TRAINING VISION SCREENERS CURRICULUM

Section III:

Screening Process, Tools and Techniques

Learning Objectives

- Know the different types of vision charts and when they are used for screening children.
- Demonstrate proper screening techniques with screening tools.
- Understand how to screen different ages and children with different developmental needs.
- Perform quality accurate vision screenings.
- Understand principles of re-screening.
- Be able to identify children who need further evaluation/referral.

Getting Ready to Screen

- Set up space according to Screening recommendations.
- Organize tools, supplies and equipment.
- Read and follow manufacturer's distance instructions for screening tools.
- Organize staff and volunteers.

Giving Group Instructions

- Tell the children you are going to play a game.
- Show the children the charts. Explain that they will use the charts to learn about their eyes.
- Use simple instructions.
- Have the children respond as a group each time you point to a symbol or letter.
- Assist any child who does not seem to understand or is not participating.

ABC's: Appearance, Behavior and Complaints

- Information used to aid in the screening process.
- Observation of any of these signs is sufficient reason to *refer* child for an examination by health care provider and it is not necessary to proceed with screening.
- How to use the ABC's:
  - Observe appearance of child's eyes.
  - Watch child's behavior.
  - Listen for complaints.

Appearance

- Observe if eyes cross, turn in or out.
- Wandering eyes (frequently, occasionally, or when the student is tired)
- Irritated, watery or crusty eyes
- Drooping eyelid(s)
- Frequent stys
- Presence of white pupil – as the screener observes it or it appears in a photograph
- Eye injuries resulting in bruising, swelling or bloodshot eyes.

Behavior

- Squinting, frowning, blinking or squeezing the eyes
- Thrusting head forward, or backward while looking at distant objects
- Rubbing the eyes
- Turning head to use only one eye
- Tilting the head to one side
- Placing head close to book or desk when reading or writing
- Closing or covering one eye, especially in sunlight
- Tripping or stumbling
- Daydreaming excessively
- Crossing mid-line difficulties

Complaints

- Headaches
- Eye pain
- Nausea or dizziness
- Burning, scratchy or itching eyes
- Blurred or double vision
- Words that “move” or “jump” when reading
- Sees blur when looking up after close work
- Unusual sensitivity to light

Vision Screenings

- Distance visual acuity
- Near visual acuity
- Stereopsis
- Color deficiency

Overview of Visual Acuity Screening

- Determines how clearly a person can see fine details.
- Distance and near visual acuity methods.
- Distance acuity is used for children of all ages.
- Near vision acuity is optional.
- Involves identifying symbols on standardized screening tools such as a vision chart at a prescribed distance or using other evidence based screening equipment.
- Usually 10 to 20 foot distance depending on tool and manufacturer's instructions

Screening for Distance Acuity

- The manufacturer's instructions should be followed for all screening materials.
- If a child wears corrective lenses/glasses, screen the child with them on.
- Standardize the screening to create consistency in starting every screening with the *right* eye to reduce recording errors of in case of disruption.
- Observe for ABC's.
- Use evidenced based and developmentally appropriate screening tools to ensure child can match symbols or identify letters.

First Steps in Screening for Acuity

- Make sure chart is at appropriate height level for child.
- Instruct child to stand on line or in the box.
- Provide clear instructions to the child on what to do and explain what you will do as a screener.
- Use a pointer to show which line or symbol to read.
- Start with screening both eyes then proceed with screening each eye separately beginning with *right* eye.
- Record acuity as last line on which more than ½ of symbols were read correctly after both eyes and each eye are screened.
- Move to screening next child and repeat process.

Tips for Effective Visual Acuity Screening

- Reference the passing lines on the vision charts for screening preschool and school age children.
- Always begin screening with the *right* eye (documentation is recorded to begin with right eye to assist with reporting errors).
- Make certain that the child does not peek, squint, or tilt his head. If a child squints on any line, do not count that line as passed.

