**Today's Objectives**
At the completion of this presentation, you will be able to:
1. Identify 3 ocular conditions that can impact a child's vision or lead to permanent visual loss.
2. List 3 special populations of children with diagnosed medical conditions that should bypass vision screening and go directly to eye exam.
3. Describe 5 components of a standardized visual acuity eye chart according to national and international eye chart design guidelines.

**Traditional Approaches → Poor Outcomes**
- Duplication of services
- Little to no population-level surveillance
- Increased medical expense
- Increased prevalence in high-risk populations
- Poor use of limited public health $s
- Barriers to health care are maintained

All of this leads to maintained levels of vision disease prevalence in children.

**National Expert Panel and their Recommendations**
The recommendation manuscripts were published in the Journal of Optometric and Visual Sciences (OVS) as the lead articles in the January 2015 issue and available in OPEN ACCESS.

They are the first set of national recommendations for a uniform approach to preschool vision screening, data collection, and surveillance in clinical and public health settings ever published.

These recommendations, along with a full understanding of the available scientific evidence and expert experience, provide state and local health departments with a roadmap to establishing a comprehensive public health system for children's vision.

**Best Practices for Children’s Vision (36 to <72 months)**
- Recommendations from national leaders in children’s vision
- Peer-reviewed, published, open access
- VS practices, data collection, program accountability measures

**National Center for Children's Vision and Eye Health**
The National Center for Children’s Vision and Eye Health was established at Prevent Blindness with support from the Maternal and Child Health Bureau to create a public health infrastructure that will promote a comprehensive, multi-tiered continuum of vision care and eye health for young children.

- **Vision:** Develop a full continuum of care for children by identifying vision conditions in children early, linking them to appropriate care, and ensuring they receive the care they need.

**Closing the Student Vision Health Loop- Special Populations**
http://visionsystems.preventblindness.org
WHO DOES NOT NEED TO BE SCREENED OR WHAT CHILDREN SHOULD NOT BE SCREENED, BUT BE REFERRED DIRECTLY FOR AN EYE EXAM?

TYPES OF VISION PROBLEMS SEEN
- Refractive Errors
  - Nearsighted, farsighted, astigmatism
- Amblyopia
- Strabismus
- Accommodative Deficits (focusing)
- Eye movement Deficits – fixation, following
- Eye Health – optic nerve atrophy, cataracts

ESTABLISHED VISION AND EYE HEALTH PROBLEMS
Students who are under the care of an eye care provider
Children who have lost or broken glasses

GROUPS WHO ARE KNOWN TO HAVE A HIGH PREVALENCE OF VISION PROBLEMS
- Children who are preterm or very low birth weight may be at risk for eye health problems, strabismus (eye turns), amblyopia (lazy eye), refractive errors, as well as other health issues.
- Children diagnosed with autism are at risk for similar eye health problems

CHILDREN WITH ACADEMIC PROBLEMS?
- Whenever a parent is concerned about a child’s vision or there are academic deficits that do not appear to match the child’s ability – it is good to rule out a vision problem.

WHAT HAPPENS ON SCREENING DAY?
- Children who are being referred are often brought along with the class for screening.
- While your time is valuable, there are times when including the child in the screening process is important:
  - Child is feeling left out.
  - Parent needs to understand that there is a reason to refer the child.

WHAT SCREENING IS APPROPRIATE FOR CHILDREN WITH SPECIAL NEEDS
- It is recommended to use recognition visual acuity testing in cases where a valid and reliable response can be obtained.
- For some children, it is helpful for the classroom teacher to practice with the Lea Symbols prior to the day of the screening. The teacher knows the child, knows how to get them to respond, and can determine the type of response.
  - Verbal, matching, forced choice, or signing

SPECIAL POPULATIONS
- Groups who are known to have a high prevalence of vision problems
- Students who are under the care of an eye care provider
- Children who have lost or broken glasses
- Children who have neurodevelopmental diagnoses

CHILDREN WHO HAVE NEURODEVELOPMENTAL DIAGNOSES
Children with the following syndromes or neurodevelopmental diagnoses are found to have many vision and eye health problems:
- Down syndrome
- Cerebral palsy
- Fetal alcohol syndrome
- Fragile X
- Intellectual and developmental disabilities
KNOW WHEN NOT TO CONDUCT SUBJECTIVE TESTS

• In cases where children do not have the cognitive ability to respond or are unable to react to a choice option, consider instrument based screening.
• Children with very short attention spans due to age, cognitive level, language barriers, attention span, or other inability to respond to a test — do not attempt visual acuity testing — go directly to instrument-based testing.

SPECIAL EDUCATION CLASSES

• Communicate with the teacher to let her/him know what the vision screening entails.
• Instruct them to sensitize the classes to the pictures, the testing environment, covering one eye, and that you will be working with them.
• Use an area without excessive distractions, ensure good lighting, have an aide or someone in the area that knows the children.

SPECIAL NEED CHILDREN

• Expect them to take more time.
• Allow them to respond in their own way.
• Enjoy the experience.

Optotype and Instrument-based vision screening

P. Kay Nottingham Chaplin, Ed.D

Optotype- and Instrument-Based Vision Screening

Learning Objectives:
3. Describe 5 components of a standardized visual acuity eye chart according to national and international eye chart design guidelines.
4. Describe 2 sets of appropriate optotypes for optotype-based screening and 3 devices for instrument-based screening.

