Year of Children's Vision Webinar Series

Developing a Strong Vision Health System (Part I): How to Ensure Quality Vision Screening and Optimal Eye Care for All Young Children

An educational webinar presented by the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) as part of the *Year of Children's Vision* (YOCV) initiative

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for the

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About the Year of Children's Vision (YOCV)

- YOCV is a collaborative initiative of American Association for Pediatric Ophthalmology and Strabismus (AAPOS), National Head Start Association, Good-Lite, School Health and the National Center for Children's Vision and Eye Health at Prevent Blindness America. It is supported by other leading national vision health organizations, including the American Academy of Optometry. For a complete list and other resources go to: http://nationalcenter.preventblindness.org/year-childrens-vision

- The goal of YOCV is to provide national guidance to staff of Head Start, Early Head Start and other early childhood programs to standardize approaches to vision screening, improve follow-up for eye care, provide family friendly educational information and consult with some of the nation's leading pediatric eye care providers to ensure best practices.

The 12-Component Vision Health System Part 1:

- Provide educational material to parents/caregivers about vision
- Obtain permission to share vision screening results with all involved in the child's care
- **Screen with age-appropriate and evidence-based tools**
- Create vision assessment policies for children with special needs
- When to refer untestable children
- Providing parents/caregivers with vision screening results
- Create system to follow-up on recommended eye care
- Link parents/caregivers with pediatric eye care provides
- **Maintain copy of eye exam for files**
- **Send copy of eye exam results to child's primary care provider**
- Ensure that treatment plan is followed
- Evaluate effectiveness of vision health program annually

Developing a Strong Vision Health System (Part I): How to Ensure Quality Vision Screening and Optimal Eye Care for All Young Children

- At the end of this discussion, the participant will be able to:
- … select vision screening methodology, for acuity testing or instrument based screening, that is age-appropriate and evidence-based
- … recognize the importance of developing procedures and policies which allow for communication between and among the early education program staff, other health care providers involved in the child's care, and parents/caregivers
- … create appropriate policies for the screening or referral of children with special needs or children who are difficult-to-screen

Agenda and your presenters…

- **Vision Screening, Exams and Treatment: The Importance of Shared Communication and Documentation**
  - **Geoffrey E. Bradford, MD, MS:** Professor of Ophthalmology and Pediatrics; West Virginia University School of Medicine

- **Evidence-Based Vision Screening Protocols and Guidelines**
  - **P. Kay Nottingham Chaplin, Ed.D:** Director for Vision and Eye Health Initiatives, Good-Lite

- **Children Difficult to Screen or with Special Health Care Needs: What Should You Do?**
  - **Linda Lawrence, MD:** Assistant Clinical Professor of Ophthalmology, University of Kansas Medical Center

Geoffrey E. Bradford, MS, MD

Vision Screening, Exams and Treatment: The Importance of Shared Communication and Documentation

The 12-Component Vision Health System

1 Provide educational material to parents/caregivers about vision

2 Obtain permission to share vision screening results with all involved in the . child's care

3 Screen with age-appropriate and evidence-based tools

4 Create vision assessment policies for children with special needs

5 When to refer untestable children

6 Providing parents/caregivers with vision screening results

7 Create system to follow-up on recommended eye care

8 Link parents/caregivers with pediatric eye care provides

9 Maintain copy of eye exam for files

10 Send copy of eye exam results to child's primary care provider

11 Ensure that treatment plan is followed

12 Evaluate effectiveness of vision health program annually

Documentation

2. Ensuring that parent/caregiver's written approval for vision screening includes permission to:

a. Share screening results with the child's eye doctor and primary care provider.

b. Get eye exam results for your file.

c. Talk with the child's eye doctor for clarification of eye exam results and prescribed treatments.

9. Receiving eye exam results for your files.

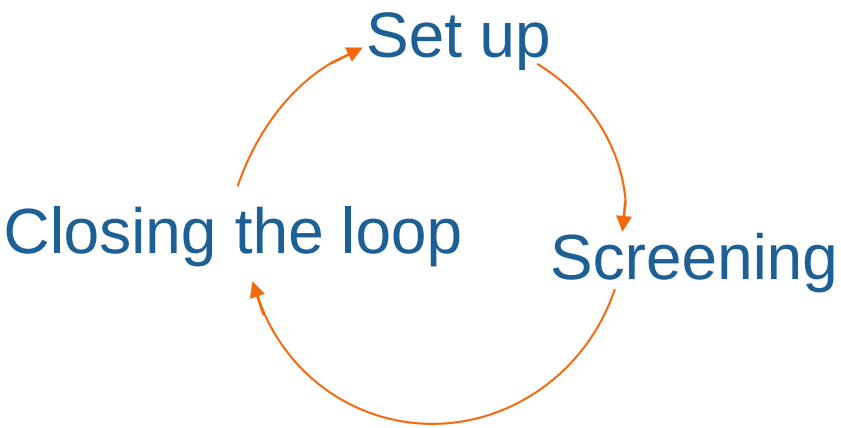
10. Sending a copy of eye exam results to the child's primary care provider.

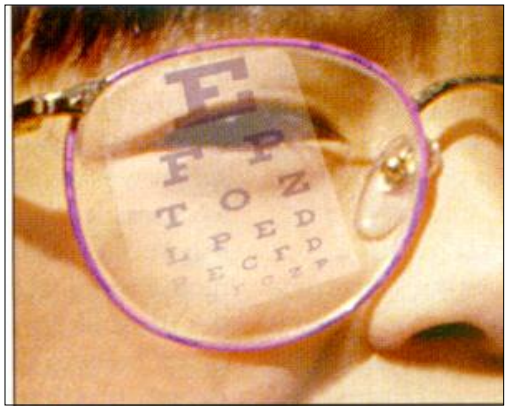
11. Ensuring that the eye doctor's treatment plan is followed.

a. Offer support and encouragement with treatment

Importance of Communication and Documentation

- **Successful screening involves more than the screening itself**
  - *Setting up* prior to screening
  - Screening
  - *Closing the loop* after the screening





Setting Up Documents for Screening

- **Ensure you have parent's written consent**
  - **To share screening results**
    - **primary care provider (PCP)**
    - **eye doctor**
  - **To receive eye exam results for your files**
  - **To talk with the doctors**
  - **To share eye exam results with the PCP**

Closing the Loop After Screening

- Get eye exam results for your files
- Send copy of the results to the PCP
- Work with parents to implement treatment
  - Penalization with patching or atropine eye d
  - Getting and wearing glasses
  - Keeping follow-up appointments

Referral for an Eye Examination

Dear Parent/Guardian:

We routinely screen vision to identify children who have vision problems or might be at risk for vision problems. We refer children for an eye exam when they do not pass vision screening or are at risk of a vision problem because of a medical or developmental reason. Vision screening does not equal a complete eye exam, but it can detect eye problems and if one is present, a referral to an eye doctor for a comprehensive eye exam should be made

You are receiving this document because your child _____ failed his/her vision screen or should have an eye exam because of a risk for a vision problem. A complete eye exam with an eye doctor (an optometrist or an ophthalmologist.) is recommended. It is important to schedule this exam as soon as you can. Do not miss this appointment. If the eye doctor finds a vision problem, early treatment leads to the best possible results for your child's vision. The back of this form lists the reason(s) for this referral.

