



Understanding Irlen Syndrome


irilen.

A piece of the puzzle



Australasian Association of Irlen Consultants Inc

What is Irlen Syndrome?

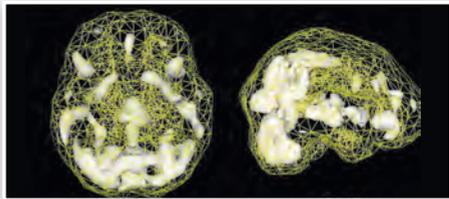
Irlen Syndrome is the name given to the range of symptoms experienced as a result of a Visual Processing Disorder that appears to be caused by an anomaly in the carrying of messages from the eye and along cortical visual pathways within the brain. This means that the image of print in particular, may be distorted as it moves towards the visual cortex of the brain, resulting in the image looking different from the original. It is as if the brain was a radio and something is interfering with the signals from the eyes. Visual Processing symptoms identified as Irlen Syndrome cannot be identified through standard psychological, educational or optometric testing. It is not an ophthalmological or optometric problem but may coexist with it.

The eyes transmit 70% of the information an individual receives and must be interpreted correctly by the brain. Any problem in the way the brain processes visual information can cause difficulties in the general ability to function, specifically processing, interpreting and interacting with the environment.

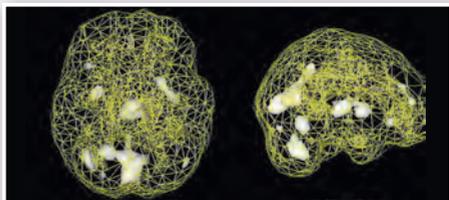
Visual Processing Disorder symptoms known as Irlen Syndrome can affect both adults and children, manifesting itself differently for each individual, and interfering with a range of activities which can be a lifetime barrier to learning, for example:

- Academic and work performance
- Behaviour
- Attention
- Ability to sit still
- Concentration

Spect Scans from the Amen Clinic, Newport Beach, California, USA



Brain activity without Irlen lenses



Brain activity with Irlen lenses

How does Irlen Syndrome affect people?

Individuals with Irlen Syndrome will generally show one or more of the following:

Reading Difficulties

Reading may be slow, word-by-word and inaccurate. There can be problems reading on white paper and though reading skills may be adequate, they may not be able to read for long periods, even with prescribed reading glasses. Information may require re-reading for comprehension. They may struggle to read music scores and mathematical notation accurately. Because individuals with Irlen Syndrome may have never perceived print correctly **they consider the way they perceive it as "normal" and do not report difficulties.**

Irlen Syndrome is NOT Dyslexia. An individual can have both Irlen Syndrome AND Dyslexia, but they are two different issues.

With coloured overlays or Irlen Spectral filters individuals report:

- Improved reading speed, fluency, accuracy and comprehension
- Tracking across the page is easier so they do not lose their place constantly
- They can read in bright light with less errors
- Less strain and fatigue, so are more willing to read
- They can read more, for a longer time



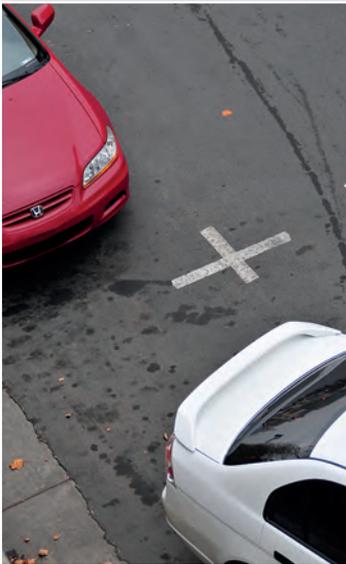
Poor Handwriting and Copying

Individuals with Irlen Syndrome may display a number of difficulties which affect school and work performance. They may have difficulty copying because many have a narrow vision span, only seeing one word at a time making it slow and laborious. It may take a long time to recognise words and write them correctly. Letters can be malformed, of unequal size, with unequal spacing between and within words, wavy baseline and inconsistent slope. They may have difficulty tracking and may lose their place when copying.

When individuals with Irlen Syndrome write on paper that is their appropriate colour, handwriting can be smaller, neater, faster, more even and they can write more, for longer.

Coloured paper, colour transparencies and Irlen Filter lenses can provide significant help for individuals doing assignments, reports, tests and especially timed tests including NAPLAN and Core Skills Tests for Year 12.

Poor Depth Perception



When there is poor depth perception individuals can be regarded as clumsy, bumping into objects and knocking things over. They may have difficulty participating in sporting activities and difficulty judging distances. Adults may require additional caution while driving, parking or riding a bike.

With better depth perception individuals can navigate their environment better when walking or driving a car, playing sport and maintaining appropriate social distances.

