

The case for Irlen

People are so hesitant about Irlen (unless they already have their Irlen Fileters (Lenses).

I looked up Irlen Syndrome online. These were the first three items I found:

- Irlen Syndrome is not recognised by most medical professionals because it "does not exist", ABC, based on RANZCO's Position statement
- Irlen Syndrome is not recognised in the medical community in Australia - Australian Disability Clearinghouse on Education and Training – based on RANZO's comment.
- Wikipedia, "The ideas of Irlen syndrome are pseudoscientific..."

Many other individuals and organisations now repeat RANZCO's position (see below) without individual investigation.

<https://ranzco.edu/wp-content/uploads/2018/11/Irlen-Syndrome-Position-Statement-May-2018-2-1.pdf>

No wonder people who may be considering Irlen are put-off.

I am replying to the first 4 RANZO points, using information from a report by Dr Sandra Tosta from the Irlen Institute (2018) and additional comments by me, Maria De Ionno, including more recent research that RANZCO could (obviously) not include.

I have been involved with using colour to help reading since SPELD SA sent me four coloured overhead projector transparencies to help one of my students in 1985 when I was a School Guidance Officer in Gove. I have been an Irlen Diagnostician since 2007.

The RANZCO Position states that:

1. The use of Irlen lenses in the treatment of reading difficulties is controversial

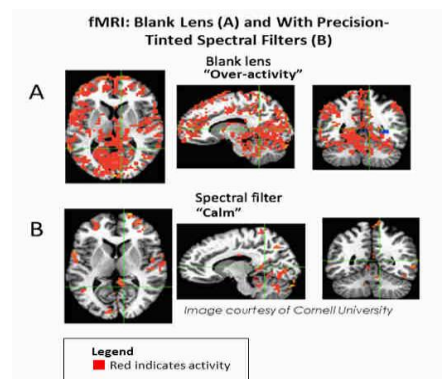
Using a so-called "controversial" methodology to deal with an issue should not be a reason for rejecting it outright.

- The medical community as a whole has not recognised Chiropractic or Acupuncture, but these topics are studied in universities. Vitamin C use is still regarded as controversial by the medical profession (3), although results showing efficacy have been available since 1937 (and the discoverer was awarded the Nobel Peace Prize for it (4)).
- The issue of readability is not new. In 1717, a letter from Dr Lancaster to Dr Charlett stated that the English printing on white paper was too bright, while "brown paper preserves the eye better than white, and for that reason, the wise Chinese write on brown. So do the Egyptians...so when

wise authors and readers agree to be wise, we should avoid printing on a glaring white paper." (5)

- The use of tinted lenses to improve vision or deal with glare appears to go back to the 12th-century use by the Chinese, though some claim Emperor Nero used an emerald to help his vision. James Ayscough, a British optician, prescribed tinted lenses (6). Tinted lenses – quartz, green, and blue- have been around for a long time, so there must have been some benefit to their use.
 - Helen Irlen and Olive Meares (a New Zealander) discovered the benefits of colour for visual processing about 40 years ago, and since then, probably millions of people worldwide have at least had short, economical "screening" sessions to help decide whether colour would benefit them, before deciding to use Irlen Spectral Filters (Lenses).
2. There is no scientific evidence that Irlen Syndrome exists or that treatment of reading difficulties with Irlen lenses work
- a. Lack of scientific evidence that Irlen Syndrome Exists or that treatment for Irlen Syndrome is effective.**
- *Over 100 articles published over 40 years in peer-reviewed scientific journals support using colour to address symptoms of Irlen Syndrome.* Many early Australian researchers at the University of Sydney and the University of Newcastle (7-14), as well as Korea (15) and Brazil (16), showed positive reading-related research studies.
 - Of the thirteen peer-reviewed studies published between 2006-2018 (15-27) on using coloured lenses and reading, ten had positive results (faster reading rate, improved comfort, enhanced comprehension, reduced visual noise, and increased accuracy). The other three had inconclusive findings due to not using the Irlen Method or not using Irlen Spectral Filters (25) or too small a sample size to detect the actual positive changes that appeared in the raw data (26-27).
 - RANZCO did not consider the latest research from Brazil (16).
 - Schools in New Zealand (28) and Australia (29) have significantly improved in standardised reading tests, with students using their Irlen Lenses as required.

