

VISION SCREENING

RATIONALE

Vision screening is vital in identifying visual and systemic disorders. Vision screening begins in infancy and continues throughout childhood and adolescence during well-child visits. Appropriate visual assessments can help children obtain early interventions to correct or improve vision. Eye examination and visual assessments are important in detecting conditions that can lead to visual impairment, signify serious systemic disease, poor school performance, and life-threatening conditions.¹ Ocular problems can be an early sign of general health concerns. In addition, regular vision screening assessments at an early age can reduce the risk of persistent amblyopia at 7 years of age by more than 50%.²

The vision screening guidelines below are based on the 2016 AAP Clinical Report – [Procedures for the Evaluation of the Visual System by Pediatricians](http://pediatrics.aappublications.org/content/pediatrics/early/2015/12/07/peds.2015-3597.full.pdf); available at: <http://pediatrics.aappublications.org/content/pediatrics/early/2015/12/07/peds.2015-3597.full.pdf>, unless otherwise noted.

SCREENING REQUIREMENTS

- All pediatric health care providers should be familiar with the most recent version of eye examination and screening guidelines of the American Association for Pediatric Ophthalmology and Strabismus, the American Academy of Ophthalmology, and the American Academy of Pediatrics.
- Screeners are required to attend their local Vision Screening Training led by CHDP staff or another agency approved by their local CHDP program for certification in visual acuity screening. Certification must be renewed every four years.
- Please review Table 1 from the 2016 AAP Clinical Report – [Procedures for the Evaluation of the Visual System by Pediatricians](http://pediatrics.aappublications.org/content/pediatrics/early/2015/12/07/peds.2015-3597.full.pdf); (<http://pediatrics.aappublications.org/content/pediatrics/early/2015/12/07/peds.2015-3597.full.pdf>). CHDP provider offices are strongly recommended to keep hard copies available for screener's use.
- Screen for visual problems at each health assessment visit. Please see Vision Screening Guideline, Table 1: Overview of Vision Screening Assessments for a description of vision screening assessments and procedures.
 - Screening should include history, external exam, red reflex testing, pupil exam, corneal light reflex, cover test, fix and follow response, and ophthalmoscopy.
 - Perform visual acuity screening for children 3 years and older.
 - Ophthalmoscopy should be done for older, cooperative children to visualize structures in the back of the eye.

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- Instrument-based vision screening (e.g. autorefraction or photoscreening) may be used if unable to conduct an optotype-based visual acuity screening. This method can be attempted beginning at age 12 months please refer to the AAP Bright Futures [Recommendations for Preventive Pediatric Health Care](http://www.aap.org/en-us/professional-resources/practice-support/Periodicity/Periodicity%20Schedule_FINAL.pdf), http://www.aap.org/en-us/professional-resources/practice-support/Periodicity/Periodicity%20Schedule_FINAL.pdf
- Visual Acuity Screening
 - Visual acuity screening should be done in a well-lit room, free of visual and auditory distractions. The eye chart should be at the child's eye level.
 - Each eye should be screened separately (monocularly), ensuring child does not peek with other eye.
 - Proper selection of age-appropriate optotypes (symbols or letters) and testing methods are important in obtaining accurate screening results. Use eye charts with lines of optotypes or matching cards with lines (crowding bars) around each optotype to obtain the most accurate visual acuity assessment. Crowding bars around the optotype make individual symbols/letters more difficult to identify when amblyopia is present, thereby increasing the sensitivity in detecting amblyopia.
- Either critical line or threshold screening may be used.
 - Threshold screening begins by asking the child to identify optotypes at the top line of the eye chart and continue down each line until the child can no longer identify the majority of optotypes in a line. Threshold screening enables the screener to identify small differences between each eye (i.e. two-line difference). Threshold screening can be relatively time-consuming and can potentially result in loss of attention, especially for younger children. Results obtained via threshold screening may not be as accurate as those derived by critical line screening may.
 - Critical line screening is an effective alternative to threshold screening that requires less time to administer. The "critical line" is the age-dependent line a child is expected to see normally and pass. The critical line to pass becomes smaller as age increases. Passing the critical line screening requires the child to correctly identify the majority of the optotypes present on the critical line appropriate for his or her age. Critical line screening, however, does not allow for identifying a two-line difference between eyes.

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- Screen children ages 3-5 years using LEA SYMBOLS® and HOTV letters.
 - LEA symbols and HOTV letters charts are standardized and have validated optotypes that provide the most accurate vision assessment.
 - Matching/response cards can be used with LEA symbols and HOTV letters charts for children who may be timid or non-verbal.
 - Screening distance is 10 feet. This short distance will enhance interaction between the child and screener without decreasing accuracy of screening results.
 - Allen figures, Lighthouse characters, and Sail Boat Chart are not standardized and not recommended for use in visual acuity screening.
 - The Tumbling E or Landolt C charts are also not recommended for vision screening because young children may not have yet developed the skill to express direction or orientation of these optotypes.
- Screen children who comfortably know their letters using Sloan letters or Snellen letters chart. May be used as early as age 5 years.
 - Sloan letter charts are standardized and therefore preferable to Snellen letters.
 - A screening distance of 10 feet is recommended.
 - Children who are unable to recognize letters should be screened using a standardized LEA symbols or HOTV letters chart.
 - Repeat screening every 1-2 years.
- Use adhesive patches or 2-inch wide hypoallergenic paper tape for effective occlusion.Error! Bookmark not defined.,Error! Bookmark not defined.
- Instrument-based vision screening (e.g. autorefraction or photoscreening) may be used if unable to complete an optotype-based visual acuity screening. This method can be attempted as early as 12 months of age. Instrument-based screening requires little cooperation from the child and is quick to administer. It is useful for nonverbal, preverbal, and timid children.Error! Bookmark not defined. Neither autorefraction nor photoscreening measure visual acuity, but both can identify ocular abnormalities that could lead to or indicate vision problems. The referral criteria may vary depending on the instrument used. Instrument-based vision screening involves

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substantial costs and may not be suitable for all provider offices. Children who can complete optotype-based screening should be screened using the appropriate method for their age.

- CHDP Providers who are considering instrument-based vision screening can refer to the American Academy of Pediatrics' Instrument-Based Pediatric Vision Screening Policy Statement³ for further guidance at:
<http://pediatrics.aappublications.org/content/pediatrics/early/2012/10/24/peds.2012-2548.full.pdf>

Bright Futures*

Please refer to Bright Futures Guidelines and Pocket Guide.

(<https://brightfutures.aap.org/materials-and-tools/guidelines-and-pocket-guide/Pages/default.aspx>). For periodicity schedules for vision risk assessment and vision testing please refer to the AAP Bright Futures [Recommendations for Preventive Pediatric Health Care](http://www.aap.org/en-us/professional-resources/practice-support/Periodicity/Periodicity%20Schedule_FINAL.pdf) (http://www.aap.org/en-us/professional-resources/practice-support/Periodicity/Periodicity%20Schedule_FINAL.pdf)

CONSIDERATIONS FOR REFERRAL, TREATMENT, AND/OR FOLLOW-UP

- Refer any eye conditions to the appropriate specialist.
- Children with the following conditions should bypass screenings and be automatically referred to an ophthalmologist or optometrist experienced in treating children for an eye examination.⁴
 - Recognized eye disorders (e.g. strabismus, ptosis)
 - Known neurodevelopmental disorders
 - Hearing impairment
 - Motor abnormalities (e.g. cerebral palsy)
 - Down syndrome
 - Cognitive impairment
 - Autism spectrum disorders
 - Speech delay
 - Systemic diseases present

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- Taking medications that may cause eye disorders
- First-degree relative with strabismus or amblyopia
- Prematurity: less than 32 weeks of gestation
- Parent believes child has vision problem
- Age-Dependent Referral Criteria for Visual Acuity Screening:
 - **Age 3 years:** Failure to correctly identify the majority of optotypes on the 10/25 (20/50) line, or worse, in either eye.
 - **Age 4 years:** Failure to correctly identify the majority of optotypes on the 10/20 (20/40) line, or worse, in either eye.
 - **Ages 5 years and older:** Failure to correctly identify the majority of optotypes on the 10/15 (20/30 or 20/32 on some charts) line, or worse, in either eye.
 - **Age 3 years and older (threshold method only):** a two-line difference between eyes, even within the passing range (e.g. a 4 year old with 20/20 in one eye and 20/32 in the other eye).
- Untestable Children and Rescreening Guidelines⁴
 - If child is unable to cooperate during the screening, a second attempt should be made the same day (i.e. later during the same visit). If same day rescreening is not possible, reschedule as soon as possible, but no later than 6 months.
- When vision screening is unsuccessful, children should be referred to an ophthalmologist or optometrist experienced in the care of children for an eye examination.

