



JOINT POLICY STATEMENT

Vision Screening for Infants and Children

A joint statement of the American Association for Pediatric Ophthalmology and Strabismus and the American Academy of Ophthalmology

Policy

The American Academy of Ophthalmology (Academy) and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) recommend timely screening for the early detection and treatment of eye and vision problems in America's children. This includes the institution of periodic vision screening during the preschool years. The US Preventive Services Task Force (USPSTF) recommends vision screening for children ages 3 to 5 years of age for the purpose of detecting amblyopia or risk factors for amblyopia.¹ Early detection of treatable eye disease in infancy and childhood can have far-reaching implications for vision and, in some cases, for general health.

Background

Good vision is essential for proper physical development and educational progress in growing children. The visual system of the young child is not fully mature. Equal input from both eyes is required for proper development of the visual centers in the brain. If a growing child's eye does not provide a clear, focused image to the developing brain, irreversible loss of vision in one or both eyes may result.

Early detection provides the best opportunity for effective treatment. The American Association for Pediatric Ophthalmology and Strabismus, the American Academy of Ophthalmology, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American Association of Certified Orthoptists all recommend early vision screening.

Vision screening programs, administered by primary care providers, community programs, and schools should provide effective testing of preschool and early school-age children, which is done quickly, accurately, and with minimum expense. Effective vision screening maximizes the rate of

problem detection while minimizing unnecessary referrals and cost. Common eye conditions that can be detected include reduced vision in one or both eyes from amblyopia, uncorrected refractive errors, misalignment of the eyes (strabismus), or other eye defects.

Amblyopia is poor vision in an otherwise normal appearing eye that occurs when the brain does not fully recognize the sight from that eye. Two common causes are strabismus and a difference in the refractive error (need for glasses) between the two eyes. Treatment becomes less effective with age. If untreated, amblyopia can cause irreversible visual loss.

Strabismus is misalignment of the eyes in any direction. Amblyopia may develop when the eyes do not align. If early detection of amblyopia secondary to strabismus is followed by effective treatment, excellent vision may be restored. The eyes can be aligned in some cases with glasses and in others, with surgery. However, restoration of good alignment does not ensure elimination of amblyopia.

Refractive errors cause decreased vision, visual discomfort (eye strain), strabismus and/or amblyopia. The most common form is nearsightedness (poor distance vision). It is usually seen in school-age children and is treated effectively, in most cases, with glasses. While mild to moderate farsightedness is normal in preschool children and usually does not require glasses, high or asymmetric amounts of farsightedness can cause decreased vision, amblyopia, and strabismus unless treated with glasses. Astigmatism (imperfect curvature of the front surfaces of the eye) also requires corrective lenses if it produces blurred vision or discomfort. Uncorrected refractive errors can cause amblyopia, particularly if they are severe or are different between the two eyes.

The Academy and AAPOS have identified myopia as a high-priority cause of visual impairment. Interventions for delaying the onset of myopia and reducing myopia progression in childhood are available. Thus, periodic screening of children and evaluation of children at risk for myopia progression would allow for a targeted strategy to address myopia, as well as other ocular conditions.

In addition to detecting vision problems, effective screening programs should also emphasize a mechanism to inform parents of screening results and attempt to ensure that proper follow-up care, when necessary, is received.

Recommendations for community and school screening programs:

In the setting of community and school-based screening programs, screeners should have specific training in vision screening techniques and protocols as recommended by the Academy, and AAPOS. Children who do not pass these screenings should be referred for an additional ocular assessment performed by the primary care provider or an eye care provider with training and experience in treating children.

Recommendations for primary care:

In the primary care setting, the Academy and AAPOS recommend that an ocular assessment be performed whenever questions arise about the health of the visual system of a child of any age. In addition, even in the absence of specific signs or symptoms, they recommend that infants and children be routinely screened for vision problems as follows and that any child who does not pass one of more of these screening tests have an ophthalmological examination.

1. A pediatrician, family physician, or other properly trained health care provider should examine a newborn's eyes for general eye health and perform a red reflex test in the newborn nursery. Any baby with an abnormal red reflex requires urgent consultation. An ophthalmologist should be asked to examine all high-risk infants (i.e., those at risk of developing retinopathy of prematurity (ROP); those with a family history of retinoblastoma, glaucoma, or cataracts in childhood; those with a family history of retinal dystrophy/degeneration; those with systemic diseases or neurodevelopmental delays associated with eye problems; those with any opacity of the ocular media; or those with nystagmus).
2. From 1 month to 4 years of age, infants and toddlers should have their ocular health assessed at each routine well-child visit, including an external inspection, pupillary examination, corneal light reflection and assessment of fixation and following behavior. This assessment should address any concerns raised by the family or noted by the primary care provider.

3. Emphasis should be placed on checking visual acuity as soon as a child is cooperative enough to complete the assessment. Generally, this occurs between ages 3 ½ and 4 years. This assessment can be performed by a pediatrician, family practitioner, ophthalmologist, optometrist, orthoptist, nurse, or other appropriately trained individual. Screeners should not have a vested interest in the screening outcome. A child who is referred from a vision screening or is uncooperative at a second attempt at vision testing should be referred for a comprehensive eye evaluation. It is essential that a formal testing of visual acuity be performed by the age of 5 years.
4. Photoscreening and handheld autorefraction may be electively performed in children 12 months to 3 years of age, allowing earlier detection of conditions that may lead to amblyopia. Photoscreening and handheld automated refraction are recommended as an alternative to visual acuity screening with vision charts (typically used for children 3 through 5 years of age) and in children who are unable or unwilling to cooperate with routine acuity screening with vision charts (but are not superior to vision chart testing for children able to participate). The use of vision charts to assess amblyopia in children 3 to 5 years of age remains a viable practice at the present time.
5. Additional screening on each child should be done at routine school checks or well-child visits every 1-2 years after age 5 years. Routine comprehensive professional eye examinations performed on normal asymptomatic children have no proven medical benefit.
6. Children with possible or diagnosed learning disabilities, such as dyslexia, should undergo a comprehensive eye examination so that any undiagnosed vision impairment can be identified and treated. Such children should be referred for appropriate medical, psychological, and educational evaluations and treatment of any learning disability. There is inadequate scientific evidence to suggest that “defective eye teaming” and “accommodative disorders” are common causes of educational impairment.^{2,3} Hence, routine screening for these conditions is not recommended.

Many serious ocular conditions are treatable if identified through screening during the preschool and early school-aged years. Many of these conditions are associated with a positive family history. Therefore, additional emphasis should be directed to screening high-risk infants and children, and, when necessary, screeners should readily refer such children to an ophthalmologist for a comprehensive eye evaluation.

References

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2. Learning disabilities, dyslexia, and vision: a subject review. Committee on Children with Disabilities, American Academy of Pediatrics (AAP) and American Academy of Ophthalmology (AAO), American Association of Pediatric Ophthalmology and Strabismus (AAPOS). *Pediatrics*. 1998; 102:1217-1219.
3. American Academy of Pediatrics, Section on Ophthalmology, Council on Children with Disabilities; American Academy of Ophthalmology; American Association for Pediatric Ophthalmology and Strabismus; American Association of Certified Orthoptists. Joint statement - Learning disabilities, dyslexia, and vision. *Pediatrics*. 2009; 124:837-844.

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