- RANZCO did not review advanced neuroscience and biochemical research (30-33) which:
 - established the existence of Irlen Syndrome
 - shows abnormal brain function in the visual cortex and surrounding brain areas that correspond to reported physical and perceptual symptoms for those identified with Irlen Syndrome
 - shows slowing of overactivity - normalised brain function - during visual stimulation and word reading, using prescribed Irlen filters
 - has confirmed improved reading performance and physical symptoms such as migraines and visual distortions.



b. Issues with lens choice, repeatability and self-reporting.

- The Irlen method uses performance indicators on a series of diagnostic tasks and behavioural observations to determine the proper colour. This unique diagnostic method makes the Irlen Method different from other coloured lens interventions. The colour is customised for each individual's brain to filter only the wavelength(s) of light the person's brain cannot process accurately. Each person ends up with their own unique colour to wear.
- RANZCO's statement about poor repeatability of colour choices is incorrect since they referenced only studies that did not use the Irlen method of colour selection (34). The methods employed by the articles referenced relied on self-selection of colour. They were not carried out by a professional trained in the Irlen method.

c. Placebo effect/Hawthorne effect/Increased attention (by parent carer)/concurrent reading program.

- Re Placebo effect: Both longitudinal and placebo-controlled studies have shown improvements in reading and other Irlen-related physical and perceptual symptoms (26-27). Yet, these studies, published in educational and psychological journals, were not considered by RANZCO when making their statement. In any case, even if the improvements are due only to placebo (which they are not), the students who veer toward Irlen have usually had significant school support, much of it very good. Some have had considerably expensive years in tutoring and still are not progressing despite the effort. When

they arrive at the Irlen Clinic, it is often as a last resort. Here is a typical experience (35)

Why not use a placebo? (37)

- Hawthorne effect, where the knowledge of being evaluated changes or improves behaviour. There appears to be no universal agreement that the Hawthorne effect exists. (37)
- Increased parental support has been known to improve performance. Many home tutor programs can help improve reading. However, the significant changes in reading that occur with and without Irlen overlays or lenses for those with Irlen Syndrome have to be seen to be believed. (36). These changes do not rely on increased parental support..except the support to use the Irlen method.
- Concurrent reading instruction. Similar to additional parental interest, individuals with dyslexia may slowly improve. Those students whose difficulties with visual stress are not identified or dealt with tend to display more school avoidance behaviours and certainly more homework refusal, so the gap between reading expectations for their age and their actual performance increases over time, even though some put in significant additional effort (personal observation).

3. Irlen syndrome is not recognised by the medical community or the World Health Organisation (WHO)

- Irlen Syndrome is a problem with the brain, not the eye. It is a perceptual processing disorder, not a visual problem. As such, Irlen Syndrome, as with other perceptual processing difficulties, falls under the educational domain and is not considered a medical condition.

4. There is no documented evidence that Irlen lenses are harmful but may divert time and resources away from proven strategies which help with reading e.g. explicit phonic instruction

- Over many decades, considerable time and resources have been put into providing phonologically based strategies such as those mentioned above which have shown to certainly improve reading for many poor readers.(37)
- However, the IDA definition states that *Dyslexia is... "often unexpected in relation to ... the provision of effective classroom instruction"*. So it is unlikely that those who improve using phonological methods alone actually have dyslexia. They may be just "poor readers" who need good teaching. Otherwise, what would explain the percentage of students who do not acquire the necessary phonological skills for reading and show continued reading difficulties even after applying the three-tiered system advocated in Australia in 2010? (38)

- There are reasons. John Stein discusses the effects of poor rapid visual and auditory temporal processing as the underlying neural pathways underlying failure to acquire phonological skills. (39) These are the things on which time and resources should be placed. We consider Irlen Lenses to best facilitate visual temporal processing as demonstrated by those wearing Irlen Lenses, who show "instant" significant increases in reading rate. (36)
- Unless individuals with visual and spoken language processing issues have these underlying neurological concerns dealt with directly, their dyslexia WILL be a lifelong problem, as IDA contends. See "How is Dyslexia treated?: <https://dyslexiaida.org/dyslexia-basics/>.

A Final Comment

The problem is huge and RANZCO's position paper creates significant disservice.

The incidence of people with dyslexia who have both dyslexia and visual stress is approximately 20%. (40). Or just consider that 5% of Australia's approximately 4 million school students (about 200,00) have visual processing concerns with or without dyslexia. There are approximately 14,000 in South Australia.

