

Preschool Vision Screening and You!

Prevent Blindness Ohio
1500 W. 3rd Ave., Suite 200
Columbus, Ohio 43212
1-800-301-2020
WiseAboutEyes.org



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What is Prevent Blindness Ohio?

- The only statewide, voluntary vision health and safety organization for the prevention of blindness and preservation of sight. Established in 1957.

How do we do it?

- Through public information, research and early detection.

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What is the SOS Grant?

- Save Our Sight Grant from the Ohio Department of Health
- Motor vehicle check-off when renewing your tags every year
- Free preschool vision screening training and screening equipment



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Today's Objectives

- Understand the importance of vision screening and regular professional eye care
- Recognize signs of vision difficulties and potential eye problems
- Implement and conduct vision screening
- Interpret acuity and stereopsis results

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About Your Certification

- After successfully completing today's course and receiving a passing grade on the test you will be a **nationally certified** Preschool Vision Screener, registered with Prevent Blindness America (PBA)
- You will receive a certification letter from PBA
- Your certification is good for **3 years**, after which you must recertify
- Recertify **online** at **www.WiseAboutEyes.org**

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Expectations of your Certification

- Conduct screenings according to the established guidelines as presented today.
- Document and report to ODH aggregate screening numbers through the ODH Annual Vision Screening Survey.

<https://www.surveymonkey.com/r/2K2QP5X>

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Vision Screening Recording Form

Preschool Vision Screening Recording Form

Screening Instructions: Keep this page for your records and use this information to complete the MANDATORY reporting requirements which is a grant requirement of the Ohio Department of Health for Save Our Sight Funding. Additional copies of this form are available at www.preventblindness.org/ohio

Date of Screening: _____ Screening Site: _____ County: _____

Total number of children screened: _____ Total number of children referred for follow-up: _____

Total number of children referred for follow-up care with an eye doctor: _____

Note: All children referred for follow-up care with an eye doctor

Child Name	Sex	Age	Race	Ethnicity	Eye	Refer	Symptoms								Total number of children referred for follow-up care with an eye doctor?		
							Strabismic	Amblyopic	Anisometropic	Myopic	Hyperopic	Presbyopic	Refractive	Other			

Race: AM = African American/Black CB = Caucasian/White PI = Pacific Islander/Asian IN = American Indian/Alaskan Native OH = Other
 Ethnicity: HH = Hispanic/Latino NH = Non-Hispanic/Latino Replaced 7/2017

- Use to document the results of your screenings/re-screenings, whether or not the child’s medical home was notified of the referral, and if the referred child received follow-up care with an eye doctor.

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Recording Form (Continued)

- Screeners should monitor the accuracy of their referrals. One way this may be done is to compare your screening results with the findings of the eye specialist examination. Not all appropriate referrals will result in treatment, but if there are frequent discrepancies between the screening and exam results, screening methods should be reviewed.

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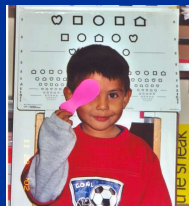
Reporting your screening numbers

- You are required to report your screening and follow-up results to ODH using the Annual Vision Screening Survey.
- Keep the recording form for your records and for use in reporting screening numbers back to ODH.

Why conduct vision screenings?

Screenings can prevent:

- Permanent vision loss
- Inability to learn
- Loss of quality motor skills
- Self esteem



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Prevalence of vision problems

- One in 20 preschoolers have a vision problem.
- One in 4 school age children have a vision problem.

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Why is a health professional's involvement so important?

- Regular contact
- Parents' RESPECT and TRUST
- Access to patient history and risk factors

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Why is involvement from Head Start and childcare providers important?

