

## Irlen Filters Information Sheet

In 1983, Helen Irlen, introduced the syndrome referred to as “scotopic sensitivity syndrome”. She used this term to refer to a constellation of signs and symptoms she felt was associated with students with learning disabilities. In her unpublished manuscript presented in 1983, she described this syndrome as having six components including:

- Photophobia
- Eyestrain
- Poor visual resolution
- Reduced span of fixation or focus
- Poor sustained focus
- Impaired depth perception

She claimed that approximately 50% of the learning disabilities population has this syndrome and that this is a key factor interfering with the reading process in these individuals.

In addition to introducing this syndrome, Irlen suggested that 90% of individuals with this disorder could be successfully treated using appropriate tinted lenses selected from a range of 150 color possibilities. These lenses that are used to treat patients with scotopic sensitivity syndrome are referred to as “Irlen Lenses or Filters”.

### Research on Irlen Filters

1. Scheiman & Blaskey, JAOA, Volume 61:600-604, 1990 “**Vision Characteristics of Irlen Filter Candidates**” The purpose of this study was to investigate Irlen’s claim that scotopic sensitivity syndrome is a distinct entity from refractive, accommodative, binocular and ocular motor anomalies. The results of this study demonstrate:
  - 95% of the 39 subjects that were identified as candidates for Irlen Filters had significant and readily identifiable vision anomalies.
  - Subjects in this study were typical of those that present for testing at Irlen Centers around the world.
  - 57% of the subjects either had regular periodic vision care or at least one examination within one year of the study. Of those having recent visual examinations, 90% had significant, uncorrected visual problems.
  - Results strongly suggest that a vast majority of individuals being treated with Irlen Filters actually have significant vision problems, primarily binocular, accommodative and ocular motility disorders.
  - The presence of these vision anomalies alone may be sufficient to explain many of the symptoms of these individuals.
2. Scheiman & Blaskey (1990) Journal of Learning Disabilities, 23:604-612: “**The effectiveness of Irlen Filters for improving reading performance.**” The objective of this study was to evaluate the effectiveness of Irlen filters for eliminating the

symptoms associated with scotopic sensitivity and for improving reading performance.

- Results showed a significant reduction in symptoms as measured by both a symptom questionnaire and the Irlen screening assessment.
- All subjects in the Irlen Filter group had vision problems based on the initial vision evaluation.
- At the post evaluation all 11 of the subjects having vision problems treated with Irlen Filters still had their visual problems.
- There were no significant changes in objective measures of comprehension, reading rate or numbers of errors in the Irlen Filter group.
- In the vision therapy group there were significant improvements in comfort as indicated by the symptom questionnaire.
- All 8 subjects that were Irlen Filter candidates who had vision problems and who were treated with vision therapy were no longer considered Irlen Filter candidates after treatment.

3. Solan, H. & Richman, J., JAOA, Vol. 61, Number 10, 10/90 pp 789-796, “**Irlen Lenses: A Critical Appraisal**”

**Abstract:** The purpose of this paper is to assess the credibility of the Irlen lenses, Irlen’s hypotheses, and the scotopic sensitivity syndrome. The analysis includes a review of 13 pro and con research papers. Of special interest is the dichotomy which developed between researchers who were Irlen participants and the professional and scientific community who required less disputable evidence. Even the former, however, failed to find scientific support for Irlen’s concept of dysfunction in the discharge rate of the retinal receptor cells. Furthermore, in the absence of any evidence that it is a separate and distinct entity, it appears that the scotopic sensitivity syndrome is, in fact, a symptom complex which results primarily from various refractive, binocular, and accommodative disorders. Some of the papers which support Irlen’s hypotheses provide reason to believe that there is a strong placebo effect.

4. Lopez, R., Yolton, R., Kohl, P., Smith, D., Saxerud, M., JAOA, Vol. 65, Number 10, 10/94 pp 705-714, “**Comparison of Irlen Scotopic Sensitivity Syndrome test results to academic and visual performance data**”

**Abstract:** Irlen has defined a condition called Scotopic Sensitivity Syndrome (SSS) that is associated with reading problems. According to Irlen, SSS can be treated by the use of colored filters, but there is disagreement about the existence of SSS and the efficacy of colored filter therapy.

**Methods:** Thirty-nine children participated in the study: 24 were academically normal, nine had specific reading problems, and six had problems in multiple academic areas. SSS levels and preferred overlay colors were determined. Optometric test data were also available for each subject.

**Results:** No significant relationships were found between academic classification and degree of SSS. There were also no significant relationships between preferred

overlay color and any other variables. There was, however, a significant tendency for subjects with higher SSS levels to be candidates for vision therapy and to derive greater benefit from the colored overlays.

**Conclusions:** Many questions about the use colored filters for the treatment of reading problems remain unanswered. Among these are questions dealing with whether the M-pathway anomalies found in some dyslexics are also present to a lesser degree in other cases of reading disabilities, and how colored filters could re-balance the M- and P-pathways. Is it the color of the filter itself that is critical, or is it the change in luminance or contrast produced by the filter that seems to make it easier for some subjects to read? More research will be needed to answer these questions.

### Summary and Conclusions

- The main effect of Irlen Filters seems to be a reduction in visual complaints.
- Although the primary objective of Irlen filters is improvement in reading performance, the data reported does not support the hypothesis that Irlen lenses produce significant changes in various measures of reading performance.
- These studies suggest that scotopic sensitivity may not be a distinct entity.
- The data strongly support the hypothesis that undiagnosed vision problems may be the primary underlying factor common to individuals who feel they may benefit from Irlen Lenses.
- Irlen Filters do appear to have a positive effect on symptoms in a small percentage of subjects.
- The data indicates that some people with certain forms of undetected binocular dysfunctions respond to the Irlen Filters with improved comfort and performance.

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