2 Approaches to Vision Screening

1. Optotype-based screening
   - Tests of visual acuity using optotypes measure visual acuity
   - Clarity of vision when identifying an optotype at a specified distance
   - May be used in the presence or absence of refractive error and pathology within the visual pathway
2. Instrument-based screening
   - Instruments do not measure visual acuity
   - Instruments measure amblyogenic risk factors:
     - Significant refractive error
     - Anisometropia
     - Eye misalignment
     - Cataract

Preferred Optotypes for Preschoolers

• National Expert Panel for the National Center for Children’s Vision and Eye Health at Prevent Blindness
• American Academy of Ophthalmology/Pediatric Ophthalmology/Strabismus Panel
• American Association for Pediatric Ophthalmology and Strabismus
• Recommend LEA SYMBOLS® and HOTV letters as optotypes

Optotype Format

• Single, LEA SYMBOLS® or HOTV letter optotype surrounded with bars for children ages 3 to 6 years at 5 feet

Preferred Optotypes for Preschoolers


**National and International Distance Visual Acuity Eye Chart Recommendations**


**Tips:**
- Line outside optotypes
- Recommended Sloan Letters
- Snellen: 20/32 vs. 20/30
- American Association for Pediatric Ophthalmology and Strabismus
- Recommends Sloan Letters
- Lighthouse: 10 feet vs. 20 feet

**Occlusion:**
Children likely to peek when given responsibility for their own occlusion.

**Do the following eye charts fit national/international eye chart design guidelines?**

- [ ] Yes
- [x] No

**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

**Occluders: Children 3 Through 5 Years**
Unacceptable Occluders
Ages 3 Through 5 Years

- Hand
- Tissue
- Paper or plastic cup
- Cover paddle

Why unacceptable?

Children can easily peek


Occluders – Older Children


Screening With Instruments

- Instruments
  - Require minimal child response or interaction.


Instrument-Based Screening – 3 to 6 Years

Welch Allyn SureSight® Vision Screener
Welch Allyn Spot™ Vision Screener
Plusoptix
Retinomax

Note: When the Plusoptix and Spot devices are used outside of an eye care setting, consultation with a pediatric eye care professional regarding the best cut-offs to use for the particular patient population to be screened is advised until evidence-based refractive error criteria are determined.


Referral Criteria

National Center for Children’s Vision and Eye Health at Prevent Blindness

- Ages 3 years:
  - Majority of optotypes on 20/50 line
- Ages 4 and 5 years:
  - Majority of optotypes on 20/40 line
- Ages 6 years and older:
  - Majority of optotypes on 20/32 (or 20/30) line

American Association for Pediatric Ophthalmology and Strabismus

- Ages 3 years:
  - Majority of optotypes on 20/50 line
- Ages 4 years:
  - Majority of optotypes on 20/40 line
- Ages 5 years and older:
  - Majority of optotypes on 20/32 (or 20/30) line

Referral criteria.


Pointing from World Health Organization

- Pointing to each optotype to help children know where they are on the chart is permissible.
- 1.8 “Line-by-line isolation or pointing may be used, but not letter by letter.”
- True or False?
  - True

Keep track of “untestable” children.
- Untestable children in VIP study were 2x as likely to have vision problems than those who passed vision screening.
- If possible, rescreen same day.
- If you have reason to believe that the child may perform better on another day, rescreen within 6 months.


Free eBook:
Navigating the Path of Children’s Vision Screening
- Screening practices
- Recommended tools
- Proper occlusion
- Guidance from national experts
Available at: https://www.schoolhealth.com/media/pdf/NavigatingVisionScreening.pdf

Thank You for Your Time and Attention!
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Role of the School Nurse
- Understanding the systems that support vision health for children and families
- Advocating for systematic approaches to screening and follow up
- Leveraging opportunities to identify children needing care
- Knowing the resources that support parents/caregivers in follow up
- Sharing information appropriately to ensure the best possible outcomes

Vision System of Care
The 12 components of a strong vision system of care
1. Appropriate educational materials for parents/caregivers
2. Parent/caregiver approval for information sharing
3. Screening with appropriate tools and procedures
4. Facilitates for children with special needs
5. Re screening and difficulties to screen children
6. Communicating screening results
7. Systematic follow up with parents/caregivers to ensure eye exam
8. Linking parents/caregivers with eye care professionals
9. Ensuring receipt of eye exam results
10. Communicating results with primary care providers
11. Ensuring compliance with the eye care treatment plan
12. Ensuring vision program effectiveness through annual evaluation
Supporting Families in Follow Up

Identifying the right resource to:

1. Help families communicate with providers
   - Fact Sheet on vision screening and development
   - Fact Sheet on eye health in diverse populations
   - Referral forms

2. Help families connect to care
   - Financial resources
   - Culturally and linguistically appropriate care

Sharing Information for Better Outcomes

1. Share vision screening and follow-up data appropriately
   - Solicit information from teachers, social workers, coaches and other support staff regarding any child they may have a concern about
   - Circle back to those referral sources to assist you in ensuring appropriate follow-up occurs. They can be allies in encouraging families to pursue an eye exam.
   - Share the follow-up exam outcome—particularly if there are treatment implications for school/classroom activities.

2. HIPAA and FERPA
   - These are guidelines for sharing information—not barriers

3. Continuity of Care
   - Closing the loop between school-eye care-primary care