



IRLEN SYNDROME

WHAT EVERYONE NEEDS TO KNOW

3 Key Takeaways

01

IDENTIFY THE PROBLEM

Be able to identify the signs and symptoms of Irlen Syndrome

02

UNDERSTAND THE IMPACT

Understand how the syndrome manifests itself in different populations and the mind-body-learning connection

03

FAMILIARITY WITH THE SOLUTION

Learn about the Irlen Method and other modifications and accommodations you can use to help your students

What is a Perceptual Processing Difficulty

- A hindered ability to make sense of information taken in through the eyes
- Different from problems involving sight or sharpness of vision
- Affect how visual information is interpreted, or processed by the brain

Irlen Discovery

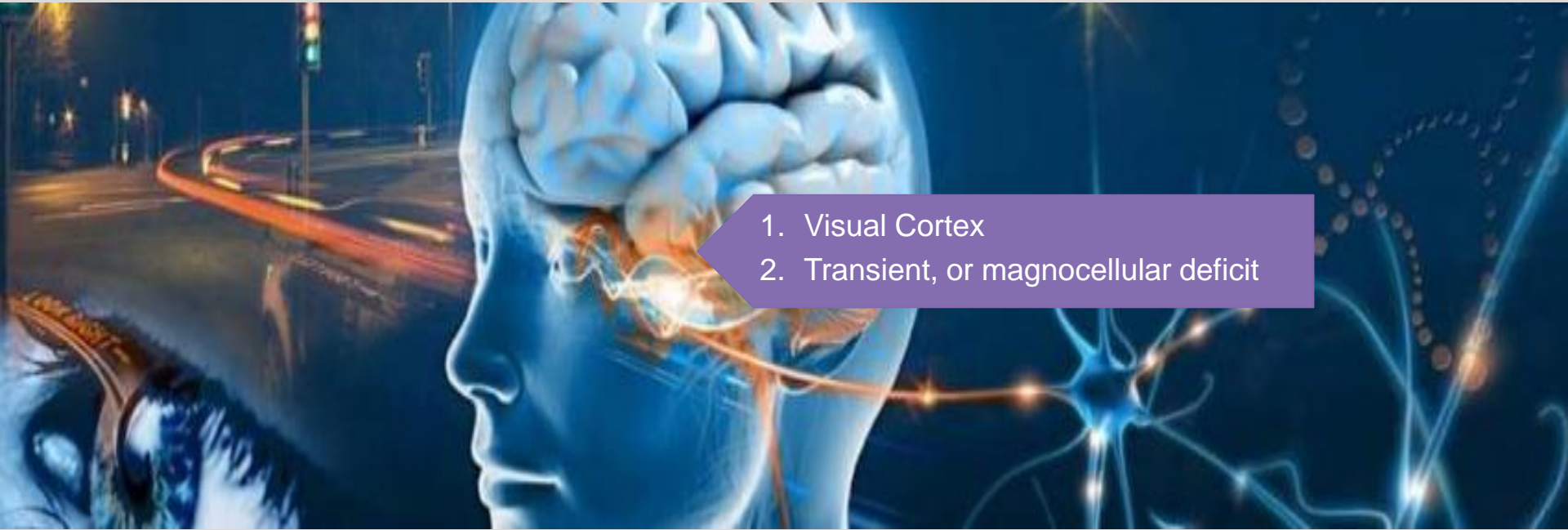
- Research based
- US Federal research grant
- Single study research design with 1,500 adults
- Conducted between 1980-1983 by Helen Irlen
- Helen Irlen presented at American Psychological Association Conference (APA) 1983

Main Facts

- Over 10,000 educators trained
- Over 100,000 wear Irlen Spectral Filters
- Millions use Irlen colored overlays
- Recognized as a standard low tech assistive technology for testing
- Recognized by Recordings for the Blind, Voc Rehabs, Dept. of Rehabs, SAT, ACT, LSAT

A Visual-Perceptual Disorder

Problem with the brain, not the eye



1. Visual Cortex
2. Transient, or magnocellular deficit

A young boy with short brown hair and glasses is sitting in a wooden chair, reading a book. He is wearing a white t-shirt. The background shows wooden shelves with various toys, including a LEGO set and a box of Harry Potter. A dark blue circular overlay is positioned on the left side of the image, containing the text 'THE PROBLEM' in large, bold, purple letters, followed by a dotted line and the text 'What is Irlen Syndrome?' in white.

THE PROBLEM

.....

What is Irlen Syndrome?

Hereditary

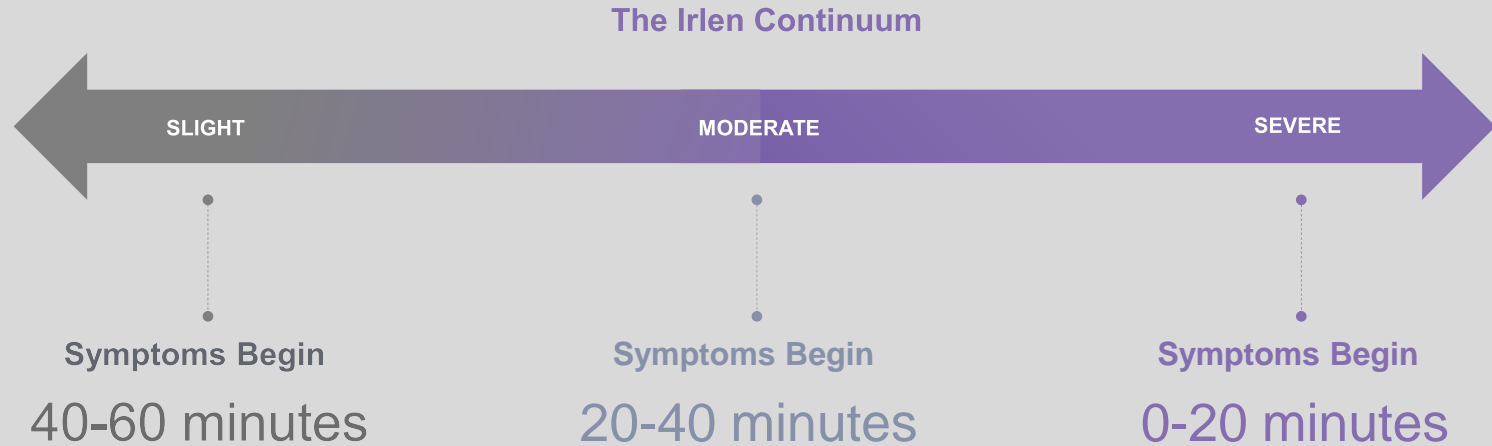
Problem with the brain, not the eye

- Genetic predisposition, runs in families
- Affects males and females equally
- Can also be acquired via injury, illness, medical procedures



