Committee on Children with Disabilities of the AAP, and Ad Hoc Working Group of the American Association for Pediatric Ophthalmology and Strabismus and American Academy of Ophthalmology

Learning Disabilities, Dyslexia, and Vision

POLICY

The American Academy of Pediatrics, the American Academy of Ophthalmology, and the American Association for Pediatric Ophthalmology and Strabismus support the position that a child or adult with dyslexia or a related learning disability should receive: (1) early medical, educational, and/or psychological evaluation and diagnosis; and (2) remediation with educational procedures of proven value, demonstrated by valid research.

BACKGROUND

Dyslexia and related learning disabilities have become matters of increasing public attention. A child’s or adult’s inability to read with understanding is a major obstacle to school learning and may have far-reaching social and economic implications. The normal and appropriate concern of parents for the welfare of their children and of society for its disadvantaged children and young adults has fostered a proliferation of purportedly diagnostic and remedial procedures, many of which are controversial. Research has shown that deficient visual perception of letters or words accounts for inability to read in only a small minority of children; the majority suffer from a variety of linguistic defects. Therefore, the diagnosis and treatment of dyslexia and associated learning disabilities have recently been reviewed with the following conclusions endorsed by the three societies named above.

EVALUATION AND CONCLUSIONS

1. Learning disabilities, including the dyslexias, as well as other forms of learning underachievement, often may require a multidisciplinary approach from medicine, education, and psychology in evaluation, diagnosis, and treatment. Certain problems may be detected during early childhood through the use of screening techniques by educational specialists. Children with potential problems include those with language defects, emotional problems, or a family history of learning disability. These individuals should be assessed by educational and psychological specialists as early as possible to determine individuals at risk for learning disabilities.

2. Eye care should never be instituted in isolation for a person who has dyslexia or a related learning disability. Children determined to have such problems should be evaluated for general medical, neurologic, psychological, visual, and hearing defects. If any problems of this nature are found, corrective and/or remedial steps should be taken as early as possible.

3. Because the decoding of written language involves transmission of visual signals from the eyes to the brain, it has, unfortunately, become common practice to attribute reading difficulties to subtle ocular abnormalities, presumed to cause faulty perception. Although eyes are necessary for vision, “visual perception” depends on the interpretation of visual symbols by the brain. Remediation directed to the eyes cannot be expected to alter the brain’s processing of visual stimuli. Indeed, children with dyslexia or related learning disability have the same incidence of ocular abnormalities, eg, refractive errors and muscle imbalances (including near point of convergence and binocular fusion deficiencies), as children without. There is no peripheral eye defect that produces dyslexia and associated learning disabilities. Eye defects do not cause reversal of letters, words, or numbers. Indeed, recent studies suggest dyslexia and associated learning disabilities may be related to genetic, biochemical, and/or structural brain changes. Further controlled research is warranted.

4. Correctable ocular defects should be treated
appropriately. However, no known scientific evidence supports claims for improving the academic abilities of dyslexic or learning-disabled children with treatment based on (a) visual training, including muscle exercises, ocular pursuit or tracking exercises, or glasses (with or without bifocals or prisms);10-15 or (b) neurologic organizational training (laterality training, balance board, perceptual training).4,6,10-16 Furthermore, such training may result in a false sense of security, which may delay or prevent proper instruction or remediation. The expense of such procedures is unwarranted. They cannot be substituted for appropriate remedial education measures. Improvement claimed for visual training or neurologic organizational training typically results from those remedial educational techniques with which they are combined.

5. The teaching of dyslexic and learning-disabled children and adults is a problem for educational science. Proper proven, expert educational and psychological testing should be performed to identify the type of learning disability. As remediation may be more effective during the early years,12 especially prior to the development of a pattern of failure, early diagnosis is paramount. Because deficient ability to learn to read can be the result of a variety of factors, including different neurophysiologic deficiencies, cognitive defects, or psychological factors, no single educational approach is applicable to all children. A change in any variable may result in improved performance and reduced frustration (including placebo benefits).

The American Academy of Ophthalmology, the American Association for Pediatric Ophthalmology and Strabismus, and the American Academy of Pediatrics strongly support the early diagnosis and appropriate treatment of persons with dyslexia and related learning disabilities. We commit ourselves to these efforts and to scientifically valid research on the cause, diagnosis, and remediation of these conditions or defects.

**Committee on Children with Disabilities**
American Academy of Pediatrics
Albert C. Fremont, MD, Chairman

**AD HOC WORKING GROUP**
American Association for Pediatric Ophthalmology and Strabismus
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American Academy of Ophthalmology

**REFERENCES**

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