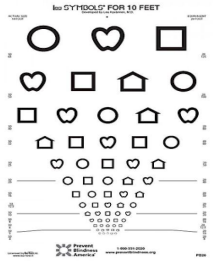
Tips for Effective Visual Acuity Screening cont.

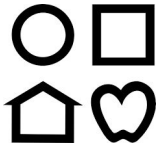
- Have the child hold the occluder in place so that they are not able to peek. For some children, it may be necessary to have a volunteer hold the occluder in place. Hands are not to be used as a substitute for an occluder. Disposable eye patches are available to ensure full occlusion.
- Start by having the child identify symbols prior to the screening. If a child appears uncertain about identifying the symbol or letter, ask for one answer. Say to the child, "I'm not sure what you mean, show me/tell me again." Child does not need to know shapes so long as they are identifying object consistently (i.e box vs. square)
- Do not coach the child during screening if child does not identify the symbol correctly. Discontinue screening if child appears to be guessing.

Recommended Screening Tools: Distance Vision

- LEA Symbols Chart ™ for Distance Vision
- Sloan Letters ™ for Distance Vision

LEA™ Symbols Chart-Distance Vision





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Sloan Letters Chart

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Visual Acuity Recording

- Recorded as a fraction such as 20/20, 20/40,etc. (larger the bottom number, the worse the vision)
- Numerator (top number) represents the distance a person with normal vision can see the letters or symbols shown
- Denominator (bottom number) indicates smallest line of letters or symbols in which the child could correctly identify more than ½ the letters/symbols (ie. The distance at which a normal eye could read that line)

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Standardized Screening Tools: Near Vision

- LEA Chart™ for Near Vision
- Sloan™ Letters for Near Vision

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Screening for Near Vision Acuity

- Similar to distance acuity screening
- Child should be able to identify symbols in own words (i.e box vs. square, ball vs. circle, etc.)
- Follow manufacturer's suggested distance on card for screening tools.
- Start with screening both eyes to condition.
- Record acuity as last line on which more than ½ of symbols were read correctly.
- Screen each eye separately, starting with the *right* eye.

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Acuity Screening Referring Criteria

- Ages three to five, **worse than** 20/40 in either or both eyes.
- Ages six and up, **worse than** 20/30 in either or both eyes.
- Or you have recorded the child as having a two line difference on the chart you are using

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Overview of Stereopsis Screening

- Full, three-dimensional depth perception.
- Only possible when both eyes are in alignment and can perceive the same image clearly.

Recommended Screening Tools: Stereopsis

- Random Dot “E” or Butterfly
- Test All grades through age 9-which includes 4th grade.
- Perform screening with child’s glasses on.

Stereopsis Screening

- Follow directions that come with the specified screening tool.
- This method involves the use of 3-D glasses.

Random Dot E: Stereopsis

- Hold plates or book by edges to avoid damage
- Have child point with cotton swab or other pointer to prevent handprint damage
- Hold plates straight up and down, long sides on top and bottom
- “Raised” on label on top
- Check for glare on plates
- Hold approximately 20 inches from child’s eyes
- 2nd time approximately 40 inches from child’s eyes

Referral Criteria for Stereopsis Screening

- Reference manufacturer’s instructions to assess whether or not the child completes this screen satisfactorily.
- Pass is 6 tries with 4 in a row correct at BOTH 20 and 40 inches.
- If child cannot see at all or only at 20 inches, refer.

Stereopsis Screening

Butterfly Stereopsis

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Overview of Color Vision Screening

- Color vision is important in early learning.
- Cones in the eye contain photoreceptors that are sensitive to red, green or blue light.
- Color disorders can result from faulty or absent photoreceptors.
- Color disorders can result from genetics, disease, injury, or medication.

