“Seeing Eye to Eye with New Vision Screening Requirements”

February 5, 2015
2:30-3:30 pm Pacific Time

About Today's Webinar

- Our presenters will take about 45 minutes to present, after which we will address questions as time allows.
- All attendees are on mute.
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- This Webinar will be Recorded
- You will receive a follow-up email which will contain a link to the recording, pdf of presentation slides, and your CE Credit Certificate (expect it in 3-5 business days).
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Agenda

- ❑ “Mandated School Vision Screening” with Pamela Kahn, RN, MPH
- ❑ “Testing for Near Visual Acuity – a Clinical Perspective” with Dr. Sandy Block
- ❑ “Near Visual Acuity Screening Tools for California School Nurses” with Dr. P. Kay Nottingham Chaplin
- ❑ Questions
- ❑ Closing Reminders
- ❑ Post Webinar Survey

Mandated School Vision Screening: SB 1172 & CEC 49455

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Coordinator, Health and Wellness

Orange County Department of Education

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Brief History of Legal Process

- AB 1840 (Campos) and SB 1172 (Steinberg) were both on the CA legislative agenda in 2014
- Both bills addressed the issue of mandated school vision screenings, including screening timing, methods, and the inclusion of near vision screening
- Both bills were signed by Governor Brown; AB 1840 on 9/29/14 and SB 1172 on 9/30/14

SB1172

- Since SB 1172 was signed last, this is the bill that was implemented
- SB 1172 incorporates changes to Section 49455 of the California Education Code (CEC) proposed by this bill and by AB 1840
- Changes to CEC 49455 became effective as of January 1, 2015

SB 1172 Bill Analysis

Assembly Committee on Education

- Early detection and prompt treatment of ocular disorders in children is important to avoid life-long visual impairment

- The bill ensures that, by moving up the time frame for vision screening in schools from third to second grade, vision deficits are identified before the crucial grade three milestone identified by the research as the turning point for learning and during the key intervals that a child's eye is developing

SB 1172 Bill Analysis

Assembly Committee on Education

- Adds the requirement that nurses and teachers observe the appearance and behavior of student's eyes on a continual basis (previously only observation of student's eyes, visual performance and perception was required)

- Due to the author's belief that near vision deficiencies may be interfering with a child's ability to read, this bill also adds the requirement for near vision screening

- "In addition, SB 1172 ensures that there is uniformity of training and methodology by requiring the California Department of Education (CDE), to adopt guidelines to implement the near vision screening."

CA Education Code 49455
Who is Screened?

(a)(1) During the kindergarten year* or upon first enrollment or entry in a CA school district, and in grades 2, 5 & 8, the pupil's vision shall be appraised by the school nurse or other authorized persons under Section 49452.

(a)(2) A pupil whose first enrollment or entry occurs in grade 4 or 7 shall not be required to be appraised in the year immediately following the pupils first enrollment or entry.

*TK is included in the Kindergarten screenings. The CDE defines Transitional Kindergarten (TK) as; "TK is the first year of a two-year kindergarten program…" http://www.cde.ca.gov/ci/gs/em/kinderfaq.asp

CA Education Code 49455
What is Screened?

(b) The appraisal shall include tests for visual acuity, including near vision and color vision. However, color vision shall be appraised once and only on male pupils, and the results of the appraisal shall be entered in the health record of the pupil. Color vision appraisal need not begin until the male pupil has reached the first grade.

CA Education Code 49455
What about Waivers?

(c) The appraisal may be waived, if the pupil's parents so desire, by their presenting of a certificate from a physician and surgeon, a physician assistant practicing in compliance with Chapter 7.7 (commencing with Section 3500) of Division 2 of B & P code, or an optometrist setting out the results of a determination of the pupils vision, including visual acuity and color vision.

CA Education Code 49455
How to Screen

(d) A pupil's vision may be appraised by using an eye chart or any other scientifically validated photoscreening test. Photoscreening tests shall be performed, under an agreement with, or the supervision of, an optometrist or ophthalmologist, by the school nurse or a trained individual who meets requirements established by the department.

Note: When the screener elects to use an eye chart, there is no need to consider an agreement with or supervision by an optometrist or ophthalmologist.