Light Sensitivity/Photophobia

Many affected people suffer eyestrain under fluorescent lights and squint in bright sunlight. They often develop light-induced headaches and migraines. They are often identified by wearing sunglasses even on cloudy days due to the glare. These individuals find it hard to stay focused when listening, reading, working on the computer or doing other close



visual work. This sensitivity can result in poor concentration, anxiety, irritability, the need to take frequent breaks and even physical symptoms such as tiredness, headaches, dizziness and sleepiness. These can be very debilitating and affect ability to complete work to their desired standard, often resulting in low self-esteem and poor promotion prospects. For those with light sensitivity, wearing Irlen Filters results in:

- Reduced tiredness, nausea and dizziness
- Reduced headaches, mood changes and restlessness
- Increased focus and better ability to stay on task and do computer work

Underachievement



Many adults and children, who work hard and still achieve work and output below expectations, may be suffering from Irlen Syndrome. These individuals can do poorly in timed activities, read the bare minimum required and complain of headaches, eyestrain or tiredness when doing visual work, even **though they are very capable, and some are gifted**. Irlen Filters reduce visual stress and assist them to achieve to their potential.

Headaches, Migraines and Other Physical Symptoms

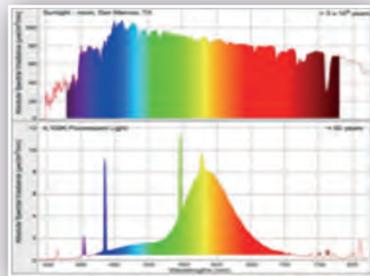
These can be symptoms of a more serious medical condition which needs to be investigated medically. Environmental factors, such as flicker and bright lights, may trigger headaches, migraines and nausea in some people. Irlen Syndrome may be indicated when tension headaches, migraine and nausea sufferers indicate they experience stress from the following environmental factors:

- discomfort in sunlight, bright, fluorescent lighting, glare conditions (snow, rain, and hazy days), including bright headlights at night
- stress or strain with sustained reading, computer use or other visually intensive activities
- difficulty looking at stripes, patterns or certain colours, which become bright and bothersome



Why Does Fluorescent Lighting Cause Visual Discomfort in Some People?

Normal sunlight and incandescent lighting have different light spectra from Fluorescent light. Fluorescent light does not emit the entire light spectrum, but rather has "peaks" of some wavelengths while some of the remainder are much reduced.



Mikki Boswell, Yuan Lu, William Boswell, Markita Savage, Kim Hildreth, Raquel Salinas, Christi A. Walter and Ronald B. Walter. *Genes* 2019, 10(4), 271;

Conditions which may include symptoms characteristic of Irlen Syndrome

Autism and Asperger's Syndrome

Irlen Syndrome may be a factor for some individuals with Autism or Asperger's Syndrome who experience:

- **Sensory Overload** triggered by lights and sunlight.
- **Environmental Distortions** that can extend to people, property (stairs, walls, floors can appear blurry, moving, changing, and can disappear), and activities such as ball sports. These cause misperceptions which can affect gross and fine motor coordination, ability to interpret facial expressions, and "poor social skills".
- **Print Distortions** which can make learning or reading difficult even though reading skills may be good or even advanced.

However, not every individual with Autism and Aspergers Syndrome suffers with perceptual problems, light sensitivity, and sensory overload.

Psychological, Medical and Visual Problems

Robert Dobrin, MD (Amen Clinics) reported that Irlen Syndrome should often be expected in a range of disorders: Sensory Integration, ADHD, Anxiety, Tic, Mood and Reactive Attachment. He considers Irlen may also be associated with Migraine, School Phobia, Traumatic Brain Injury, Visual Dyslexia, recurrent automobile accidents, excessive daytime fatigue, and Irritable Bowel Syndrome.

Traumatic Brain Injuries, Head Injuries, Concussions and Whiplash

Up to 80% of people suffering from these conditions have one or more of the following symptoms related to visual stress:

- **Reading.** Change in clarity or stability of the print.
- **Sustained Attention and Concentration.** Discomfort in reading and doing other visual activities
- **Light Sensitivity.** Reduced rehabilitation because going outside, bright or fluorescent lighting, and driving at night is uncomfortable or stressful.
- **Physical Symptoms.** Headaches, nausea, dizziness, anxiety, irritability, or stomach aches is often increased by light, reading, and other visually-intensive activities.
- **Depth Perception.** Interferes with home and work-related activities that require the ability to judge depth or spatial relationships.
- **Fatigue.** Greater sense of being tired and fatigued.
- **Neurological Problems.** Light-induced seizures, tremors, or other similar problems.

How can Irlen Spectral Filters Help to Reduce These Factors?