A Spectrum Disorder

Falls on a continuum



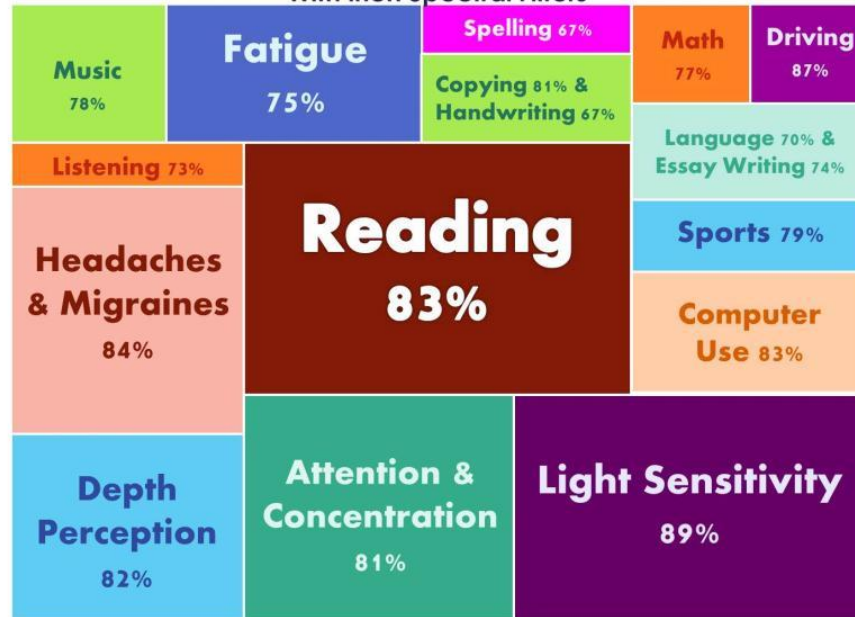
A Variety of Symptoms

- Light Sensitivity
- Inefficient Reading
- Slow Reading Rate
- Attention Deficit
- Strain or Fatigue
- Poor Depth Perception



