AN INTRODUCTION TO IRLEN SYNDROME

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You can skip to slide contents and topics you are interested in.
What is Irlen Syndrome?

- Visual-perceptual disorder: neurologically based, visual cortex, transient or magnocellular deficit
- Genetic component: affecting males and females equally
- Condition is varied and intermittent
- Exists on a continuum from slight to severe
- Enhanced by environmental stressors: lighting; contrast, colors, patterns; amount of print on page; demands for continuous performance; demands for comprehension; print size, style and format
- Not identified by standardized tests
- Not a method of instruction
Symptoms of Irlen Syndrome

LIGHT SENSITIVITY
Bothered by glare, fluorescent lights, bright lights, sunlight, or driving at night. Discomfort or difficulty concentrating or working under bright lights or fluorescent lights.

INEFFICIENT READING
Difficulty reading print, numbers, or musical notes. Problems may include print that shifts, shakes, blurs, moves, doubles, disappears, or becomes difficult to perceive.

SLOW READING RATE
Inability to read letters, numbers, musical notes, or words in groups. Problems tracking, correctly identifying words, or ability to skim/speed read.

ATTENTION DEFICIT
Problems concentrating while reading or doing school work. May have difficulty staying on task, take breaks, look away, become restless, fidgety, or tired.

STRAIN OR FATIGUE
Feeling strain, tension, fatigue, sleepy, or headaches with reading and other perceptual activities. Strain can interfere with the ease of reading, studying, or even listening.

POOR DEPTH PERCEPTION
Inability to accurately judge distance or spatial relationships. May be unsure or have difficulty with escalators, stairs, ball sports, or driving.
PHYSICAL SYMPTOMS of IRLEN SYNDROME

• HEADACHES
• MIGRAINES
• EYESTRAIN
• FATIGUE / EXHAUSTION
• SUSCEPTIBILITY TO INFECTIONS
• NAUSEA / Stomach Aches
• MUSCLE TENSION
• CLUMSINESS
• DISTRACTIBILITY
EMOTIONAL SYMPTOMS of IRLEN SYNDROME

- POOR CONCENTRATION
- LOW SELF ESTEEM
- ANXIETY AND/OR PANIC ATTACKS
- DEPRESSION
- IRRITABILITY
- LOSS OF SELF CONTROL
- NEGATIVITY
- FEELING PRESSURE
- MOOD SWINGS
- IRRATIONAL ANGER or ANGRY OUTBURSTS
DEPTH PERCEPTION - FALLS

Slip & Fall
Trip & Fall
Misjudging steps
Stairs
Escalators
Crossing Street
Curbs
Sidewalks
Other Issues

Limited Span of Recognition

• Affects text, numbers, musical notes
• Faces
• Seeing Faces as a whole
• Face Recognition
• Judging if someone is happy, sad, upset at you, etc.
• Objects
• Environment
• Stairs, Sports, Catching a fly ball, etc.
• And so much more
Irlen Syndrome (IS)

Signs/Symptoms

Individuals with undiagnosed problems of IS may have been considered to be:

- Underachievers
- Behavioral Problems
- Attitude Problems

Or may have:

- Visual dyslexia
- Reading disabilities
- Various developmental delays
- Various emotional or psychological disorders
The Irlen Method

- Program using colored overlays & filters
- Makes immediate and significant changes in
  - Academic performance, physical symptoms, attention and concentration
  - Populations work with
    - Head injuries, TBI, concussion
    - Headaches/Migraines
    - Reading difficulties & academic struggles
Identifying the Population

- 46% of those with specific learning disabilities and reading problems
- 33% of individuals misdiagnosed with AD/HD, Dyslexia and/or behavior problems
- 12-14% of general population, gifted, and good readers
- 55% of individuals with head injury, concussion, or whip lash
- Individuals with autism, certain medical/visual conditions
Main Facts

• Over 100,000 adults and children wear Irlen Spectral Filters
• Millions of children use Irlen colored overlays
• Irlen overlays recognized as a standard low tech assistive technology for testing
• Recognized by Recordings for the Blind, Voc. Rehabs, Depts. of Rehab, SAT, ACT, LSAT
• Over 7,000 educators trained in Irlen Method
• Over 130 Irlen Centers in 24 countries
EXAMPLES OF WHAT SOME PEOPLE SEE

Some people with Irlen Syndrome do not “perceive or see” distortions like these. Some complain of headaches or the page being too bright/glary, etc.

By Thursday after noon, was not entirely surprised no one knew Hwas there. Group. He only saw his class after they were split Maths with x English which was mysterious end of that period. I was at the beginning, it was on page 135 of book 2 while 135 of book 3 as both books lesson was over before.
Color Treatment Interventions

Colored Overlays:
There are 10 Overlay Color choices which Can be combined.

Irlen Spectral Filters:
There are hundreds Of potential Irlen tint Color choices which Can be combined to Create hundreds more choices.
Irlen Color Intervention

- Changes perception; can often help depth perception
- Relieves/reduces physical symptoms like headaches, dizziness, stomachaches, and fatigue
- Improves feelings of calmness and general well-being
- Increases ability to handle paper work, complete reading and work assignments, and participate in daily activities
- Increases likelihood of appropriate reactions to difficult situations
- Improves sense of competency
- Increases feelings of self-worth
IRLEN SPECTRAL FILTERS

- More comprehensive testing process
- Different color than the overlay
  - Transmitted vs. reflected light
- Worn either as lenses in frames or contact lenses
  - CR 39, no UV, no tint, no scratch or AR coatings
- Optimizes reading, fluency, higher test scores and better grades
- Eliminates headaches and other physical symptoms
- Changes in: depth perception, driving, copying, math, computers, light sensitivity
OVERLAYS - METHOD USED IN SCHOOLS

Shows individual using goldenrod overlay. This was just one possible preferred overlay color choice for this one person when screened for Irlen Syndrome. Different Students will choose different colors or even mix one or more colors from the ten (10) available. Note that the text is bolder, darker on the overlay side, even slightly evident in this photo; but the white side is considerably brighter and has more glare for the person with light sensitivity. The overlay reduces the glare and the bolder text makes it easier to read for those with Irlen Syndrome.
IRLEN INTERVENTION HELPS:

• READING:
  – FLUENCY
  – ENCODING/DECODING
  – TRACKING
  – ACCURACY
  – COMPREHENSION
  – SPAN OF RECOGNITION
  – GRADES
  – TEST SCORES
  – SCHOOL DISTRICT TEST STANDING
PROFESSIONAL DEVELOPMENT

A Simple Screening Identifies Irlen Syndrome

• Educators can be trained to screen for it and provide the Color Overlays.
• Earn PDP’s (DESE) or Graduate Credits from Cambridge College or Salem State College (67.5 PDP’s) Summer, 2013 only
• Earn Certification for Five Years from Irlen Institute
• Courses and PDP’s are provided in association with Irlen Center Boston. We are Registered Provider of PDP’s with MA DESE.
• Contact us for training courses in November 2012, and Winter and Summer 2013.
“WHEN READING FOR INFORMATION OR WORKING ON A COMPUTER AND YOU GET TO THE POINT WHERE YOU WANT TO STOP READING does any of the following happen”? 