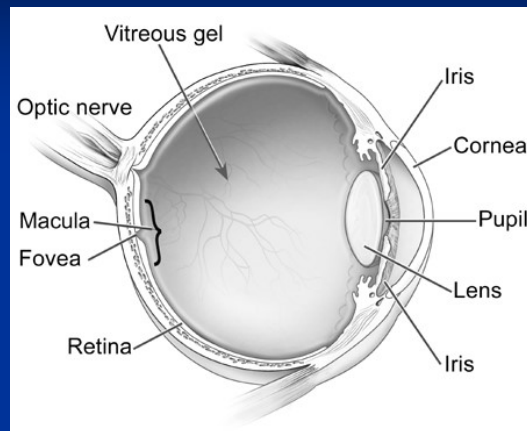
- Regular contact with child and family
- Parent's trust and respect
- Ability to re-screen children who do not pass on the first attempt

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Common Eye Problems

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Basic Eye Anatomy



National Eye Institute

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Refractive Errors (pg. 5)

- A refractive error occurs when the light rays cannot be brought to a single focus on the retina of the eye.
- What is the difference between nearsighted and farsighted?
 - Nearsighted – Can see near, not far
 - Farsighted – Can see far, not near

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Refractive Errors Myopia (Nearsightedness)

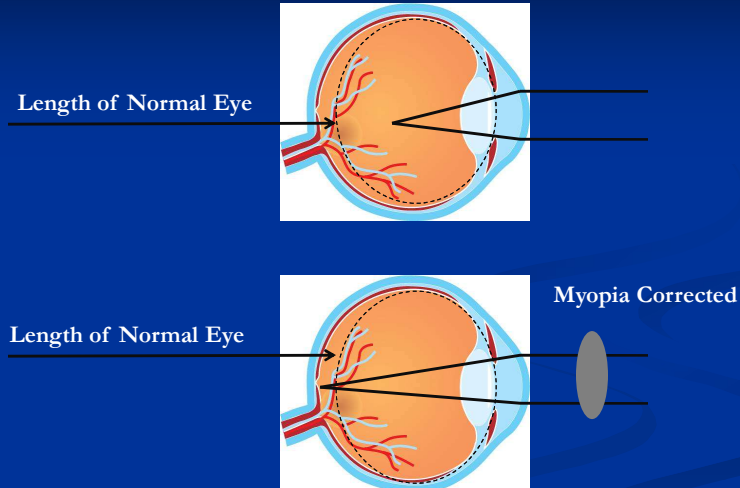


Myopia (Nearsightedness) pg. 5

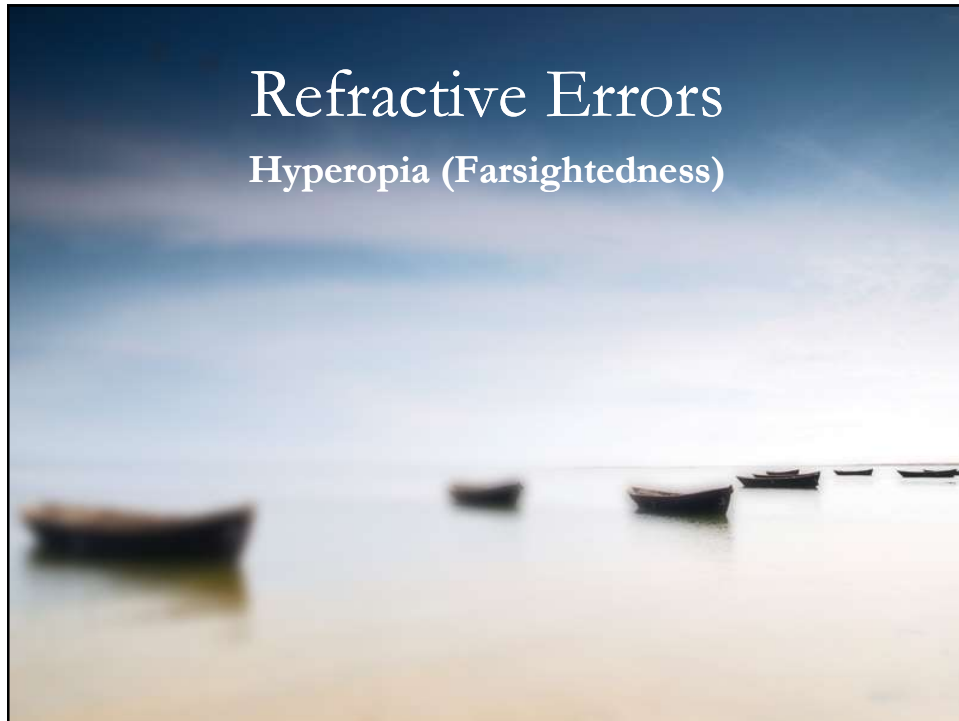
- Near objects are seen clearly while distant objects are blurry or out of focus
- Light is focused short of retina
- Primarily hereditary in nature
- Most common refractive error