Areas Impacted

Areas of Significant Improvement For 689 Clients
With Irlen Spectral Filters



© Perceptual Development Corp. 2012

Triggered by Environment

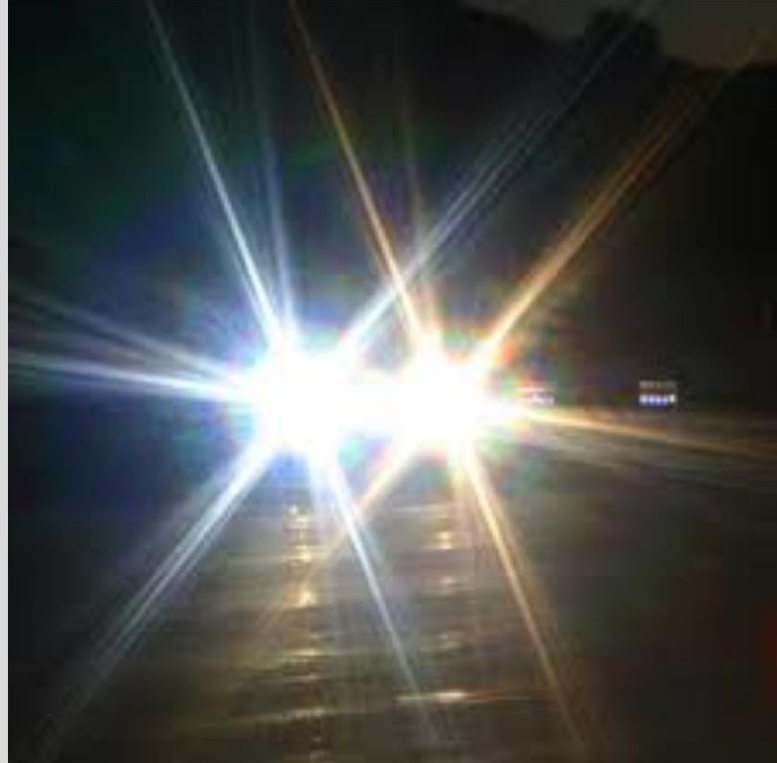


Lighting

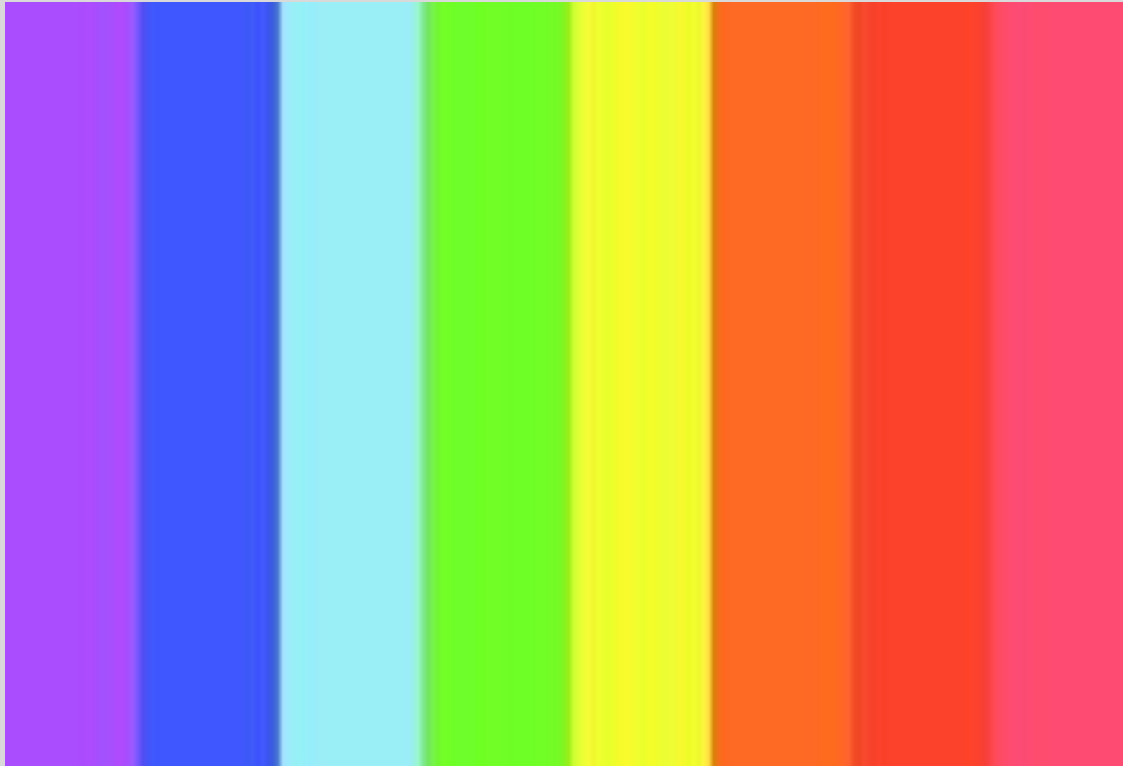
Bright and Fluorescent Lighting



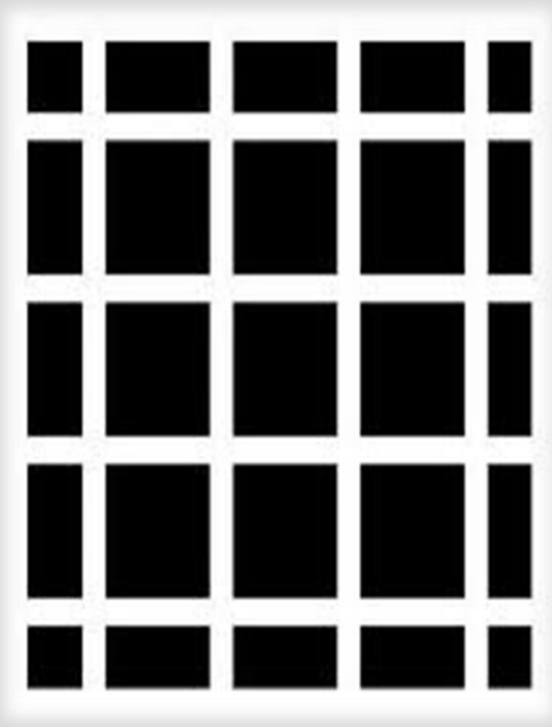
Glare



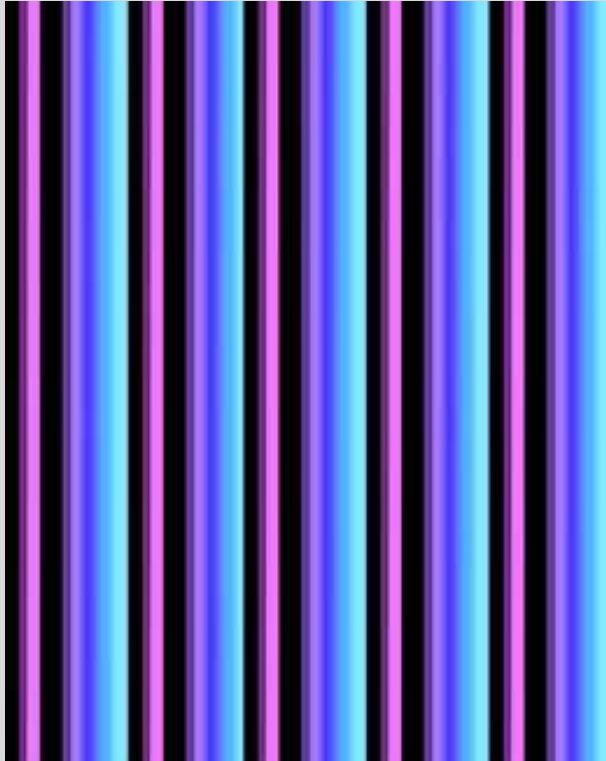
Bright Colors



High Contrast



Patterns and Stripes



Details





Print Size, Style and Format

Font and layout can make a difference

Font and layout can make a difference

Font and layout can make a difference

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Sustained Attention and Continued Performance



Activities as Stressors

- Looking, Listening
- Reading, Math
- Writing, Copying
- Scantron Answer Sheets
- Computer, TV, Movies
- Other Visually-Intensive Activities



Impacts the Entire Body

Abnormal brain function

Eye strain

Shallow, labored,
quickenened, breathing

Small and gross
motor integration

Fatigue

Headaches

Tense neck,
back, shoulders

Nausea




Systemic Impact

- Autonomic NS Imbalance
- Immune system suppressed
- Endocrine system imbalance

Systemic Impact

- Emotional, behavioral, psychological implications
- ADD/HD
- Depth perception & sensory integration
- Sleeping difficulties
- Visual fragmentation