Special Circumstances

CCR Title 5, Division 1, Chapter 2, Subchapter 3, Article 4

- "For pupils who, because of age or special needs are not able to be tested with an optotype test, other types of vision testing, such as a functional vision test, may be utilized, using procedures and criteria of failure as described by the manufacturer."

A functional vision assessment measures how well a child uses vision to perform routine tasks in different places and with different materials throughout the day. The functional vision assessment "paints a picture" of how a child uses vision and what visual skills the child needs to develop further.

CA Education Code 49455
Ongoing Observation

(e) Continual and regular observation of the pupil's eyes, appearance, behavior, visual performance, and perception that may indicate vision difficulties shall be done by the *school nurse* and the *classroom teacher.*

CA Education Code 49455
Waiver

(f) This section shall not apply to a pupil whose parents or guardian file with the principal of the school in which the pupil is enrolling, a statement in writing that they adhere to the faith or teachings of any well-recognized religious sect, denomination, or organization and in accordance with its creed, tenets, or principles depend for healing upon prayer in the practice of their religion.

CA Education Code 49455
CDE Guidelines

(g) The Department shall adopt guidelines to implement this section, including training requirements and a method of testing for near vision.

Note: As of today, the CDE has not released any training requirements or recommended methods of testing for near vision since their 2005 publication *"A Guide for Vision Testing in California Public Schools"*

http://www.cde.ca.gov/ls/he/hn/documents/visionreport.pdf

Resources

- AB 1840 Assembly Bill – Bill Analysis
  - http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_1801-1850/ab_1840_cfa_20140623_171245_sen_comm.html
- AB 1840 Bill Text
  - http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1840
- SB 1172 Senate Bill – Bill Analysis
  - http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_1151-1200/sb_1172_cfa_20140610_111847_asm_comm.html
- SB 1172 Bill Text
  - http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1172
- California Education Code 49455
  - http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=49455
- A Guide for Vision Screening in California Public Schools
  - http://www.cde.ca.gov/ls/he/hn/documents/visionreport.pdf

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Testing for Near Visual Acuity – A Clinical Perspective

Sandra S. Block, OD, M Ed, FAAO, FCOVD

Professor, Illinois College of Optometry

Medical Director, School-Based Vision Clinics

Disclaimer

- My responses today are mine and have developed as a result of various aspects of my professional life:
  - First, my experience as an educator in optometry have allowed me to follow many changes and improvements in vision screening techniques that have been seen over the years.
  - Second, I have followed the research to determine which are good screenings techniques for specific problems and which are not.
  - Lastly, my experience as a clinician has had a major influence. I have been practicing since 1981 with a focus on the care of infants, toddlers, children and adolescents. My clinic serves low income children from the Chicago Public Schools. In the 4 years since we have been open, we have seen 23,000 children.

Why test vision at near?

- It is important to test near visual acuity so we know that the child is able to see books, and papers up close clearly so they can perform the academic work.

What does Near VA testing really test for?

- Vision screenings are designed to identify those children who are at risk for vision problems. The vision problems that school and community based screening look for include:
  - Strabismus - also referred to as *squint* or *eye turns* (in, out, up, or down)
  - Factors that lead to of the development amblyopia. Amblyopia is often referred to as *lazy eye*.
  - Significant refractive errors – myopia, hyperopia and astigmatism. Significant reflects those refractive errors that would benefit from glasses (lens correction).

Strabismus

- This is when the eyes do not point to the same point in space. The child's eyes may or may not look like one is turning. The eye turn can affect only one eye or alternate between the eyes.
- If one eye turns more than the other and this has been occurring for some time, the vision in the eye that turns may not be as good as the other.
- Near visual acuity testing does **NOT** test for an eye turn, but it can identify if the vision in one eye is not as good as the other if testing is conducted one eye at a time (monocular) versus with both eyes open (binocular).

Amblyopia

- Classically, referred to a decrease in vision in one eye.
- Can affect one eye due to:
  - Long standing eye turn.
  - Higher refractive error in one eye as compared to the fellow eye. Both distance and near visual acuity is reduced when amblyopia is present.
  - Eye health issues such as a droopy eyelid (covering most of the pupil) or cataract in one eye which prevents good vision from developing.