The back of this page lists the reason(s) for this referral. Please:

Complete the Consent and Release of Information block below AND the top part of the back of this page.
Take this paper with you to the eye exam and give the form to your eye doctor.
Ask the eye doctor to send exam results to us and discuss the eye exam results with us, if necessary.

Consent and Release of Information

By my signature below, I authorize: (1) the vision screening agency to release my child's vision screening results and/or medical or developmental reason for an eye exam to the eye doctor and medical doctor (if screening did not occur in the medical home), (2) my child's eye doctor to send exam results to the vision screening agency, (3) the vision screening agency and eye doctor to discuss eye exam results, (4) and the vision screening agency to send exam results to the child's medical doctor (if screening did not occur at the medical office) for the specific purpose of notifying my child's healthcare and educational providers of any specific vision problems, recommendations, and treatment instructions related to my child's vision needs. I understand that I may refuse to sign this authorization and that my refusal will not affect my ability to obtain an eye exam for my child or assistance with payment for the eye exam.

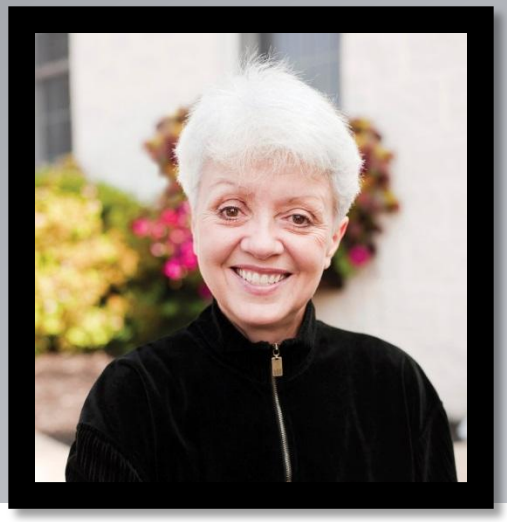
Referral for an Eye Examination

Patient information:
Name (First, M.I., Last)_____
Birth date_____ Sex (M/F) ____ Grade _____
Parent or guardian _____
Mailing address _____ City _____ State ____ Zip _____
Phone ( )____-
_____

Referring agency contact information and reason for referral:
Office name _____ Phone number ( ) ____-_____ Fax number ( ) ____-_____
Date of referral _____ Vision screening conducted by_____

Reason for referral (Check all that Apply):
____ Visual acuity ____ Misaligned eyes ____ Pupillary reflex ____ Red reflex
____ Ocular structure concern (i.e., ptosis (drooping eyelid)
____ Family history of early onset vision problems
____ Developmental delay/chronic condition (describe) _____
____ Other (describe) _____

Exam results from the eye doctor: Date of eye examination: _____



P. Kay Nottingham Chaplin, Ed.D.

- **Director – Vision & Eye Health Initiatives – Good-Lite**
- **Vision Screening Consultant – School Health Corporation**
- **Member – Advisory Committee to the National Center for Children's Vision and Eye Health at Prevent Blindness**

The 12-Component Vision Health System Part 1:

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Component 3 of Strong Vision Health System of Care

3. Screening vision with age-appropriate and evidence-based tools and procedures, including optotypes (pictures) and/or instruments.

   - 3.a. Follow national referral and rescreening guidelines.

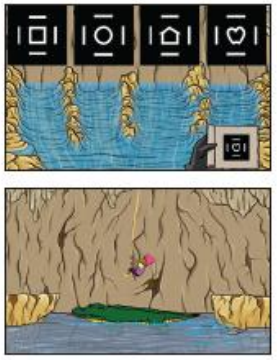
   - 3.b. Include vision screening training for your staff that leads to certification in evidence-based vision screening procedures.

Component 3. Screening Vision With Age-Appropriate and Evidence-Based Tools and Procedures, Including Optotypes (Pictures) and/or Instruments

- Two types of vision screening:
  - Optotype-based
  - Instrument-based
    - Or combination
- Optotype = name of picture, symbol, letter to identify
- Optotype-based screening measures visual acuity
- Instrument-based screening measures for presence of amblyopia risk factors:
  - Significant refractive error
  - Asymmetry of refractive error
  - Misalignment of eyes
  - Presence of cataract

Single, Surrounded LEA Symbol

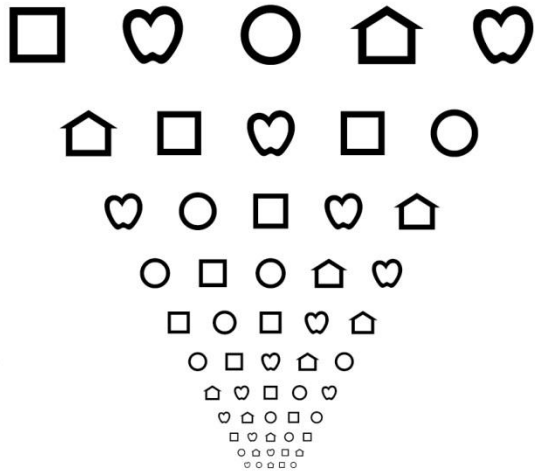
- Research supports using single, LEA Symbols optotypes surrounded with bars at 5 feet for children aged 3 to 5 years

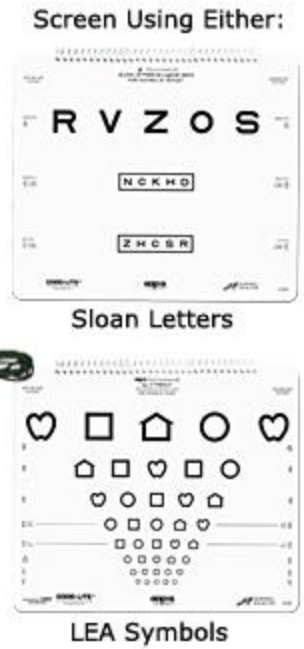


Vision in Preschoolers (VIP) Study Group. (2009). Findings from the Vision in Preschoolers (VIP) Study. *Optometry and Vision Science, 86*(6), 619-623.