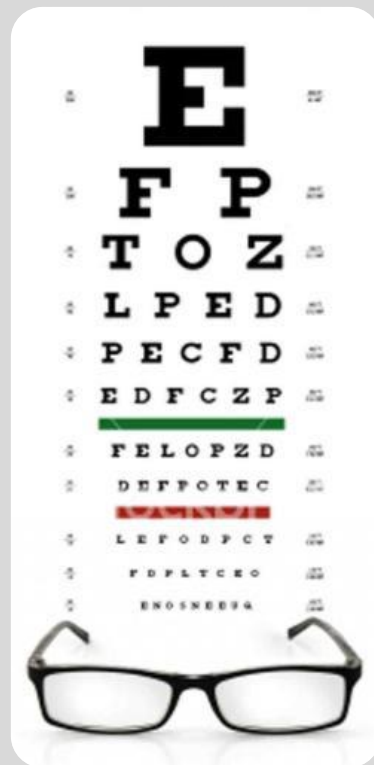
© Irlen Institute 2015



**Irlen Syndrome
is not...**

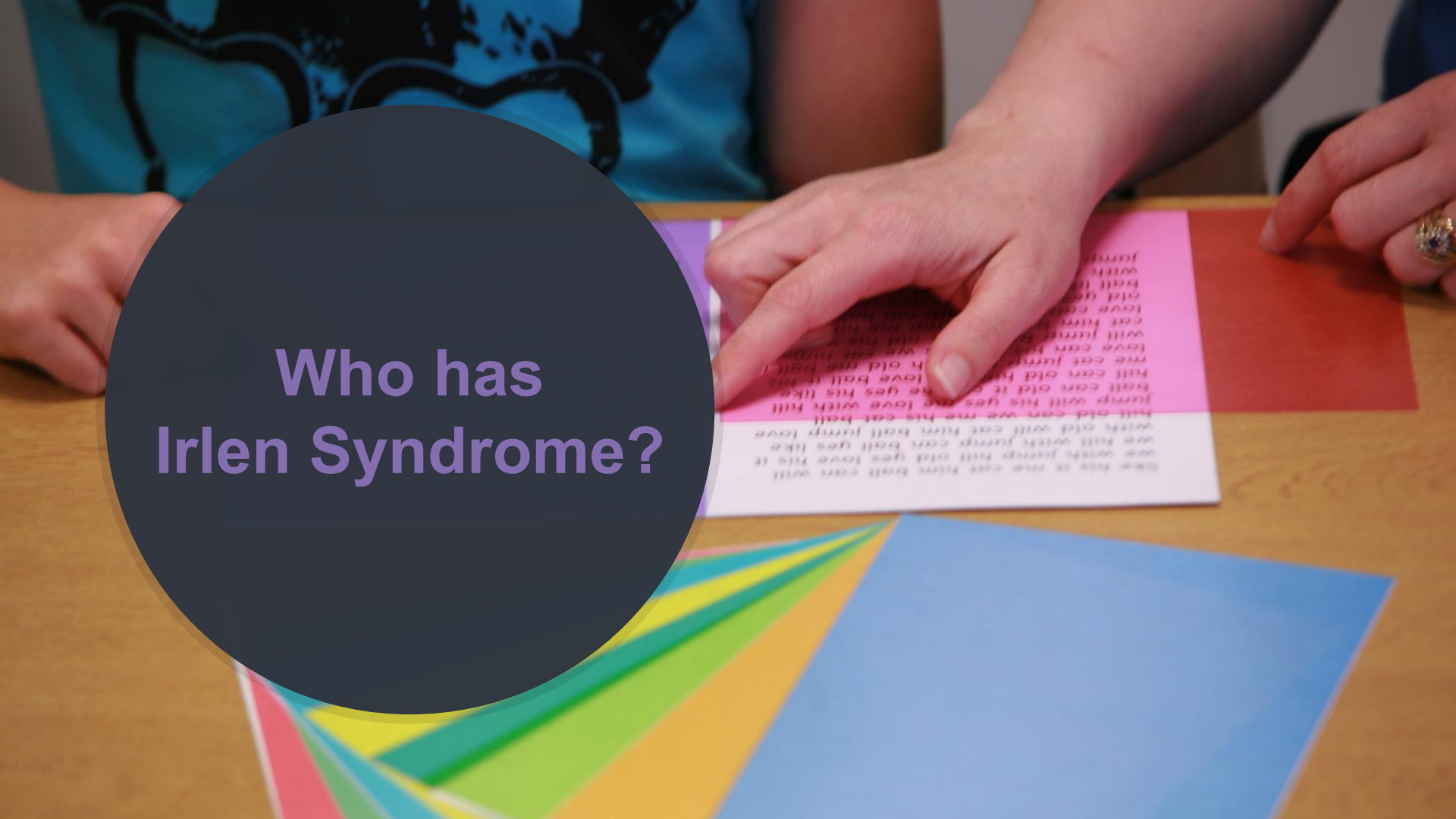
Not Identified By Current Tests

- Educational
- Medical
- Ophthalmological



Not a Method of Instruction





Who has
Irlen Syndrome?

Identifying the Population



46%

Learning disabilities, reading problems

35%

Head injury, concussion, or whiplash

33%

ADHD, Dyslexia, behavior problems

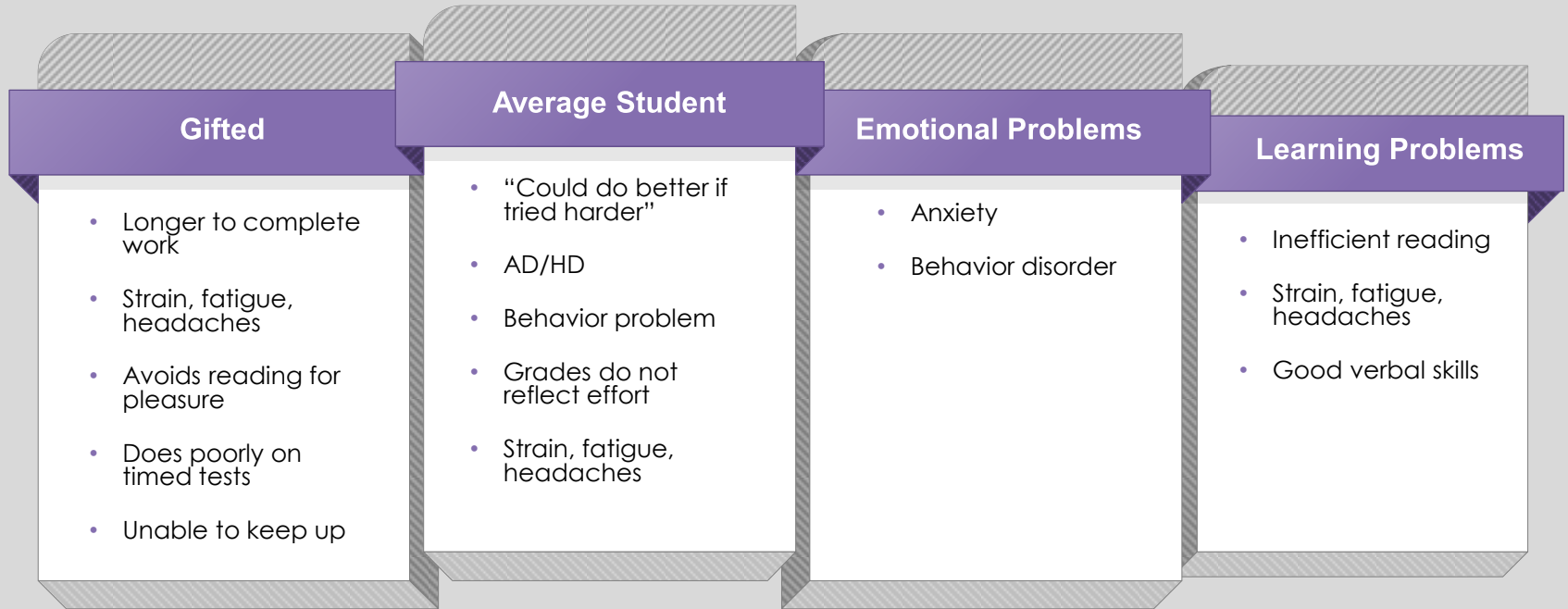
30%

Autism

14%

General population, gifted, good readers

Different Manifestations



Other Populations



Medical

- Headaches/Migraines
- Dizziness, Stomachaches
- AD/HD
- Autism/Asperger
- Light-Induced Epilepsy
- Depression, Anxiety, OCD
- TBI, Concussion, Whip Lash
- Stroke Victims