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Myopia



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Refractive Errors

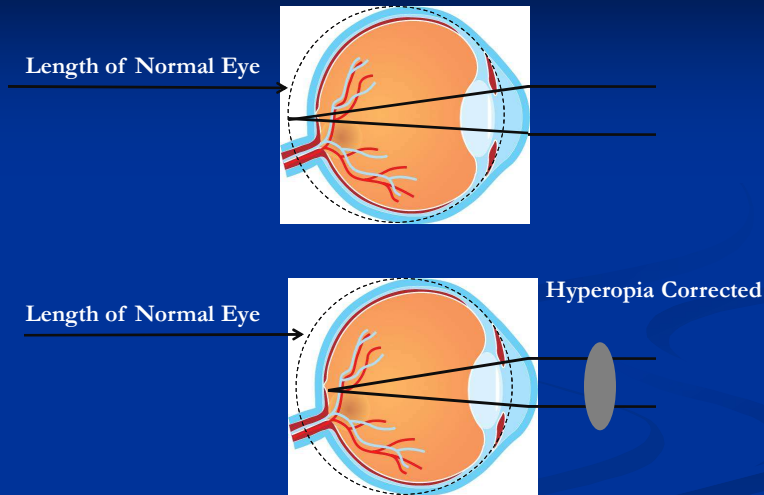
Hyperopia (Farsightedness)

Hyperopia (Farsightedness) pg. 6

- Distant objects are seen clearly while near objects are blurry or out of focus.
- Occurs when the eyeball is too short
- Point of focus is lies beyond the retina and are not yet in focus when they arrive at the retina.
- Most children have some hyperopia, but lose it as they grow.

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Hyperopia



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Astigmatism (p. 7)

- Occurs because irregular curvature of the cornea prevents light rays from focusing on a single point on the retina.
- Visual acuity is poor for objects both near and far.
- We all have some slight astigmatism
- Causes wavy vision, like rippling pond
- Hereditary

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Astigmatism



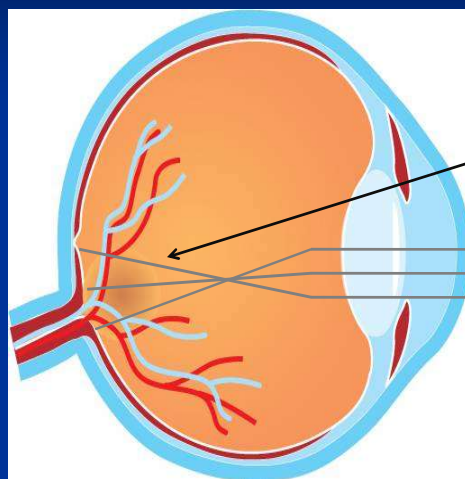
Normal Cornea



Astigmatic Cornea

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Astigmatism



Light rays entering the cornea do not focus at a single point, thus causing distorted vision.

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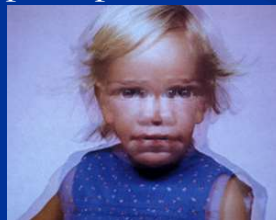
Strabismus



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Strabismus (pg. 7)

- **MUSCLE** problem causing eyes not to properly align
 - Eye turns in, out, up or down
 - Can alternate eyes
 - Can worsen if child is sick or tired
- The eyes do not work properly together which affects depth perception



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Strabismus (Continued)

- Affects 3-5% of American children
 - half of those with strabismus are born with it or develop it within the first 6 months of life.
- Causes
 - Birth injuries, false muscle attachments, heredity, prematurity, Cerebral Palsy (3/4)

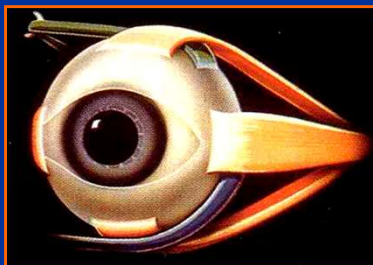
It is imperative that strabismus is caught at an early age!