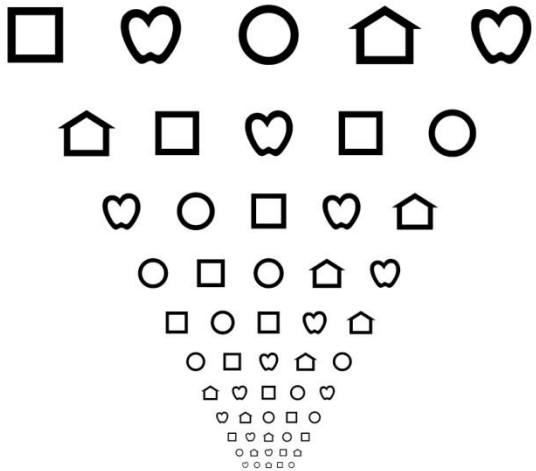
Threshold vs. Critical Line for Optotype-Based Screening

- Threshold screening
  - Move down chart until child cannot correctly identify majority of optotypes
- Critical line screening
  - Line child needs to pass according to child's age





- Many of you use threshold eye charts as a test of visual acuity– this session will focus on threshold eye charts



Importance of Appropriate Tools

- "Visual acuity scores can be significantly affected by the chart design." (p. 1248)
  - Bailey, I.L. (2012). Perspective: Visual acuity – Keeping it clear. *Optometry and Vision Science, 89*(9), 1247-1248.

- Excluding optotype size, "each visual acuity level on a test chart should present an essentially equivalent task". (p. 740)
  - Bailey, I. L., & Lovie, J. E. (1976). New design principles for visual acuity letter charts. American Journal of Optometry & Physiological Optics, 53(11), 740-745.

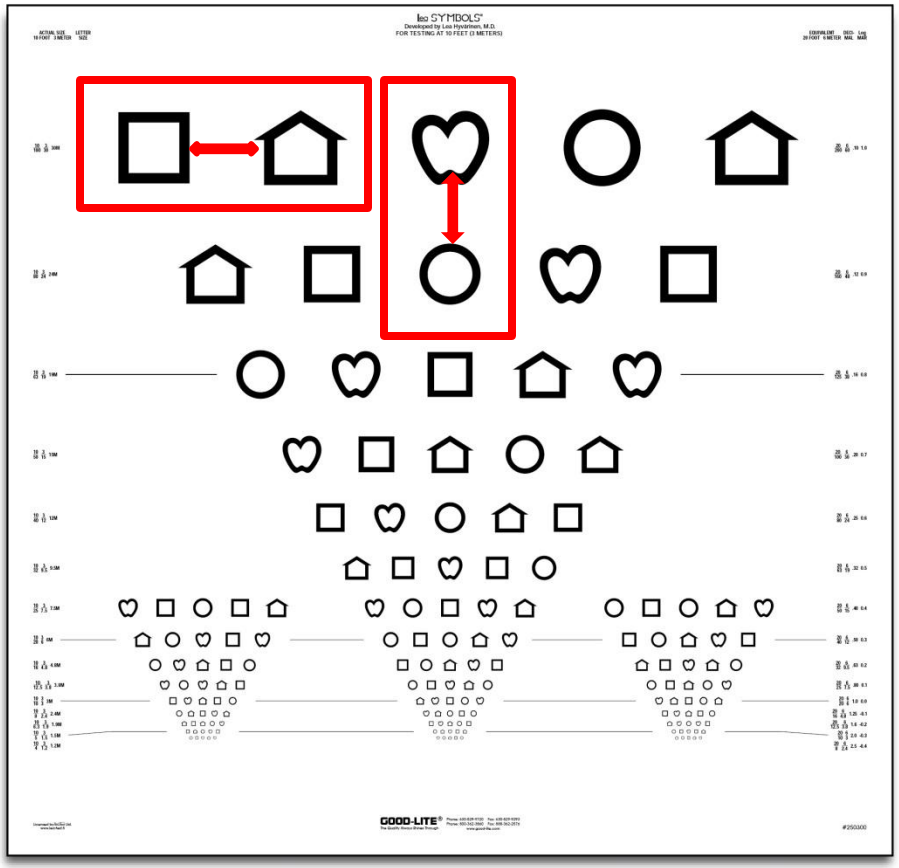
- Standardized eye charts meeting national and international eye chart design guidelines offer this equivalent test task.
- Many commonly used eye charts do not.
- If you use an eye chart for optotype-based screening, how do you know if the chart is standardized?

National and International Distance Visual Acuity Eye Chart Recommendations

- **1980 - National Academy of Sciences-National Research Council (NAS-NRC)**
  - Recommended Standard Procedures for the Clinical Measurement and Specification of Visual Acuity
  - Committee on Vision. (1980). Recommended standard procedures for the clinical measurement and specification of visual acuity. Report of working group 39. Assembly of Behavioral and Social Sciences, National Research Council, National Academy of Sciences, Washington, DC. *Advances in Ophthalmology, 41*:103–148.
- **1984 - International Council of Ophthalmology (ICO)**
  - Visual acuity measurement standard.
  - www.icoph.org/dynamic/attachments/resources/icovisualacuity1984.pdf
- **2003 - World Health Organization Prevention of Blindness & Deafness (WHO)**
  - Consultation on Development of Standards for Characterization of Vision Loss and Visual Functioning
  - Prevention of blindness and deafness. Consultation on development of standards for characterization of vision loss and visual functioning. Geneva: WHO;2003 (WHO/PBL/03.91).
- **2010 – American National Standards Institute, Inc.**
  - ANSI Z80.21-1992 (R2004) Approved May 27, 2010
  - Performance standard for the optical design of optotypes used in clinical visual acuity measurement systems

- **Optotypes approximately equal in legibility**
- **Horizontal between-optotype spacing = 1 optotype width**
- **Vertical between-line spacing = height of next line down**
- **Geometric progression of optotype sizes of 0.1 log units (logMAR, ETDRS)**
- **5 optotypes per line**
- **Optotypes black on white background with luminance between 80 cd/m^2 and 160 cd/m^2**