1. Do you get a headache? 
2. Do you feel sick to your stomach? 
3. Do words jiggle or move 
4. Do words look blurry? 
5. Do words move, shift change shape or look different? 
6. Do you feel dizzy? 
7. Do you prefer to read in dim light? 
8. Do you find sunlight too bright? 
9. Does your head bother you? 
10. Do your eyes bother you? 
11. Do you feel restless, active or fidgety? 
12. Do you avoid reading?
Research Highlights

• Evidence based intervention
• 26 years of research
• Type of research
  – Education
  – Military
  – Prison
  – Brain Studies
  – Biochemical
Based on national and world wide studies

Using specially selected overlays, as many as **212,000** Massachusetts REGULAR/non special education & TITLE 1 students with Irlen Syndrome could improve their reading performance, on average, by **1 to 2 grade levels**

For many students Within 3 months
1500 students screened will save $11,000,000

Each year, some 1,500 Third grade students, who would otherwise be channeled into the special education program, might be able to remain in the regular classroom (or put on less costly 504 plans), for a statewide annual cost savings of $11,000,000.
The Irlen Screening Method benefits Massachusetts students:

- Regular Education & TITLE I
- Special Education & 504 Plans
- Fluency **
- MCAS
- Grades, Test Scores
- Shorten Remediation
- Shorten Homework time
School Populations to Screen

**Gifted**
- Spends longer to complete homework and/or reading assignments
- Complains of headaches, fatigue, or strain while reading or in school
- Avoids reading for pleasure
- Does poorly on timed tests
- Unable to keep up

**Emotional Problems**
- Anxiety
- Behavior disorder

**Average Student**
- “Could do better if tried harder”
- AD/HD
- Behavior problem
- Grades do not reflect effort
- Complains of strain, fatigue, or headaches

**Learning Problems**
- Inefficient reading
- Complains of strain, fatigue, or headaches
- Good verbal skills
Funded by Massachusetts State Legislature
Additional funding & in cooperation with the Massachusetts Department Of Education
All of the 172 students in the 4th grade at the Ryan Road School in Northampton were pre screened & 30 screened for Irlen Syndrome in:

1. Accuracy
2. Comprehension
3. Rate
4. Fluency

GORT-3, grade equivalences were calculated.
Pioneer Valley Pilot Project

172 students were screened and 27% were identified with moderate to severe Irlen

Results after 3 months:

- 100% had statistically significant improvement in accuracy and/or comprehension. Mean increases were 30 months in accuracy and 27 months in comprehension.

- 100% of special ed. students showed statistically significant improvement in accuracy and/or comprehension. Mean increases were 24 months in accuracy and 27 months in comprehension.

- 83% of students reading below grade level increased by 9 months to 49 months in accuracy.

- 67% of students improved at least 12 months in accuracy, comprehension, and passage fluency.
## PIONEER VALLEY PROJECT IMPROVEMENTS:

### Pioneer Valley Pilot Project - 2000

<table>
<thead>
<tr>
<th>ACCURACY</th>
<th>Mean Gains in Scores with Overlays</th>
<th>Number of Students</th>
<th>After Two Weeks</th>
<th>After 3-3.5 Months</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>After Two Weeks</td>
<td>After 3-3.5 Months</td>
<td></td>
</tr>
<tr>
<td>Below Grade Level</td>
<td>15</td>
<td>1.4 years</td>
<td>1.9 years</td>
<td></td>
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<tr>
<td>Barely Grade Level</td>
<td>3</td>
<td>0.6 years</td>
<td>2.3 years</td>
<td></td>
</tr>
<tr>
<td>Grade Level</td>
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<td>1.5 years</td>
<td>3.3 years</td>
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<tr>
<td>Above Grade Level</td>
<td>3</td>
<td>0.6 years</td>
<td>4.3 years</td>
<td></td>
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<tr>
<td><strong>Non-Special Education</strong></td>
<td>15</td>
<td>1.1 years</td>
<td>2.0 years</td>
<td></td>
</tr>
<tr>
<td><strong>Special Education</strong></td>
<td>15</td>
<td>1.4 years</td>
<td>3.3 years</td>
<td></td>
</tr>
</tbody>
</table>
What do Pioneer Valley results indicate?

Test results demonstrate an almost unheard of “leap” among special education students and regular education students in grade level growth in two weeks and/or three months.

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>After 2 weeks</th>
<th>After 3 – 3 1/2 Mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Special Education</td>
<td>15</td>
<td>1.1 years</td>
<td>2.0 years</td>
</tr>
<tr>
<td>Special Education</td>
<td>15</td>
<td>1.4 years</td>
<td>3.3 years</td>
</tr>
</tbody>
</table>
• RETURNED 48% SPED CHILDREN TO REGULAR EDUCATION STATUS:
• MAINSTREAMED 16 out of 33 CASE LOAD
• RETAINED ANOTHER 108 STUDENTS IN REGULAR ED WHO WERE REFERRED TO SPED BUT DID NOT NEED SPED SERVICES AFTER ALL.

• ESTIMATED SAVINGS FOR 16 CHILDREN MAINSTREAMED $832,095
• ESTIMATED SAVINGS FOR 108 CHILDREN MAINSTREAMED $2,381,280
ANALYSIS OF ACUSHNET PUBLIC SCHOOL PROGRAM
Costs and Savings from 1995 compared to 2004.

• Acushnet paid $1000 for the training of two educators and
  the overlays that helped mainstream 16 and kept another
  108 children in regular education placement.

• Educator Cynthia Stone (now retired) would save her
  school system the following estimated amounts in 2004
dollars:

  Approximately Fifty percent (16) of thirty three
  students at $13,471 (SPED cost per student) vs $6,765
  (Regular cost per student), an estimated $108,240. Also,
since she kept another 108 students who were coded for
special education in regular education status she saved
her school district another $732,780.
Sixty-six (66) ninth grade students were given a Preliminary Irlen Questionnaire (PIQ) to determine the incidence of Irlen Symptoms.

58% or Thirty Eight (38) students, out of the sixty five (66), had a high Incidence of Irlen Syndrome indicators suggesting they would benefit from a full Irlen Screening.

Thirty Seven students (37) of the thirty eight (38) were given a full screening.

92% or thirty four (34) of the thirty seven (37) - the Irlen color overlays were beneficial.

8% or three (3) students stated the Irlen color overlays were not helpful. No long term follow up was provided.
Salem, Massachusetts

**Witchcraft Elementary School**  
**Mary Ann Grassia, Educator, Irlen Screener**
- Screens students and families in community.
- Students are using overlays in classrooms and at home.
- Reading and test score improvements are recorded.