Visual & Co-morbidity

- Diseases/Impairments
- Astigmatism
- Low Vision



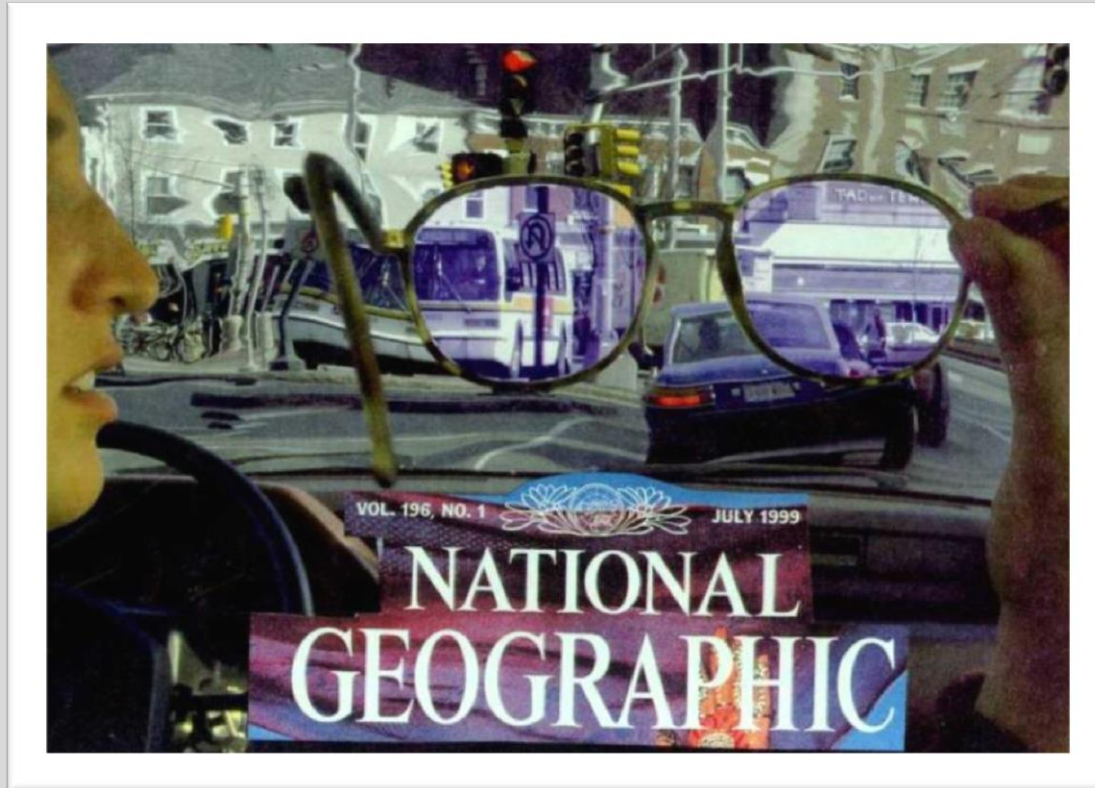
Diseases & Co-morbidity

- Auto Immune
- CFS
- Diabetes
- Multiple Sclerosis
- Cerebral Palsy
- Spina Bifida
- Parkinson's Disease
- Fibromyalgia
- Viral Illnesses
- Hydrocephalus
- Myasthenia Gravis

How Irlen Can Affect Perception



Environmental Distortions



Rivers

However, by the end of the day he had decided that this school was better than the last one even though he didn't like it. Nobody had offered to pull his head off, rip his coat off, or throw his shoes over the roof. On the other hand, nobody had spoken to him either. By Thursday after noon, nothing had changed. Bill was not entirely surprised no one spoke to him because no one knew he was there every day. He was with another group. He only saw his class together at registration after that they were split up for all their lessons. Maths with 1x English with 1c games with 2y a lesson which was mysteriously called GS with 1z. At the end of that period he was nowiser about GS than he had been at the beginning. It seemed that the class was on page 135 of book 2 while the teacher was on page 135 of book 3 as both books had identical covers. The lesson was over before any one noticed Bill had had no book anyway being advised to share with a boy in a pink shirt who kept his elbow firmly between Bill and the book. When the bell rang Bill grabbed the boy in the pink shirt before he could leave. However, by the end of the day he had decided that this school was better than the last one even though he didn't like it. Nobody had offered to pull his head off, rip his coat off, or throw his shoes over the roof. On the other hand, nobody had spoken to him either. By Thursday after noon, nothing had changed. Bill was not entirely surprised no one spoke to him because no one knew he was there every day. He was with another group. He only saw his class together at registration after that they were split up for all their lessons. Maths with 1x English with 1c games with 2y a lesson which was mysteriously called GS with 1z. At the end of that period he was nowiser about GS than he had been at the beginning. It seemed that the class was on page 135 of book 2 while the teacher was on page 135 of book 3 as both books had identical covers. The lesson was over before any one noticed Bill had

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Washout

OBSERVATIONS:

Arthur is a friendly, talkative boy who speaks in a rather loud voice. He impressed the examiner as a nervous, high strung youngster. He was restless, frequently tapping his fingers on the table and often out of his seat, yet he continued to work steadily by the table. Arthur seemed to be making a good effort on all the test items, but he worked rapidly and had difficulty sustaining his attention for any length of time. Some impulsive and impulsivity were noted. Arthur appeared to resist academic tasks, resorting to manipulative behavior which included diverting conversation, making excuses, and verbalizing comments which produced falsely favorable conditions. Arthur expended considerable energy avoiding a job rather than accepting the responsibility for one. He was quite anxious concerning his performance, and he frequently requested reassurance as to the accuracy of his responses. It was important to him to do well, and he became increasingly tense and nervous when he was threatened with failure. Arthur did not give up when challenged, but he sometimes needed to be encouraged or reminded that task avoidance behaviors would not be effective in this situation.

SUMMARY AND RECOMMENDATIONS:

The current psychometric data suggests that Arthur is functioning in the high average to very superior range of intelligence. Considerable scatter was noted on the subtest scores of the WISC. Arthur had the greatest difficulty with those tasks requiring close concentration and immediate auditory rote memory and arithmetic reasoning ability. His strengths were concentrated in the non-verbal skills. He demonstrated a remarkable aptitude in the analysis and formation of abstract designs and in the awareness of cause and effect and time sequences; Arthur reached the scaled score ceiling in both of these areas. The examiner feels that the results of the verbal section of the WISC may represent a minimal evaluation of Arthur's potential in these skills. The unevenness of his performance seems to reflect, in part, his irregular school attendance and slow academic progress, anxiety, and some perceptual immaturities. Borderline deficiencies on the auditory association ~~subtest~~ and auditory sequential memory subtests of the WISC were noted, and these weaknesses were also indicated by Arthur's performance on the WISC. He has difficulty sustaining his attention, and he seems to have a disability involving the auditory perceptual modality, the extent of this auditory problem is obscured due to the degree of anxiety present and the limited exposure to the development of listening skills acquired in the regular classroom setting. Evidence of a delayed visual-motor perceptual development was also noted and the primary difficulty appeared to be one of poor fine motor control; Arthur has trouble with handwriting and seems to mix manuscript cursive forms, suggesting some confusion and a need for individualized instruction in the

Blurry

BY ANDREW J. SOSTEK
AND RICHARD L. WYATT

As any parent, grandparent, or baby-sitter knows, some babies are adaptable, placid, and regular in their habits, while others are difficult and unpredictable. Differences in temperament show up from the first day of life: some infants sleep very little, others sleep a lot; some infants are highly sensitive and cranky, others are quiet and unresponsive.

Since newborns have not been exposed to the world for long, environmental factors beyond the womb can hardly account for such differences in temperament. Rather, the differences must be largely a result of genetic influences. Yet these have been few, if any, attempts to relate different biological endowments at birth to newborns' behavior.

We have found in research at the National Institute of Mental Health (NIMH) that behavioral differences in newborns are associated with an enzyme that circulates in both the blood and the brain, monoamine oxidase (MAO). By comparing the amounts of MAO in the blood of newborns with their performance on behavioral tests, we concluded that those with lower levels of MAO tended to be more sensitive and anxious than those with high MAO. The lower MAO newborns were also more active and performed better on items relating to motor functioning.

In the brain, researchers believe that MAO influences behavior by breaking down the chemical neurotransmitters that carry messages between neurons. By preventing neurotransmitters from building up, MAO quiete the brain cells that would otherwise be activated. Low levels of MAO thus mean more activity—higher arousal—in the brain.

