Visual Stress and Coloured Overlays

What is Visual Stress?

Visual stress (sometimes called 'Meares-Irlen Syndrome' or 'Scotopic Sensitivity Syndrome') is the experience of unpleasant visual symptoms when reading, especially for prolonged periods. Symptoms include illusions of shape, movement and colour in the text, distortions of the print, loss of print clarity, and general visual irritation. Visual stress can also cause sore eyes, headaches, frequent loss of place when reading, and impaired comprehension.

Visual stress is caused by the striped effect of black writing on white paper which causes over stimulation and excitation of the visual cortex.

Visual stress can have an adverse effect on the development of reading skills, especially reading fluency - i.e. the ability to recognise words quickly and to read longer passages of text in a smooth and efficient way so that good comprehension is maintained. Visual stress makes reading an unpleasant and irritating activity that children will tend to avoid as much as possible. Research has shown that 15 - 20% of people suffer visual stress to some extent, and they also tend to be hypersensitive to fluorescent lighting and flicker on computer monitors.

The condition of visual stress was first discovered independently by Olive Meares, a teacher in New Zealand, in 1980, and by Helen Irlen, a psychologist in the United States in 1983.
They did not use the term 'visual stress', but they recognized that the problem contributed significantly to reading difficulties and that coloured overlays can help to overcome the unpleasant symptoms.

The use of tinted lenses or coloured overlays to treat visual stress was formerly regarded with scepticism by the medical and education professions.

However, scientific studies in the 1990s by Professor Arnold Wilkins of the University of Essex have shown that this treatment is generally the most effective and simplest solution.

For more information on research by Professor Arnold Wilkins on visual stress visit: [www.essex.ac.uk/psychology/overlays](http://www.essex.ac.uk/psychology/overlays)


**Coloured overlays**

Coloured overlays are transparent sheets of coloured plastic that can be placed over a page or a book so as to colour the text without affecting its clarity. The colour reduces the perceptual distortions of text that children sometimes describe. They enable some children to read more fluently, with less discomfort and fewer symptoms of visual stress.
Distortions of text include blurring, movement of print, shadowy lines, colours or shapes on the page and flickering.

Coloured overlays and coloured glasses can increase the speed of reading, although with conventional text the improvement may only be apparent after 10 minutes of reading, when the child would begin to tire were an overlay not used. If the text is closely spaced, the benefit is more immediate.

The children who benefit may already appear to be good readers but more often they have difficulty with reading. They usually suffer visual discomfort when reading and when questioned, will often report visual distortions of the text.

A specialist Orthoptist has assessed the child’s eyes and prescribed the coloured overlay as a trial. The overlay may not be the correct colour or the child may not like to use it. If the overlay is simply making the page look different the effect will wear off. We, therefore, suggest that if the child voluntarily uses the overlay, particularly if they do not have to be reminded to use it, for one school term, then this is a positive indicator that colour will be beneficial.

The child does not have to use the overlay if they feel it makes no difference. The response to colour is subjective and the wearer is the best person to judge if there is any benefit.
The coloured overlay should be laid over the text the child is reading; the overlay should be flat touching the page and positioned so as to avoid reflections from the surface. The overlay should not be creased and it is a good idea to keep the overlay in an envelope when not in use. The child can touch the overlay to help when reading and it can be wiped clean.

**General advice if overlays are advised**

Try to sit the child in natural lighting whenever possible, fluorescent lighting will exacerbate any symptoms of visual stress.

Please allow the child to hand his/her homework in on coloured paper rather than black writing on white paper. It would also be very helpful to allow the child to write in school on a different coloured paper for the same reason.

When using an interactive white board or a computer, it would be very useful to change the background colour away from white with black print.

At the beginning the colour of the paper/background is not of paramount importance as the majority of children will chose a different colour at their next visit until they eventually settle with one specific colour.

**Further information**

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