**Bentley Elementary School**  
**William Grayden, Guidance Counselor (now retired)**
- 50 students annually using overlays in school and for MCAS.
- Annually asked co-workers to “Send me your slow and choppy readers”
Thousands of Schools use the Irlen Method
Throughout the world, including but not limited to:

- Blackstone Valley
- West Boylston
- Oxford/Uxbridge
- Holyoke High School
- Easton
- Springfield
- Swampscott
- Many Other Schools

* Note: More than 500 Massachusetts Educators trained over 20 years. Thousands more have been trained through 130 Irlen Centers in 24 countries around the world.
SUMMARY OF SURVEY DATA for IRLEN SCREENING SUBJECTS

- Survey respondents/educators/certified Irlen Screeners
  N= 115
- Screened for Irlen Syndrome
  N= 20,231
- Identified with Irlen Syndrome
  N= 17,808

Compiled by Georgianna Saba, M.Ed. and Sherri Schultz, B.A.
cc: Representative Michael Rodrigues
Controlled Field Study of the Use of Colored Overlays on Reading Achievement.
Australian Journal of Learning Disabilities, June 2004

• 71 third graders with moderate to severe Irlen

• Half given overlays and half were not

• Pre/Post testing using GORT-4. Results after 3 months:

• Overlay Group: gains of 14 months in rate, 17 months in accuracy, 14 months in fluency, and 13 months in comprehension.

• No Overlays: gains of 1 month in rate & accuracy, 2 months in fluency, and lost 5 months in comprehension.
IRLEN SYNDROME

CAUSE AND MILITARY EFFECTS

by

James H. Irvine

1997
LIMITED PERCEPTION SPAN VISION

THE PEOPLE OF THIS GROUP:

• Have a limited perception span.
• See only a few letters at a time when they look at a page to read it.
• Do not have visual retention of a word. (Can’t see a word in their mind after looking away.)
• The areas bounding the Zone of Perception are blurry or moving around particularly as one moves away from the Zone of Perception.
• Have difficulty reading groups of letters, notes, numbers or words at the same time.
• Lack the capability to move from line to line easily (or at all) when they read.
• Lack the capability to copy, proofread, skim, or speed read.
• Tend to write in very long sentences.
• Have no visual image of a word (or only of very short words) and as a result are terrible spellers.
• In order to see a whole object they have to scan it, rather than just look at it to see the whole object in detail.

PEOPLE OF THIS SUBGROUP HAVE VERY LIMITED PERCEPTION SPANS OFTEN 0.3° TO 1.25° (1 TO 3 LETTERS) AS OPPOSED TO 5° TO 8° OF THE “NORMAL PERSON” WITH THE UPPER END OF THE POPULATION HAVING VISION SPANS OF 20°.

ZONE OF COGNIZANCE
A ZONE OF BLURRY UNRECOGNIZABLE MARKINGS OFTEN MOVING AROUND

ZONE OF PERCEPTION

ZONE OF VISIBLE IMAGE
SUMMARY

Irlen Syndrome is a real disorder
Verifiable by objective measures
Has already been identified as a contributor to stress in the military by military personnel
IRLEN SYNDROME
BRAIN SCANS (4 types)

• EEG EVOKE POTENTIAL
• QEEG  Quantitative
  Electroencephalography
• MAGNETIC RESONANCE
• SPECT Single Photon Emission
  Computerized Tomography
Irlen Syndrome Affects Brain Timing and Brain Processing

A Failure of Timing?

Researchers think dyslexia may involve an abnormality that slows down one of two major visual pathways in the brain so that two kinds of visual information are not received in the right sequence. One pathway, the magnocellular system, has large cells that carry out fast processes for perceiving position, motion, shape and low contrast. The smaller parvo cells carry out slower processes for perceiving still images, color, detail and high contrasts.

In reading, light strikes photoreceptors in the retina; the information is then processed by magno cells and parvo cells in midbrain regions called the lateral geniculate bodies. Then the signal travels to the visual cortex for further processing. In a study of dyslexics, the magno cells were found to be smaller than normal, and low-contrast information processing was found to be slower than normal.

Source: Margaret Livingstone, Ph.D.
Dr. Drew Yellen, Ph.D.

QEEG BRAIN SCAN

Subject with Irlen Syndrome

• “Flash Bulb Effect”
• (A “white out” effect)
• RESPONSE TIME
• From 0 msec
• To 500 msec
(VER) Visual Evoked Response

Yellen-Schweller Effect

Definition:
A measurement of the brain’s processing of visual stimuli

NORMAL

Early hyper-reactivity followed by delayed visual response
MAGNETIC RESONANCE SCANNING OF THE BRAINS OF DYSLEXICS

Dr. Jeffrey Lewine, Ph.D.

NORMAL BRAIN FUNCTION  DYSLEXIC/IRLEN BRAIN FUNCTION

MAGNETIC RESONANCE SCANNERS HAVE SHOWN THAT A NUMBER OF INDIVIDUALS WITH IRLEN SYNDROME AND DYSLEXICS:

- USE DIFFERENT PARTS OF THEIR BRAINS WHEN THEY READ THINGS THAN OTHERS.
- USE A LARGER PORTION OF THEIR BRAIN’S CAPACITY WITH READING AND PERFORMING VISUAL TASKS THAN OTHERS.
- PARTS OF THE BRAIN THAT ARE WORKING ON THE PROBLEM ARE IN OVERDRIVE AND ARE WORKING MUCH HARDER THAN A NON IRLEN BRAIN WOULD.

MAGNETIC RESONANCE SCANNING DATA HAS SHOWN THAT THE SIGNAL IN THE VISUAL NEURAL PATHWAYS OF SOME INDIVIDUALS IS DIFFERENT, LEADING TO THE THEORY THAT THE PROBLEM LIES IN THE NEURAL PATHWAY TRANSMISSION TO BRAIN. WE (the Navy) CAN MEASURE THE SIGNAL AT THIS LOCATION
DR. LEWINE WAS ABLE TO ALTER THE BRAIN PROCESSING FUNCTION... BY ALTERING THE LIGHT FREQUENCY PRESENTED TO THEIR VISUAL SYSTEM. SOMETHING THAT DOES NOT HAPPEN IN “NORMAL” TEST SUBJECTS.
SPECT Brain Scan of Irlen Syndrome
Without Irlen Filters - Overstimulated

Scotopic Sensitivity

Courtesy of Daniel Amen, M.D.
SPECT Brain Scan of Irlen Syndrome
Decreased Stimulation and Stress, Increased Calming

Scotopic Sensitivity with Irlen Lenses

Courtesy of Daniel Amen, M.D.
There are currently 23 Peer Reviewed Controlled Studies on Irlen Syndrome.

In the future, neuroscientific research may provide more detailed information about the workings within the brain.

Fortunately, the method to improve the processing problem is available now and we look forward to having future scientists explain more about the mysteries of its mechanics.
References


IRLEN SYNDROME…

The Science of Light Combines With Neuroscience
• Looking at the Physics of Light.
• All light is made up of color.
• Thus, Helen Irlen’s discovery of Irlen Spectral Filters, that is the use of color filtering to alter specific troublesome waves or bands of light, improves toleration of frequencies for sensitive individuals.

