

## Reading Problems and Pediatric Ophthalmology

Reading is one of the most important scholastic skills to which children must adapt or learn. Reading usually requires vision (focused, steady images of letters and words) and many higher brain functions. A psychological problem in which information is much more slowly acquired and processed by reading than other avenues is called "Dyslexia<sup>1</sup>." Check [www.schwablearning.org](http://www.schwablearning.org). School psychologists can test for dyslexia.

Children who are in the early grades and have difficulty reading should have an eye examination to detect glasses problems such as farsightedness or astigmatism or problems with comfortable alignment of the eyes on the printed page. Often children with reading problems have excellent vision and are suffering from a problem of visual memory processing. This non-visual type of reading problem may be associated with other learning disabilities or can be isolated to reading (dyslexia). While some people believe you just have smooth "tracking" (pursuit movement), speed reading is actually composed of rapid changes in fixation on groups of words (saccadic eye movement). Many children with uncontrollable jumping (nystagmus) of their moderately poor seeing eyes are able to read rapidly and accurately if they hold the material close enough to their eyes.

As with any other task, if a child has reasonable ability to see the printed page, improved reading is a product of persistent PRACTICE. Any learning method lacking practice will fail. The motivated, well-rested, attentive child will make appropriate strides with practice. Under certain circumstances, however, a potentially capable child will become discouraged and will not read up to potential due to unmotivated practice. For many elementary school children, the translated European comic series "Tintin" and "Asterix and Obelisk" are great motivators.

Consider reading to be one of several different learning tasks such as hurdling on an educational "track team." Some kids love to run hurdles. Others are better shot-putters (which might be an analogy for learning to draw). With respect to the task of reading, we want every kid on the educational "track team" to be better hurdlers. A good coach can take a runner of any initial interest and ability and encourage them to practice hurdles so their performance will be better at the end of the season. A poor coach might discourage the shot-put type by direct comparison with an initial hurdle-lover and further humiliate by disallowing any fun time in the non-hurdling favorite event.

A psychologist named Helen Irlen coined the term "Scotopic Sensitivity Syndrome" and marketed spectacles with colored tints aimed at improving reading speed and efficiency. While there is no objective test of the eyes to determine which tint a person might prefer, some adults even think colored tints allow them to better discern words and letters on a "busy" page of sentences. I have objected to the Irlen process for three important reasons: 1) Cost; the simple tinted spectacles are inexpensive to make, but have been sold for high prices by Irlen (initially \$800 per pair) and the Irlen-trainees have often made much money promoting the expensive glasses for all kinds of poor performance at school, 2) Self esteem; slow readers already think poorly of their abilities- being forced to wear funny colored glasses in school torpedoes their motivation, and 3) "crutch diagnosis-" Scotopic Sensitivity Syndrome has not been clinically proven or well-defined - many children given this "diagnosis" by a lay Irlen screener lose even more motivation to try in school. Our solution: Children with reading concerns should have a thorough eye examination emphasizing refractive error (cycloplegic), accommodation, alignment at distance and near, comitance, color vision and overall health. If no other problems are identified and addressed, children can try to read through a tinted film that is placed on the page, not on the child's face. A large assortment of photographers colored acetate filters can be obtained from Edmund Scientific Company (609)547-8880 • [www.edsci.com](http://www.edsci.com) • Book of 100 Colored Filters (small NT39-417 \$9.25; large NT39-418 \$37.50) Phone: (800) 363-1992, Fax: (856) 573-6233. If your child chooses one particular color, you can order many more pages for minimal cost. If your child does NOT prefer any colors, consider donating your set to a school.

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1. Shaywitz S. Dyslexia. *Sci Am*. 1996;275:98-104.

Goldberg, HK, Drash PW: The Disabled Reader. *J Pediatr Ophthalmol* 1968; 5:11-24.

"Overcoming Dyslexia" by Sally Shaywitz (ISBN 0375400125, Knopf Publisher)

<http://www.nichd.nih.gov/publications/pubsblue.cfm?from=nrp>

Aoccdrnig to rscheearch at Cmabrigde uinervtisy, it deosn't mttar waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteres are at the rghit pclae. The rset can be a tatol mes and you can sitll raed it wouthit a porbelm. Tihis is bcuseae we do not raed ervey lteter by it slef but the wrod as a wlohe.

<http://www.mrc-cbu.cam.ac.uk/personal/matt.davis/Cmabrigde/>

Rawlinson, G. E. (1976) The significance of letter position in word recognition. Unpublished PhD Thesis, Psychology Department, University of Nottingham, Nottingham UK.