We knew that some of our early monoamine oxidase research had found a connection between levels of MAO and adult behavior. Dennis Murphy and his associates had found that many schizophrenics and depres-

sives had lower-than-normal amounts of MAO in their blood. In a study of normal adults, Monte Buchsbaum and his associates uncovered an association between low MAO and a variety of distinctive personality traits, including propensities, a tendency to drink and experiment with drugs, an active, varied sex life, and a preference for activities such as motorcycle riding.

Was MAO present in the blood of infants in the same relative amounts,



and could it similarly influence their behavior? To find out, we first examined the blood of 23 newborns. Soon after birth, blood is routinely taken from the part of the infant's umbilical cord that is attached to the placenta to determine blood type. We obtained permission to analyze the remaining fetal blood.

We found approximately the same variation in the range of MAO levels among our 23 infants as among the 650 adults examined in previous studies. The MAO levels were also similar regardless of the type of delivery, race, gender, birth weight, or medication given the mother during delivery. Previous research has shown that the levels of MAO found in the blood of different people follow genetic laws. For example, iden-

tical (same-egg) twins have very similar amounts and people in the same family generally have quite similar amounts. Thus, we assume that the MAO levels found in the blood at birth are biologically fixed.

To measure behavioral differences among our sample, we gave the Neonatal Behavior Assessment Scale (NBAS) to the 23 infants on their second day of life. The NBAS assesses infants' reactions to a range of sights and sounds and provides an evaluation of their motor functioning and arousal patterns. In one group of items, for example, the examiner rings a bell, shakes a rattle, and shines a flashlight at sleeping newborns to assess their ability to screen out stimuli; infants who wake easily or cannot stop responding are either more arousable or have less efficient information-processing skill.

To see how MAO related to the infants' NBAS scores, we compared the infants who had the most MAO to those with the least MAO. The most notable difference was in arousability. During the 30 minutes of testing, low-MAO newborns were much more active and easily aroused; they cried more often, took longer to console, and required more holding and rocking to quiet down. They also displayed better muscular coordination.

Our research shows that one enzyme in the blood can have some effect on individual differences among newborns. We don't know whether other blood chemicals—such as the endorphins—are present in sufficient quantities at birth and also influence infant behavior. It is also an open question whether these biological predispositions are constant throughout the life span—that is, whether the more active infants grow up to be outgoing, adventurous, and so on, while the placid ones become quiet, etc. more introverted adults. **E**

Andrew J. Sostek is an assistant professor at the Adult Psychiatric Branch, Special Mental Health Research, NIMH, Bethesda, MD, and is chief of the branch.

Shaky

PROMISES PROMISES
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Halo

We all see thing the same way.
We see words in groups or phrases.
The print is more dominant than the background. The print shows no movement. The printed letters are evenly black. Black print on white paper gives the best contrast for everyone. White background looks white.

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Swirl

[illegible]

Senior citizens' policy for the aging in the United States came into focus in the 1960s. The major factor was the general social response to the phenomenal success of the Old Age Retirement Act and other Federal programs for the aged that were supported by the creation of separate departments and government agencies to deal with different levels of the problem of aging in population groups. The function in which the Administration on Aging finds its origin offers a good example of this position. As a separate agency within the Department of Health, Education, and Welfare, it operates independently of the Health Care Financing Administration (which administers both the Medicare and Medicaid programs), and it is also distinct from the Social Security Administration, which administers the Old Age and Survivors Insurance Program, along with the Supplementary Security Income program. It is of course separate from the departments of Housing and Urban Development, Transportation, Labor, and Agriculture, all of which administer major programs directly affecting the elderly. As well as from the Veterans Administration, which provides long-term care for many elderly veterans, the Administration on Aging oversees benefit programs.

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Members of the Society of Organizational Designers (SOD) have been studying the evolution of organizational design for many years. The SOD is a professional organization of organizational designers, and its members are interested in the latest developments in the field. The SOD is a professional organization of organizational designers, and its members are interested in the latest developments in the field. The SOD is a professional organization of organizational designers, and its members are interested in the latest developments in the field.

[illegible]

Adopting a social policy for the aged predominantly falling on welfare strategies and in the maintenance of social harmony and the preservation of existing social

Seesaws

Do you remember the story of the tiny pig? The new sawed off little pig? The new who built a nose of straw. He big wolf blew adn d ew nuff! he blew the house down. He said, "Pratin." He po away. The secondttle dig built his house ont of stf cks. The bigbig sid house ont of stf cks. The bigbig sid. On by the hair on my hanny chin. On by the hair on my hanny chin.

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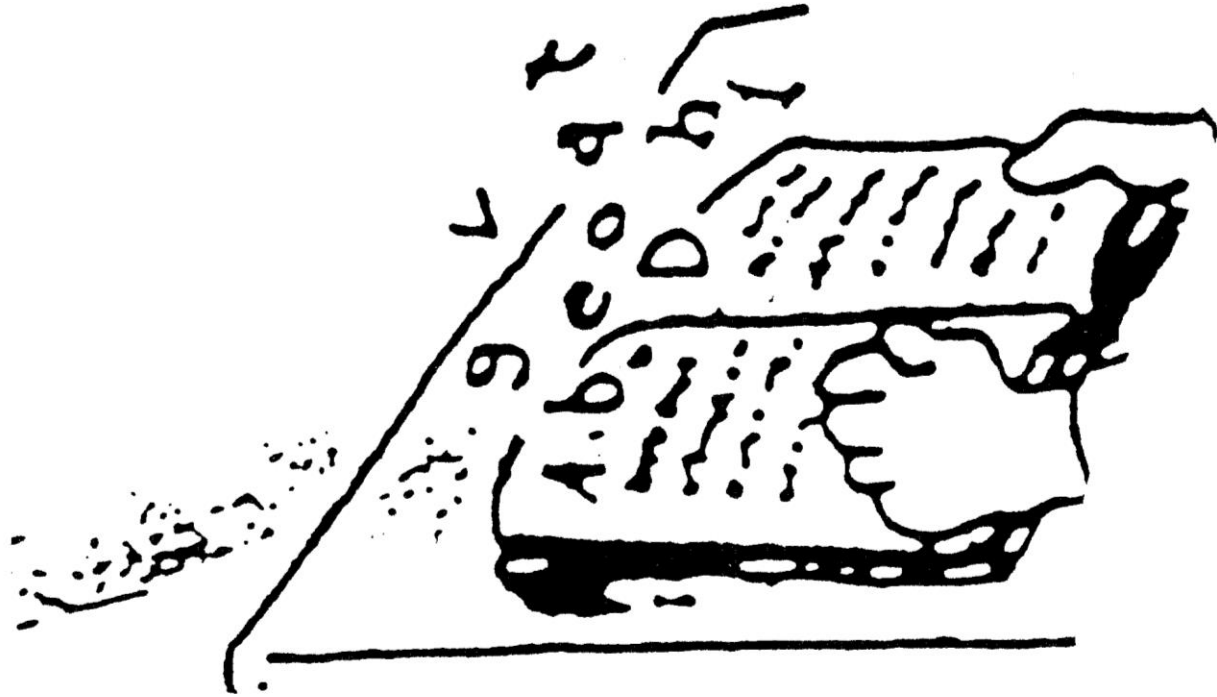
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Star Wars

the forecast calls for a high of 75 and a low of 50. Tomorrow will be partly sunny with clouds developing later in the day. A high of 75 is expected, with a 40% chance of showers. Tomorrow night will be cool with temperatures in the 50's. The five day outlook calls for temperatures in the 70's and 50's. Today is for seasonal temperatures, be fair and with highs in the 70's and lows in the 50's. Today is for seasonal of 72. expected, to be fair and with high pleasant partly cloudy with a high lows in