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Recommended Screening Tools: Color Vision

- COLOR VISION TESTING MADE EASY®
- The purpose of this test is to detect children who are red-green color deficient. It is 100% Ishihara compatible
- Follow manufacturer's instructions
- Each test consists of one demonstration card and nine "test" cards (labeled 1-9) displaying a circle, star and/or square
- Child should wear their own glasses if they have them.
- Kinder- 1st and special education
- **Note:** Even color deficient individuals should correctly identify the demonstration card and one object on the first six cards. This checks for malingering and confirms the individual understood how to take the test.

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Color Vision Screening

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Color Vision Testing Made Easy®

- Hold straight up and down, approximately 16 inches from face
- Child should be able to name or trace shapes
- Have child use cotton swab or other blunt-ended, non-marking pointer if tracing as hand print “oil” will eventually damage plates

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Referral Criteria

- Use the manufacturer’s instructions to assess whether or not a color deficiency is present.
- Referrals to a professional should ***not*** be made on the basis of color deficiency alone.

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Selecting the appropriate screening method considerations

- Child's chronological age
- Child's developmental age
- Screening environment

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Screening Special Populations

- Students who are very young, developmentally delayed, or have special needs often require more time and special equipment. It is very important to administer regular vision screenings due to the increased number of vision problems among students receiving special education services.

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Re-screening

- Re-screen all students who *DO NOT* meet the criteria for passing.
- Always refer students who *DO NOT* pass the Stereopsis Screening.
- Recommend referral to all children that *DO NOT* pass second screening to optometrist or pediatric ophthalmologist for further evaluation.

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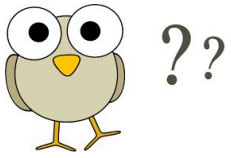
Spot Challenge Question

- *Why would a child pass the second screen after not passing the first?*



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Tips for Effective Vision Screening

- Follow your school/agency policy for notifying parents of the screening.
- Request assistance from a parent or staff member to accompany children to and from the screening room.
- Allow for time to assist children who are not able to provide a reliable response.

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Tips for Vision Screening con't.

- Reference the passing lines when using the acuity charts for preschool and school age children.
- To introduce the acuity test, have the younger children or any children with communication barriers (bilingual or non-verbal) play a matching game.

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Tips for Vision Screening con't.

- Familiarize the child with the symbols.
- Make certain that the occluder is positioned correctly. Given the opportunity, some children may move or slightly adjust and peek with both eyes!
- Using hands is not recommended for occluding. There is potential for contaminating the eye and placing pressure on eye which may change visual perception.
- The volunteer or screener should hold the occluder if necessary.

Instrument Based Screening

- Utilize standardized screening equipment for vision screening.
- Automated Computerized Screeners
- Photoscreeners
- *Need to ensure that your equipment is evidence based and meets the National Standards for Children's Vision and Eye Health*

Spot Vision Screener

Screening Techniques

Step 1: Power On

Step 2: Position (3 ft)

Step 3: Select Age Range and Screen

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Screening Process

"Too far"
Move camera toward subject

Hold Camera Still
(about 3 ft away)

"Too Close"
Move camera away from subject

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Screening Options

Binocula

Monocula

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Screening Results

- Quick and Efficient Screening
- Chirping Sounds
- Visual LED "Twinkling" lights

Vision Screening Summary

- Demographic Information
- Analysis of Test
- Results for Each Eye
- Binocular Results
- Severity Index
- Recommendations

Vision Screening Summary (cont.)

- Eye Exam Recommendations (red)
- In-range Results (blue)
- Import Results Option (CSV file)

Spot Screening Tips

- Trust Your 1st Reading
- Screen with Glasses/Contacts on (tilt head if needed for glare)
- Does *not* test for Acuity
- Does *not* test for Presbyopia (i.e reading glasses)
- Does *not* detect Cortical Visual Impairment (CVI)
- Does *not* detect tracking
- *Screening Results are not a diagnosis and should be referred for further ophthalmological evaluation.*

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Summary

- Understanding the difference between optotype screening and instrument based screening is essential to provide reliable evidence based screenings.

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