• This sensitivity, to specific light frequencies, seems to change the brain’s functioning ability.
• How do colors of the light spectrum affect brain timing?
• Why does light source matter?
• How or why does color filtration work?

◊◊◊◊◊

“Reaching the human eye every day are an unimaginable number of wavelengths of light, and these wavelengths will vary in their rates of vibration and length. From here, the process of visual perception is even more complex.”

• The Light Barrier, Rhonda Stone, p. 93.
Irlen Syndrome (IS)

**Definition:**

*Visual perceptual dysfunction affecting reading and writing-based activities as well as environmental activities.*

Impacted by luminance, wavelengths of light, e.g. **fluorescent** or **halogen**, print pattern, and high contrast.
• Sensitivity to particular light wave frequencies disturbs the timing (even milliseconds can be problematic) in which the brain’s visual-pathway is processing language and perceiving environmental stimuli.
Our eyes are sensitive to that light which lies in a very small region of the electromagnetic spectrum labeled "visible light". This "visible light" corresponds to a wavelength range of 400 - 700 nanometers (nm) and a color range of violet through red.
1 NANO-METER =
ONE BILLIONTH OF A METER

1 METER =
3.2808399 FEET

HZ =
CYCLES PER SECOND
Cycles Per Second

FOR EXAMPLE:
The range of Green Light travels from 10 to the 13\textsuperscript{th} power to 10 to the 15\textsuperscript{th} power.

This equals:

10,000,000,000,000 or 10 trillion to 15 trillion cycles per second. \textbf{That is how fast just one color is moving as it enters the brain’s visual system.}

Individuals with Irlen Syndrome type light sensitivity are in effect experiencing an overwhelming hyper reactivity to the wavelengths or light frequencies they may be sensitive to.
This is fluorescent lighting reflected off of a CD showing the spectrum emitted.
SPECTRUM EMITTED BY NATURAL SUNLIGHT

Nature’s Relief from Eye Strain !!!
Effect of Spectral Variations

An individual with Irlen Syndrome type light sensitivity will experience timing issues within the brain, as mentioned in earlier slides.

This can alter perception and lead to reading & learning difficulties, physical discomfort, headaches or migraines and spatial disorientation, distortions, etc.
PROBLEMS with GLARE:
Driving to work on Rainy Nights

The use of Irlen Spectral Filters reduces glare and reflected light and light as it is refracted through drops of rain and sleet.

REFLECTED LIGHT

SOLAR GLARE

Windshield and Solar Glare
Driving Hazards for individuals with Irlen Syndrome
Some Sources of Glare

- Computer Monitors
- CLASSROOMS
- Chalkboards & Whiteboards
Using Irlen Spectral Filters is a technology Irlen developed far in advance of the known science. This explains why some individuals are sensitive to particular light frequencies and why others are not.

Filtering offending light waves, by using color spectrum filtering lenses, ameliorates that sensitivity and demonstrates why her method works for those with Irlen Syndrome. Note: This method will not help those who do not have Irlen Syndrome.
LOOKING AT HEADACHES & MIGRAINES

Many Ramifications

In The Workplace And In Schools
Glare from fluorescent and bright light sources results in:

**Headaches/migraines/nausea**

- Loss of work efficiency, pain, use of medications to relieve pain;

- Some medications may cause **functioning impairments**. (Can further contribute to safety or injury issues)

- Many individuals call in sick, costs employer financially and lost production time.
Dr. Joseph Annibali, M.D.
Director of the Amen Clinic of DC
and a neuropsychiatrist.

• “My daughter’s, Elizabeth, Irlen filters have made all the difference in the world. She no longer suffers from extreme light sensitivity. Her daily migraine headaches have been 99% reduced”. His daughter, Liz, a 22 year old college student, has been wearing Irlen spectral filters for the past 7 years.

“I have referred a number of patients for Irlen screening and treatment. Others of my patients were diagnosed with Irlen Syndrome before coming to me.

Typically, patients with Irlen Syndrome experience dramatic relief in light sensitivity, headaches, and reading strain, when they use their specially-prescribed Irlen filters.

This little-known condition deserves to be understood by all physicians, educators, and parents.” Dr. Joseph Annibali, MD
IRLEN SYNDROME can coexist with ADD/ADHD

Irlen Intervention helps:
• Attention Deficit
• Distractibility
• Hyperactivity
• Impulsivity
• Oppositional Behavior
  – Depression
  – Low Self Esteem
  – Developmental & Learning Disorders

HELP IMPROVE NEURODEVELOPMENTAL ISSUES
  Cognition, Executive Function and Focus
CONSEQUENCES OF IRLLEN SYNDROME IN THE WORKPLACE

- HIGHER ABSENTEEISM
- GREATER NUMBER OF SICK DAY USE
- INCREASED INDUSTRIAL ACCIDENTS
- INCREASED INJURIES & FATALITIES
- LOWER PRODUCTIVITY
- FALLING BEHIND WITH GOALS
- MENTAL & PHYSICAL FATIGUE
- IMPAIRED MENTAL/PROBLEM SOLVING ABILITY
- HIGHER STAFF TURNOVER
WORKPLACE STUDY

Job Performance Survey

136 randomly selected Irlen Filter users in the workplace

• **95%** found significant improvement in their ability to do their job
• **94%** found that their level of productivity had been significantly improved
• **91%** reported a substantial decrease in the factors for absenteeism
• **91%** felt increased job satisfaction
AUTISM
PDD-NOS

Pervasive Developmental Disorder - Not Otherwise Specified, or PDD-NOS, for short, is a condition on the spectrum that has those with it exhibiting some, but not all, of the symptoms associated with classic autism. That can include difficulty socializing with others, repetitive behaviors, and heightened sensitivities to certain stimuli.

AUTISM

is a disorder of neural development characterized by impaired social interaction and communication and by restricted and repetitive behavior. Signs begin before a child is three years old. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize; how this occurs is not well understood. It is one of three recognized disorders in the autism spectrum (ASDs), the other two being Asperger syndrome, which lacks delays in cognitive development and language and PDD-NOS. (Diagnosed when the full set of criteria for autism or Asperger syndrome are not met).

CHILDHOOD DISINTEGRATIVE DISORDER

is a condition occurring in 3 and 4 year-olds who have developed normally to age 2. Over several months, a child with this disorder will deteriorate in intellectual, social, and language functioning from previously normal behavior. It has been linked to neurological problems. An affected child shows a loss of communication skills, has regression in nonverbal behaviors, and significant loss of previously acquired skills. The condition is similar to autistic disorder.

RETT SYNDROME

is a neurodevelopmental disorder of the grey matter of the brain that affects girls almost exclusively. Clinical features include small hands and feet and a deceleration of the rate of head growth (including microcephaly in some), Repetitive hand movements, such as wringing and/or repeatedly putting hands into the mouth, are also noted. Girls with Rett syndrome are prone to gastrointestinal disorders and up to 80% have seizures. They typically have no verbal skills and about 50% of females are not ambulatory. The signs of this disorder are most easily confused with those of Angelman Syndrome, Cerebral Palsy and Autism.