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References

1. Donahue, S, Baker, C. Procedures for the Evaluation of the Visual System by Pediatricians. *Pediatrics*. 2016; 137 (1): 1-9.
2. Donahue, S, Baker, C. Visual System Assessment in Infants, Children, and Young Adults by Pediatricians. *Pediatrics*. 2015. Policy Statement.
3. American Academy of Pediatrics. [Instrument-Based Pediatric Vision Screening Policy Statement](#). Published October 29, 2012. Accessed July 28, 2014.
4. Cotter, S, Cyert, L, Miller, J, et al. Vision Screening for Children 36 to <72 Months: Recommended Practices. *Journal of Optometry & Vision Science*. 2015; 92(1): 6-16. doi: 10.1097/OPX.0000000000000429

Table1– OVERVIEW OF VISION SCREENING ASSESSMENTS*

Assessment	Procedures
Family History and Parent Observations	Ask about family history of eye disorders such as strabismus, amblyopia, cataracts, refractive error, as well as eye surgery and use of glasses during childhood in parents or siblings. Ask parents for any observations or concerns about their child's vision.
External Exam	Using a penlight, examine the eyelids, conjunctiva, sclera, cornea, and iris. Refer to a pediatric eye care specialist if abnormalities are present, such as ptosis, nonresolving conjunctivitis, or presence of cloudy or enlarged corneas and/or photophobia.
Red Reflex	Perform in a darkened room to maximize pupil dilation. It is not necessary to use eye drops for further pupil dilation. Set direct ophthalmoscope to "0" and while viewing through it at an arm's length distance from the child, evaluate both pupils simultaneously as child looks at the light. The screener can move closer to the child to assess each eye individually. The observed red reflexes should be light orange-yellow in color in lightly pigmented eyes or a dark red in darkly pigmented brown eyes. The two red reflexes should be identical in color, brightness, and size. Bright white or yellow reflex, or a dull or absent red reflex can be a sign of significant abnormality and necessitates a referral.
Pupil Exam	Pupils should be equal, round and equally reactive to light. Unequal pupil shape or differences in diameter greater than 1 mm are often due to an eye injury, disease or neurological disorder. A difference of less than 1 mm in pupil size can occur

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Assessment	Procedures
	normally and are generally benign unless presenting along with ptosis or an ocular motility deficit.
Corneal Light Reflex	Using a penlight directed at the child's face from arm's length away, check for symmetry of the white pinpoint light reflexes while the child gazes at the light. Normally these reflexes fall symmetrically in or near the center of the pupils. Asymmetry of the reflexes is typically a sign of strabismus.
Cover Test	Have the child look at a small object, such as a small toy or sticker on a tongue depressor. As the child fixates on the target, cover each eye alternately. A shift in an eye's alignment as it fixates on the target may indicate possible strabismus.
Ophthalmoscopy	<p>For older, cooperative children, the direct ophthalmoscope can be used to visualize structures in the back of the eye, such as the optic nerve, retinal blood vessels, and central retina.</p> <p>While child is looking into the distance at a target, use the ophthalmoscope to (starting at +10 lens) gradually move as close to the eye as possible while dialing less lens power until retinal vessels come into focus. Follow these vessels to view the optic nerve. A normal optic nerve is yellow-pink and generally flat. To view the foveal reflex, ask the child to look directly at the ophthalmoscope light. A normal foveal reflex should appear bright and sharp. Retinal hemorrhages can be present after a vaginal delivery but may also be a sign of severe child abuse. A swollen optic nerve may be a sign of increased intracranial pressure.</p>
Fix and Follow Response	<p>Evaluate the child's ability to fixate on and follow an object or toy held before the child. Perform with both eyes open first, and then repeat with each eye alternately covered. Determine if each eye can fixate on the object, maintain fixation for a short time, and then follow the object as it is moved in various directions.</p> <p>If the child demonstrates poor fixation and follow response when screened binocularly after 3 months of age, or demonstrates asymmetrical responses between the 2 eyes at any age, a referral is necessary for further evaluation.</p>
Visual Acuity	Visual acuity screening should be done in a well-lit room, free of visual and auditory distractions. The eye chart should be at the child's eye level. Each eye should be screened separately (monocularly), ensuring child does not peek with other eye. Use adhesive patches or 2-inch wide hypoallergenic paper tape for effective occlusion. ^{1,4} Either critical line or threshold screening may be used.

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Assessment	Procedures
	<p>Screen children ages 3-5 years using standardized LEA symbols or HOTV letters charts. LEA symbols and HOTV letters charts are standardized and have validated optotypes that provide the most accurate vision assessment. Matching/response cards can be used with LEA symbols and HOTV symbols charts for children who may be timid or non-verbal. Screening distance is 10 feet. This short distance will enhance interaction between the child and screener without decreasing the accuracy of screening results.</p> <p>Screen children who comfortably know their letters using Sloan letters or Snellen letters chart. Sloan letter charts are standardized and therefore preferable to Snellen letters. A screening distance of 10 feet is recommended.</p> <p>Children who are unable to recognize letters should be screened using a standardized LEA symbols or HOTV letters chart.</p>
Instrument-Based Screening	<p>Instrument-based vision screening (e.g. autorefraction or photoscreening) may be used if unable to complete an optotype-based visual acuity screening. This method can be attempted as early as 12 months of age. Instrument-based screening requires little cooperation from the child and is quick to administer. It is useful for nonverbal, preverbal, and timid children. Neither autorefraction nor photoscreening measure visual acuity, but both can identify ocular abnormalities that could lead to or indicate vision problems. The referral criteria may vary depending on the instrument used. Instrument-based vision screening involves substantial costs and may not be suitable for all provider offices. Children who can complete optotype-based screening should be screened using the appropriate method for their age.</p>

*Table 1 is synopsis of screening recommendations outlined in the 2016 AAP Clinical Report Procedures for the Evaluation of the Visual System by Pediatricians

Recommendations for Preventive Pediatric Health Care

Bright Futures/American Academy of Pediatrics

Each child and family is unique; therefore, these Recommendations for Preventive Pediatric Health Care are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in a satisfactory fashion. Developmental, psychosocial, and chronic disease issues for children and adolescents may require frequent counseling and treatment visits separate from preventive care visits. Additional visits also may become necessary if circumstances suggest variations from normal.

These recommendations represent a consensus by the American Academy of Pediatrics (AAP) and Bright Futures. The AAP continues to emphasize the great importance of continuity of care in comprehensive health supervision and the need to avoid fragmentation of care.

Refer to the specific guidance by age as listed in the *Bright Futures Guidelines* (Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017).

The recommendations in this statement do not indicate an exclusive course of treatment or standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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AGE ¹	INFANCY									EARLY CHILDHOOD						MIDDLE CHILDHOOD						ADOLESCENCE												
	Prenatal ²	Newborn ³	3-5 d ⁴	By 1 mo	2 mo	4 mo	6 mo	9 mo	12 mo	15 mo	18 mo	24 mo	30 mo	3 y	4 y	5 y	6 y	7 y	8 y	9 y	10 y	11 y	12 y	13 y	14 y	15 y	16 y	17 y	18 y	19 y	20 y	21 y		
HISTORY	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS																																		
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Head Circumference		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Weight for Length		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Body Mass Index ⁵												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Blood Pressure ⁶		★	★	★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SENSORY SCREENING																																		
Vision ⁷		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Hearing		● ⁸	● ⁹	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
DEVELOPMENTAL/BEHAVIORAL HEALTH																																		
Developmental Screening ¹¹																																		
Autism Spectrum Disorder Screening ¹²																																		
Developmental Surveillance		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Psychosocial/Behavioral Assessment ¹³		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Tobacco, Alcohol, or Drug Use Assessment ¹⁴																						★	★	★	★	★	★	★	★	★	★	★	★	
Depression Screening ¹⁵																							●	●	●	●	●	●	●	●	●	●	●	
Maternal Depression Screening ¹⁶					●	●	●	●																										
PHYSICAL EXAMINATION ¹⁷		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
PROCEDURES ¹⁸																																		
Newborn Blood		● ¹⁹	● ²⁰	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
Newborn Bilirubin ²¹		●																																
Critical Congenital Heart Defect ²²		●																																
Immunization ²³		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Anemia ²⁴						★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Lead ²⁵							★	★	● or ★ ²⁶	★	● or ★ ²⁶	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Tuberculosis ²⁷				★				★			★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Dyslipidemia ²⁸												★		★								→	→	→	→	→	→	→	→	→	→	→	→	
Sexually Transmitted Infections ²⁹																						★	★	★	★	★	★	★	★	★	★	★	★	
HIV ³⁰																						★	★	★	★	★	★	★	★	★	★	★	★	
Cervical Dysplasia ³¹																																		
ORAL HEALTH ³²								● ³³	● ³³	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Fluoride Varnish ³⁴																						→	→	→	→	→	→	→	→	→	→	→	→	
Fluoride Supplementation ³⁵								★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
ANTICIPATORY GUIDANCE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

- If a child comes under care for the first time at any point on the schedule, or if any items are not accomplished at the suggested age, the schedule should be brought up-to-date at the earliest possible time.
- A prenatal visit is recommended for parents who are at high risk, for first-time parents, and for those who request a conference. The prenatal visit should include anticipatory guidance, pertinent medical history, and a discussion of benefits of breastfeeding and planned method of feeding, per "The Prenatal Visit" (<http://pediatrics.aappublications.org/content/124/4/1227.full>).
- Newborns should have an evaluation after birth, and breastfeeding should be encouraged (and instruction and support should be offered).
- Newborns should have an evaluation within 3 to 5 days of birth and within 48 to 72 hours after discharge from the hospital to include evaluation for feeding and jaundice. Breastfeeding newborns should receive formal breastfeeding evaluation, and their mothers should receive encouragement and instruction, as recommended in "Breastfeeding and the Use of Human Milk" (<http://pediatrics.aappublications.org/content/129/3/e827.full>). Newborns discharged less than 48 hours after delivery must be examined within 48 hours of discharge, per "Hospital Stay for Healthy Term Newborns" (<http://pediatrics.aappublications.org/content/125/2/405.full>).
- Screen, per "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report" (http://pediatrics.aappublications.org/content/120/Supplement_4/S164.full).

- Blood pressure measurement in infants and children with specific risk conditions should be performed at visits before age 3 years.
- A visual acuity screen is recommended at ages 4 and 5 years, as well as in cooperative 3-year-olds. Instrument-based screening may be used to assess risk at ages 12 and 24 months, in addition to the well visits at 3 through 5 years of age. See "Visual System Assessment in Infants, Children, and Young Adults by Pediatricians" (<http://pediatrics.aappublications.org/content/137/1/e20153596>) and "Procedures for the Evaluation of the Visual System by Pediatricians" (<http://pediatrics.aappublications.org/content/137/1/e20153597>).
- Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per "Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs" (<http://pediatrics.aappublications.org/content/120/4/898.full>).
- Verify results as soon as possible, and follow up, as appropriate.
- Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See "The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies" ([http://www.jahonline.org/article/S1054-139X\(16\)00048-3/fulltext](http://www.jahonline.org/article/S1054-139X(16)00048-3/fulltext)).
- See "Identifying Infants and Young Children With Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening" (<http://pediatrics.aappublications.org/content/118/1/405.full>).

