

the targeted vision problems present in the population of children being screened.^{104,109} The sensitivity of a wide variety of screening techniques was evaluated by the Vision in Preschoolers (VIP) study, which unlike standard screenings used licensed eye doctors who had completed VIP study specific training and certification.¹⁰⁴ In the study, the sensitivity of 11 vision screening techniques used for detecting clinically significant vision problems in children 3 to 5 years of age varied from 16% to 64%, with specificities ranging from 62% to 98%. These tests were compared again with a specificity of 94%, and the sensitivity dropped even further.¹⁰⁹ When these same tests were performed by trained nurses or lay screeners (except for non-cycloplegic retinoscopy, which was deemed too technically challenging), the sensitivity was similar or lower.¹¹⁰ Even with the use of trained examiners, these vision screening techniques were unable to provide high levels of both sensitivity and specificity for detecting many vision problems in children. Currently, widespread application of vision screenings do not utilize licensed eye care professionals or the techniques found to be most sensitive.

When Snellen visual acuity alone was used as a screening tool, it was 100% specific for identifying reduced acuity, but missed 75.5% of the children found to have binocular and oculomotor vision problems when given a complete visual examination.¹¹¹ Additionally, a study of 1,992 school-age children found that 41% of children who failed the State University of New York screening battery would not have been identified if the screening was based on visual acuity alone.¹¹²

Many children who fail a screening do not receive the necessary treatment of their conditions. A study of public school children reported only 38.7% who failed the vision screening received follow-up care after screenings.¹¹³ Due to a lack of follow-through, screenings alone may not lead to the earlier diagnosis and treatment of eye and vision problems. While screenings may identify some children at risk for vision problems, a comprehensive eye exam is necessary for definitive diagnosis and appropriate treatment.¹¹⁴

III. CARE PROCESS

A. COMPREHENSIVE PEDIATRIC EYE AND VISION EXAMINATION

The comprehensive pediatric eye and vision examination provides the means to evaluate the structure, function, and health of the eyes and visual system. It is preferable in most cases for the parent/caregiver to accompany the child into the examination room. The in-person interaction between patient/parent/caregiver and doctor is a dynamic process. It involves collecting subjective data from the patient/parent/caregiver and obtaining objective data by observation, examination, and testing. During the examination, information is obtained to explain symptoms reported by the patient and/or parent/caregiver and diagnose their cause. It also provides the means to identify the presence of other ocular or systemic conditions that may exist with or without symptoms. (See Appendix Figure 1.)

The goals of the comprehensive pediatric eye and vision examination are to:

- Evaluate the refractive, binocular, and accommodative status of the eyes and visual system, taking into account special vision demands and needs
- Assess ocular health and related systemic health conditions
- Establish a diagnosis (or diagnoses)
- Formulate a treatment and management plan
- Counsel and educate the patient/parent/caregiver regarding visual, ocular, and related systemic health care status, including recommendations for prevention, treatment, management, and future care.

1. General Considerations

Since the capabilities and needs of children vary significantly by age, the potential components of the comprehensive pediatric eye and vision examination have been divided into three age groups. This subdivision of the pediatric population is based on the developmental changes that occur from birth through childhood. The following age groups were also chosen