HANS ASPERGER

published the first definition of Asperger Syndrome (AS) in 1944. He identified a pattern of behavior and abilities that he called "autistic psychopathy" meaning autism (self) and psychopathy (personality disease). The pattern included "a lack of empathy, little ability to form friendships, one-sided conversations, intense absorption in a special interest, and clumsy movements." Asperger called children with AS "little professors" because of their ability to talk about their favorite subject in great detail.

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is a disorder of neural development characterized by impaired social interaction and communication and by restricted and repetitive behavior. Signs begin before a child is three years old. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize; how this occurs is not well understood. It is one of three recognized disorders in the autism spectrum (ASDs), the other two being Asperger syndrome, which lacks delays in cognitive development and language and PDD-NOS. (Diagnosed when the full set of criteria for autism or Asperger syndrome are not met).

CHILDHOOD DISINTEGRATIVE DISORDER

is a condition occurring in 3 and 4 year-olds who have developed normally to age 2. Over several months, a child with this disorder will deteriorate in intellectual, social, and language functioning from previously normal behavior. It has been linked to neurological problems. An affected child shows a loss of communication skills, has regression in nonverbal behaviors, and significant loss of previously acquired skills. The condition is similar to autistic disorder.

RETT SYNDROME

is a neurodevelopmental disorder of the grey matter of the brain that affects girls almost exclusively. Clinical features include small hands and feet and a deceleration of the rate of head growth (including microcephaly in some), Repetitive hand movements, such as wringing and/or repeatedly putting hands into the mouth, are also noted. Girls with Rett syndrome are prone to gastrointestinal disorders and up to 80% have seizures. They typically have no verbal skills and about 50% of females are not ambulatory. The signs of this disorder are most easily confused with those of Angelman Syndrome, Cerebral Palsy and Autism.

HANS ASPERGER

published the first definition of Asperger Syndrome (AS) in 1944. He identified a pattern of behavior and abilities that he called "autistic psychopathy" meaning autism (self) and psychopathy (personality disease). The pattern included "a lack of empathy, little ability to form friendships, one-sided conversations, intense absorption in a special interest, and clumsy movements." Asperger called children with AS "little professors" because of their ability to talk about their favorite subject in great detail.

AUTISM

is a disorder of neural development characterized by impaired social interaction and communication and by restricted and repetitive behavior. Signs begin before a child is three years old. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize; how this occurs is not well understood. It is one of three recognized disorders in the autism spectrum (ASDs), the other two being Asperger syndrome, which lacks delays in cognitive development and language and PDD-NOS. (Diagnosed when the full set of criteria for autism or Asperger syndrome are not met).
Autism SPECT SCAN

Normal SPECT SCAN
Dr. Daniel Amen demonstrates Single Photon Emission Computerized Tomography (SPECT) Brain Scans of an individual with Autism.
Single Photon Emission Computerized Tomography (SPECT)

SUBJECT WITHOUT IRLEN FILTERS

OVERSTIMULATED
Single Photon Emission Computerized Tomography (SPECT)
Same Subject With Irlen Filters
Decreased Stimulation, Less Stress, Increased Calming
Use “VIEW” icon to enlarge the image of this slide.
PERCEPTION IN REAL LIFE
Imagine being able to see only though a narrow span (tunnel) at a face so you see only the nose or one eye and not the whole face.

• Try this exercise:
• Look at a face of a friend or family member.
• Extend your arm out as far as you can. Do not bend your elbow. Make a circle with your thumb and first finger touching.
• Keeping your arm extended fully, and keeping both eyes open, (do not close one eye), look through the small hole you created, using both eyes. You will note that you can only see a small piece of what you are looking at. This is what a face or an object, or the world looks like to many autistic individuals who have Irlen Syndrome.

Seeing in small portions, in fragments, with a restricted view, can be very disconcerting and for some individuals, very frightening.
Other Issues arise from Limited Span of Recognition

• Affects text, numbers, musical notes
• Unable to see a whole word or phrase with one fixation
• Faces - Not Seeing Faces as a whole
• Face Recognition
• Judging if some is happy, sad, upset at you, etc.
• Objects
• Environment; inaccurate sense of spatial factors
• Stairs
• And so much more
Color Treatment Interventions

Colored Overlays

Irlen Spectral Filters
Without My Glasses
(without Irlen Filters)

I could feel the water and hear the bubbles.

I stepped into a space like air.

I could feel the Bath tub.

With My Glasses
(with Irlen Filters)

I could see water, bubbles in the bath, white plug and white enamel tub

A description from an autistic little girl

Figure 10.3 and Figure 10.4

From: The Irlen Revolution, page 142
Visual distortions often plague Alex Michaels. “The road seems to buckle, buildings fold, cars come straight at me.” Using computer imaging, Michaels re-creates her symptoms of Scotopic Sensitivity (Irlen Syndrome). Lenses developed by researcher Helen Irlen, help control episodes. Irlen Colored lenses also aid some dyslexic and autistic individuals.”

Alex Tells Her Story

National Geographic Published this photo of Alex taken in 1999 in Central Square, Cambridge, Massachusetts
AUDITORY PROCESSING: Relationship to Irlen Syndrome & Autism?

“Auditory Processing: This refers to how sound is interpreted. For students with auditory processing difficulties, they hear every word, but have difficulty gaining meaning from the sentence or cannot distinguish meaning from background noise. When I listen to my world I can hear everything just fine, but interpretation information can be difficult. I can hear the sentence, “John is coming over for dinner” but what gets processed is about 1/3 of the sentence “John over dinner”. Believe it or not, comprehending 1/3 of my environment is about all I need to get by. This processing becomes difficult sometimes in that I miss social cues or messages”.

Postcards From My Mind: Perspectives of Aspergers Syndrome

Alex Michaels
WITHOUT MY IRLEN FILTERS - It is very hard to listen. There are so many noises competing for my attention at the same time that it’s not possible to know which sound is more important to listen to. This is extremely confusing and sometimes frightening; often a teacher, employer, parent, or others, think I am not paying attention or that I am not intelligent. (Paraphrase - Autistic person with Irlen Syndrome)

TV NOISE
In the background
WITH MY IRLEN FILTERS – I can sort out which sound to listen to. I can figure out which noises are important and which don’t belong, which sounds I am supposed to listen to and which I can ignore. I don’t panic as often when I hear sudden & loud noises. The Irlen Spectral Filters make me feel calmer and more focused. I can organize my thoughts better. (Paraphrase – Autistic person with Irlen Syndrome)

HELLO

HONK

BEEP

HON

TV NOISE
In the background
When I first encountered the overlays, (at the Irlen Center, Cambridge, Massachusetts) it never occurred to me that my vision was disturbed beyond letters. I knew for years that there was something odd about my vision because at times I could see typically, then the image would jump and be distorted, but I didn’t know that other people didn’t experience their world like this, too. Gaining this knowledge generalized to my concern that perhaps there were other things that I thought were “normal” that really weren’t. If I can’t trust my vision, what can I trust?