- Screening should occur per "Identification and Evaluation of Children With Autism Spectrum Disorders" (<http://pediatrics.aappublications.org/content/120/5/1183.full>).
- This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See "Promoting Optimal Development: Screening for Behavioral and Emotional Problems" (<http://pediatrics.aappublications.org/content/135/2/384>) and "Poverty and Child Health in the United States" (<http://pediatrics.aappublications.org/content/137/4/e20160339>).
- A recommended assessment tool is available at <http://www.ceasar-boston.org/CRAFT/index.php>.
- Recommended screening using the Patient Health Questionnaire (PHQ)-2 or other tools available in the GLAD-PC toolkit and at http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Mental-Health/Documents/MH_ScreeningChart.pdf.
- Screening should occur per "Incorporating Recognition and Management of Perinatal and Postpartum Depression Into Pediatric Practice" (<http://pediatrics.aappublications.org/content/126/5/1032>).
- At each visit, age-appropriate physical examination is essential, with infant totally unclothed and older children undressed and suitably draped. See "Use of Chaperones During the Physical Examination of the Pediatric Patient" (<http://pediatrics.aappublications.org/content/127/5/991.full>).
- These may be modified, depending on entry point into schedule and individual need.

(continued)

19. Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Newborn Screening Panel (<http://www.hrsa.gov/advisorycommittees/mchbadvisory/heritabledisorders/recommendedpanel/uniformscreeningpanel.pdf>), as determined by The Secretary's Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (<http://genes-r-us.uthscsa.edu/sites/genes-r-us/files/nbsdisorders.pdf>) establish the criteria for and coverage of newborn screening procedures and programs.
20. Verify results as soon as possible, and follow up, as appropriate.
21. Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See "Hyperbilirubinemia in the Newborn Infant \geq 35 Weeks' Gestation: An Update With Clarifications" (<http://pediatrics.aappublications.org/content/124/4/1193>).
22. Screening for critical congenital heart disease using pulse oximetry should be performed in newborns, after 24 hours of age, before discharge from the hospital, per "Endorsement of Health and Human Services Recommendation for Pulse Oximetry Screening for Critical Congenital Heart Disease" (<http://pediatrics.aappublications.org/content/129/1/190.full>).
23. Schedules, per the AAP Committee on Infectious Diseases, are available at http://redbook.solutions.aap.org/SS/Immunization_Schedules.aspx. Every visit should be an opportunity to update and complete a child's immunizations.
24. See "Diagnosis and Prevention of Iron Deficiency and Iron-Deficiency Anemia in Infants and Young Children (0–3 Years of Age)" (<http://pediatrics.aappublications.org/content/126/5/1040.full>).
25. For children at risk of lead exposure, see "Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention" (http://www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf).
26. Perform risk assessments or screenings as appropriate, based on universal screening requirements for patients with Medicaid or in high prevalence areas.
27. Tuberculosis testing per recommendations of the AAP Committee on Infectious Diseases, published in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases*. Testing should be performed on recognition of high-risk factors.
28. See "Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents" (<https://www.nhlbi.nih.gov/health-topics/integrated-guidelines-for-cardiovascular-health-and-risk-reduction-in-children-and-adolescents>).
29. Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases*.
30. Adolescents should be screened for HIV according to the USPSTF recommendations (<http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm>) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually.
31. See USPSTF recommendations (<http://www.uspreventiveservicestaskforce.org/uspstf/uspsscerv.htm>). Indications for pelvic examinations prior to age 21 are noted in "Gynecologic Examination for Adolescents in the Pediatric Office Setting" (<http://pediatrics.aappublications.org/content/126/3/583.full>).
32. Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (<https://www.aap.org/RiskAssessmentTool>) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See "Maintaining and Improving the Oral Health of Young Children" (<http://pediatrics.aappublications.org/content/134/6/1224>).
33. Perform a risk assessment (<https://www.aap.org/RiskAssessmentTool>). See "Maintaining and Improving the Oral Health of Young Children" (<http://pediatrics.aappublications.org/content/134/6/1224>).
34. See USPSTF recommendations (<http://www.uspreventiveservicestaskforce.org/uspstf/uspstdnch.htm>). Once teeth are present, fluoride varnish may be applied to all children every 3–6 months in the primary care or dental office. Indications for fluoride use are noted in "Fluoride Use in Caries Prevention in the Primary Care Setting" (<http://pediatrics.aappublications.org/content/134/3/626>).
35. If primary water source is deficient in fluoride, consider oral fluoride supplementation. See "Fluoride Use in Caries Prevention in the Primary Care Setting" (<http://pediatrics.aappublications.org/content/134/3/626>).

Summary of Changes Made to the Bright Futures/AAP Recommendations for Preventive Pediatric Health Care (Periodicity Schedule)

This schedule reflects changes approved in February 2017 and published in April 2017.

For updates, visit www.aap.org/periodicityschedule.

For further information, see the *Bright Futures Guidelines*, 4th Edition, *Evidence and Rationale* chapter (https://brightfutures.aap.org/Bright%20Futures%20Documents/BF4_Evidence_Rationale.pdf).

CHANGES MADE IN FEBRUARY 2017

HEARING

- Timing and follow-up of the screening recommendations for hearing during the infancy visits have been delineated. Adolescent risk assessment has changed to screening once during each time period.
- Footnote 8 has been updated to read as follows: "Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per 'Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs' (<http://pediatrics.aappublications.org/content/120/4/898.full>)."
- Footnote 9 has been added to read as follows: "Verify results as soon as possible, and follow up, as appropriate."
- Footnote 10 has been added to read as follows: "Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See 'The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies' ([http://www.jahonline.org/article/S1054-139X\(16\)00048-3/fulltext](http://www.jahonline.org/article/S1054-139X(16)00048-3/fulltext))."

PSYCHOSOCIAL/BEHAVIORAL ASSESSMENT

- Footnote 13 has been added to read as follows: "This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See 'Promoting Optimal Development: Screening for Behavioral and Emotional Problems' (<http://pediatrics.aappublications.org/content/135/2/384>) and 'Poverty and Child Health in the United States' (<http://pediatrics.aappublications.org/content/137/4/e20160339>)."

TOBACCO, ALCOHOL, OR DRUG USE ASSESSMENT

- The header was updated to be consistent with recommendations.

DEPRESSION SCREENING

- Adolescent depression screening begins routinely at 12 years of age (to be consistent with recommendations of the US Preventive Services Task Force [USPSTF]).

MATERNAL DEPRESSION SCREENING

- Screening for maternal depression at 1-, 2-, 4-, and 6-month visits has been added.
- Footnote 16 was added to read as follows: "Screening should occur per 'Incorporating Recognition and Management of Perinatal and Postpartum Depression Into Pediatric Practice' (<http://pediatrics.aappublications.org/content/126/5/1032>)."

NEWBORN BLOOD

- Timing and follow-up of the newborn blood screening recommendations have been delineated.
- Footnote 19 has been updated to read as follows: "Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Newborn Screening Panel (<http://www.hrsa.gov/advisorycommittees/mchbadvisory/heritabledisorders/recommendedpanel/uniformscreeningpanel.pdf>), as determined by The Secretary's Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (<http://genes-r-us.uthscsa.edu/sites/genes-r-us/files/nbsdisorders.pdf>) establish the criteria for and coverage of newborn screening procedures and programs."
- Footnote 20 has been added to read as follows: "Verify results as soon as possible, and follow up, as appropriate."

NEWBORN BILIRUBIN

- Screening for bilirubin concentration at the newborn visit has been added.
- Footnote 21 has been added to read as follows: "Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See 'Hyperbilirubinemia in the Newborn Infant \geq 35 Weeks' Gestation: An Update With Clarifications' (<http://pediatrics.aappublications.org/content/124/4/1193>)."

DYSLIPIDEMIA

- Screening for dyslipidemia has been updated to occur once between 9 and 11 years of age, and once between 17 and 21 years of age (to be consistent with guidelines of the National Heart, Lung, and Blood Institute).

SEXUALLY TRANSMITTED INFECTIONS

- Footnote 29 has been updated to read as follows: "Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases*."

HIV

- A subheading has been added for the HIV universal recommendation to avoid confusion with STIs selective screening recommendation.
- Screening for HIV has been updated to occur once between 15 and 18 years of age (to be consistent with recommendations of the USPSTF).

- Footnote 30 has been added to read as follows: "Adolescents should be screened for HIV according to the USPSTF recommendations (<http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm>) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually."

ORAL HEALTH

- Assessing for a dental home has been updated to occur at the 12-month and 18-month through 6-year visits. A subheading has been added for fluoride supplementation, with a recommendation from the 6-month through 12-month and 18-month through 16-year visits.
- Footnote 32 has been updated to read as follows: "Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (<https://www.aap.org/RiskAssessmentTool>) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See 'Maintaining and Improving the Oral Health of Young Children' (<http://pediatrics.aappublications.org/content/134/6/1224>)."
- Footnote 33 has been updated to read as follows: "Perform a risk assessment (<https://www.aap.org/RiskAssessmentTool>). See 'Maintaining and Improving the Oral Health of Young Children' (<http://pediatrics.aappublications.org/content/134/6/1224>)."
- Footnote 35 has been added to read as follows: "If primary water source is deficient in fluoride, consider oral fluoride supplementation. See 'Fluoride Use in Caries Prevention in the Primary Care Setting' (<http://pediatrics.aappublications.org/content/134/3/626>)."



Procedures for the Evaluation of the Visual System by Pediatricians

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Vision screening is crucial for the detection of visual and systemic disorders. It should begin in the newborn nursery and continue throughout childhood. This clinical report provides details regarding methods for pediatricians to use for screening.

abstract

This clinical report supplements the combined policy statement from the American Academy of Pediatrics (AAP), American Association for Pediatric Ophthalmology and Strabismus, American Academy of Ophthalmology, and American Association of Certified Orthoptists titled “Visual System Assessment in Infants, Children, and Young Adults by Pediatricians.”¹ The clinical report and accompanying policy statement supplant the 2012 policy statement “Instrument-Based Pediatric Vision Screening,”² the 2003 policy statement “Eye Examination in Infants, Children, and Young Adults by Pediatricians,”³ and the 2008 AAP policy statement “Red Reflex Examination in Neonates Infants and Children.”⁴ The policy statement articulates the screening criteria and screening methods, and the clinical report explains the various evaluation procedures that are available for use by the pediatrician or primary care physician.

