraph technology reveals why some children battle to read

Reading fluency can be improved through improved visual and perception skills. DONALD KLAASSEN discusses his development of VISAGRAPH infra-red eye tracking technology.

Behavioural optometry has come a long way since its origins in the 1920's.

Today's Behavioural Optometrist fills a specialist niche which concentrates not only on the attainment of clear vision but also on increasing the efficiency of the entire visual motor and perceptual system.

My interest in behavioural optometry began in 1990 during field studies on bushman children in the Kalahari Desert of Namibia. We were interested to determine whether their visual acuity was better than Europeans or other Black African groups in Southern Africa.

What we found was that their acuity was similar but that their incredible ability to perceive animals in the bush at great distance was more of a learned ability. This confirmed to us an earlier held view that visual perception is "innate in the neonate, but largely learned in the adult".

Translating the above into a classroom situation means that it is possible to improve reading fluency by not only improving visual clarity but also by improving visual motor and perceptual skills.

The requirement for reading of these crucial skills has led me to introduce Visagraph infra-red eye tracking technology. This technology, probably the first of its kind in Auckland, allows us to gain an incredible understanding and insight of eye movement as a student reads a short passage of text.

Detailed analysis can be made on the accuracy of eye movement, the number of fixations as well as regressions (directional attack) and saccadics (fast eye movements). Words read per minute and reading comprehension is also checked.

For those children who have to deal with Dyslexia or who are on the Autism Spectrum, the practice also assists with advice on practical aspects to learning.

We can do this for each eye individually or we can superimpose the data for both eyes and make inferences about binocular visual stability.

This revolutionary technology allows us to implement remedial eye exercises to improve reading fluency.

For the first time we can play back the visual behaviour in real time allowing parents and teachers greater understanding and awareness of their children's eye movements while reading.

Children who are experiencing difficulty with reading and learning or who have

been advised through the school vision screeners to have their eyes checked would benefit from this technology.

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Having a child with Autism has



A young student performing Visagraph reading analysis

Behavioural Optometrist

Donald G Klaassen

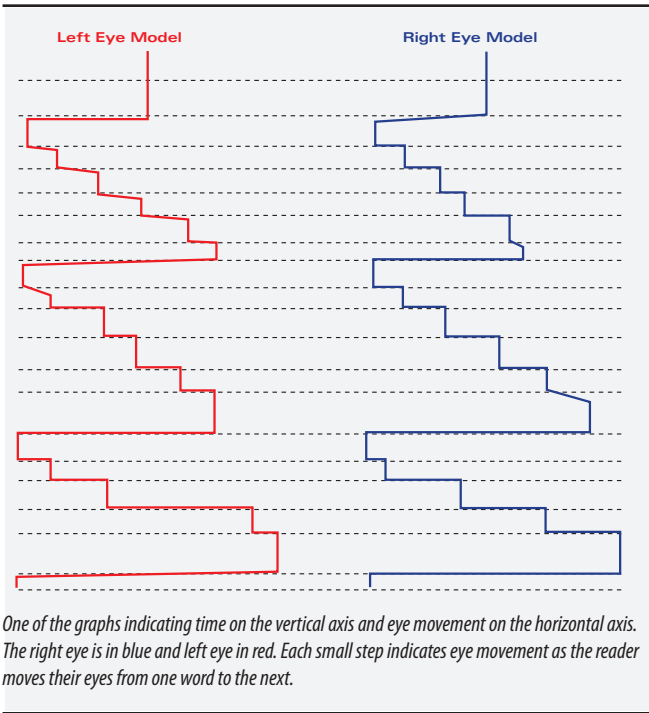
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Specialist optometry services and advice for all children including those with vision related reading and learning difficulties.

- Comprehensive paediatric eye examinations
- Large range of children's frames
- Visagraph technology for computerised eye tracking
- Irlen colour screening
- Active therapy for "lazy eye"
- Tailored eye exercise programs and advice on dyslexia
- Over 10 years experience with autism spectrum disorders
- Over 20 years international experience
- Registered with Enable NZ Spectacle Subsidy

Available by appointment at three locations in Auckland

Botany Ph 262-0086 • Manukau Ph 262-0086
Sandringham Ph 846-7007



given me more than 10 years of intimate knowledge on the difficulties that these children encounter with learning and behaviour.

We also run the Dyslexia Determination test as devised by the American Optometric Extension program to give parents and students greater

clarity and awareness of the issue.

We screen for Irlen Syndrome through the use of coloured reading overlays.

It has been demonstrated that in some individuals the speed of two neural pathways, that is the magno-cellular and parvo-cellular pathways, do not seem to be in sync. This can be incredibly disruptive to reading.

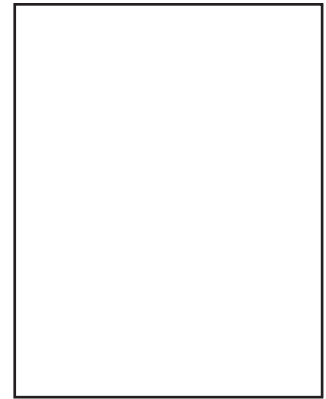
The coloured overlays are not a panacea but form another piece of the puzzle in attempting to even out the neural message and thereby improve reading fluency and visual perception.

In addition to tailored visual therapy and eye exercise programs, we have also had success with therapy designed for "lazy eye" which has seen, in some instances a four-line improvement in acuity on the test chart.

Registered with Enable NZ, we are able to conduct thorough paediatric eye examinations and provide spectacles in most cases at no charge to the

patient. The prerequisite being that the child is under 16 years of age and is on a Community Services Card or High Health User Card and has not made a claim within the last year.

We welcome referrals of children that would benefit from our services and are open to demonstrating our practice technologies to interested teachers and educators.



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