What supports are available for them in schools after they move through the three-tier system and still do not improve? While encouraging them to realise that they have varied and wonderful skills (which they do), they still have to put up with not being able to read as well as their peers, no matter how hard they try..for 13 years ..if they get through school.

A sad state, when there is something that CAN be done.

Using Irlen Overlays or Irlen Filters for those children identified, will not divert time and resources from "proven strategies". Because these supports reduce visual stress and the over-activity of the visual system during visual stimulation and word reading, individuals who would otherwise "fall through the cracks" will benefit from the necessary explicit phonics instruction and become the success stories we all want to see.

References

1. Bias against Vitamin C in Mainstream Medicine: Examples from Trials of Vitamin C for Infections pmc.ncbi.nlm.nih.gov/articles/PMC8779885/
2. Discoverer of ascorbic acid. www.acs.org/education/whatischemistry/landmarks/szentgyorgyi.html#:~:text=The%20Discovery%20of%20Ascorbic%20Acid,-In%201930%2C%20Szent&text=Svirebely%2C%20working%20with%20Szent%2DGy%C3%B6rgyi,be%20produced%20within%20their%20bodies.
3. Aubrey John Esquire, Letters written by prominent persons in the seventeenth and eighteenth centuries, Printed for Longman et al, London, 1813.
4. History of Sunglasses blog.sciencemuseum.org.uk/9-surprising-moments-in-the-history-of-sunglasses/
5. Nobel, J., Orton, M., Irlen, S., & Robinson, G. (2004). A controlled field study of the use of coloured overlays on reading achievement. *Australian Journal of Learning Disabilities*, 9(2) 14-22.
6. Robinson, G.L. (2000). Irlen coloured filters and adults. *Australian Journal of Learning Disabilities*, 5(1), 15-23.
7. Robinson, G.L. (1994). Coloured lenses and reading: a review of research into reading achievement, reading strategies and causal mechanisms. *Australian Journal of Special Education*, 18, 3-14.
8. Robinson, G.L. (1992). Coloured lenses and reading difficulties: What is research telling us? *The Journal of the Victorian Adult Literacy and Basic Education Council Inc.*, 14(6), 16-20.
9. Robinson, G. L., & Foreman, P. J. (1999). Scotopic sensitivity/Irlen syndrome and the use of coloured filters: A long-term placebo controlled and masked study of reading achievement and perception of ability. *Perceptual & Motor Skills*, 89(1), 83-113.
10. Whiting, Paul R. (1988). Improvements in Reading and Other Skills Using Irlen Coloured Lenses. *Australian Journal of Remedial Education*. 20(1), 13-15.
11. Whiting, P., Robinson, G.L., & Parrot, C.F. (1994). Irlen coloured filters for reading: a six-year follow up. *Australian Journal of Remedial Education*, 26, 13-19.
12. Whiting, P., & Robinson, G.L. (1988). Using Irlen coloured lenses for reading: A clinical study. *Australian Educational and Developmental Psychologist*, 5, 7-10.
13. Kim, J. H., Seo, H. J., Ha, S. G., & Kim, S. H. (2015). Functional Magnetic Resonance Imaging Findings in Meares-Irlen Syndrome: A Pilot Study. *Korean Journal of Ophthalmology*, 29(2), 121-125.
14. Garcia A.C.O., Momensohn-Santos T.M., Vilhena D.A. (2018). Effects of Spectral Overlays on Reading Performance of Brazilian Elementary School Children, *Folia Phoniatr Logop*, 69, 219-225
15. Cardona, G., Borràs, R., Peris, E., & Castañé, M. (2010) A placebo-controlled trial of tinted lenses in adolescents with good and poor academic performance: reading accuracy and speed. *Journal of Optometry*, 3(2), Pages 94-101.
16. Christian-Sanders, M. (2012). Comparative efficacy of reading interventions for children with autism spectrum disorder (Doctoral dissertation, Northern Michigan University).
17. Ekenna-Kalu, C., Fatolitis, P., Momen, N., Haseltine, C., Temme, L., Krouse, S. (2006). Meares-Irlen Syndrome Innovation Study: Assessment of the potential for colored overlays to enhance the reading skills of listed recruits (Navy). Report by the Naval Aerospace Medical Research Laboratory (NAMRL), July, 2006.