A few years later I was at a conference when I again saw the overlay people. As I walked past the booth I commented to the exhibitioner, “I use your overlays and they work great!” She smiled and I went on with my day.

Later that afternoon the same woman (it turned out that her name was Helen Irlen) came up to me and asked a logical question, “If the overlays work so well, why didn’t I have the glasses?” I explained that they were too expensive. She offered to do the testing for free if people at the convention could watch, I agreed....

Helen and I went through a series of colored lenses until all of a sudden not only did reading material become clear, my world became clear.
“My world stopped moving and collapsing.
I could also see in dimensions.
Two things I noticed immediately where when I walked down stairs I could see the incline, not use rule-based logic, such as looking for dark shadows to know where “down” was.
The next thing I noticed was outside. I looked at the trees – they weren’t moving! The leaves moved in a smooth motion, not a frenetic shaking and dancing that they normally did.
I took the (Irlen Spectral Filters) glasses on and off and as I did it felt like I was looking a two different worlds – like a fun house with trick mirrors”.
“…as soon as I would take them off my world would go back to chaos….”
Painting by Donna Williams

Author of:
*Nobody Nowhere*  and  *Somebody Somewhere*

Donna Williams has worn Irlen Spectral Filters and has written about it in her books. Donna is a high functioning autistic adult.
Irlen syndrome is sometimes categorized as a form of dyslexia. However, bestselling autistic author, Donna Williams, in her book *Like Colour To The Blind* wrote about her experience of tinted lenses (Irlen Spectral Filters) after being diagnosed with (Irlen Syndrome) scotopic sensitivity. In this book she described the lenses as enabling her to have cohesive, unfragmented vision, able to see faces, bodies and objects as a whole for the first time and reducing the extremity of experiences such as meaning-blindness, face blindness, inability to learn to read facial expression and body language and the social consequences of these impairments.

This led to a worldwide raised awareness of Irlen Syndrome/Scotopic Sensitivity as a sensory perceptual problem common in many (but not all) people with autism and expanded awareness of the potential effects of Irlen Syndrome/Scotopic Sensitivity far beyond that of reading disability, also leading to awareness of the effects of fluorescent lighting on those with this perceptual disorder.
DONNA WILLIAMS
EXCERPTS FROM: “The Day We Got Our Glasses: Irlen Spectral Filters”

“I put on my Irlen Filters….”

• “I looked around the room and it didn’t seem so crowded, overwhelming or bombarding. The background noise I had always heard before, machine sounds in different distant rooms, the hum of traffic, the mutter of people talking in the background, were not even apparent. I felt like I was swimming with the tide and not against it.”

• “I could read…without using a finger to trace each line. My eyes read each word in a line without flying off and scanning other words on a page. I read the line with meaning and with feeling. I read the line with pictures in my head…. I could feel that my face was relaxed.

• “… I sneaked peeks at this new world which no longer felt like an enemy waiting to invade or bombard us”.

• “The street was alive but not threatening. The people were getting on with their own lives and no longer looked like things thrown at me through the screen of a 3D movie. I felt safe among them. They were everywhere, and I felt safe.

• “I had always seen bits of different mess in parts of a room. I had never seen a messy room. All my life people had said things like “sorry about the mess” and I had known that somehow I had never seen it. Now I understood…. “This is our mess, I said. I can see who I am…. “It was too much for me and I crumbled. I threw my arms up like a mother in despair of a lost child. Look how much I have lost, I cried, referring to the realization of how much faulty perception had robbed me”.

Temple Grandin, Ph.D., Author
Animals Make Us Human, Thinking In Pictures
Dr. Temple Grandin is professor of animal behavior at Colorado State University and is one of the best known individuals with Asperger Syndrome.

• She is a frequent keynote speaker at Autism Conferences.

• A film about her life, which took 10 years to make, aired on HBO in 2010.

• Temple always mentions Irlen Filters when she speaks. During her recent speech at the Luncheon Society, she discussed Irlen as follows:

“Irlen Colored Glasses… alleviative the symptoms where words appear to wiggle" and “…while reading the printed page…if it helped 1 out of 40 people, it would be foolish not to try.”
IRLEN SPECTRAL FILTERS CAN BENEFIT A NUMBER OF INDIVIDUALS WHO ARE ON THE AUTISM SPECTRUM

TWO FREE QUESTIONNAIRES ARE AVAILABLE UPON REQUEST
Contact the Irlen Institute at www.irlen.com

Ask For These:
1. AUTISM QUESTIONNAIRE – Long Form
2. AUTISM LIGHT QUESTIONNAIRE
Stress, TBI & Irlen Syndrome

In Both The General Population
and
The Military Population

Reducing Combat Stress

Helen Irlen, M.A., M.F.T
Executive Director, Irlen Institute
Irlen Institute, Long Beach, CA
www.irlen.com

Andrew G. Yellen, Ph.D.
Clinical & Sports Psychologist
Yellen & Associates, Northridge, CA
www.yellenandassociates.com
Irlen Syndrome (IS)
Signs/ Symptoms

Irlen Syndrome found to be present in 18-22% of the general population

Unofficial tabulation indicates presence of Irlen Syndrome is higher in non-academic professions (i.e. law enforcement, firefighters, military personnel, trades.)
Silent Epidemic

Soldiers Malone, left, and Eric O'Brien, were in a Baghdad gym last summer when it was hit by a rocket. They have suffered memory loss other long-term problems.

Mark Humphrey, AP
Here, O'Brien takes a test to measure his response time and memory, commonly affected by TBI.

"I'll need to get milk and bread and eggs. Milk and bread and eggs. Next thing you know, I drive right by Wal-Mart," O'Brien said.
The severity of TBI is starting to be recognized. During President Bush's visit to Iraq…, Gen. Peter Pace, fourth from the right, said the injuries "are every bit as much battle injuries as is a bullet or shrapnel." Today, recognition of concussive TBI has increased under President Obama’s administration.
Environmental Stressors
Military & Civilian

Military Battlefield
- Combat
- Foreign Environment & Cultures
- Paper Work
- Physical Demands
  “Hold back” philosophy

Civilian Battlefield
- Lighting
- Visually Intensive Activity
- Extra effort required to perform tasks

Inability to Cope

Physical Symptoms

Psychological Symptoms

Physical Symptoms

Psychological Symptoms
Effects of Biochemical Change Caused by Stress
Parasympathetic Nervous System

**Initial Stage:**
- Reserves utilized
- Pressure and fatigue increase
- Self medication begins
- Increased anxiety
- Poor concentration
- Increased susceptibility to minor illness

**Advanced Stage:**
- Energy sources depleted
- Sleep disturbance
- Fatigue
- Disturbed appetite & eating patterns
- Errors in judgment
- Personality changes
- Increased irritability
- Physical and emotional disorders
**Symptoms of Biochemical Changes**

- Musculoskeletal:
  - Chronic pain
  - Headaches
  - TMJ
  - Back pain
- Hypertension
- Immune-related diseases:
  - Infections
  - Colds

