



## 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 and the American Association for Pediatric Ophthalmology and Strabismus recommend timely screening for the early detection and treatment of eye and vision problems in America's children. This includes the institution of rigorous vision screening practices during the preschool years. 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 in growing children and educational progress. 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 may result. Early detection provides the best opportunity for effective treatment. Monitoring ocular health should begin at birth and continue throughout childhood. 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 recommend early vision screening. Serial screening of every child by their primary medical care provider in the patient's medical home is the most effective approach to accomplish early detection of ocular problems in infants and children.

Vision screening programs should provide widespread, effective testing of preschool and early school-age children. Many school systems have regular vision screening programs that are carried out by volunteer professionals, school nurses, and/or properly trained laypersons. Screening can be done quickly, accurately, and with minimum expense by any of these individuals. The screener should not have a vested interest in the screening outcome. As with all screening programs, vision screening should be performed in a fashion that maximizes the rate of problem detection while minimizing unnecessary referrals and cost. Beginning in the preschool years, common conditions that can be detected by vision screening include reduced vision in one or both eyes from amblyopia, uncorrected refractive errors or misalignment of the eyes (strabismus).

**Amblyopia** is poor development of the brain's vision centers due to vision deprivation or abnormal binocular interaction during visual maturation. Two common causes are strabismus (misaligned eyes) and a difference in the refractive error (need for glasses)

between the two eyes. If untreated, amblyopia can cause irreversible visual loss. The best time for treatment is during the preschool years. Improvement of vision in children over the age of ten is seldom achieved.

**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), 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. Farsightedness can cause problems with focusing at near and may be treated with glasses. Astigmatism (irregularity of the optical properties 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.

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

#### **Recommendations:**

The American Academy of Ophthalmology and the American Association for Pediatric Ophthalmology and Strabismus recommend that an ophthalmological examination be performed whenever questions arise about the health of the visual system of a child of any age. They recommend that infants and children be screened for vision problems as follows and that any child who does not pass the screening have an ophthalmological examination.

1. An ophthalmologist, pediatrician, family physician, or other properly trained health care provider should examine the outer structures of a newborn's eyes and perform a red reflex test in the nursery. The baby with an abnormal red reflex requires urgent consultation.
2. Subsequent to the initial assessment, all infants should again be screened by six months to one year of age. This assessment should include the ability to fixate and follow with each eye, as well as attention to the external ocular structures and a red reflex test during routine well-baby follow-up visits with the pediatric health care provider.
3. Annual vision screening should also be performed on children beginning at 42 months of age. The child's physician or another individual trained in vision assessment of preschool children should perform an assessment of vision and ocular alignment. Emphasis should be placed on checking visual acuity. A child who is uncooperative for a second attempt at vision testing should be referred for a comprehensive pediatric eye evaluation. It is essential that the initial visual acuity screening be completed by the age of 5 years and be repeated at each well-child visit thereafter.
4. A growing body of evidence currently exists to suggest that photoscreening may be a

valuable adjunct to the traditional screening process, particularly in preliterate children.

5. Routine comprehensive eye examinations of the normal asymptomatic child by licensed eye care providers have no proven medical benefit. Also, because of financial constraints, a universal one-time comprehensive eye exam for all infants and children is not recommended as sound public health policy.

6. Many serious ocular conditions, which can be found at screening, are treatable if identified during the preschool and early school-aged years. Many of these conditions are associated with a positive family history. Therefore, additional screening emphasis should be directed to high-risk infants and children, and screeners should readily refer such children to an ophthalmologist for a comprehensive medical eye evaluation. An ophthalmologist should be asked to examine all high-risk infants, including those:

- at risk of developing retinopathy of prematurity (ROP)
- with a family history of retinoblastoma, glaucoma, or cataracts in childhood
- with retinal dystrophy/degeneration or systemic diseases associated with eye problems
- with any opacity of the ocular media
- with nystagmus (purposeless rhythmic movement of the eyes)
- with neuro-developmental delays

7. Children with presumed or diagnosed learning disabilities such as dyslexia should undergo a comprehensive pediatric medical eye examination so that any undiagnosed vision impairment can be identified and treated. They should be referred for the appropriate medical, psychological, and educational evaluation and treatment of the learning disability. There is not adequate scientific evidence to suggest that “defective eye teaming” and “accommodative disorders” are common causes of educational impairment. Hence, routine screening for these conditions is not recommended.

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