VISUAL SYSTEM HISTORY ASSESSMENT

Relevant family history regarding eye disorders (cataracts, strabismus, amblyopia, and refractive error), eye surgery, and the use of glasses during childhood in parents or siblings should be explored. Parents’ observations are also valuable in the history and review of systems. Questions that can be asked include:

1. Do your child’s eyes appear unusual?
2. Does your child seem to see well?
3. Does your child exhibit difficulty with near or distance vision?
4. Do your child’s eyes appear straight or do they seem to cross?
5. Do your child’s eyelids droop or does one eyelid tend to close?
6. Has your child ever had an eye injury?

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www.pediatrics.org/cgi/doi/10.1542/peds.2015-3597

DOI: 10.1542/peds.2015-3597

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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OCULAR EXAMINATION

The ocular examination consists of the external examination, pupil examination, red reflex testing to assess ocular media, the examination of the ocular fundus by using ophthalmoscopy, and an assessment of visual function.

EXTERNAL EXAMINATION (LIDS/ORBIT/ CONJUNCTIVA/CORNEA/IRIS)

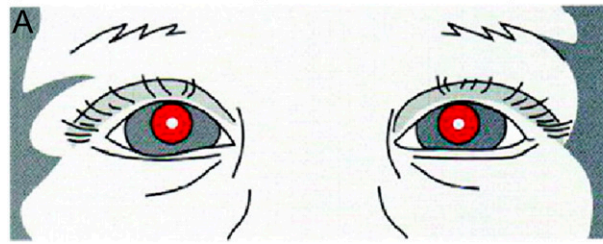
External examination of the ocular structures consists of a penlight evaluation of the eyelids, conjunctiva, sclera, cornea, and iris. Detection of abnormalities, such as ptosis, nonresolving conjunctivitis, or the presence of cloudy or enlarged corneas and/or photophobia, necessitates timely referral to an eye care specialist appropriately trained to treat children. Nasolacrimal duct obstruction that has not resolved by 1 year of age also should lead to referral. Thyroid disease can manifest by increased visibility of the superior cornea caused by eyelid retraction.

RED REFLEX TESTING

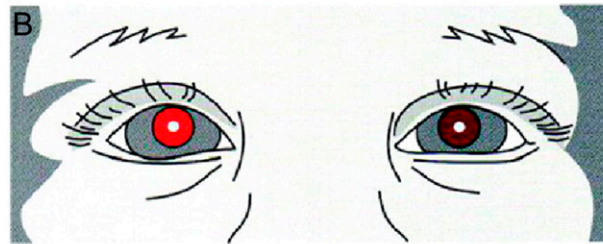
Red reflexes from the retinas can be used by the physician to great advantage. The red reflex test, or Bruckner test if performed binocularly, is used to detect opacities in the visual axis, such as a cataract or corneal abnormality, as well as abnormalities in the posterior segment, such as retinoblastoma or retinal detachment. The examiner also may detect subtle differences in the red reflex between the eyes, consistent with the presence of strabismus or refractive errors. The inequality of the red reflection or the interference with the red reflection can be noted in various conditions (Fig 1).

Red reflex testing should be performed in a darkened room (to maximize pupil dilation). Eye drops to further dilate the pupils are not necessary. The direct ophthalmoscope is set on "0," and while viewing

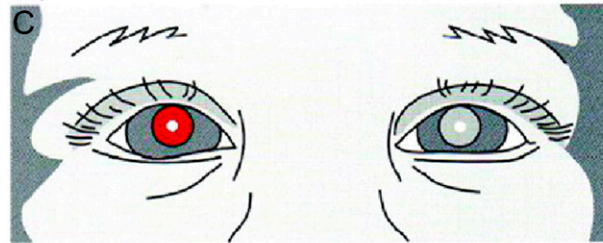
↓ **NORMAL**—Child looks at light. Both red reflections are equal.



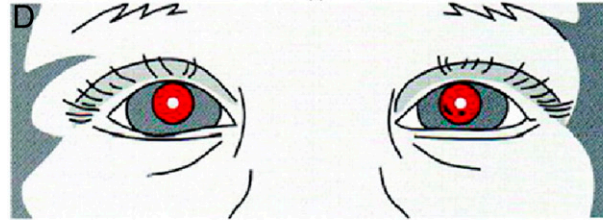
↓ **UNEQUAL REFRACTION**—One red reflection is brighter than the other.



↓ **NO REFLEX (CATARACT)**—The presence of lens or other media opacities blocks the red reflection or diminishes it.



↓ **FOREIGN BODY/ABRASION (LEFT CORNEA)**—The red reflection from the pupil will back-light corneal defects or foreign bodies. Movement of the examiner's head in one direction will appear to move the corneal defects in the opposite direction. (Parallax)



↓ **STRABISMUS**—The red reflection is more intense from the deviated eye.

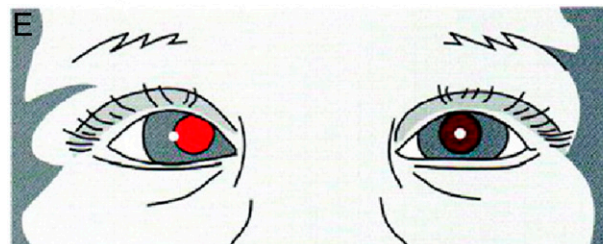


FIGURE 1

Red reflex examination. A, **NORMAL**: Child looks at light. Both red reflections are equal. B, **UNEQUAL REFRACTION**: One red reflection is brighter than the other. C, **NO REFLEX (CATARACT)**: The presence of lens or other media opacities blocks the red reflection or diminishes it. D, **FOREIGN BODY/ABRASION (LEFT CORNEA)**: The red reflection from the pupil will back-light corneal defects or foreign bodies. Movement of the examiner's head in one direction will appear to move the corneal defects in the opposite direction. E, **STRABISMUS**: The corneal light reflex is temporally displaced in the misaligned right eye, indicating esotropia. (Used with permission of Alfred G. Smith, MD, ©1991.)

through it at a distance of approximately arm's length from the child, both pupils are evaluated simultaneously as the child looks at the light. To view more detail, the examiner can move closer to the child to assess each eye individually. The observed red reflexes can be compared and should be a light orange-yellow in color in lightly pigmented eyes or a dark red in darkly pigmented brown eyes. If normal, the 2 red reflexes should be identical in color, brightness, and size. A bright white or yellow reflex or, conversely, a dull or absent red reflex can be an indication of a significant abnormality that necessitates further evaluation by a pediatric ophthalmologist, or if unavailable, a comprehensive ophthalmologist or optometrist with specialized interest in the treatment of children, and who uses cycloplegia (dilating drops) as part of his or her routine evaluation. Because there is often considerable variation in the qualitative nature of the red reflex among patients without eye abnormalities, the frequent, routine assessment of the red reflex will help the primary care physician better distinguish an abnormality of the reflex from a normal one.

PUPIL EXAMINATION

Both pupils should be equal, round, and equally reactive when light is directed toward either eye. Asymmetric responses to light may indicate visual system dysfunction. Moreover, asymmetry of pupil shape or difference in diameter greater than 1 mm can often be attributable to an ocular injury or disease or to a neurologic disorder. Differences in pupil size less than 1 mm can occur normally and are generally benign unless associated with ptosis or an ocular motility deficit.

OCULAR ALIGNMENT AND MOTILITY ASSESSMENT

The assessment of ocular alignment in the preschool- and early school-

aged child is also important. The development of strabismus in children may occur at any age and, although often isolated, may also represent serious orbital, intraocular, or intracranial disease.

The corneal light reflex test and the cover test are each useful in identifying the presence of strabismus as well as in differentiating true strabismus from pseudostrabismus.

The corneal light reflex test (ie, Hirschberg test) is performed with a penlight directed onto the child's face from arm's length away and by observing the symmetrical location of the white pinpoint light reflexes while the child gazes at the light. Normally, these reflexes fall symmetrically in or near the center of the pupils. An abnormal response occurs when the reflex in one eye is centered in the pupil while the reflex in the opposite eye is displaced nasally, temporally, or vertically away from the pupil center (Fig 1). This asymmetry of the reflexes typically indicates the presence of strabismus.

The cover test should be performed while the child fixates on a small, interesting target, such as a small toy or sticker on a tongue depressor. The bright beam of a penlight does not provide a comfortable target and does not adequately stimulate accommodation (focusing). As the child attends to the target, each eye is alternately covered. A shift in an eye's alignment as it assumes fixation onto the target is a possible indication of strabismus.

Strabismus in the neonatal period is not unusual, and intermittent strabismus is often a normal finding in early infancy. However, constant horizontal strabismus that persists after 4 months of age does not resolve spontaneously.⁵ Thus, any child older than 4 months with strabismus should be referred for evaluation.

Pseudostrabismus is the appearance of crossed eyes (esotropia)

attributable to the presence of prominent epicanthal skin folds that cover the medial portion of the sclera on 1 or both eyes, giving the false impression of esotropia. The inability to differentiate strabismus from pseudostrabismus also necessitates referral.

Finally, the presence of unusual eye movements in an infant or young child may indicate nystagmus or a similar disorder and often indicates decreased vision or neurologic dysfunction. Nystagmus does not resolve spontaneously and often indicates afferent visual system dysfunction or neurologic disease and necessitates further evaluation by either an ophthalmologist or neurologist.

OPHTHALMOSCOPY

Use of the direct ophthalmoscope in older, cooperative children serves to visualize structures in the back of the eye, such as the optic nerve, retinal blood vessels, and central retina (fovea). To properly visualize these structures, the child looks into the distance at a target of interest. The ophthalmoscope is dialed to a +10 lens and the examiner focuses on the pupil from ~3 inches away. The examiner then gradually moves as close to the eye as possible while sequentially dialing less lens power until retinal vessels come into focus. These vessels can be followed to identify and view the optic nerve. The normal optic nerve has a yellow-pink color and is generally flat. To view the foveal reflex, the child is asked to look directly at the light of the ophthalmoscope. The normal foveal reflex should appear bright and sharp. Retinal hemorrhages can be observed after a normal vaginal delivery but are also the harbinger of severe child abuse; a swollen optic nerve may be an indicator of increased intracranial pressure.