Irlen Spectral Filters filter out the specific wavelengths of light that may trigger the symptoms listed above.

Some people who have a Traumatic Brain Injury report a substantial reduction in symptoms when they wear their Irlen Spectral Filters.



Military and Veterans with Combat-Related Brain or Head Trauma

Service men and women who have experienced concussions, traumatic brain injury and repeated blast exposure may experience the following

- **Extreme light sensitivity** (i.e., sensitivity to bright lights, sunlight, or fluorescent lights)
- **Chronic headaches or migraines** that are not relieved by other courses of treatment and do not respond to medication
- **Changes in vision or perception** that are not corrected with optometric glasses
- **Difficulty with reading** or distortions on the printed page
- **Changes in depth perception**

The Irlen Institute in California, since 2011, has partnered with Semper Fi Fund to provide Irlen Spectral Filters to military personnel experiencing "medically resistant" headaches and migraines as a result of combat-related brain or head trauma. A study of 178 of these servicemen and women showed dramatic and immediate improvements of these headaches and migraines, as well as improvement in a variety of other areas, including reading, night driving, eye-strain, and dizziness. Results from this study were presented at the World Congress on Brain Injury held in San Francisco, CA in March 2014.

Attention Deficit Disorder (ADHD)

Some people showing ADHD symptoms may have either Irlen Syndrome or ADHD or both. Some ADHD individuals may be mislabelled and may have symptoms of visual stress. They may be observed looking away from the page and daydreaming - "inattentiveness". They often rush through activities ignoring careless errors, or apparently "give up" easily and avoid reading and writing tasks.



These are coping strategies often used to manage visual stress. Telling them to pay more attention or keep trying may not be helpful.

Research on ADHD and Irlen Syndrome was conducted at the David Yellin Academic College of Education Israel and reported at the Irlen International Conference 2019 in Manchester, UK. The researchers looked at the ADHD profile of professionally diagnosed adults and compared symptoms of Inattention before and after wearing Irlen Spectral Filters. They concluded that wearing Irlen Spectral Filters for a few months changed the ADHD profile to the Norm. Ref. Shulamit Elad, Dr. Aviva Bar Nir, Haya Shaked. David Yellin Academic College of Education, Israel.



Substantial research world-wide is being conducted to differentiate Irlen Syndrome from ADHD and to determine when either, or both, are present.

Who can have Irlen Syndrome?

- Between 42% and 70% of reading disabled students and 15% of high ability students were reported to have symptoms of Irlen Syndrome (Robinson et al., 1995 Table 1, quotes these figures)
- 20% - 24% of the general population of students from two secondary schools had symptoms of Irlen Syndrome. (Robinson et al., 1995)
- It occurs on a **continuum** from mild symptoms to very severe symptoms (Irlen H., "Reading by the Colors" 1995)
- It occurs in people who are gifted and talented and those with learning difficulties.
- It can occur with or without dyslexia but is **more prevalent in dyslexic people** varying from 31 to 46% (Irlen and Lass, 1989; Kruk, Sumbler and Willows, 2008).
- Research was reported showing that there is an 80% chance of a parent passing it to their children and if one child in the family has it, then the chance of other children having it is 50 to 70% (Robinson et al., 1996)
- 80% of inmates participating in prison education programs were found to have symptoms of Irlen Syndrome. (Whichard, Feller & Kastner Sept 2000)



What is the Irlen Method?

The Irlen Method has been used for over 30 years to identify and help people with the Visual Processing Disorder resulting in the symptoms identified as Irlen Syndrome. The Irlen Method determines whether using specifically coloured overlays and precisely tinted Irlen Spectral Filters reduce the symptoms.

The Irlen Method is a two-step process:

- **Problem identification:** A test is used to identify whether someone has Irlen Syndrome or not. If symptoms are present, it is determined whether colour can help reduce or eliminate these. Each individual will have a colour that is specific to their needs.
- **Selection of the Irlen Spectral Filters.** This involves using a large range of coloured filters either alone or in combinations. For most individuals who have Irlen Syndrome there is a specific spectral filter which reduces or removes the symptoms that they experience. The final specific colour or colour combinations are determined by assessment, not only in reading, but in other areas identified as difficulties - sunlight, glare, depth perception, etc.



This second session is extremely important because the colour of the filters worn as glasses is not the same as the plastic overlay colour. Wearing the wrong colour, even if only slightly different from the colour required, can cause additional or worsened visual stress and problems.

This is why the Irlen Method can only be carried out by certified Irlen Diagnosticians.

What Experts say about the Irlen Method

"I have repeatedly seen dramatic, instantaneous response to using Irlen Filters and other transparent overlays; I am now convinced that Scotopic Sensitivity does exist and that it may be responsible for many of the so-called learning disabilities in our schools. I also believe that screening for Scotopic Sensitivity Syndrome should be a regular part of every school health program."