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Strabismus (Continued)

Treatment

- Correcting strabismus requires straightening the eye, often by muscle surgery.



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Amblyopia – Lazy Eye (pg. 9)

- Amblyopia is reduced vision in an eye that has not received adequate use during early childhood. The loss of vision is due to **LACK OF USE BY THE BRAIN** at a time of critical development of the visual pathways.
- Conditions that **CAUSE** amblyopia include:
 - Strabismus
 - unequal refractive error
 - drooping eye lid
 - cataract

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Amblyopia (Continued)

- The brain ignores the blurry image caused by vision disorders and the nerves that send images to the brain do not develop.
- Treatment by about the age of 6 is **CRITICAL**
- Can lead to functional blindness
- Affects 2-5% of the general public
- 90% chance of successful treatment when caught at an early age



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Amblyopia (Continued)

■ Treatment

Step 1 - correct vision

Step 2 - retrain brain



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Nearsightedness



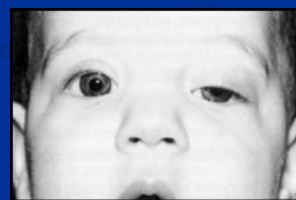
Farsightedness



Cataract



Strabismus



Ptosis

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Vision Screenings

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What is the difference between a screening and an exam?

- **Screening** – Identifies those at high risk, detects disorders, provides information and education, and can result in a referral.
- **Exam** – EXAMINES patients for eye disorders and diseases and DIAGNOSES eye disorders and diseases and PRESCRIBES treatment.

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Objectives of a Vision Screening

- Screening identifies children at high risk for a vision problem and may detect vision disorders at an early, treatable stage.
- Vision screening checks for:
 - Observable and reportable signs and symptoms
 - defects of visual acuity
 - ocular muscle disorders

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Objectives of a Vision Screening (continued)

- Screening is NOT an eye examination and does not diagnose! It does not take the place of an eye exam and does not detect all eye problems or diseases.

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4 Components of PBA's Preschool Vision Screening

- Observation
- Distance Visual Acuity Screening
- RDE Stereopsis Screening
- Follow-up

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Setting up the screening space

- Ensure that the screening space has enough room to accommodate the space requirements for screening equipment
- Try to set up the equipment in a space that is free from distractions and has good lighting
- Take into consideration the comfort of the child

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Supplies needed to conduct a vision screening

- Light Box
- Lea Chart
- Occluder (Dixie cups)
- Pointer
- Random Dot E Stereopsis Test

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Supplies needed to conduct a vision screening (continued)

- Tape measure
- Masking tape
- Trash can (s)
- Alcohol pads
- Recording forms
- Pens/pencils
- Stickers

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Screener's responsibilities the day of the screening

- Waiting Room or Classroom
 - Practice card
 - Happy Feet

- Perform all steps of preschool vision screening
 - Risk assessment/Family History
 - Observation (ABC's)
 - Distance Visual Acuity

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Screener's responsibilities the day of the screening (continued)

- Stereopsis
- Educate caregiver
- Note any concerns in child's chart or on the recording form
- Provide resource information to parents

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Tests and Equipment

- Observation
 - No equipment is needed
 - While screener greets the child and introduces themselves to the child, they looking at the child's eyes and observing his/her behavior for signs of possible eye problems
 - Parent may be able to provide family history of eye problems, history of child's complaints about discomfort or visual difficulties

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Test #1 – Observation (pg. 17)

- ABC's Vision Risk Factors
 - **A (Appearance)** – how the eyes appear upon visual inspection
 - Eye crossing, watering, red, drooping eyelid, white pupil in photos, unequal pupil size or cloudy pupil
 - **B (Behavior)** – signs in the child's manner, stance or vision related habits
 - Tilts head, squinting, blinking, covering one eye, frequent eye rubbing, eyes in constant motion
 - **C (Complaint)** – signs that would indicate discomfort or illness
 - Headaches, burning eyes, double vision, light sensitivity

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Observation Referral Standards

- Observation of any of the ABC signs is sufficient reason to refer a child for a professional eye examination.