ASSESSMENT OF VISUAL ACUITY IN PREVERBAL CHILDREN

The assessment of visual function in this very young age group is best

accomplished by evaluating the child's ability to fixate on and follow an object held before the child. A standard assessment strategy is to determine whether each eye can independently fixate on the object, maintain fixation on it for a short period of time, and then follow it as it is moved in various directions. The child should be awake and alert for this testing, and the targeted object should be a toy or something of interest to the child. Disinterest or poor cooperation can mimic a poor vision response. This assessment should first be performed binocularly and then repeated with each eye alternately covered. If poor binocular fixation and following behavior is noted after 3 months of age, an ocular or neurologic abnormality may be present. Similarly, asymmetry in responses between the 2 eyes in children of any age necessitates further evaluation.

ASSESSMENT OF VISUAL ACUITY IN OLDER CHILDREN

Children who are old enough to delineate objects on a wall-mounted or handheld eye chart can provide a direct measurement of visual acuity. For some children, this may be accomplished as young as 3 years, but for the typical healthy child, an accurate visual acuity can be achieved with a high degree of success at 4 years and older. Eyes should be tested monocularly, ensuring that the child does not peek with the fellow eye.

With traditional visual acuity screening, the selection of age-appropriate shapes or letters and specific testing methods is crucial in obtaining the most accurate screening results. Many children can identify optotypes (figures or a selection of distinct letters formatted on chart lines or presented singly on individual cards) by 4 years of age. Eye charts using lines of optotypes or matching cards with lines (crowding

bars) around each optotype provide the most accurate assessments of visual acuity (Fig 2). Using cards with single optotypes but without crowding bars can overestimate visual acuity. Crowding bars surround an optotype and make individual letters more difficult to recognize by an amblyopic eye, thus increasing the sensitivity to detect amblyopia (Fig 2). Accurate assessment of visual acuity, therefore, is best accomplished by using a line of symbols or symbols with crowding bars around them.

The currently preferred optotypes are the LEA or HOTV symbols, although other new picture optotype acuity tests are under development.^{6,7} Allen figures, Lighthouse characters, and the Sail Boat Chart are not standardized and are no longer recommended for use, nor are the Tumbling E or Landolt C charts, because a child of preschool age may not yet have developed the ability to express the orientation of these optotypes. HOTV symbols are

easier for the young child to understand, as they are symmetric and not subject to letter reversal. With the examiner pointing to a symbol with a finger under it, a timid child can point to the optotypes that he or she recognizes on a card with similar symbols; this allows the child to effectively offer nonverbal responses during testing. Once a child can distinguish letters, a chart with letter optotypes should be used. Although the traditional Snellen chart remains in wide usage, Sloan letter charts present letters in a standardized fashion and should be used for acuity testing if they are available.

Screening Process

Large optotypes at the top of an eye chart or on handheld cards are first reviewed with the child with both eyes open to help the child understand the test. After this review, 1 eye is occluded (preferably by an occlusive patch or tape) and lines of optotypes or cards with single crowded optotypes (ie, the figure is surrounded by bars on all 4 sides) are presented to each eye separately. Effective occlusion, such as with tape or an occlusive patch of the eye not being tested, is important to eliminate the possibility of peeking.

Threshold Line Evaluation

The time-honored method of testing visual acuity has been to ask the child to start at the top of an eye chart and continue reading down each line until he or she recites the smallest line of optotypes discernable with each eye tested separately. This method is called "threshold" acuity testing and remains a common method of acuity testing. It enables one to identify the best level of visual acuity in each eye. Thus, children with near-normal acuity who still have a mild difference in acuity between each eye can be detected. However, threshold line evaluation can be sufficiently time-consuming to result in loss of attention from a young subject.

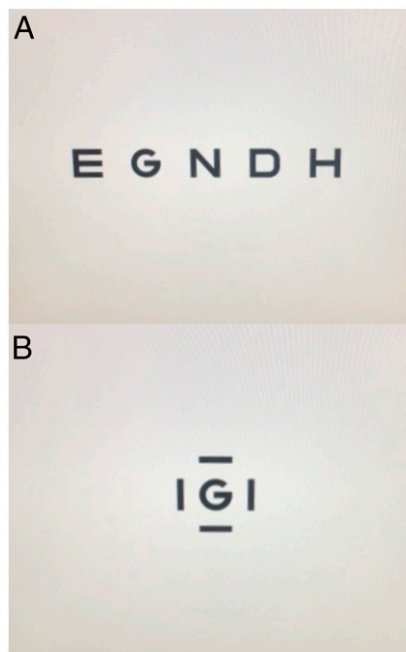


FIGURE 2
A, Five 20/50 letters presented in a row. B, Crowding bars isolate a single letter on the same 20/50 line, making it easier for a child to identify the letter, but are less subject to the "crowding phenomenon" (see text).

Critical Line Evaluation

Young children, even those with normal vision, are frequently unable to attend sufficiently to small optotypes and identify them. "Critical line" screening is an effective alternative to threshold testing for identifying children with potentially serious vision concerns and can be more quickly administered than can screening by using threshold testing. The "critical line" is the age-dependent line a child is expected to see normally and pass. For screening purposes, it is unnecessary to measure acuity below the age-specific critical line to pass the test. The critical line to pass screening becomes smaller as age increases. Most eye charts present 4 to 6 optotypes per line, and passing the screening requires the child to correctly answer a simple majority of the optotypes present on the critical line appropriate for his or her age as follows:

- Ages 36 through 47 months: If attempted at this age, the critical line to pass screening is the 20/50 line
- Ages 48 through 59 months: The critical line to pass screening is the 20/40 line
- Ages 60 months and older: The critical line to pass screening is the 20/30 line (or the 20/32 line on some charts)

Establishing an Effective Screening Environment and Methodology

It is important that the screening area be conducive for assessing visual acuity and that proper technique is used to promote accurate screening. It is important that screening personnel be trained to recognize and avoid pitfalls that reduce the accuracy of visual acuity screening. Accurate screening of visual acuity requires dedicated and skilled staff members.

1. A well-illuminated area free from distraction is important. A quiet examination room or hallway is generally sufficient for this purpose.

2. An appropriate testing distance must be used. For children up to 5 years of age, especially when pictorial optotypes are used, this distance should be set at 10 feet rather than 20 feet as a standard. This shorter distance helps to enhance interaction between the child and the individual administering the screening without decreasing the accuracy of screening results. Indeed, current standardized preschool eye charts are typically calibrated for use at 10 feet. For children 6 years and older for whom a letter chart is used, the test distance may be appropriately set at either 10 feet or at the common standard of 20 feet, as long as the chart is properly calibrated for use at that distance.

Increasingly, screening methods using short testing distances are becoming available in the form of handheld optotypes used at a testing distance of 5 feet⁸ or as computer, tablet, or smart phone-based models with testing distances within 1 to 2 feet. Although the accuracy of screening visual acuity at these shorter distances has not yet been validated in large population-based studies, the use of these methods can fit well into small clinical work areas. One computer-based application, available from the Jaeb Center for Health Research, is specifically for use by nonophthalmic health care professionals. The Jaeb Visual Acuity Screener incorporates all current screening guidelines and is available free of charge for download and unlimited use at <http://pedig.jaeb.org/JVAS.aspx>.

3. It is important to recognize that children with visual impairment may inaccurately pass a vision screening if they peek around an incompletely covered eye or if they are able to correctly guess when only 2 or 3 optotype choices are presented. Use of an adhesive patch over the nontested eye is recommended. Visually impaired children may become

uncooperative during an examination; such behavior should be considered a possible indicator of poor visual function.

4. The use of validated and standardized optotypes and acuity charts is important for an accurate assessment of vision. For this reason, only the LEA symbols and HOTV characters are recommended for preschool vision screening at this time. Other optotypes are not well validated in the screening environment.
5. Every effort should be made not to isolate shapes or letters inadvertently on a line with a finger or cover to "help" a struggling child. If performed in this manner, the visual acuity result may be made falsely elevated by blocking out the natural crowding inherent in open lines of letters. If single optotypes are presented, they should include "crowding bars."
6. Screening visual acuity to the child's threshold (ie, best possible acuity) may provide a less accurate result than testing to the age-appropriate critical line for that child. Critical line testing is an appropriate alternative to threshold testing, requires less time to administer, and may provide a more accurate screening assessment of a child's visual function.

Incorporating these concepts into clinical practice offers a quick and reliable assessment of visual acuity in young children. To assist pediatricians and primary care physicians, the American Association for Pediatric Ophthalmology and Strabismus has developed a Vision Screening Kit designed specifically for young children that incorporates these important concepts. It is available commercially and can be purchased from the AAP.

For healthy children 6 years and older, testing of visual acuity using optotype-based vision charts at 10 or

20 feet remains the preferred method for screening and should be repeated every 1 to 2 years (Table 1).

Although barriers to its use exist, a level-1 Current Procedural

Terminology (CPT) code, 99173, has been established for visual acuity screening and is available to primary care physicians to seek payment for this testing.

