

Visual Stress

Visual stress has been associated with a number of problems of which migraine is the most common. Correction of this problem can help people with migraine if they have light sensitivity or problems with visual tasks. Assessment and treatment is not available under the NHS but the Exeter visual stress clinic can offer assessment and advice privately. Further information is below.

Symptoms of Visual Processing Disorder

- Screwing up of eyes with visual tasks
- Blurred vision
- Print jumbling, vibrating or merging together
- Frontal lobe headaches
- Pain around the eyes
- Light sensitivity, especially to glare, bright white pages or screens
- Problems with car headlights at night

The Exeter Visual Stress Clinic

The Exeter Visual Stress Clinic has been successfully running for six years. The aim of the clinic is to identify, diagnose and treat visual disorders which may be contributing to reading or specific learning difficulties in adults and children. Visual processing disorder can also be apparent in patients with neurological conditions such as photosensitive migraine, photosensitive epilepsy, multiple sclerosis, and stroke.

Visual processing pertains to the way the brain makes sense of visual information. It is the brain's ability to process and interpret what the eyes see. This includes how the eyes work together, tracking of the eyes whilst reading, making fast eye movements, visual comfort and the perceptual aspects of vision. Difficulties in visual processing may produce various signs and symptoms of visual processing disorder, which can be identified and treated by an orthoptist. It is run by Donna Cartlidge.

Meet Donna Cartlidge

Donna currently works as a senior orthoptist at the Royal Devon and Exeter Hospital, operating the Exeter Visual Stress Clinic. Since qualifying in 1993, she has gained nearly three decades' worth of experience working with and treating both children and adults with a variety of visual concerns and ailments.

As an orthoptist, Donna is qualified to diagnose and treat defects in eye movement and vision. These can be caused by issues with the muscles around the eye or defects in the nerves that enable the brain to communicate with the eyes.

Initial Consultation

At the initial appointment, a full orthoptic assessment of eye tracking and visual stress screening will take place. If any areas of concern are identified, we will offer specific treatments based on the patient's requirements. Treatments may include orthoptic exercises, optical quality overlays and, following precision colorimetry testing we are able to prescribe precision tinted lenses where necessary.

Eye tracking

Tracking is the ability to make your eyes follow incoming information and process it in your brain to interpret the correct meaning. Inability to focus on letters and numbers and follow them on the page can impair a person's ability to learn.

Eye tracking exercises can improve the way the eyes follow words on a page and track movements through peripheral vision. They can also help train the eyes to remain focused on an object without moving, and make the eyes move quickly when needed to jump from one line of vision to another.

When reading, children with tracking problems will often lose their place and skip or transpose words. They often have difficulty with comprehension and may use their fingers to follow a line of print. Copying instructions from the board or books can pose serious difficulty for children with tracking dysfunction.

Migraines and Visual Stress

Headaches and photosensitive migraines are often associated with a sensitivity to glare, and most patients are sensitive to light during an attack. This sensitivity (known as visual stress) is associated with an abnormally strong response to bright lights and bold geometric patterns in the visual cortex of the brain. Migraines can be helped by reducing this sensitivity using precision tinted lenses.

Following assessment, we aim to:

- Determine visual problems relating to reading and writing skills
- Manage visual processing difficulties through treatment and exercises
- Offer support to parents and teachers
- Offer advice and guidance to the school, college or university
- Identify and treat any orthoptic concerns

Referral to clinic

Self-referral can be made to the Exeter Visual Stress Clinic. You do not require a referral from your GP.

Following a full assessment, a report concluding our findings and recommendations can be provided.

Should you require any more information regarding this clinic please call Pullen & Symes Optician, Exeter 01392 257529 where the clinic is run.

Further information on migraine and visual stress

Reports of benefit from colour came to the attention of Professor Arnold Wilkins of the Medical Research Council, UK in the early 1990's. Concerned that the benefit was placebo effect, he recognised that if colour potentially gave benefit, the colour needed to be selected with precision and with the three aspects of colour, hue, saturation and brightness independent of one another. To allow this selection he invented what is called today the Intuitive Colorimeter and used this instrument to carry out scientific research into this effect.

Following open trials, a double blind placebo controlled trial [*2](#), published in 1994, proved that the beneficial effect of colour on perceptual distortion was not entirely attributable to a placebo effect. This meant that many children and adults with visual stress could be helped. Further research showed a possible explanation of the effect [*3](#) and confirmed links with photosensitive epilepsy [*4](#)

Much research has also been carried out into the effect of colour with migraine. [*5](#) Again people with migraine or with migraine in the family are particularly susceptible to the perceptual distortions seen in epileptogenic visual stimuli and colour can be of benefit.

FURTHER RESEARCH PAPERS AVAILABLE

AT: <http://www.essex.ac.uk/psychology/overlays/>

It is recognised that problems of visual stress could be attributed to Binocular vision anomalies or refractive problems, so it is vitally important that prior to a colour assessment a full optometric examination is carried out to eliminate these possibilities which it would be inappropriate to treat with colour. [*7](#) + [*8](#)

[*1](#) Lightstone A. Lightstone T. Wilkins A. Both coloured overlays and coloured lenses can improve reading fluency but their optimal chromaticities differ. Ophthalmic and Physiological Optics 19 279-285 (1999)

[*2](#) Wilkins A. Evans B.J.W. Brown J.A. Busby A.E. Wingfield A.E. Jeans R.J. and Bald J. Double-masked placebo-controlled trial of precision filters in children who use coloured overlays. Ophthalmic and Physiological Optics Vol 14 365-370 (1994)

[*3](#) Wilkins A.J. Visual Stress Oxford Science Publications (1995)

[*4](#) Wilkins A.J. Baker A. Amin D. Smith S. Bradford J. Zaiwalla Z. Besag F. Binnie C. Fish D. Treatment of photosensitive epilepsy using coloured glasses. Seizure 8 444-449 (1999)

[*5](#) Wilkins A.J. Patel R. Evans B.J. Tinted spectacles and visually sensitive migraine. Cephalalgia 22 711-719 (2002)

*6 Huang J. Wilkins A. Cao Y. Mechanisms whereby precision spectral filters reduce visual stress: an fMRI study.

*7 Evans B.J Patel R. Wilkins A.J. Optometric function in visually sensitive migraine before and after treatment with tinted spectacles. *Ophthalmic and Physiological Optics* 22 130-142 (2002)

*8 Scott L. McWhinnie H. Taylor L. Stevenson N. Irons P. Lewis E. Evans M. Evans B. Wilkins A. Coloured overlays in school: orthoptic and optometric findings. *Ophthalmic and Physiological Optics* 22 156-165 (2002)