

Irlen Syndrome and the Yellen-Schweller Effect

By [Andrew Yellen, Ph.D.](#)

Irlen Syndrome is a hereditary, visual-perceptual problem that prevents an estimated 14-18% of the population from being able to read efficiently. The actual visual processing deficit has been identified as the Yellen-Schweller Effect and is similar to the effects of a flashbulb in a person's face.

Irlen Syndrome is a hereditary, visual-perceptual problem that prevents an estimated 14-18% of the population from being able to read efficiently. Irlen Syndrome is not a vision problem of the eye. Irlen Syndrome is the visual-perceptual reception site of the brain perceiving the timing of light waves ineffectively. The disorder remains undetected by standard educational, visual, and medical tests. It is a learning disability.

Individuals with Irlen Syndrome perceive the printed page and sometimes their environment differently. Unlike those without the disorder, reading becomes more difficult over time and physically exhausting. It can also affect attention span, listening, energy level, motivation, and work production. Such individuals are quite light sensitive. They are very familiar with the admonition "Turn on the lights. You'll ruin your eyes." In fact, many times it is the bright light that is the culprit causing headaches and reading distortions.

In an individual without Irlen Syndrome visual stimuli is processed by the brain usually between 130-150 milliseconds. Once the brain has processed the information, it returns to a readiness state by approximately 200 milliseconds and awaits the next stimulus. The actual phenomenon that occurs in Irlen Syndrome has been identified as the Yellen-Schweller Effect. The Yellen-Schweller Effect was discovered using the Visual Evoked Response portion of the DESA technology (Digital EEG Spectral Analysis). There is an early hyper reactivity to visual stimuli somewhere between 30-60 milliseconds, and it is 3-9 standard deviations above normal. If one were to visualize a graph, rather than a smooth bell-shaped curve of processing of visual information, there is an extreme spike at the beginning, followed by a latency period occurring when the brain would normally be processing the information producing performance 3-6 standard deviations below normal recording. The brain "comes back on line" and begins to reprocess the information, delaying complete processing well into the 400-500 millisecond range when the normal brain would be awaiting the next stimulus. It is even possible to have a second stimulus occur while the brain is still processing the first. It is believed that this concurrent processing of different stimuli is responsible for the distortions associated with Irlen Syndrome.

Much like the effects of a flashbulb, the brain is stunned, taking several moments to clear itself. However, in Irlen Syndrome this phenomenon occurs every waking moment, giving the brain no time to recover and producing the now well-documented effects of Irlen Syndrome called the Yellen-Schweller Effect. Traditional evaluations of Visual Evoked Responses failed to identify the Yellen-Schweller Effect because they looked at averages rather than millisecond-by-millisecond behavior.

Advanced technologies, such as the DESA, have made the discovery of heretofore unexplainable phenomenon much more objective. What was once thought of as a figment of someone's imagination is now explainable by science and technology.

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Currently pioneering advances in the field of Brain Electrical Activity Mapping, Dr. Yellen has augmented the accuracy of psychological assessments by offering the latest technological advances of Digital EEG Spectral Analysis ([DESA](#)) to schools, rehab clinics, attorneys, sports organizations, and our injured veterans.

Dr. Yellen has appeared nationally on television as well as giving commentary on local television and radio stations. He is the author of *The Art of Perfect Parenting and Other Absurd Ideas* and co-author of *Understanding the Learning Disabled Athlete and Social Facilitation in Action*. His books are available for purchase through his website. For further information, personal consultations or speaking engagements, he can be reached at (818) 360-3078

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