INSTRUMENT-BASED SCREENING TECHNIQUES

Instrument-based screening is endorsed by the AAP² and by the US Preventive Services Task Force as a

TABLE 1 Eye Examination Guidelines

Function	Recommended Tests	Referral Criteria	Comments
Newborn to 6 mo			
Vision assessment	Fixation and follow response	Inconsistent or no response by 3 mo	
Ocular media clarity	Red reflex	White, pupil, dark spots, absent or asymmetric reflex	
External inspection	Direct observation	Any ocular abnormality of concern	
6 to 12 mo			
Pupil examination	Flashlight	As above for ages newborn to 6 mo, plus	
Ages 1–3 y			
Instrument-based vision screening when available (CPT 99174)	Photoscreening Autorefractometry	Failed screening as indicated by the device	
Distance visual acuity may be attempted at age 3 y	HOTV or LEA Symbols	Fewer than a simple majority of optotypes correct on the 10/25 (20/50) line with either eye tested monocularly at 10 ft	
Ages 4–5 y			
Distance visual acuity or instrument-based screening when available (CPT 99173)	HOTV or LEA symbols	A simple majority of figures correct on the age-appropriate critical line with either eye tested monocularly at 10 ft	<ol style="list-style-type: none"> 1. Use a well-illuminated area free from distraction. 2. Either critical line testing or threshold testing may be used (see text for details). 3. Testing distance of 10 ft is recommended for all visual acuity tests. 4. A line of figures is preferred over single figures, unless the single figures are “crowded” (see text). 5. The fellow eye should be covered by an occluder held by the examiner or by an adhesive occluder patch applied to the eye; the examiner should determine that it is not possible to peek with the nontested eye.
Ages:			
48–59 mo: 10/20 (=20/40)			
60+ mo: 10/15 (=20/30)			
or			
For threshold testing only: a 2-line difference between eyes, even with the passing range; eg, 20/15 (20/30) and 10/10 (20/20) for a 60-mo-old			
Ocular alignment	Cross cover test	Any eye movement	Child must be fixing on a target while cross cover test is performed.
Any asymmetry of pupil color, size, brightness			Direct ophthalmoscope used to view both red reflexes simultaneously in a darkened room from 2–3 feet away; detects asymmetric refractive errors as well.
Ocular media clarity	Red reflex	White pupil, dark spots in pupil, absent red reflex	Direct ophthalmoscope, darkened room. View each red reflex separately at 12–18 inches; white reflex indicates possible retinoblastoma. Dark or absent reflex indicates possible cataract.

TABLE 1 Continued

Function	Recommended Tests	Referral Criteria	Comments
Ages ≥6 y			
Distance visual acuity; instrument-based screening when available for children unable to perform acuity	Sloan letters or Snellen letters	Fewer than a simple majority of optotypes correct on the 10/15 (20/30) line with either eye tested monocularly at 10 ft	<ol style="list-style-type: none"> 1. Tests are listed in decreasing order of cognitive difficulty; the highest test that the child is capable of performing should be used. 2. Use a well-illuminated area free from distraction. 3. Either critical line testing or threshold testing may be used (see text for details). 4. Testing distance of 10 ft is recommended for all visual acuity tests. 5. A line of figures is preferred over single figures unless the single figures are “crowded” (see text). 6. The fellow eye should be covered by an occluder held by the examiner or by an adhesive occluder patch applied to the eye; the examiner should determine that it is not possible to peek out of the covered eye.
	HOTV or LEA symbols		
or			
		For threshold testing: only: a 2-line difference between eyes, even within the passing range; eg, 10/10 (20/20) and 10/15 (20/30)	
		Any eye movement	Simultaneous red reflex test (Bruckner test). Child must be fixing on a target while cross cover test is performed.
Ocular media clarity	Red reflex	White pupil, dark spots, absent reflex	Direct ophthalmoscope, darkened room. View each red reflex separately at 12–18 inches; white reflex indicates possible retinoblastoma. Dark or absent reflex indicates possible cataract.

valid method for screening very young children.⁹ A recent randomized, controlled, multicentered crossover study demonstrated photoscreening to be superior to direct testing of visual acuity for screening well children ages 3 to 6 years in the pediatric office.¹⁰ If available, instrument-based screening can be attempted beginning at age 12 months,¹¹ and a previous study has demonstrated better eventual outcomes for children undergoing their first photoscreening before 2 years of age.¹²

Instrument-based screening can be relatively quick and requires less attention from the child compared with traditional visual acuity screening. Screening instruments identify optical and physical characteristics that indicate the presence of ocular conditions known to cause amblyopia. Similar to the code for visual acuity screening, a level-1 CPT code, 99174, has been assigned to photoscreening and

enables the primary care physician to seek payment for its use. CPT codes 99173 and 99174 are specific for visual acuity screening and photoscreening, respectively.

Two types of instrument-based vision screening are now available for use in ambulatory care settings. Although neither type provides a direct assessment of visual acuity, both identify ocular risk factors that can lead to early vision loss in children. Once children can read an eye chart easily, optotype-based acuity should

supplement instrument-based testing. The actual age for this is not yet well established and likely varies depending on the child.

The most common ocular abnormalities seen during the early childhood years are strabismus, anisometropia, and a high magnitude of uncorrected refractive errors: hypermetropia, myopia, and astigmatism. The American Association for Pediatric Ophthalmology and Strabismus has developed refractive criteria to help

TABLE 2 Amblyopia Risk Factor Targets Recommended by the American Association for Pediatric Ophthalmology and Strabismus

Age, mo	Refractive Risk Factor Targets			
	Astigmatism, D	Hyperopia, D	Anisometropia, D	Myopia, D
12–30	>2.0	>4.5	>2.5	>–3.5
31–48	>2.0	>4.5	>2.0	>–3.0
>48	>1.5	>3.0	>1.5	>–1.5
Nonrefractive Risk Factor Targets				
All ages	Media opacity >1 mm			
	Manifest strabismus >8 prism D in primary position			

D, diopters
From Donahue et al.¹⁵

primary care physicians appreciate the levels of refractive error known to increase risk of amblyopia (Table 2).¹³ Referral criteria that best detect these amblyopia risk factors may vary depending on the screening instrument used and the desired levels of sensitivity and specificity.

Photoscreening devices identify optical characteristics of the eyes to estimate refractive error, media clarity, ocular alignment, and eyelid position. Abnormalities in these characteristics constitute risk factors for the presence or development of amblyopia. Photoscreening has been shown to have high sensitivity and specificity in community and office settings.^{14–20} Photoscreening instruments assess both eyes simultaneously and the images can be interpreted by trained operators, by a central reading center, or with computer software.

Autorefractive instruments, like photoscreeners, also are useful for screening young children.^{21,22} Handheld autorefractors use optical methods to estimate the refractive error of each eye, 1 eye at a time, and as such, are limited in their ability to detect strabismus in the absence of an abnormal refractive error. However, autorefractors remain useful in detecting anisometropia in the absence of strabismus, which is the most common cause of amblyopia undetected at an early age.

Instrument-based devices using technology based on visual evoked potentials²³ and retinal birefringence²⁴ are currently in development and may provide additional means to assess visual acuity and ocular health in young children.

For all instrument-based devices, the sensitivity and specificity to detect an ocular abnormality has been carefully considered by their manufacturers. Typically, when a high sensitivity (ie, high rate of detection of at-risk children) is chosen, an increase in

overreferrals (ie, low specificity) results. Conversely, when a high specificity is set, there is often a low sensitivity (ie, reduced detection of at-risk children). Given these factors, the referral criteria can be adjusted for many instruments on the basis of the child's age and desired levels of sensitivity and specificity.

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ACKNOWLEDGMENTS

The writing committee and lead author thank Drs James B. Ruben, MD, FAAP, and Geoffrey E. Bradford, MD, FAAP, for assistance with drafting and editing this document.

ABBREVIATIONS

AAP: American Academy of Pediatrics
CPT: Current Procedural Terminology

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ACADEMY OF OPHTHALMOLOGY
Pediatrics; originally published online December 7, 2015;
DOI: 10.1542/peds.2015-3597

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PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

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DOI: 10.1542/peds.2015-3597

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LEA Symbols® and HOTV Distance Chart Threshold Vision Screening Procedure

Key Points:

- When pointing to symbols, **briefly point to and quickly remove pointer**. Leaving the pointer at the symbol makes the symbol easier to identify, which may lead to missed visual disorders.
- Screen one eye at a time.
- When a child responds, give verbal praise (“good”, “right”, etc.), even if child is incorrect.

LEA Symbols and HOTV Chart Threshold Screening Procedure:

1. Use with children age 3 years and older who are unable to recognize letters.
2. Determine if the child wears glasses or contacts. Perform the screening with the glasses/contacts on and document this.
3. Explain the screening procedure to child, saying you are playing a game. With both eyes uncovered, ask child to identify all four symbols using either the chart or matching response card.
 - Child may choose the name for each symbol.
 - If child does not know the name of a symbol, screener can give two choices and have child select one (e.g. apple or heart, circle or ball).
 - Children who are shy or nonverbal have the option to use the matching response card to match the symbol the screener is pointing to on the chart.
4. Screener may hold or hang the chart with the **20/40** line at the child’s eye level.
5. Measure and mark 10-foot screening distance between the chart and the child’s eyes.
 - The screening line should be midline to the chart marked on the floor, and not on the wall.
 - If using AAPOS Kit, use 10-foot measuring cord to determine the distance between the chart and the child’s eyes.
6. Child may stand during screening, or sit on a chair.
 - If the child stands on the line, the **arch** (middle) of each foot should be on the 10-foot screening line.
 - If seated, child may sit with back against back of chair with eyes aligned at the 10-foot distance.
7. Screen right eye first. Use recommended occluder to cover the left eye (e.g. adhesive patch or 2-inch wide hypoallergenic paper tape).
 - Assess for allergies to tape prior to placement.
 - If patches/paper tape are not available or not tolerated, use occluder glasses.
 - If the child is wearing prescription glasses:
 - The adhesive patch/paper tape goes over the eye beneath the glasses.
 - The occluder glasses go over the prescription glasses.
 - Clean occluder glasses after each use with alcohol free wipes.
8. Beginning at the top line, ask the child to identify the first symbol on the **right** side of each line and move down the chart.
 - If a symbol is missed, return to the line above and ask the child to identify ALL symbols on that line reading from **left to right**.
 - If 3 or more symbols are correctly identified, move down to the next line.

LEA Symbols® and HOTV Distance Chart Threshold Vision Screening Procedure

9. On each lower line, continue asking child to identify each symbol until the child misses 3 on a line.
 - Have child identify the whole line even when 3 or more symbols are missed.
10. Document visual acuity for the right eye as the smallest line the child correctly identified 3 or more symbols.
11. Cover right eye and begin screening the left eye.
12. Repeat procedure starting with the first symbol on the **left** side of each line.
 - When identifying a full line of symbols, read from **left to right**.
13. Document visual acuity for left eye as the smallest line the child correctly identified 3 or more symbols, using 20/xx.

If LEA Symbols/HOTV Chart has lines that split into 2 columns:

- The right column is for screening the right eye. When child is reading a full line of the right column, child reads from **left to right**.
- The left column is for screening the left eye. When child is reading a full line of the left column, child reads from **left to right**.

For charts with 20/160 and/or 20/125 lines, the child must correctly identify each symbol, per manufacturer's instructions.