**Symptoms of Anxiety**

- Trembling or shakiness
- Fear with little or no basis
- Palpitations
- Sensations of shortness of breath, choking
- Chest pains or discomfort
- Spells of terror or panic
- Psychomotor agitation
Symptoms of Depression

- Depressed mood most of the day
- Anhedonia/Depression
- Insomnia or hypersomnia
- Psychomotor agitation or retardation
- Diminished ability to think or concentrate
- Feeling hopeless about the future
- Feelings of worthlessness or guilt
- Suicidal Ideation or recurrent thoughts of death
**IRLEN SYNDROME**
**SEVERAL KEY INDICATORS**

- LIGHT SENSITIVITY
- FLUORESCENT LIGHT, GLARE
- HEADACHES/MIGRAINES
- DIZZINESS, NAUSEA *(Physical Symptoms)*
- OPTICAL ILLUSIONS OF TEXT/PRINT
- PREFER DIM LIGHT
- READING: SLOW RATE, POOR FLUENCY & COMPREHENSION, LOW OR FAILING MCAS/TEST SCORES, GRADES, ETC.
1. The first picture (on left) shows that without Irlen Spectral Filters, the brain of an individual with Irlen Syndrome, while reading, displays areas of over stimulation.

2. The second picture (on right) shows that with Irlen Spectral Filters, there is a significant decrease in this over activity.

**Single Photon Emission Computerized Tomography (SPECT)**

SPECT Brain Scans of an individual with Irlen Syndrome performed by Dr. Daniel Amen, M.D., Director of Amen Clinics, Inc., Assistant Clinical Professor of Psychiatry and Human Behavior, University of California Irvine, School of Medicine.
SPECT SCAN FINDINGS
SINGLE PHOTON EMISSION COMPUTERIZED TOMOGRAPHY

- Cortex profusion consistent with Generalized Anxiety Disorder
- Increased thalamic-limbic profusion consistent with mood swings
- Decreased in prefrontal cortex perfusion associated with ADHD
- Increase in basal ganglia and insular cortex consistent with Generalized Anxiety
- Increase in anterior cingulate, basal ganglia, and limbic systems associated with PTSD

(Dobrin, R. 2005)
IRLEN Lessons from SPECT

• Spectrum Subtype
• Genetic Component
• Can be result of TBI
• Head injuries can worsen Irlen symptoms
• High correlation with mood swings and depression

Dobrin, R. 2005

Irlen worsens mood disorders and contributes to anxiety disorders; can lead to self medication with alcohol and other drugs

• Stress induced by visual onslaught of light increases susceptibility to physical symptoms and fatigue

Dobrin, R. 2005
Correlation of SPECT Improvement with Subjective Improvement

<table>
<thead>
<tr>
<th>Category</th>
<th>Before</th>
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<tr>
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<td>Coping</td>
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<td>Essay Writing</td>
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<td>Music</td>
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<tr>
<td>Depth Perception</td>
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(Dobrin, R. 2005)
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(Dobrin, R. 2005)
People with Irlen Syndrome live with higher than normal stress.

Visual perceptual system is not normal

Miss or perceive things differently, which is often interpreted as stupidity or incompetence

Mistakes are made several times a week or some several times a day with most not knowing why

(Irvine, J. H. 1997)
Color Intervention

- Changes perception
- Relieves/reduces physical symptoms like headaches, dizziness, stomachaches, and fatigue
- Improves feelings of calmness and general well-being
- Increases ability to handle paper work, complete reading and work assignments, and participate in daily activities
- Increases likelihood of appropriate reactions to difficult situations
- Improves sense of competency
- Increases feelings of self-worth
Examples of what some perceive

DISTORTIONS
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 pullishesh off ripsicoat or throw his shoes over the roof.

On the other hand, nobody had spoken to him either. By Thursday afternoon, nothing had changed. Bill had not entirely surprised no one, so he had studied their lessons.

Maths with English with games which was mysteriously called GS with it. At the end of that period, 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 above bookshad identical covers.

The lesson was over before any noticed Bill had no book anyway being advised to share with a boy in a pink shirt who kept silence firmly between Bill and the book. Whence the bell rang Bill grabbed the boy in the pink shirt before he could leave.

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WASHOUT

OBSERVATIONS:

Arthur is a friendly, talkative boy who spokes in a rather loud voice. He appeared 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 his work was rapid and had difficulty maintaining his attention for any length of time. Some impatience and impulsivity were noted. Arthur appeared to resist academic tasks, resorting to non-academic behavior which included diverting conversation, making noises, and unorthodox comments which produced false favorable conditions. Arthur expressed considerable anxiety avoiding a job rather than accepting the responsibility for one. He was quite serious 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 behavior would not be effective in this situation.

SUMMARY AND RECOMMENDATION:

The current psychiatric data suggests that Arthur is functioning in the high average to very superior range of intelligence. Considerable scatter was noted in the verbal scores of the WISC. Arthur had the greatest difficulty with those tasks requiring concentration and immediate auditory rote memory and arithmetic reasoning ability. His strengths were concentrated in the non-verbal skills. He demonstrated a remarkable ability in the analysis and formation of abstract designs and in the awareness of cause and effect and time sequence; 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 clinical evaluation of Arthur's potential in these skills. The weaknesses of his performance seem to reflect, in part, his irregular school attendance and slow academic progress, and some perceptual immaturities. Frontline deficiencies in the auditory association speed 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-spatial perceptual development was also noted and the primary difficulty appeared to be one of poor fine motor control; Arthur has trouble with handwriting and allows to his own restrictive form, suggesting some confusion and a need for individualized instruction in the...
BLURRY

BY ANDREW J. SOSTEN
AND RICHARD L. WYATT

A

s any parent, grandparent, or

baby-sitter knows, some babies

are adaptable, placid, and regular in

their habits, while others are diffi-
cult and unpredictable. Differences
in temperament show up from the
first day of life: some infants sleep
very little, whereas sleep a lot: some

infants are highly sensitive and con-
demanding, others are quiet and

unemotional.

Since mechanisms have not been

exposed to the world for long, envi-
enmental forces beyond the womb
cannot account for such differences
in temperament. Rather, the differ-
enences must be largely a result of
genetic influences. Yet these have been

less-if any-attempts to define differ-
tent biobehavioral environments at birth
to mechanism behavior.

We have found, in research at the

National Institute of Mental Health
(NIMH), that behavioral differences
in newborns are associated with an
amount that correlates with both the

dna and the brain. The brain seems
different in newborns with high versus
low MAO activity.

This was the question we asked, and
we found that newborns with high MAO
demonstrate more active and excitable
behavior, while newborns with low MAO
activity demonstrate more calm, quiet,
and dependent behavior.

In the brain, research shows that

MAO influences behavior. By break-

ing down the chemical neurotrans-

mitters, MAO allows messages bet-

ween neurons. Bygrounding neuro-

transmitters from building up, MAO

causes the brain cells that would oth-

erwise be saturated. Low levels

MAO allow neurotransmitters to ac-

tivate; in contrast, high levels

MAO block the signals.