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Floating



Wavy

When Sampler CPU 1 boots up "Code Meter" automatically loads. This is a Wibu application (free online from Wibu.com). This is essential to recognize the DVZ-RT/Space/Library authorization USB key. This is essential to recognize the DVZ- because it's in the Windows Task Tray (icon). This may be immediately visible the DVZ-RT computers (Control and Samplers). This runtime program is actually installed on all

If the Code Meter task Tray icon is green, this means the authorization key is present on the computer being viewed. On those computers where the key is not installed, the icon will be gray, but it will work because the program always the valid key over the network.

Also, On all Samplers, you will see an AI Cpt into 151 Host (Helix) icon. That also loads automatically upon boot up. This AI Cpt into 151 Host (Helix) icon. That also loads and will change later.

If the icon is not present, launch it from the desktop icon, or look in the Start Menu - Programs/Audio Impressions/AI Studio, launch AI Cpt into 151 Host (Helix) icon. That also loads load or the Wibu key is not connected so please make sure it's present on one of the computers, that they're all networked correctly together, etc.

If it's loaded, right-click on the icon and a context menu will come up. The first item will be Dismount if all loaded correctly. Don't select this. If the first item is "Mount" then select this (this mounts the library). If you mount, you have to choose the image, and that's located on the sample drive and named "disk" (Audio Impressions Symphonic Image). You select it and mount it to X (using the dropdown menu). No letter other than x will function correctly. Note: All this will occur automatically in the final release and even in beta you shouldn't have to do the mounting if the boot process works correctly.

Ripple

When Sampler CPU 1 boots up "Code Meter" automatically loads. This is a Wibu application (free online from Wibu.com). This is essential to recognize the DVZ-RT/Space/Library authorization USB key (dongle). This may be immediately visible because it's in the Windows Task Tray. This runtime program is actually installed on all the DVZ-RT computers (Control and Samplers).

If the Code Meter task Tray icon is green, this means the authorization key is present on the computer being viewed. On those computers where the key is not installed, the icon will be gray, but it will work because the program accesses the valid key over the network.

Also, On all Samplers, you will see an AI Crypt VST Host (Helix) icon. That also loads automatically upon boot up. This AI Crypt info pertains only to beta turn-key systems, and will change later.

If the icon is not present, launch it from the desktop icon, or look in the Start Menu - Programs/Audio Impressions/AI Strings and launch AI Crypt. If it isn't there, it failed to load or the Wibu key is not connected so please make sure it's present on one of the computers, that they're all networked correctly together, etc.

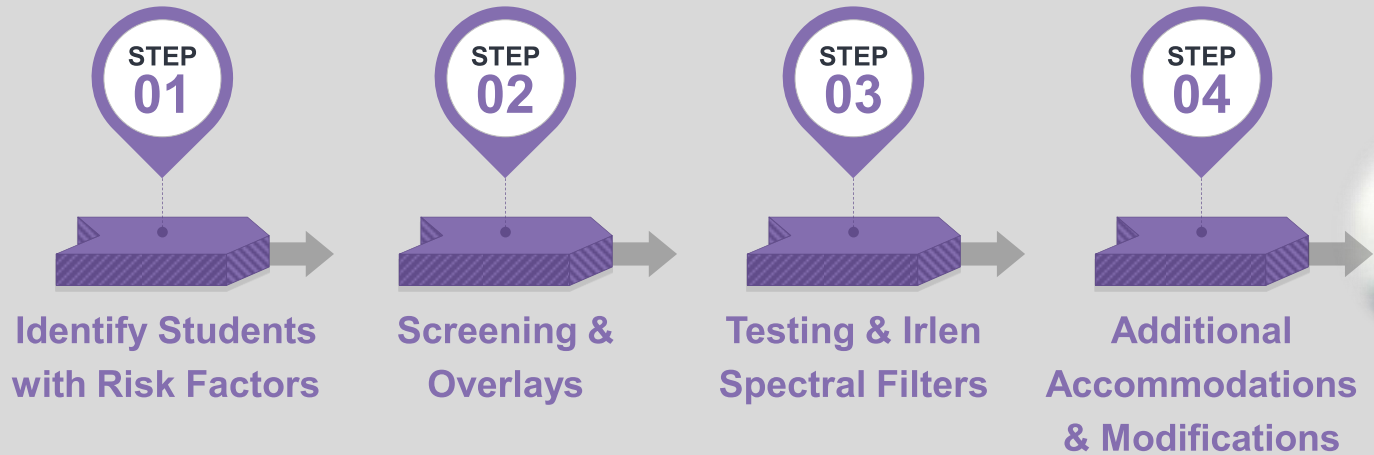
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A young boy with short brown hair and black-rimmed glasses is the central focus. He is wearing a purple t-shirt and looking slightly to his left with a thoughtful expression. The background is a classroom with colorful lockers (red, green, blue, yellow) and shelves filled with various items. Other students are partially visible in the background, seated at desks.

THE SOLUTION

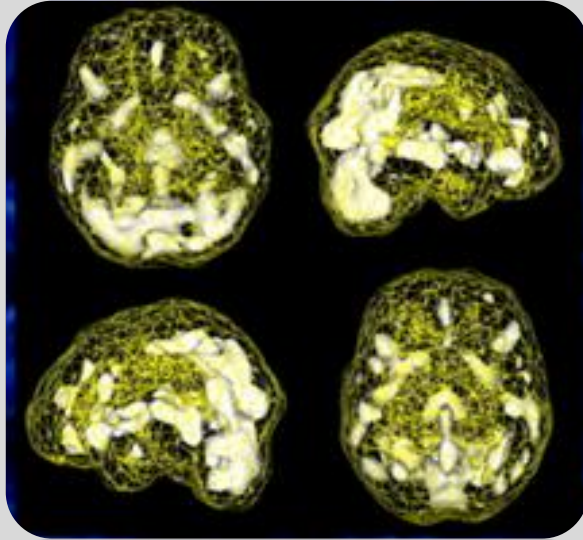
The Irlen Method

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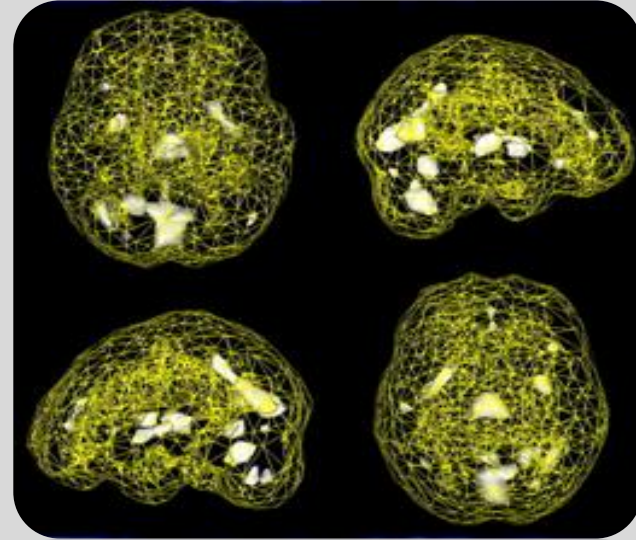