Amblyopia

- Can affect both eyes:
  - Seen when both eyes have significant nearsightedness, farsightedness or astigmatism.
  - When eye health problems such as cataracts are present in both eyes and have prevented visual acuity from normal development.

Note: Amblyopia is not a disease process, it occurs when a otherwise healthy eye does not develop good vision because it has not received the right stimulation to allow for normal vision development.

Refractive Errors

- Myopia - also referred to nearsightedness:
  - Typically, the distance vision is blurred but near vision remains clear in mild and moderate amounts. People with myopia complain about blur when looking at the board.
  - High amounts of nearsightedness, both distance and near vision may have been affected.

Refractive Errors

- Hyperopia or farsightedness:
  - Near vision is usually affected before distance vision.
  - Visual acuity may be reduced at near when high moderate or high amounts of farsightedness are seen.
  - Complaints of headaches, tearing, and intermittent blur are associated with moderate or high amounts of uncorrected hyperopia. Children experience difficulty concentrating on close work for extended periods of time.

Refractive Errors

- Astigmatism
  - Astigmatism occurs alone or with myopia or hyperopia.
  - Distance and near vision are affected equally.
  - Children with significant amounts of astigmatism typically have learned to compensate for significant amounts of astigmatism by squinting. *Watch carefully for squinting when testing vision during screenings!*
  - Children from Hispanic backgrounds have higher amounts of astigmatism.

Note: While someone with astigmatism sees well while squinting, squinting should not be the way they see the world.

Accommodation

- The ability to change focus when changing fixation from distance viewing (board) to near viewing (book).
- Should be a normal response (involuntary) in children.
- If accommodation is not working properly, children will report initial blur when changing viewing distance or not be able to clear up near images.
- Children with farsightedness will have to work harder to keep near targets clear if accommodation is reduced. Complaints may include fatigue, headaches, or difficulty keeping words clear.
- May lead to academic problems when doing close work.

Choice of Screening Tests

- Best practices for vision screenings, should provide the following:

  High sensitivity –fails children if the child has a vision problem to ensure that the referrals are good.

  High specificity – pass children who do not have a vision problem, preventing overreferrals.

  Valid –test what it is designed to test.

  - Example: Distance visual acuity tests should be able to detect reduced far vision at 5 foot for preschools or 10 feet for other students. It should also show a difference between the two eyes is amblyopia has developed in one eye. Visual acuity tests do not tell you if a child is using both eyes together.

California Screening Requirements

- Test students upon entry to school & every 3 years.
  K/1st, 2nd, 5th, 8th grades.
- Screen vision when a vision problem is suspected.
- Screen vision when school performance suggests a vision problem.
- Uses optotype at far point – letters for literate students, pre- or illiterate – “E”, HOTV or LEA with crowding bars.
- UTT/special needs children – “functional vision test”.
- Pseudoisochromatic plates for color vision.
- Retest initial vision screening failures.

Why These Grades?

- Kindergarten & 2nd Grade

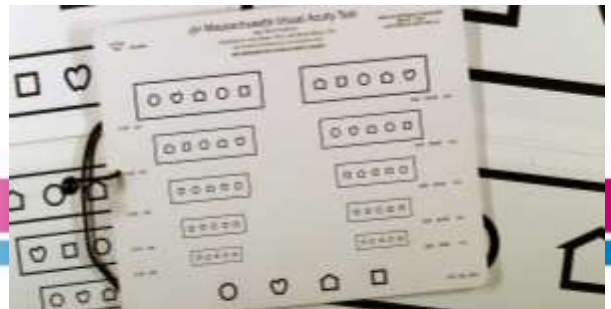
The rationale for screening the younger children is to look for existing “amblyogenic” vision problems or existing significant refractive errors or eye health problems.

- 5th Grade & 8th Grade

The rational for screening older children relates to the fact that vision changes over time. Research has shown if myopia is to develop, it might surface around the age of 9 or 10 years. Also, to ensure problems identified in the earlier screenings had been referred and treated.

Near Vision Testing

- Use charts that are properly designed:
  - Isolating letters or symbols is only done when crowding bars around the letter/symbol or a crowding box around the line is present.
- Watch the child carefully! When a child is not seeing well, they move closer to the target. As they move closer to the target it gets larger and they will read smaller lines. This will yield better vision than the child really has.
- When testing monocularly, watch for peeking.
- Ensure that good lighting falls on the front of the test card.