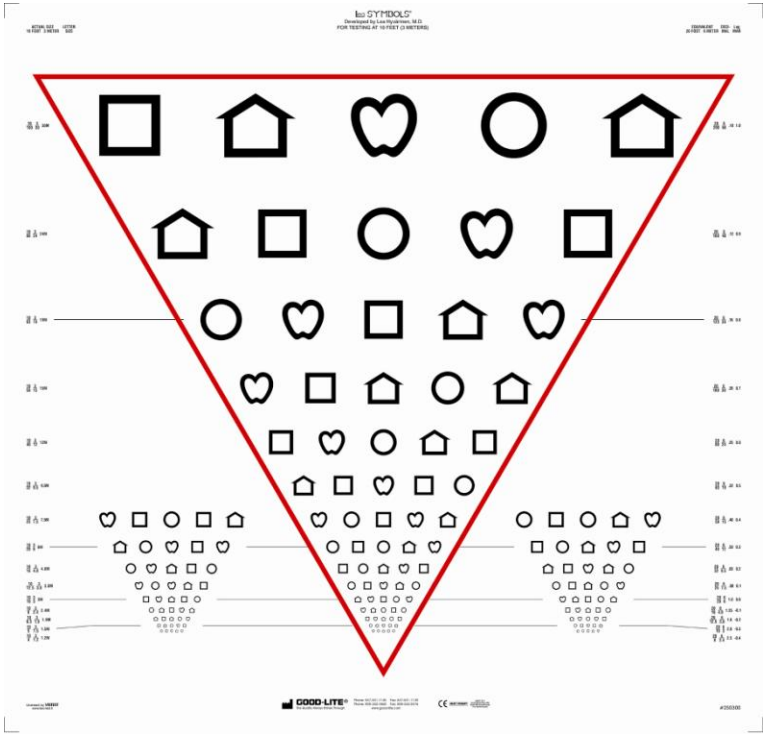
Similar recommendations across guidelines



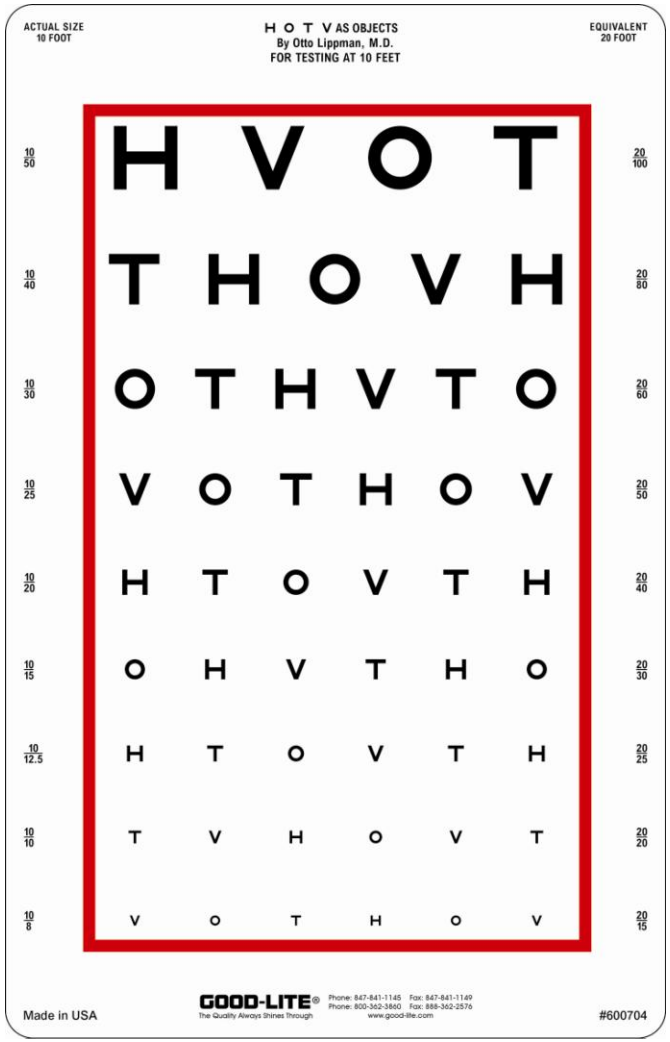
Design guidelines = “ETDRS Design”

- Tips:
  - Line outside optotypes = inverted pyramid, NOT rectangle
  - 20/32 vs. 20/30
  - 10 feet vs. 20 feet