THRESHOLD SCREENING PASS/FAIL CRITERIA

AGE	PASS	FAIL and REFER, or RESCREEN WITHIN 6 MONTHS	DOCUMENTATION
3 years	Correctly identified at least 3 of 5 symbols on 20/50 line or better	Missed 3 or more symbols on 20/50 line or worse. Two-line difference between the eyes, even within the passing range (e.g. 20/20 and 20/32).	Visual acuity to document is 20/63 or worse.
4 years	Correctly identified at least 3 of 5 symbols on 20/40 line or better	Missed 3 or more symbols on 20/40 line or worse. Two-line difference between the eyes, even within the passing range (e.g. 20/20 and 20/32).	Visual acuity to document is 20/50 or worse.
5 years and older	Correctly identified at least 3 of 5 symbols on 20/32 line or better	Missed 3 or more symbols on 20/32 line or worse. Two-line difference between the eyes, even within the passing range (e.g. 20/20 and 20/32).	Visual acuity to document is 20/40 or worse.

Remember:

- Refer any child who has not passed the vision screening to an optometrist or ophthalmologist.
- Explain the importance of the referrals to parents.
- Review manufacturer's instructions for additional guidance.

Sloan Letters Distance Chart Threshold Vision Screening Procedure

Key Points:

- When pointing to letters, **briefly point to and quickly remove pointer**. Leaving the pointer at the letter makes the letter easier to identify, which may lead to missed visual disorders.
- Screen one eye at a time.
- When child responds, give verbal praise (“good”, “right”, etc.), even if the child is incorrect.

Sloan Letters Chart Threshold Screening Procedure:

1. Use with:
 - children who know their letters well (review letters with younger children)
 - adolescents
 - adults
2. Determine if the child wears glasses or contacts. Perform the screening with the glasses/contacts on and document this.
3. Screener may hold or hang the chart with the **20/32** line at the child’s eye level.
4. Measure and mark 10-foot screening distance between the chart and the child’s eyes.
 - The screening line should be midline to the chart marked on the floor, and not on the wall.
 - If using AAPOS Kit, use 10-foot measuring cord to determine the distance between the chart and the child’s eyes.
5. Child may stand during screening, or sit on a chair.
 - If the child stands on the line, the **arch** (middle) of each foot should be on the 10-foot screening line.
 - If seated, child may sit with back against back of chair with eyes aligned at the 10-foot distance.
6. Screen right eye first. Use recommended occluder to cover the left eye (e.g. adhesive patch, 2-inch wide hypoallergenic paper tape, paddle or “Mardi Gras” mask).
 - Assess for allergies to tape prior to placement.
 - If the child is wearing prescription glasses:
 - the occluder goes over the eye beneath the glasses.
 - the “Mardi Gras” mask goes over the prescription glasses.
 - Clean paddle and mask after each use with alcohol free wipes.
7. Beginning at the top line, ask the child to identify the first letter on the **right** side of each line and move down the chart.
 - If child successfully reaches the last line, ask child to name all 5 letters reading from **left to right**.
 - If child identifies at least 3 of 5 letters, that line is the visual acuity for that eye. Document results using 20/xx.

OR

Sloan Letters Distance Chart Threshold Vision Screening Procedure

8. Beginning at the top line, ask the child to identify the first letter on the **right** side of each line and move down the chart.
 - If a letter is missed, return to the line above and ask the child to identify ALL letters on that line reading from **left to right**.
 - If 3 or more letters are correctly identified, move down to the next line.
9. On each lower line, continue asking child to identify each letter until the child misses 3 on a line.
 - Have child identify the whole line even when 3 or more letters are missed.
10. Document visual acuity for the right eye as the smallest line the child correctly identified 3 or more letters.
11. Cover right eye and begin screening the left eye.
12. Repeat procedure starting with the first letter on the **left** side of each line.
 - When identifying a full line of letters, read from **left to right**.
13. Document visual acuity for left eye as the smallest line the child correctly identified 3 or more letters, using 20/xx.

If Sloan Letters Chart has lines that split into 2 columns:

- The right column is for screening the right eye. When child is reading a full line of the right column, child reads from **left to right**.
- The left column is for screening the left eye. When child is reading a full line of the left column, child reads from **left to right**.

For charts with 20/160 and/or 20/125 lines, the child must correctly identify each letter, per manufacturer's instructions.

THRESHOLD SCREENING PASS/FAIL CRITERIA

AGE	PASS	FAIL and REFER or RESCREEN WITHIN 6 MONTHS	DOCUMENTATION
5 years and older	Correctly identified at least 3 of 5 letters on 20/32 line or better	Missed 3 or more letters on 20/32 line or worse. Two-line difference between the eyes, even within the passing range (e.g. 20/20 and 20/32).	Visual acuity to document is 20/40 or worse.

Remember:

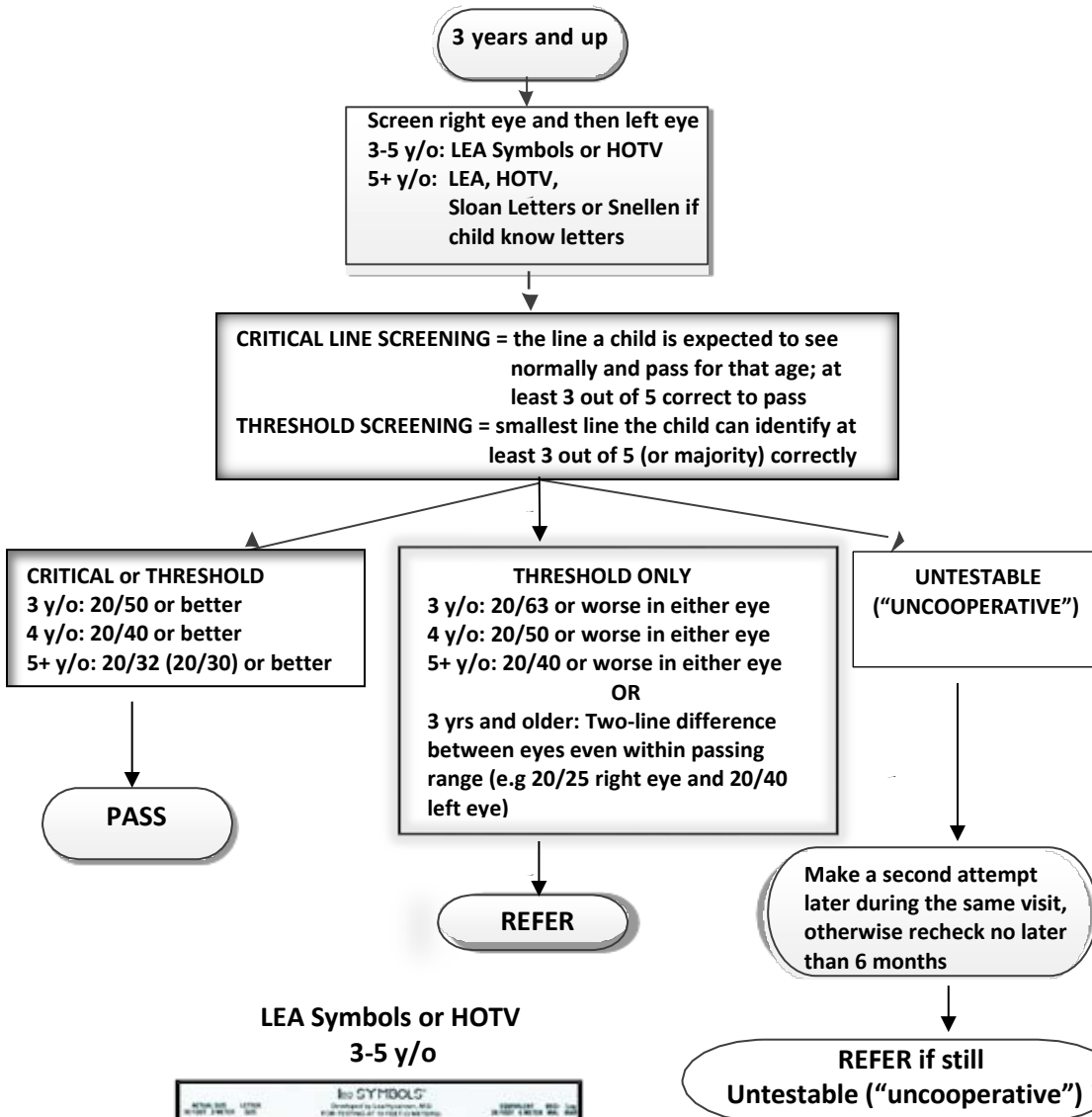
- Refer any child who has not passed the vision screening to an optometrist or ophthalmologist.
- Explain the importance of the referrals to parents.
- Review manufacturer's instructions for additional guidance.

VISION SCREEN: 3 YEARS AND UP

Perform Visual Acuity Screening per American Academy of Pediatrics Bright Futures periodicity at the following ages: 3,4,5,6,8,10,12, and 15 years old.

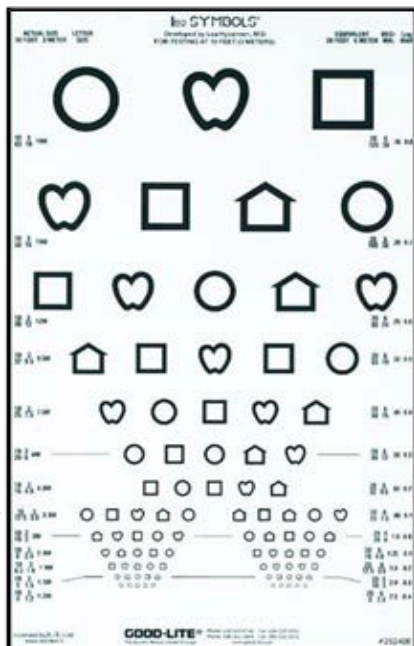
Complete risk assessment questionnaire at all other ages.