Near Vision Testing

- Points to consider when testing near:
  - If amblyopia is present, testing needs to include monocular testing. This is the only way to identify what each eye can see alone.
  - If you only test both eyes together you can miss the difference in visual acuity that screenings for the presence of amblyopia.

Distance Visual Acuity Referral Criteria

California Department of Education

- VA of 20/40 or poorer for children ≥ 6 years of age.
- VA of 20/50 or poorer for children < 6 years of age.
- A difference between 2 lines on the chart.

National Center on Vision & Eye Health at Prevent Blindness

- VA poorer than 20/32 (20/30) for children ≥ 6 years of age.
- VA poorer than 20/40 for children 4 year of age.
- VA poorer than 20/50 for children 3 years of age.

Testing for Hyperopia

- One additional test listed in the CA Guide for Vision Testing (2005) is to look at the results of the distance visual acuity testing and compare it to the results of the same testing while the child looks through +2.50 D lenses.
- If the vision is not blurred while looking at the chart through lenses, hyperopia is suspected. Testing is done at the same distance as distance visual acuity testing.
- <u>This is not a near visual acuity test.</u>

What About the New Technology?

- Technology has brought some new means to screen children's vision. Acceptable devices currently include SureSight, PlusOptix, and the Spot.
- These instruments are wonderful additions to accurate testing, however, we need to understand what they tell us.
- These devices are often preferred for screening children with special needs who are unable to complete "typical" vision screening tests.

Welch Allyn SureSight Screener

Designed to refer children who present with significant refractive errors.

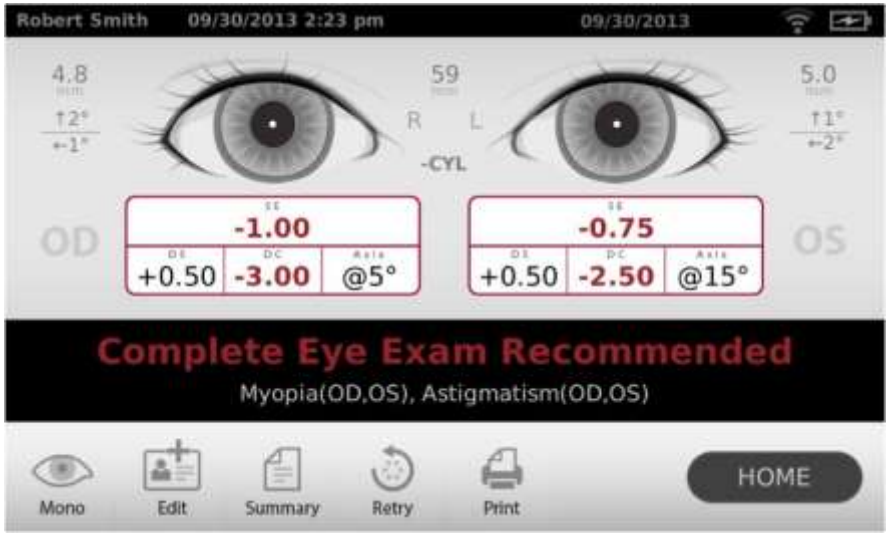
Does not look for a difference in visual acuity.

In combination with stereopsis testing improves detection of strabismus.

Version 2.5 is recommended -the VIP Study pass/fail criteria for 90% specificity.

http://www.welchallyn.com/content/welchallyn/americas/en/search.html#query=suresight vision

Spot™ Vision Screener



http://www.welchallyn.com/en/products/categories/physical-exam/eye-exam/vision-screeners/spot-vision-screener.html