YES

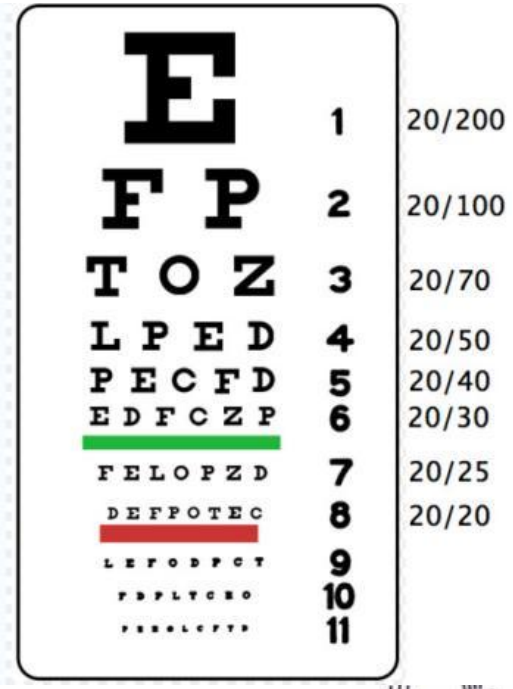


NO



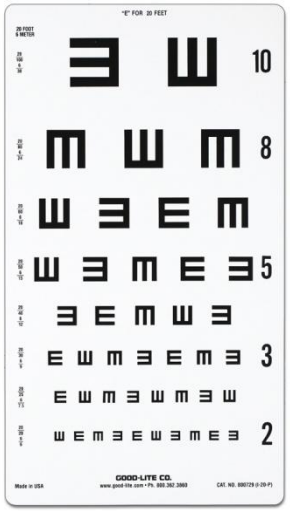
Challenges With 5 Common Eye Charts

Snellen Letters



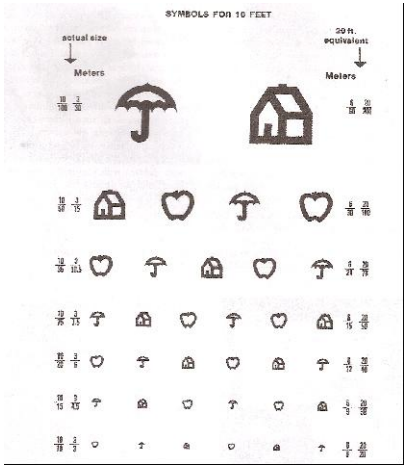
Kindergarten Test Cha

Tumbling E



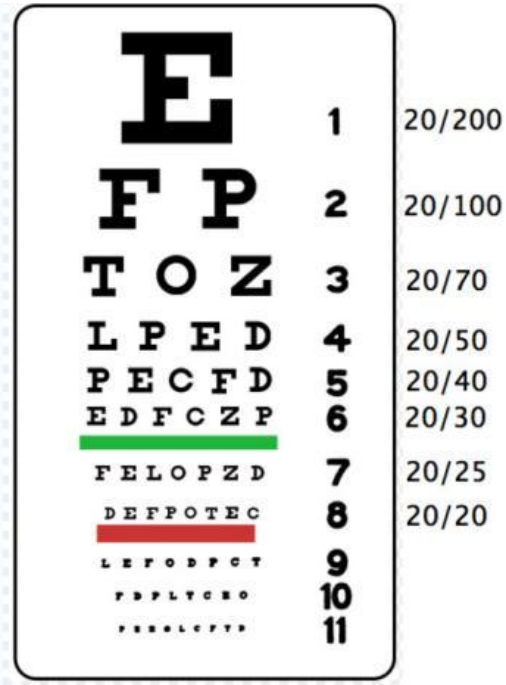
Allen Pictures

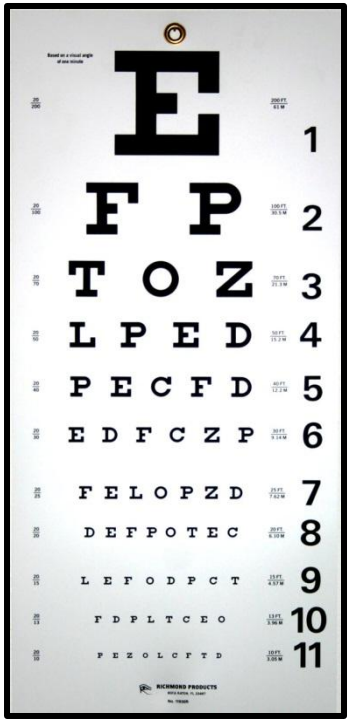
Lighthouse or "House, Apple, Umbrella"



2 Challenges With “Snellen Charts”

- Do not meet national/international eye chart design guidelines
- Are not standardized
- Some optotypes are easier to guess than others





Kaiser, P. K. (2009). Prospective evaluation of visual acuity assessment: A comparison of Snellen versus ETDRS charts in clinical practice (An AOS thesis). *Transactions of the American Ophthalmological Society, 107*, 311-324.

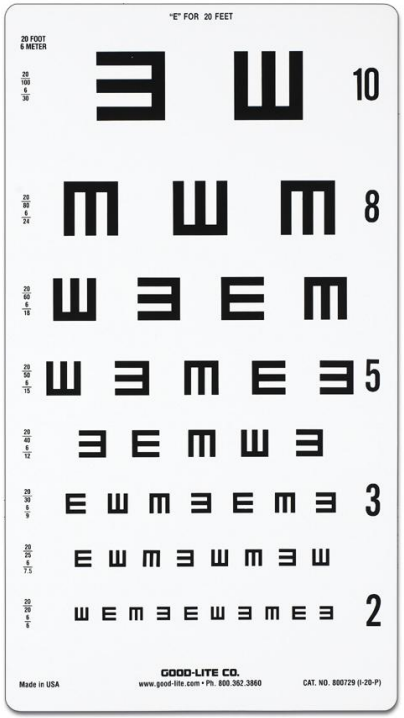
“Sailboat” Chart Lacks Scientific Evidence

- Does not meet national/international eye chart design guidelines
- Optotypes of different sizes on same line
- NEVER on recommended list of eye charts from American Academy of Pediatrics
- Chart’s history and developer unknown
- No supporting research to validate

2 Challenges With Tumbling E

1. Children's orientation and direction challenges with directional optotypes
   a. Emerging cognitive skill
   b. Up/down emerges before left/right
   c. Usually in place by ages 8 or 10 years

2. Ability to guess optotype at threshold



Elkind, D. (1961). Children's conceptions of right and left: Piaget replication study IV. *The Journal of Genetic Psychology, 99*, 269-276.

Hyvärinen, L., Näsänen, R., & Laurinen, P. (1980). New visual acuity test for pre-school children. *Acta Ophthalmologica (Copenhagen)*, 58(4), 507-11.

3 Challenges With Allen Pictures

1. Asking young children to make a “whole” picture from “parts”
2. Cultural bias
3. Calibrated against Snellen 30-ft E, not Landolt C (international standard)

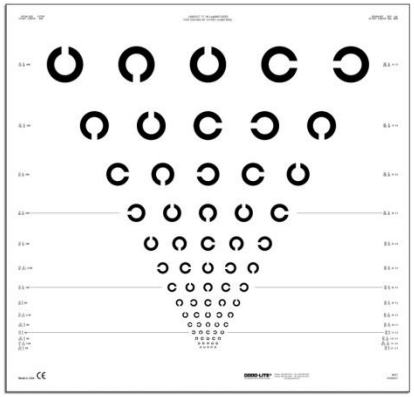
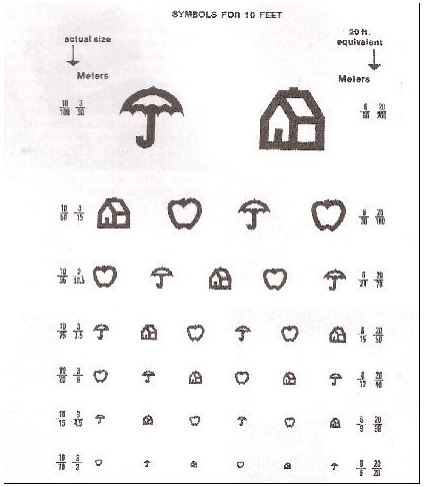


Fig. 1 (Allen). Preschool vision test characters. Actual size with 30-foot E.

Lighthouse Chart

- Optotypes easy to guess
- Poor visual acuity results when compared with international Landolt C standard



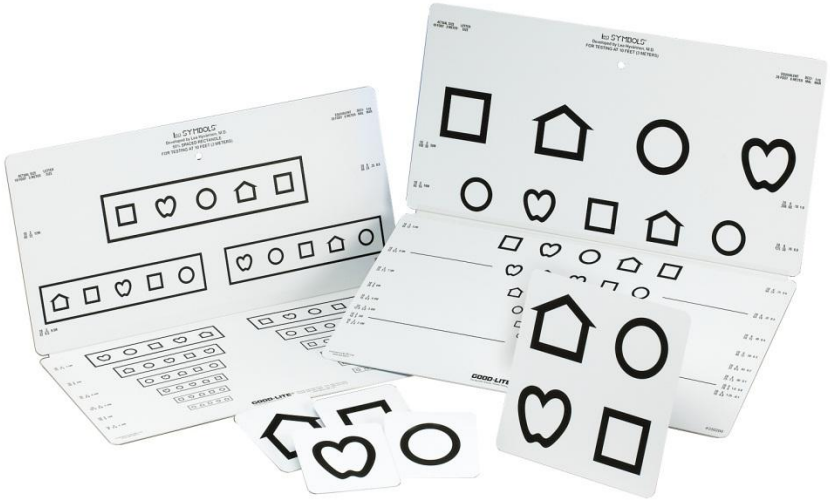
- Not on list of charts recommended by:
  - **American Academy of Pediatrics**
  - **American Association of Certified Orthoptists**
  - **American Association for Pediatric Ophthalmology and Strabismus**
  - **American Academy of Ophthalmology**

Candy, T. R., Mishoulam, S. R., Nosofsky, R. M., & Dobson, V. (2011). Adult discrimination performance for pediatric acuity test optotypes. *Investigative Ophthalmology & Visual Science*, *52*(7), 4307-4313.