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Tests and Equipment

- Distance Visual Acuity (pg. 18)
 - 10 foot Lea Chart
 - Specially designed for 3-5 year olds
 - Familiar shapes discourages a sense of failure and does not require knowledge of alphabet or rely on child's sense of direction
 - Useful in screening non-English-speaking or nonverbal children
 - Symbols selected because they are equally sensitive to blur and equally difficult to distinguish and equally spaced



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Tests and Equipment

- Distance Visual Acuity Continued
 - Light Box - provides the appropriate amount of lighting that children need to read the chart
 - Occluder

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Test #2 - Acuity

- What is acuity?
 - Keeness or sharpness of perception; the ability to discern fine visual difference
- How is it measured?
 - It is determined by having a child read a standardized visual stimulus (eye chart) at a standardized distance
- How is it recorded?
 - Visual acuity is recorded as a fraction

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What does the fraction mean?

- The top number represents the standardized distance the child is from the chart
- The bottom number indicates the smallest line that the child can read correctly
- The smaller the bottom number, the better the visual acuity

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Visual Acuity

- 20/20 – child can read details on chart that a person with normal vision would also see at 20 feet
- 20/200 – child can read at 20 feet details on chart that a person with normal vision could see at 200 feet



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Conducting the visual acuity test

- Explain the “Shape Game” to the child
- Ensure child understands directions by having the chart attendant point at the 4 shapes on top of the chart and having the child name those shapes without the occluder covering an eye
- Begin acuity screening with the right eye (cover the left eye) and screen to threshold, if possible
- Switch occluder to the right eye and screen left eye to threshold, if possible

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Tips for Visual Acuity Testing

- If the child wears glasses, they should wear them for the screening.
- Child should stand with their **HEELS** on the tape line.
- Children can sit for the screening. Line the back of the chair or wheelchair with the tape line.
- Always watch the child to make sure that they are not peeking around the occluder.

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Acuity Referral Standards: Primary Care

- To pass a line on the Lea chart, the child must be able to correctly identify 3 out of 5 symbols on the line (1 more than half)
- Preschool child must be able to read the **20/40** line (AAP) on a LEA chart with each eye separately in order to pass the screening
- Children who do not pass the vision screening should be rescreened before being referred, if possible. Rescreening should take place as soon as possible, but within 6 weeks.

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Acuity Referral Standards: Primary Care

- **Threshold Screening Referral for Two-Line Difference**
 - Threshold is the smallest line that the child can pass
 - A two-line difference means that the acuity varied by two or more lines
 - **Primary Care** - Pass 20/30 (R), 20/40 (L); Refer 20/20 (R), 20/40 (L)

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Acuity Referral Standards: Childcare/ School/ ODH

- To pass a line on the Lea chart, the child must be able to correctly identify 3 out of 5 symbols on the line (1 more than half)
- Preschool child must be able to read the 20/32 line on a LEA chart with each eye separately in order to pass the screening
- Children who do not pass the vision screening should be rescreened before being referred, if possible. Rescreening should take place as soon as possible, but within 6 weeks.

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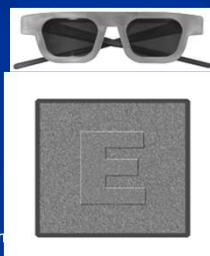
Acuity Referral Standards: Childcare/ School/ ODH

- Threshold Screening Referral for Two-Line Difference
 - Threshold is the smallest line that the child can pass
 - A two-line difference means that the acuity varied by two or more lines
 - **Childcare/Head Start** – Pass 20/32 (R), 20/25 (L); Refer 20/32 (R), 20/16 (L)

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Tests and Equipment

- Stereopsis Screening (p. 23)
 - Random Dot E stereopsis test
 - Suggested for children through third grade or age 9
 - “Model E” card
 - 2 cards with random dot patterns, one of which contains a 3-dimensional picture of the letter E
 - Polarized glasses
 - While wearing glasses the picture is visible to individuals with binocular vision.