PlusOptix

http://plusoptix.com/lang-en/vision-screener/9-vision-screener.html

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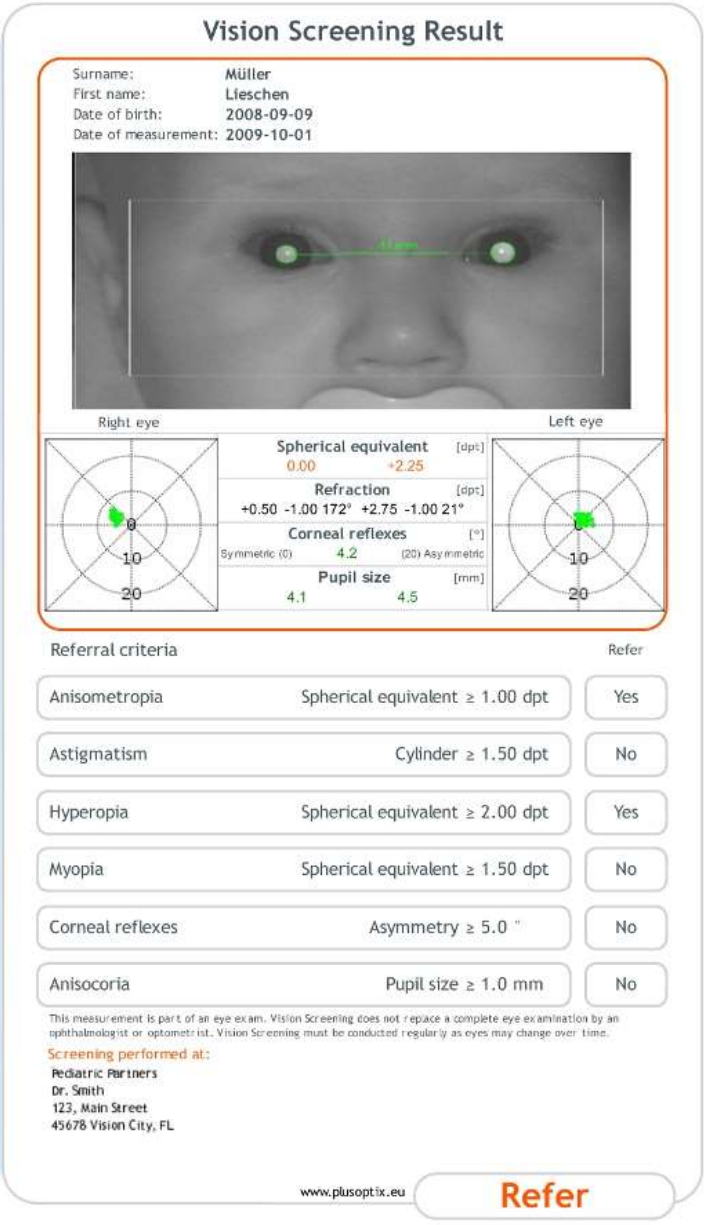

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Thank you for your attention. Questions?

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Near Visual Acuity Screening Tools for California School Nurses

P. Kay Nottingham Chaplin, EdD

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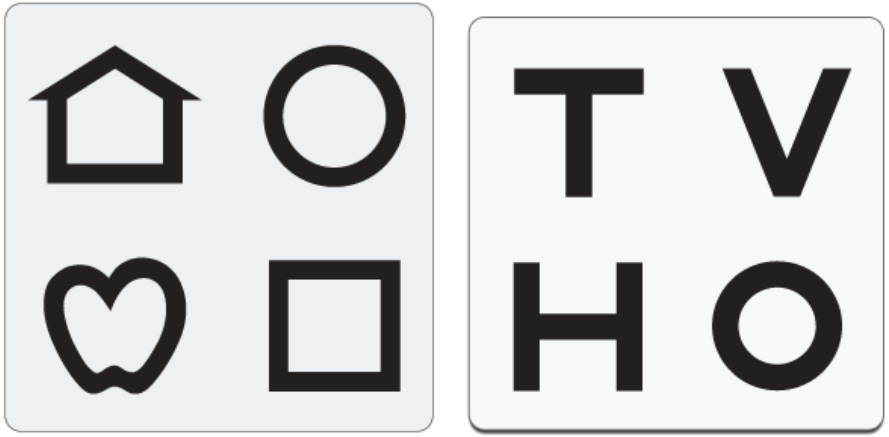
Preferred Optotypes for Preschoolers

- National Expert Panel of the National Center for Children's Vision and Eye Health at Prevent Blindness
- *American Association for Pediatric Ophthalmology and Strabismus*
- American Academy of Ophthalmology
  - *Recommend LEA Symbols and HOTV optotypes*



Cotter, S. A., Cyert, L. A., Miller, J. M., & Quinn, G. E. for the National Expert Panel to the National Center for Children's Vision and Eye Health. (2015). Vision screening for children 36 to <72 months: Recommended Practices. *Optometry and Vision Science, 92*(1), 6-16.