The Result: A Calmer Brain

Without Irlen Lenses



With Irlen Lenses

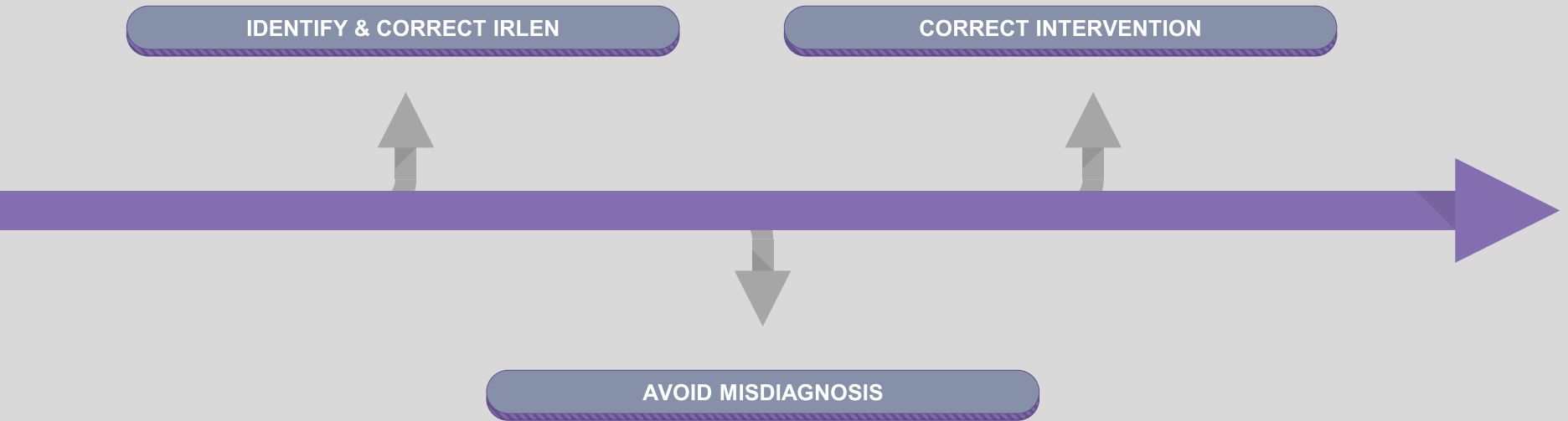


SPECT Scans Courtesy of Daniel Amen, M.D., Amen Clinics

What Can You Do?



Identify Irlen First



Irlen Students With Risk Factors

Irlen Reading Strategies Questionnaire

READING DIFFICULTIES

- Skip words or lines
- Lose place
- Repeat lines
- Misread words
- Reading slow or choppy
- Reading deteriorates
- Rereads for comprehension

DISCOMFORT

- Eyes: hurt, ache, burn
- Eyes: dry, sandy, scratchy, itchy, heavy
- Sleepy
- Headache, dizzy, nauseous
- More difficult to read with bright or fluorescent lights

Become an Irlen Screener

Trained to:

- Identify
- Severity
- Language
- Educate
- Counseling
- Determine overlay color(s)



Overlay Tips

- Self selection doesn't work
- Colors can be worse than white
- Colors can be better than white
- One color or colors that make the most difference



Classroom/At Home Modifications

CONTRAST

- No bright or fluorescent colors
- No stripes, plaids, or polka dots
- No large or glittery jewelry or buttons

LIGHTING

- Reduce lighting
- Incandescent or indirect natural lighting
- Gels over fluorescent
<http://www.rosco.com/us/filters/cinegel.asp>
- Visor or brimmed hat

Classroom Modifications

WHITEBOARDS

- Gray or brown
- Colored marker/chalk (red and yellow are hard to see)
- Write in columns

COMPUTER/OVERHEAD PROJECTOR

- Use colored overlays

PAPER

- Recycled, off-white, non-glare
- Different colors for different people

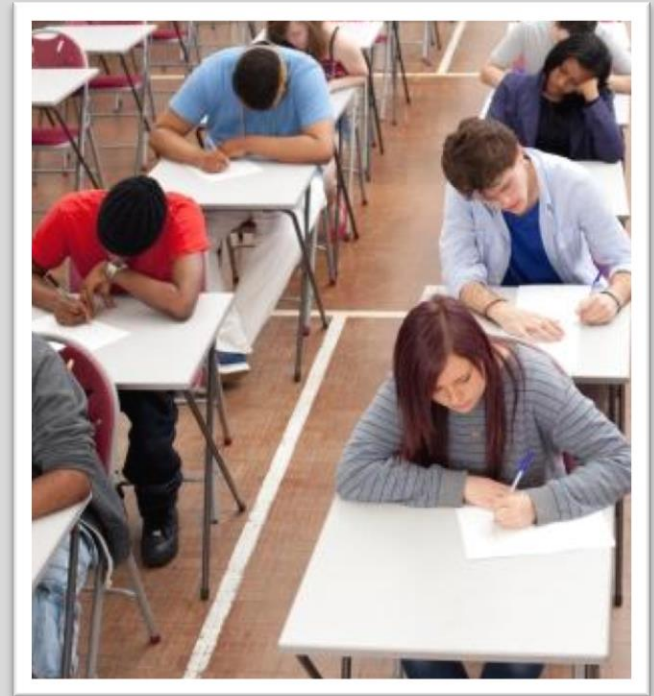
Reading Modifications

- Irlen Spectral Filters
- Colored overlays
- Magnifying bar
- Visor/brimmed hat
- Bookstand
- Markers
(above, below, to the side of the line)
- Avoid fluorescent lighting
- Dim lighting
- Incandescent lighting



Testing Modifications

- Tests duplicated on colored paper
- Colored plastic overlays
- Scantron answer sheets
- Use a ruler
- Natural lighting



For More Information

- Email: irleninstitute@irlen.com
- ***Reading by the Colors*** by Helen Irlen
- ***The Irlen Revolution*** by Helen Irlen
- You Tube Videos:
 - **Irlen Syndrome:**
A Teen's Summary
<http://www.youtube.com/watch?v=9N5qbMFtKQ4>
 - **ABC World News with Peter Jennings**
<http://www.youtube.com/watch?v=91WOnEepH0A>

www.irlen.com