Eye examination in infants, children, and young adults by pediatricians. (2003). *Pediatrics, 111*(4), 902-907.

Options for Pediatric Eye Charts

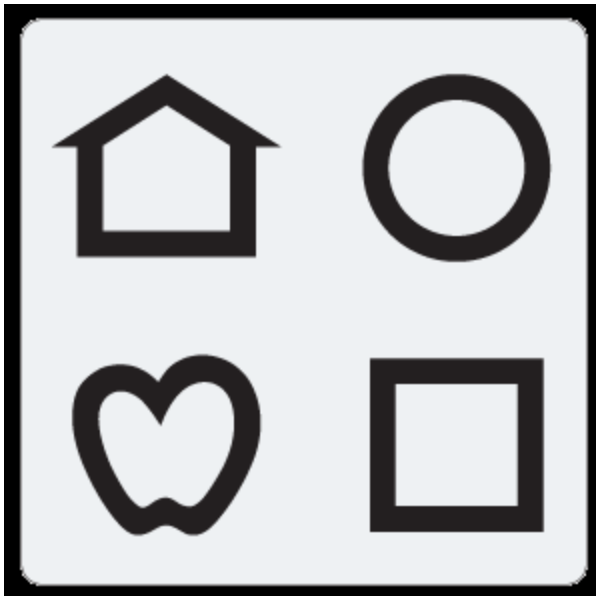
LEA Symbols



HOTV

LEA Symbols

- Only pediatric eye chart with optotypes that blur equally at threshold
- Culturally neutral
- Children call optotypes what they want
  - i.e., Square may be an iPad
  - Circle may be hula-hoop



No Single Optotypes or Flashcards Without Surround Bars for Typically Developing Children

- Visual acuity results, on average, 3 lines worse on charts with lines vs. single, non-crowded optotypes
  - For example, 20/32 with single, isolated optotype and 20/80 with line chart

Youngson, R. M. (1975). Anomaly in visual acuity testing in children. *British Journal of Ophthalmology, 59*(3), 168-170.

Hilton, A. F., & Stanley, J. C. (1972). Pitfalls in testing children's vision by the Sheridan Gardiner single optotype method. *British Journal of Ophthalmology, 56*(2), 135-139.

Occluders – Younger Children <10 Years

3.a. – Follow National Referral and Rescreening Guidelines

- **Example: 2003 Policy Statement from:**
  - American Academy of Pediatrics
  - **American Association of Certified Orthoptists**
  - American Association for Pediatric Ophthalmology and Strabismus
  - **American Academy of Ophthalmology**

- **Ages 3-5 years:**
  - Majority of optotypes (3 of 5) on 20/40 line with both eyes

- **Ages 6 years and older**
  - Majority of optotypes (3 of 5) on 20/30 (20/32) line with both eyes

Eye examination in infants, children, and young adults by pediatricians. (2003). *Pediatrics, 111*(4), 902-907.

3.a. – Follow National Referral and Rescreening Guidelines

- Keep track of "untestable" children
- Untestable children were 2x as likely to have vision problems than those who passed vision screening.
- If you have reason to believe that the child may perform better on another day, consider rescreening the child within 6 months.
- Otherwise, refer untestable children for an eye exam with pediatric eye care professional skilled in treating young children.

Vision in Preschoolers Study Group. (2007). Children unable to perform screening tests in Vision in Preschoolers Study: Proportion with ocular conditions and impact on measure of test accuracy. *Investigative Ophthalmology & Visual Science, 48*(1), 83-87.

American Academy of Ophthalmology Pediatric Ophthalmology/Strabismus Panel. (2012). Preferred Practice Pattern® Guidelines. Amblyopia. San Francisco, CA: American Academy of Ophthalmology. Retrieved from http://one.aao.org/preferred-practice-pattern/amblyopia-ppp--september-2012

3.b. - Include Vision Screening Training for Your Staff That Leads to Certification in Evidence-Based Vision Screening

World Health Organization:

- Recommends "regular training" for screeners because " . . . the ***skill of the tester*** affects very significantly the validity and variability of the outcome." p.6

- Check with the Prevent Blindness affiliate in your area for training/certification or state-designated trainer, such as public health department

World Health Organization. (2003). Consultation on development of standards for characterization of vision loss and visual functioning. Retrieved from http://whqlibdoc.who.int/hq/2003/WHO_PBL_03.91.pdf

A Historical Review of Distance Vision Screening Eye Charts

What to Toss, What to Keep, and What to Replace

P. Kay Nottingham Chaplin, EdD, West Virginia

Geoffrey E. Bradford, MD, West Virginia

Vision screening protocol and equipment guidelines differ among schools across the United States. Budget cuts are forcing many school nurses to reevaluate their vision screening programs, as well as items in their vision screening toolboxes. School nurses tasked with inventorying those toolboxes to determine which items to toss, keep, or replace are oftentimes perplexed by the copious choices featured in vendor catalogs and websites. For school nurses who want their vision screening toolboxes to include eye charts, national and international eye chart design guidelines are available to help ensure selected eye charts are standardized. A national consensus policy exists that recommends specific eye charts. And, a large body of vision screening literature is available to help school nurses make informed decisions. Current documents suggest that LEA Symbols are appropriate for young children and Sloan Letters are a better choice than "Snellen" charts for older children.

Keywords: preschool vision screening; school-aged vision screening; LEA Symbols; HOTV; Sloan Letters; eye charts; eye chart design recommendations

The first state-supported vision screening program in a school setting started in Connecticut in 1899 with a distance visual acuity Snellen chart as the testing tool (Appelboom, 1985). Though some school nurses across the United States have added vision testing devices to their toolboxes during the last 112 years, the time-honored eye chart continues to hold a primary and prominent space in those toolboxes.

Technology-based vision screening tools include computerized vision screening software, instruments with slides, autorefractors, and photoscreeners. The choice of vision screening tools oftentimes depends on a budget line item and a school nurse's comfort with using instrument-based technology.

Budget cuts are forcing many school nurses to reevaluate the vision screening tools they use or replace. Effective distance wall charts may be a better fit for a tight budget.