American Association for Pediatric Ophthalmology and Strabismus (2014). *AAPOS techniques for pediatric vision screening*. Available at: http://www.aapos.org//client_data/files/2014/1075_aapostechniquesforpediatricvisionscreening.pdf

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

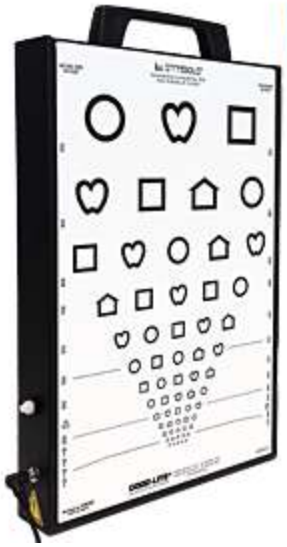
Preferred Optotypes for School-Aged Children

- American Association for Pediatric Ophthalmology and Strabismus
  - *Recommends Sloan Letters*
- American Academy of Ophthalmology
  - *Recommends Sloan Letters and LEA Numbers*

American Association for Pediatric Ophthalmology and Strabismus (2014). *AAPOS techniques for pediatric vision screening*. Available at: http://www.aapos.org//client_data/files/2014/1075_aapostechniquesforpediatricvisionscreening.pdf

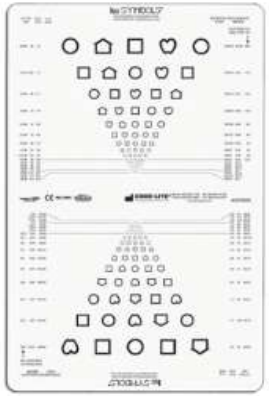
American Academy of Ophthalmology Pediatric Ophthalmology/Strabismus Panel. (2012). Preferred Practice Pattern® Guidelines. Amblyopia. San Francisco, CA: American Academy of Ophthalmology. Available at: http://one.aao.org/preferred-practice-pattern/pediatric-eye-evaluations-ppp--september-2012