LouAnne Johnson, author of the best selling book *The Queen of Education, Rules for Making Schools Work*, which inspired the movie *Dangerous Minds*

"There is so much evidence that Irlen coloured filters can literally transform a child's outlook on life that it makes sense to offer Irlen overlays or glasses to every child who needs them."

Felicity Craig, author of *Conquering Dyslexia*

"Autistic individuals who have benefited from the Irlen Method report seeing better, feeling more relaxed, less sensitive to bright lights, having fewer perceptual distortions, and better fine and gross motor coordination."

Olga Bogdashina, author of *Sensory Perceptual Issues in Autism and Asperger Syndrome*

"During a 15-month period, I evaluated 460 patients, including both adults and children. Using questions that would uncover problems related to light sensitivity and reading difficulties,

I found 122 patients. Many were treated with (Irlen) tinted lenses and were enthusiastic about their improvement. For these patients, Irlen Syndrome is an authentic diagnosis.

Robert Dobrin, M.D., F.A.A.P.

"...our feeling as disinterested outsiders is that the technique developed by Helen Irlen addresses a severe, unmet need in the community, has promise, and has benefited many individuals but requires further validation. We look forward to seeing the results of further work in this fascinating area."

David M. Hailey & Anthony R. Lea, Health Technology Division,
Australian Institute of Health

"Should reading educators support an approach that works for some children without knowing why it does? At the risk of sounding scientifically premature, we think they should ... The use of (Irlen) colored overlays and filters may provide the fighting chance many at-risk readers deserve."

William Henk, EdD., Associate Professor of Education and Reading, Pennsylvania State University, Robert J Rickelman, Millersville University

Where is Irlen Supported?

With over 170 Irlen Diagnosticians and thousands of Irlen Screeners, the Irlen Institute is able to offer our method to individuals in more than 44 countries around the world. Our International Headquarters, located in sunny, Long Beach, California, USA, offers clinical services and houses the national and international lab that services all of the Institute's North American and European affiliates.

The Medical Research Council at Cambridge University, Visual Perception Unit of Essex University in England, University Laboratory of Physiology at Oxford University, and Newcastle University in Australia have extensively researched and published studies on coloured overlays and coloured filters.

Recognition in Australia

In Australia, the following agencies provide support for students who have Irlen Syndrome. NSW Department of Education: NSW Education Standards Authority (NESA): TAFE (Technical and Further Education) NSW: many Universities Australia-wide: Board of Secondary Education W.A.: Department of Children's Services W.A.



Many individual workplaces support workers who require Irlen Filters.

Many Individual GP's, Optometrists and Psychologists also refer clients.

And in education?

Unfortunately, school systems in Australia have not yet officially caught up with the over 30 years of research and the knowledge base that extends now to SPECT Scans, fMRI and genetic studies.

They have been slow to accept that this very cost effective and minimally invasive approach can improve the educational outcomes of a very large proportion of children with learning disabilities and of those underachieving, as well as ease the teaching burden, at relatively little cost. An increasing number of progressive schools and individual teachers do implement Irlen.

AAIC members see many hundreds of children and adults each year who report symptoms of Irlen Syndrome and who benefit from Irlen Spectral Filters.

Many parents have been told that their child will not achieve to the level of their peers, because they are immature, lazy or need more effort/practice. Parents are often told they should read to their children more, even though most have been doing that regularly.



Adult clients rue the 10-30 years and more of **life wasted**, not knowing why they were unable to progress to their potential.

Children with Irlen Syndrome often give up after years of low self-esteem and self-confidence. This can be prevented if children are identified in their early years of school, but identification at any age is important.

What is the advantage of early identification?

- Children can benefit from instruction from "Day 1".
- Schools increase literacy levels - eg NAPLAN
- Government literacy results improve quickly
- Fewer children "withdraw" or "give up" on education.
- Reduced behaviour problems related to Irlen Syndrome - reduced need for specialist behaviour/learning programs.
- Teachers have fewer children with academic problems in their classrooms - easier teaching and learning.
- Reduced need for Special Education support by up to 50%.
- Raised results of 12% of individuals with no reading difficulties, who are not achieving to potential.

What are the advantages in workplaces?

- **Increased** - Productivity/output, Morale, Accuracy, Attention, Motivation
- **Reduced** - Workplace related stress, Absenteeism, Errors, Health issues, e.g migraines

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Australasian Association of Irlen Consultants Inc

www.aaic.org.au

Want to know more?

Visit www.aaic.org.au

You will find directions to Irlen Centres and Clinics in every State and Territory in Australia as well as in New Zealand and Singapore.

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