Distance Visual Acuity Optotype Charts as Gold Standard

Optotype (letters, numbers, and pictures) charts continue to serve as the most common test for assessing visual acuity in clinical practice (Ehrmann, Fedtke, & Radić, 2009). In schools, distance visual acuity eye charts have been the gold standard for decades (Proctor, 2005). Eye charts "are time-honored, considerably less expensive than vision testing machines and other similar equipment, and effective for screening, if appropriately selected and used" (Proctor, 2005, p. 33).

Challenges in Choosing Optotype Distance Visual Acuity Charts

Countless eye charts have emerged since Herman Snellen introduced his optotypes in 1862 (Bennett, 1965). The "Snellen" chart concept has withstood the test of time, although this chart, as well as others, has design challenges that may reduce the accuracy of screening vision in children. Selecting appropriate eye charts is challenging because no one particular national standard exists to provide guidance on selecting distance visual acuity eye charts to use in the school setting.

Eye chart recommendations differ among the 38 states, and the District of Columbia, with school vision screening requirements (The Vision Council, 2009). Vendor catalogs and websites offer

DOI: 10.1177/1942602X11411094

Nottingham Chaplin, P. K., & Bradford, G. E. (2011). A historical review of distance vision screening eye charts: What to toss, what to keep, and what to replace. *NASN School Nurse, 26*(4), 221-228. http://nas.sagepub.com/content/26/4/221.abstract

Thank You for Your Time and Attention!!!!

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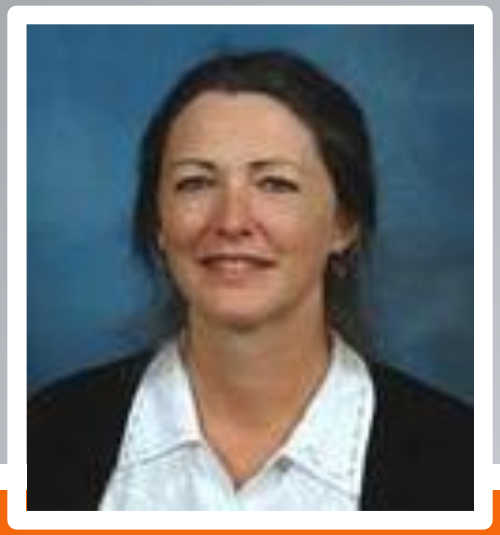


Linda Lawrence, MD

Children Difficult to Screen or with Special Health Care Needs: What Should You Do?

The 12-Component Vision Health System Part 1:

- Provide educational material to parents/caregivers about vision
- Obtain permission to share vision screening results with all involved in the child's care
- *Screen with age-appropriate and evidence-based tools*
- *Create vision assessment policies for children with special needs*
- *When to refer untestable children*
- Providing parents/caregivers with vision screening results
- Create system to follow-up on recommended eye care
- Link parents/caregivers with pediatric eye care provides
- **Maintain copy of eye exam for files**
- **Send copy of eye exam results to child's primary care provider**
- Ensure that treatment plan is followed
- Evaluate effectiveness of vision health program annually

New 2012 AAP Policy Statement

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Instrument-Based Pediatric Vision Screening Policy Statement

AMERICAN ACADEMY OF PEDIATRICS Section on Ophthalmology and, Committee on Practice and Ambulatory Medicine, AMERICAN ACADEMY OF OPHTHALMOLOGY, AMERICAN ASSOCIATION FOR PEDIATRIC OPHTHALMOLOGY AND STRABISMUS and AMERICAN ASSOCIATION OF CERTIFIED ORTHOPTISTS

Pediatrics 2012;130;983; originally published online October 29, 2012;
DOI: 10.1542/peds.2012-2548

- Photoscreening may electively be performed in children age 6 months to 3 years.
- Photoscreening is recommended as an alternative to visual acuity screening in children ages 3-5 years.
- Visual acuity screening with charts is preferred in children above 5 years of age.

What is the difference between vision screening and vision screening devices?

- Vision screening with eye charts tests visual acuity

- Vision screening devices do not test visual acuity,
  - Instruments test for conditions or risk factors that may cause decreased vision or amblyopia: refractive errors, strabismus, cataracts, etc.
  - They do not test visual acuity or visual function

Vision screening devices: instrument-based screening

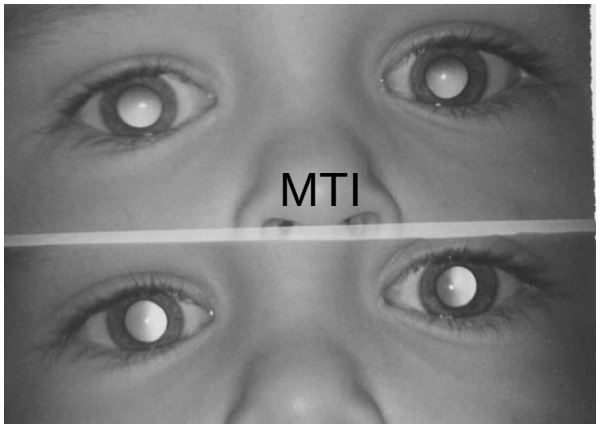
- Devices generally fall into one of two categories:
  - Photoscreeners
  - Autorefractors
  - What is the difference?
  - Neither replace visual screening with eye chart

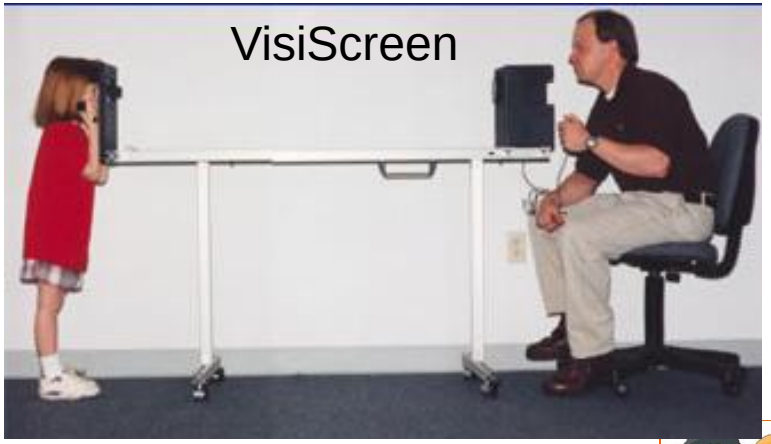
What is a Photoscreener?