18. Imaizumi, S., Hibino, H., & Koyama, S. (2016). Effect of Colored Overlays on Reading Comfort in People with and without Meares-Irlen Syndrome. *International Journal of Affective Engineering*, 15(1), 21-28.
 19. Kusano, Y., Awaya, T., Saito, K., Yoshida, T., Ide, M., Kato, T., & Heike, T. (2015). [A girl with dyslexia suspected to have Irlen syndrome, completely relieved by wearing tinted lenses]. *Brain and development*, 47(6), 445-448.
 20. Ludlow, A., Wilkins, A., & Heaton, Pam. (2006). The effect of colored overlays on reading ability in children with Autism. *Journal of Autism and Developmental Disorders*. Spring 2006.
 21. Northway, N., Manahilov, V., & Simpson, W. (2009) Coloured filters improve exclusion of perceptual noise in visually symptomatic dyslexics. *Journal of Research in Reading*, Volume 33, Issue 3, Pages 223-230.
 22. Park, S. H., Kim, S. H., Cho, Y. A., & Joo, C. K. (2012). The effect of colored filters in patients with Meares-Irlen syndrome. *Journal of the Korean Ophthalmological Society*, 53(3), 452-459
 23. Vidal-López, J. (2011) The role of attributional bias and visual stress on the improvement of reading speed using colored filters. *Perceptual and Motor Skills*, 112 (3), pp. 770-782.
 24. Bouldoukian, J., Wilkins, A.J., & Evans, Bruce J.W. (2002). Randomised controlled trial of the effect of coloured overlays on the rate of reading of people with specific learning difficulties. *Ophthalmological and Physiological Optics*, 22, 55-60.
 25. Nobel, J., Orton, M., Irlen, S., & Robinson, G. (2004). A controlled field study of the use of coloured overlays on reading achievement. *Australian Journal of Learning Disabilities*, 9(2) 14-22.
 26. (www.empoweredlearningtrust.co.nz/wp-content/uploads/2012/11/Annual-Report-2018-final-draft.pdf)
 27. Whole School Approach to Irlen Syndrome, presented by Jo-Ann Slater and Adam Myers of Miles State Primary School.
 28. Loew, S.J., & Watson, K. (2012). A prospective genetic marker of the visual perception disorder Meares-Irlen syndrome. *Perceptual and Motor Skills*, 114(3), 870-882.
 29. Soares, FA, & Gontijo, LS (2018). Knowledge production: genetic, biochemical and immunological bases of the Meares-Irlen syndrome. *Brazilian Journal of Ophthalmology*, 75(5), 412-415.
 30. Sparks, D.L., Robinson, G.L., Dunstan, H., & Roberts, T.K. (2003). Plasma cholesterol levels and Irlen Syndrome: preliminary study of 10- to 17-yr old students. *Perceptual and Motor Skills*, 97, 745-752.
 31. Robinson, G.L., Roberts, T.K., McGregor, N.R., Dunstan, R.H., & Butt, H. (1999). Understanding the causal mechanisms of visual processing problems: a possible biochemical basis for Irlen Syndrome? *Australian Journal of Learning Disabilities*, 4(4), 21-29.
-
32. Elliot D.B., Wood J.M. (2017). Coloured filters show gendered differences and poor repeatability. *Editorial Ophthalmic Physio Opt*, 37, 635-639.
 33. www.youtube.com/watch?v=SQDuvvF83r0&list=PL264AE319EAE1C4B0&index=8
 34. www.health.harvard.edu/newsletter_article/the-power-of-the-placebo-effect
 35. The Hawthorne effect: An old scientists' tale lingering "in the gunsmoke of academic snipers" *Scientific American* www.scientificamerican.com/blog/absolutely-maybe/the-hawthorne-effect-an-old-scientistse28099-tale-lingering-e28099cin-the-gunsmoke-of-academic-sniperse28099/
 36. www.youtube.com/watch?v=zO91B8OhpG8&t=17s
 37. fivefromfive.com.au/phonics-teaching/evidence-for-systematic-synthetic-phonics/
 38. Helping people with dyslexia: a national action agenda. Report to the Hon Bill Shorten, Parliamentary Secretary for Disabilities and Children's Services, from the Dyslexia Working Party January 2010.
 39. www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2022.1004027/full
 40. Evans, B. J. W., & Allen, P. M. (2016). A systematic review of controlled trials on visual stress using Intuitive Overlays or the Intuitive Colorimeter. *Journal of Optometry* Volume 9, Issue 4, October–December 2016, Pages 205-218