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Caring for the RDE Kit

- Clean stems and nose bridge of glasses with an alcohol swab after each child.
- Lenses are VERY sensitive.
 - Do not use alcohol swab or regular glasses cleaners on these glasses.
 - Use a soft cloth or tissue and mild soap.
 - Do not submerge in water.
 - If lenses come out of the frames, order a new pair of glasses. Don't try to pop them back in to the frame.

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Test #3- RDE Stereopsis Test

- Stereopsis Screening testing is conducted to determine if the eyes are working together.
 - For children whose eyes are not working together, the brain is unable to blend the separate images from each eye into one image
- Children who are unable to pass the stereopsis test are at high risk for strabismus and/or amblyopia.

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Conducting the stereopsis test

- Explain the “Magic Glasses Game” using the “Model E” card
- Place the glasses on the child and explain that they should not touch them.
- Show the child the two stereo cards at reading distance (RAISED up). Explain that one card has the shape and one card does not. Have them point to the card with the shape to ensure that the child understands your directions.

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Conducting the stereopsis test: Primary Care

- **The test is conducted at 16 inches**
- Present the stereo cards a maximum of 6 times
- When presenting the cards, watch the child's eye movements to ensure that they are looking at both cards before pointing to the card with the shape
- Always hold the stereo card so that the word RAISED is up
- Be careful of the angle at which you are holding the cards because glare can affect the screening outcome.

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Stereopsis Referral Standards: Primary Care

- Children must identify correct card 4 out of 6 times at a distance of 16 inches

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Conducting the stereopsis test: Childcare/school/ODH

- **The test is conducted at 5 feet**
- Present the stereo cards a maximum of 4 times
- When presenting the cards, watch the child's eye movements to ensure that they are looking at both cards before pointing to the card with the shape
- Always hold the stereo card so that the word RAISED is up
- Be careful of the angle at which you are holding the cards because glare can affect the screening outcome.

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Stereopsis Referral Standards: Childcare/School/ODH

- Children must identify correct card 4 out of 4 times at a distance of 5 feet

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Referral Criteria Review

- A child should be referred to an eye care provider under any of the following circumstances:
 1. If external observation indicates a condition that might be associated with a vision problem.
 2. If the child has failed any of the screening tests for visual acuity or stereopsis.
 3. If the child is unable to be screened.

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Conducting follow-up

- Have a consistent system in place
- Make sure that all people involved understand the system
- Use documentation. You can access copies at **www.WiseAboutEyes.org**
- Provide referral information
- Follow up when documentation is not received

*Follow up is a critical component
of vision screening!*

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Additional Resources

- **CPT CODE 99173 (p. 41)**
 - Reimbursements range from \$10.50 to \$20.00
 - About 25% of Insurers will reimburse
 - Is a screening code, not a diagnostic code

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Additional Resources

- **Sight for Students Program**
 - PBO works through “Partner Agencies” to identify children in need of an eye exam and/or glasses but cannot afford them.
 - 200% Federal Poverty Level
 - Social Security Number
 - Not used program in last 12 months
 - Age 18 or younger
 - To become a registered agency call 1-800-301-2020 ext. 120.



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Additional Resources

- **Brochures translated into Arabic, French, Somali, Spanish, Ukranian, Russian & Chinese.**
 - Brochures available are:
 - Your Child's Sight
 - Amblyopia
 - Strabismus
 - Play It Safe
 - Signs of Possible Eye Problems in Children
 - Available to download on **WiseAboutEyes.org**

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After today...

- **Expectations of Certified Preschool Vision Screeners**
 - Conduct vision screenings according to the established guidelines as presented today
 - Document and report aggregate screening numbers to ODH through the Annual Vision Screening Survey.

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**PBO maintains contact with our
certified screeners through:**

- Newsletters
- Event opportunities
- Reporting screening data

***REMEMBER, VISION SCREENING
MAKES A DIFFERENCE!***

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For questions related to vision screening contact:

Prevent Blindness Ohio
1500 West Third Avenue
Suite 200
Columbus, OH 43212
1-800-301-2020
614-481-9670 (fax)

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