- An instrument that takes a photo of the eye's red reflex to estimate refractive error (prescription of the eye)
- Also detects ocular misalignment and other conditions that may blocking line of sight (cataract)

Photoscreeners

MTI





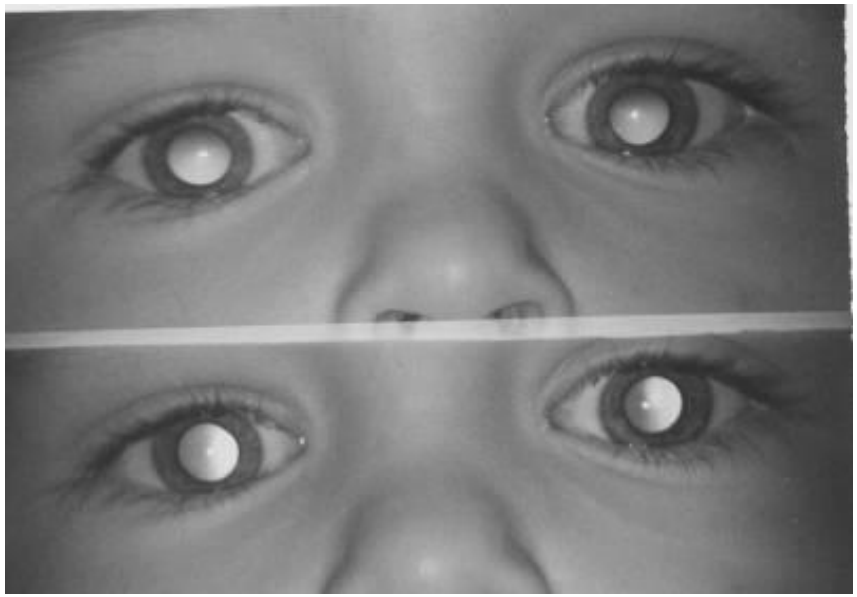
year of children's vision

Giving kids a head start on healthy sight!

Photoscreeners

These photos reveal that this child has farsightedness (hyperopia) indicated by crescents formed in the red reflex

Needs to be interpreted by an experienced reader



Autorefractor

- An instrument that determines the refractive error of an eye
  (glasses prescription)
- High or asymmetric refractive errors may cause strabismus and/or amblyopia
- Other conditions that block the visual axis (cataracts) may also be detected
- Most measure only one eye at a time

Autorefractors

Welch Allyn SureSight

Righton Retinomax

Seiko WAM-5500

PlusOptix S09

Pediavision "Spot"

Visual Acuity evaluated according to age and ability

Do you feel you have done good screening?

- Was the test age & ability appropriate?
- What is next?

year of children's vision
Giving kids a head start on healthy sight!

Options

- Refer (if fails screen) for comprehensive eye exam
- Screen with a different test
- Screen again at a later date
- Pass the child (this should not be done if fails the screen!)

Invest Ophthalmolo Vis Sci 2007;48:83-87

Preschool Children unable to perform vision screening

- More likely to have vision disorders
- These include amblyopia, strabismus, significant refractive error, or unexplained low vision
- May be behavioral or learning related
- Data does not show if better to screen with another method or refer

Invest Ophthalmolo Vis Sci 2007;48:83-87

Options

- May rescreen if the child obviously ill or not able to do on the specific day
- Different test or different day? May depend on availability of other tests, or resources
- Should be done within few weeks
- Screener do not diagnose! They refer if the child fails the screen, screener do not interpret the test

Invest Ophthalmolo Vis Sci 2007;48:83-87

Who do you refer to?

- Pediatrician may use same screening techniques
- Eye care specialist that are experienced with young children
- Make a list of possible referral sources, child friendly, what insurances they take, are they taking new patients, does the child already have an eye care specialist?
- The child who fails the screen needs a comprehensive eye evaluation with dilation to examine the inside of the eye (fundus exam) and determine exact refractive needs
- If you make direct referrals to a specific provider, you may be responsible for the fees

Should children with known ocular disease be screened?

- May detect interim changes
- Inclusion in “activity” at center
- Parental education: some feel if they are bringing their child to an eye care specialist, it is not necessary to have additional screening, and feel the time and expense don’t justify this

Who Should Bypass Vision Screening and Go Directly To Eye Exam?

- Children with developmental delays or other risk factors have a greater possibility of vision problems and should be directly referred to an eye care provider who specializes in caring for young children for a comprehensive eye examination.
- It is essential that parents of these children receive educational materials so that they can understand the increased risk of vision problems their child faces.
- If you have to screen to refer, screen

Who should bypass vision screening and go directly to eye exam?

- Children with Down syndrome, juvenile arthritis, and neurofibromatosis.
- A family history of amblyopia, strabismus, retinoblastoma, congenital cataracts, or congenital glaucoma.
- Children with developmental delays, intellectual disabilities, neuropsychological conditions, and/or behavioral issues that render them untestable.

High Risk infants
Premature Infants

- Low birth weight, prolonged supplemental oxygen, or grades III or IV intra-ventricular hemorrhage
- Retinopathy of prematurity, even if regressed

Children with Neurological Disability

- No consensus as to the best method of assessing vision in children with ND
- Comprehensive exam indicated with functional visual evaluation
- May include retinoscopy, tests of accommodation, pupil exam, oculomotor exam including saccades and pursuits, test for strabismus, stereopsis, color vision, acuity tests based on age and ability, visual fields, developmental review

Children who should bypass vision screening and go directly to eye exam

- Mothers smoked or used drugs, alcohol during pregnancy.
- Mothers had rubella, toxoplasmosis, venereal disease, herpes, cytomegalovirus, or human immunodeficiency virus during pregnancy.
- Mothers experienced difficult or assisted labor, which may be associated with fetal distress or low Apgar scores.
- Child with known or suspected central nervous system dysfunction evidenced by developmental delay, cerebral palsy, dysmorphic features, seizures, or hydrocephalus.
- Children on the autism spectrum.
- Children with attention deficit hyperactive disorder.

What are the barriers to follow-up?

- Parent's knowledge of importance of further exams
- Who will pay for the exam?
- Insurance questions
- Role of Affordable Care Act
- Who pays for interventions?
- Parent's don't want children to wear glasses
- If fail screen, must have appropriate referral protocol in place
- Education of parent and screeners important!

Questions for the presenters?

Kira Baldonado, Director for The National Center for Children's Vision and Eye Health

at Prevent Blindness America

Conclusion of today's presentation…

- Thank you to each of our presenters
- Today's webinar will be archived and available online, link will be sent via email
- Be on the lookout for more *Year of Children's Vision* events
  - Full day YOCV panel presentation at the National Head Start Association Annual Meeting, Long Beach, CA, April 30, 2014
  - NHSA BAM! Radio podcast
  - YOCV website: http://nationalcenter.preventblindness.org/year-childrens-vision
  - Past and future webinars and much more!

Thank you for attending!