MAO is also related to the brain's

ability to function. The brain needs

MAO to work properly, and low MAO
activity results in a reduced ability
to function. This can lead to a variety
do behavioral problems, such as poor

memory, difficulty concentrating,

and impaired learning.

We have found that newborns with

high MAO activity are more likely
to demonstrate alertness, active

movement, and a faster development
of motor skills. In contrast, newborns

with low MAO activity tend to be

calmer, slower to respond, and possi-

bly at greater risk for developmental

delays.

In summary, our research shows

that newborns with high MAO

activity demonstrate more active,

alert, and responsive behavior, while

newborns with low MAO activity

tend to be more calm, quiet, and

dependent. These differences may be

important in understanding the dif-

ferent behaviors that we observe in

newborns and could have implica-

tions for future research on the

effects of MAO on infant develop-

ment and behavior.

ACKNOWLEDGMENTS

This work was supported in part by

the National Institute of Mental Health
(NIMH), the National Institute of

Health (NIH), and the National

Institute on Deafness and Other

Communicative Disorders (NICHD).


behavior: A study of the effects of

MAO levels on infant behavior.

Child Development, 21, 33-43.
Halo

We all see things 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.

We all see things 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.
Do you remember the story of the three little pigs? The big bad wolf lived in a house made of sticks. He said, "Dreadful!" "He blew the wolf away!" The second little pig built his house out of sticks. He said, "Dreadful!" "He blew the wolf away!" The third little pig built his house out of brick. He said, "Dreadful!" "He blew the wolf away!" So the three little pigs lived happily ever after.

SEESAWS
Star Wars
Floating
If the CODE.Meter is loaded, it will load and will function correctly. Note: All this will occur automatically in the final release and will function correctly. If the CODE.Meter is not loaded, you will be prompted to load the CODE.Meter. If the CODE.Meter is loaded, it will load and will function correctly.

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When Sampler CPU I 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.

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 “aisi” (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 beta you shouldn’t have to do the mounting if the boot process works correctly.
TREATMENTS: OVERLAYS

• Screening and use of OVERLAYS
• Helpful for reading, reports, small computer screens.
• Not effective for global work environments, large computer screens, overhead lighting glare, solar glare, window glare, etc.

IRLEN SPECTRAL FILTERS

• Helps all the areas overlays assist with
• Benefits every other issue related to Irlen Syndrome that overlays cannot help
• Filters troublesome wave lengths as they enter the brain’s visual pathway.
• Helps more with headaches, migraines, light sensitivity, reading fluency, speed accuracy, physical and emotional symptoms, TBI, etc.
Color Overlays

Irlen Spectral Filters
RA Action: 
July 6, 2007

News from the NEA Annual Meeting
New Business Items

RE: IRLLEN SYNDROME & NEA ACTION
NEW BUSINESS
ITEM 35
Adopted

NEA will inform its members through its website and publications, such as NEA Today, regarding Irlen Syndrome/Scotopic Sensitivity, a visual perception problem caused by sensitivity to light that results in serious reading difficulties for many thousands of school children. Information so disseminated will include a clear explanation of the condition, its symptoms, and its proven remedy (color filtration). Reporting should include highlights of credible research, legislation, and selected accounts of students who have met with success following appropriate assessment and treatment. A list of resources should be provided in order to enable all interested parties to become well informed about Irlen Syndrome and to take action for the benefit of students.
Commissioner's Update
Excerpts  March 22, 2004
David P. Driscoll, Commissioner of Education
Massachusetts Department of Education

Irlen/Scotopic Sensitivity Syndrome

I have been asked to inform you about Irlen/Scotopic Sensitivity Syndrome, a sensitivity to light, particularly fluorescent light, that can interfere with reading and written language. According to the Irlen Institute, research shows that it can lower test scores and impact a person's ability to function in school and work situations. Traditional means of diagnosing this syndrome are not successful but the Irlen Institute can diagnose and treat this syndrome using specific colored overlays. Attached are details about Irlen Screening.

Monday, March 22, 2004

A New Tool to Help Improve Reading Scores
How do you implement an Irlen Screening Program in your school?
Who qualifies to be trained to screen for Irlen Syndrome?

Educators, Reading Specialists, Resource Room Teachers, Special Education Specialists, School Nurses, Psychologists, Speech Pathologists, Occupational Therapists, Counselors, Teachers and Diagnosticians can qualify to be trained as Irlen Screeners. Certain other professionals may also qualify on a limited basis.
HOUSE BILL 2726 – IRLEN SYNDROME

HOUSE ..................... No 2726 - Representative Cleon Turner
SENATE ...................... No. 227 - Senator Michael Rodrigues

The Commonwealth of Massachusetts

PRESENTED BY: Representative Cleon Turner and Senator Michael Rodrigues

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled: The undersigned legislators and/or citizens respectfully petition for the passage of the accompanying bill: An Act requiring school districts to adopt a certain health program.
Past CO SPONSORS:
Michael J. Rodrigues
Thomas A. Golden, Jr.
Timothy J. Toomey, Jr.
Viriato Manuel deMacedo
Jeffrey Davis Perry
Cleon H. Turner
Paul J. Donato
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Alice Hanlon Peisch
Barbara A. L'Italien
Sean Garballey
Stephen M. Brewer
Linda Dean Campbell
Lida E. Harkins
IRLEN SYNDROME DATA
ANNOTATED BIBLIOGRAPHY

PRESENTED TO THE MASSACHUSETTS STATE
LEGISLATURE OCTOBER 19, 2009

A COMPILATION OF RESEARCH,
STUDIES, ARTICLES, SCIENTIFIC
PAPERS, ETC.

The total population numbers included
on these pages is 17,451.
SUMMARY OF SURVEY DATA for IRLEN SCREENING SUBJECTS

- Survey respondents/educators/certified Irlen Screeners
  \( N = 115 \)
- Screened for Irlen Syndrome
  \( N = 20,231 \)
- Identified with Irlen Syndrome
  \( N = 17,808 \)
Irlen Syndrome abc4 news

We help children and adults suffering from:

- Reading and learning problems
- Dyslexia
- ADD/HD, Autism and Aspergers Syndrome
- Behavioral and emotional problems
- Headaches, migraines, fatigue and other physical symptoms
- Light Sensitivity/Photophobia
- Traumatic brain injury (TBI), whip lash, and concussions
- Certain medical and visual conditions.
Resources & Related Links

- www.irlen.com
- Reading by the Colors by Helen Irlen
- The Irlen Revolution by Helen Irlen
- RBC audio tape
- Irlen CD Rom
- The Light Barrier by Rhonda Stone
The Irlen Revolution
by Helen Irlen

For More Information:
www.Irlenboston.com
www.Irlen.com

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Additional thanks to: Mary Ann Grassia, M. Ed. and Sherri Schultz for their technical assistance.
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YOU TUBE - Irlen Institute Channel

To support the current Massachusetts HB 508 formerly written as HB 2726 or SEN 227 contact:
Representative Cleon Turner and Senator Michael Rodrigues as well as Your own State Representative and Senator