Near Vision Optotype-Based Screening Tools for ESV1200

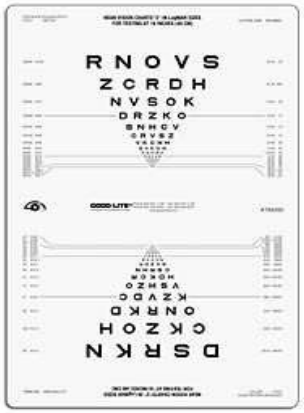


Easily Change Charts

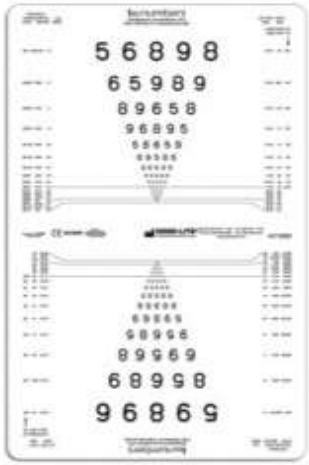
Storage in Back



LEA Symbols until children know their letters



Sloan Letters when children know their letters through senior high



LEA Numbers

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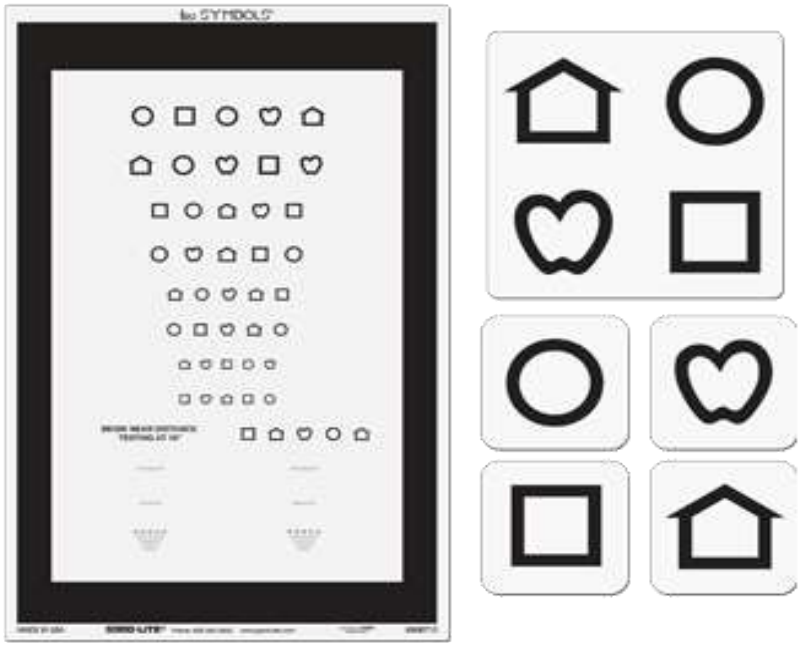
Near Vision Optotype-Based Tools for Insta-Line



LEA Symbols until children know their letters

Includes distance and near

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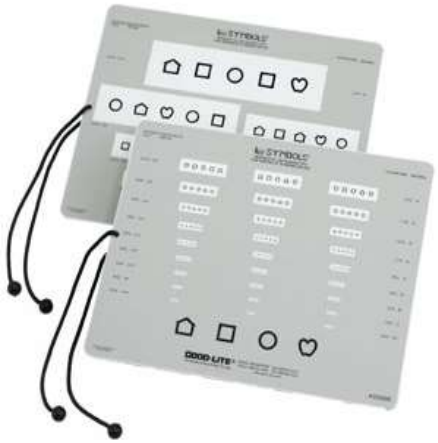
Tests of Visual Acuity with 16-in. Cord for Preschoolers

LEA Symbols threshold chart on one side and 50% and 25% spacing on other side



LEA Symbols

HOTV

Optotype-Based Charts with 16-in. Cord for Older Children and Mixture

Sloan Letters

LEA Numbers

LEA Symbols
and
LEA Numbers

Optotype-Based Tools in Kits

AAPOS Supplemental Vision Screening Kit with Near, Color, and Stereoacuity with LEA Symbols and Sloan Letters

Near/Distance Vision Screening Test with Tutorial DVD by AAPOS, Good-Lite & School Health with LEA Symbols, HOTV, LEA Numbers, and Sloan Letters

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No Pointing at Optotypes

- No pointing at optotypes
- Holding pointer at optotype makes optotype easier to identify
- Briefly point under or over top of optotype and *quickly* remove pointer
  - If line has a box around optotypes, do not break box with pointer

Occluders: Preschoolers and <10 Years

Best Practice for preschoolers – National Center for Children's Vision and Eye Health at Prevent Blindness *and* American Association for Pediatric Ophthalmology and Strabismus

Acceptable Practice for preschoolers – National Center for Children's Vision and Eye Health at Prevent Blindness *and* American Association for Pediatric Ophthalmology and Strabismus

Unacceptable Occluders for Preschoolers

- Hand
- Tissue
- Paper cup
- Cover paddle

Cotter, S. A., Cyert, L. A., Miller, J. M., & Quinn, G. E. for the National Expert Panel to the National Center for Children's Vision and Eye Health. (2015). Vision screening for children 36 to <72 months: Recommended Practices. *Optometry and Vision Science, 92*(1), 6-16.

Occluders: 10 Years and Older

Instrument-Based Screening Examples for Estimate of Refractive Error

Welch Allyn SureSight® Vision Screener

14-inch screening distance

Version 2.25

Welch Allyn Spot™ Vision Screener

About 3 feet screening distance

Plusoptix S12C

About 3 feet screening distance

Thank You for Your Time and Attention!

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Questions?

- Please type your questions into the “Questions” box in GoTo Webinar.
- We will address as many questions as possible.
- If there are questions we can not get to due to time, we will follow up on them and share with the group in the follow up email.

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Closing Reminders

- Thank you to our presenters today!
- Thank you again to CSNO – visit www.csno.org
- Your follow-up email will arrive in 3-5 business days
- Post-webinar survey – *please share your feedback!*

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