Catch up any patient who was not screened at the recommended age



- ### KEY POINTS
- Recommended screening distance is 10 feet.
 - Stand with **arch** (middle) of each foot on 10-foot line.
 - Screen each eye separately.
 - Adjust chart to child's eye level. (See Procedure).
 - For the shy/non-verbal, child, child may point to the matching response card.
 - When pointing to symbol, briefly point to and quickly remove pointer from symbol.
 - When child responds, give verbal praise, ("great!") even if child is incorrect.
 - May use LEA or HOTV chart for patients who do not know all their letters.
 - Automatic Referral Partial List:
 - Strabismus, ptosis present
 - Family history of strabismus or amblyopia
 - Hearing impairment, Cerebral Palsy, Down Syndrome, Autism, Speech Delay
 - Diabetes, Hypertension present
 - Taking medications known to cause eye disorders
 - Prematurity <32 weeks
 - Parent concerns

LEA Symbols or HOTV
3-5 y/o

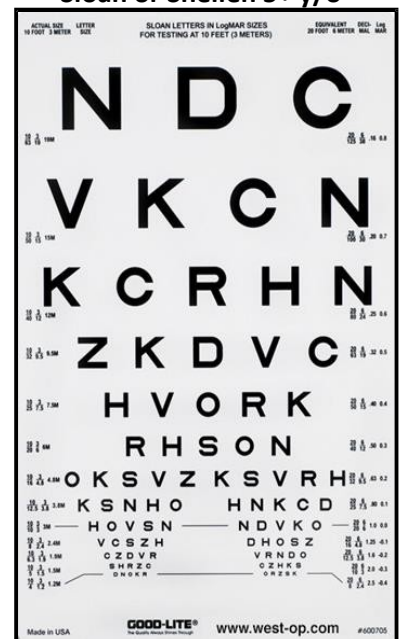


Refer:
Two-line
difference
between
eyes

Recommended Occluders
Adhesive patch or 2"-wide paper tape



Sloan or Snellen 5+ y/o



CHDP Vision Threshold Screening Results Form

Last Name:	First Name:	AGE:
------------	-------------	------

Vision Screen Date: _____

Comments: _____

Referred To: _____

	Right Eye	Left Eye
Without Glasses	/	/
With Glasses	/	/

.....
Signature & Title of Person Performing Test

CHDP Vision Threshold Screening Results Form

Last Name:	First Name:	AGE:
------------	-------------	------

Vision Screen Date: _____

Comments: _____

Referred To: _____

	Right Eye	Left Eye
Without Glasses	/	/
With Glasses	/	/

.....
Signature & Title of Person Performing Test

Sample Referral Log

Referral Date	Patient's Name	D.O.B.	Provider Referred To	Specialty	Date of Appt	Date Consult Received	7 Day Follow-up	30 Day Follow-up

**COUNTY OF LOS ANGELES – DEPARTMENT OF PUBLIC HEALTH
CHILDREN’S MEDICAL SERVICES**

Child Health and Disability Prevention (CHDP) Program

North/East: 9320 Telstar Avenue, Suite 226, El Monte, California 91731

East: TEL (626) 569-3750 • FAX (626) 571-4580

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Southwest: 12012 Compton Avenue Room 4-212 Los Angeles, CA 90059

TEL (424) 338-1186 • FAX (310) 223-0090

Vision Screening Charts

The Vision Screening Charts are available for purchase from the companies listed below. Price varies between these companies. This is a partial list of companies. It is not intended as an endorsement of any company.

<p>1. Good-Lite Company (800) 362-3860 www.good-lite.com</p>	<p><u>Proportionally Spaced Charts</u> LEA with matching response cards (Item #s: 252400, 250100, 257000) HOTV with matching response cards (Item #s: 600759, 600303) Sloan Letters: 10-foot (Item #s: 600705, 600711, 800735) AAPOS Vision Screening Kit: LEA and Sloan Letters (Item #: 120) HOTV & Sloan Letters (Item #: 129) Adhesive Eye Occluder (Item #: 760001)</p>
<p>2. MacGill Discount School Nurse Supply (800) 323-2841 www.macgill.com</p>	<p><u>Proportionally Spaced Charts</u> LEA with matching response cards (Item #s: 2504, 2524, 250100) HOTV with matching response cards (Item #: 6718) Sloan Letters: 10-foot (Item # 12378)</p>
<p>3. School Health 866-323-5465 www.schoolhealth.com</p>	<p><u>Proportionally Spaced Charts</u> LEA with matching response cards (Item #s: 52444, 52149) HOTV with matching response cards (Item #s: 52824, 52184) Sloan Letters: 10-foot (Item #s: 52844, 52533, 52159)</p>
<p>4. McKesson</p>	<p>Contact your sales representative</p>

For LEA/HOTV/Sloan Letters charts, order **proportionally** spaced wall charts. Please order the LEA and/or HOTV set with **matching response cards**.

Refer to the manufacturer guidelines for screening procedures.

CALIFORNIA VISION PROJECT (CVP) APPLICATION FORM

The California Vision Project provides free eye exams to eligible low-income families and individuals. Services are donated by volunteer optometrists throughout California.

Eligibility requirements: All eligibility requirements must be met in order to qualify (PLEASE READ)

- It has been at least 2 years since your last eye exam;
- The individual applying **cannot** have **any** government or private insurance that covers eye exams;
- Applicants are low-income and are unable to pay for eye care (income guidelines listed at www.californiavision.org);
- **\$10.00 non-refundable administrative fee (per person) must accompany the application.**

Cash or Money Orders only, can be made payable to "The California Vision Foundation"

Home address: (Please print legibly)

Address _____ Apt# _____

City _____ State _____ Zip Code _____

Daytime telephone number () _____ - _____ Date _____

Please answer all questions below. Verification may be requested. Failure to complete application in its entirety may result in a delay of services.

1. Is anyone in your household currently employed (full-time or part-time)? Yes No
2. What was your household's approximate gross **annual** income before taxes and deductions? _____
3. What is the total number of people in your household living with you, **including yourself**? _____
4. How many **miles** are you able to travel for your appointment? (Must be at least 10 miles) _____
5. Please list any particular cities that you would be able to travel to for your appointment: _____
6. How did you hear about CVF? (Please be specific. If internet, what website?) _____

Language: English Spanish Other (specify) _____

List all household members who are applying for a free eye exam:

Applicant(s)Name: (First/Last)	Date of Birth (MMDDYYYY)	Month and year of last eye exam?	Does this person have any private or government insurance that covers eye exams? (this includes Medi Cal and Medicare)
1.	/ /		<input type="checkbox"/> Yes <input type="checkbox"/> No
2.	/ /		<input type="checkbox"/> Yes <input type="checkbox"/> No
3.	/ /		<input type="checkbox"/> Yes <input type="checkbox"/> No
4.	/ /		<input type="checkbox"/> Yes <input type="checkbox"/> No

Your completed form will be reviewed to determine your eligibility. Verification of income may be requested. Eligible patients will be notified by mail at the end of each month. If your application has been denied, you will be notified by mail within 7-10 business days.

Mail this completed application with the \$10.00 per person (Cash or Money Order)

Administrative Fee(s) to:
California Vision Foundation
2415 K Street, Sacramento, CA 95816
www.californiavision.org

FORMULARIO DE SOLICITUD DEL PROYECTO DE LA VISIÓN DE CALIFORNIA (CVP)

El proyecto de visión de California ofrece exámenes de la vista gratis a los bajos ingresos familias.
Servicios son donados por optometristas voluntarios a lo largo de California.

Requisitos de elegibilidad: Deben cumplirse todos los requisitos de elegibilidad para calificar.

(por favor leer)

- Ha habido por lo menos 2 años desde su última examen de la vista;
- La persona que solicita no puede tener ningun gobierno o seguro privado que cubre exámenes de la vista;
- Los solicitantes son de bajos ingresos y no pueden pagar la atención oftalmológica (las pautas de la renta enumeraron en www.californiavision.org);
- \$10,00 cuota administrativa no reembolsable (**por persona**) debe acompañar la solicitud. **En efectivo o Money Orders solo**, deben hacerse pagaderos a "The California Vision Foundation".

Dirección del solicitante: (letra de imprenta legible) Language: English Spanish Other _____

Dirección _____ Apto. # _____

Ciudad _____ Estado _____ Código postal _____

Número de teléfono durante el día () _____ -- _____ Fecha _____

Por favor, responda todas las preguntas. En algunos casos podrá solicitarse verificación.

1. ¿Alguna persona de su hogar trabaja actualmente (full-time o part-time)? **Sí** **No**
2. ¿Cuál fue su aproximado bruto **anual** ingresos antes de impuestos y deducciones? _____
3. ¿Cuánta gente vive en su casa con usted, **incluido** usted? _____
4. ¿Cuántas **millas** son capaces de viajar para su cita? (**debe ser por lo menos 10 millas**) _____
5. Por favor indique algunas de las ciudades específicas a las que podría viajar para su cita con el oftalmólogo: _____
6. ¿Cómo se enteró acerca de CVP? (Por favor sea **específico. En Ingles**) _____

Lista de los miembros del hogar que solicitan un examen de la vista gratis:

Solicitante Nombre: (Primero/último)	Fecha de nacimiento (MMDDYYYY)	¿Mes y año del último examen ocular?	¿Esta persona tiene seguro privado o del gobierno que cubra exámenes de la vista? (Esto incluye Medi Cal y Medicare)
1.	/ /		<input type="checkbox"/> Sí <input type="checkbox"/> No
2.	/ /		<input type="checkbox"/> Sí <input type="checkbox"/> No
3.	/ /		<input type="checkbox"/> Sí <input type="checkbox"/> No
4.	/ /		<input type="checkbox"/> Sí <input type="checkbox"/> No

Su formulario completado se examinarán para determinar su elegibilidad.

Podrá solicitarse la verificación del ingreso. Los pacientes elegibles serán notificados por correo al final de cada mes.

Si su solicitud ha sido denegada, se le notificará por correo dentro de 7-10 días laborales.

Enviar por correo esta solicitud completada con \$10,00 por persona (Efectivo o Money Order) Honorarios administrativos para:

**California Vision Foundation
2415 K Street, Sacramento, CA 95816**

www.californiavision.org

Si usted tiene alguna pregunta por favor visite el sitio web www.californiavision.org o contacte con nosotros en (909) 483-7761

Application is current as of 01/2019