

1  **Title: Through the Eyes of a Child:  
Healthy Vision Leads to Healthy Development**

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2  **6 Topics**

1. Impact of vision disorders on learning
2. 7 key vision developmental milestones in the first year of life
3. Vision screening, eye exam, importance of following up on referrals, and next steps after referrals
4. Expectations for the eye exam
5. Supporting Parents and follow up to care
6. Wrap-up and your burning questions

3  **Healthy vision in children contributes to...**

- Healthy development
- Ability to learn
- Child's self esteem and confidence
- Athletic ability
- Improved behavior

4  **MULTISTATE LEVEL**

2015 Vision in Preschoolers – Hyperopia in Preschoolers Study (VIP-HIP) found:

- Children ages 4 and 5 years with uncorrected hyperopia (farsightedness  $\geq 4.0$  D) scored *significantly* worse on a test of early literacy than children with normal vision.
- $\leq 4.0$  D also had lower scores, but difference not statistically significant.
- Test = TOPEL (Test of Preschool Early Literacy)
- Performance most affected: Print knowledge subtest, which assesses the ability to identify letters and written words

5  **MULTIPLE INNER CITY SCHOOLS LEVEL:**

Ongoing

- 317 2<sup>nd</sup> and 3<sup>rd</sup> grade students in 12 high-poverty schools in Baltimore City School District in phase 1
- Most common eye exam findings: refractive errors (hyperopia, myopia, astigmatism)
- Poor baseline visual acuity and hyperopia associated with reduced reading achievement and worse baseline reading scores

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6  **SINGLE SCHOOL DISTRICT LEVEL:**

- 2015 study of low-income children ages 3 through 5 years screened in South Carolina's Charleston County School District – *after diagnosis and treatment with prescription glasses* – found:
  - Improvement in academic progress.
  - Increase in focus during lessons.

- Increase in participation and classroom interaction.
- Improvement in confidence behavior. and

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- 1 First grade reading ability found to be predictive of 11<sup>th</sup> grade reading outcomes, including reading comprehension, vocabulary, and general knowledge.
- 2 Children who lag in 1<sup>st</sup> grade but catch up by 3<sup>rd</sup> or 5<sup>th</sup> grade have good prognosis for future reading level.

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- Milestones check-off table available at:  
<http://nationalcenter.preventblindness.org/publications-and-presentations>
- Time for reaching milestones can vary up to 6 weeks.
- Slides show when baby should reach milestones.
- Process:
  - Milestone and age when milestone should occur
  - Why milestone is important
  - Example of what to do if milestone not met . . . or next steps

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Many vision milestones are related to overall developmental milestones . . . want you to think about those milestones from a perspective of vision . . . or how baby's vision could impact milestone.

10  **2 APPROACHES TO VISION SCREENING:**

**Optotype-based screening**

**Provides info about the visual pathway from the cornea at the front of the eye to the visual cortex at the back of the brain, where vision occurs, and results in a visual acuity value (i.e., 20/20, 20/40, etc.).**

**Instrument-based screening**

**Instruments do not measure visual acuity**

***Uses images of the eyes' red reflexes from retina to identify optical and physical characteristics, of the eyes, to provide information about amblyopia and reduced vision risk factors:***

**Significant refractive error**

***Anisometropia***

**Eye misalignment**

11  **2 Types Optotype-Based Screening**

- 1 • Threshold
  - Move from top to bottom of chart
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- 2 • Critical Line
  - Use only line child needs to pass according to child's age
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12  **NOT Recommended by NCCVEH and/or AAP**

**Sailboat**  
**Allen Pictures**  
**Lighthouse – House, Apple Umbrella**  
**Tumbling E**  
**Snellen**  
**Landolt C**

13  **Single, Surrounded Optotypes**

NCCVEH national guidelines call for using single, LEA SYMBOLS® or HOTV letter optotypes surrounded with crowding bars for children ages 3, 4, and 5 years at 5 feet.

14  **OPTIONS: CRITICAL LINE SCREENING AT 10-FEET  
SIGHT LINE  
SIGHT LINE KIT**

15  **Unacceptable Occluders Ages 3 Through 5 Years**

- Hand
- Tissue
- Paper or plastic cup
- Cover paddle
- Why unacceptable?
- *Children can easily peek*
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16  **Instrument-Based Screening**

- Use beginning at 12 months; better success at 18 months (AAP) (some pediatricians begin at age 6 months with success)
- Use instruments OR tests of visual acuity for children 3 through 5 years (NCCVEH and AAP)
- If use instruments, have test of visual acuity as back-up for children ages 3 years and older.
- Why? If device has 90% "capture rate", how screen 10%?
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17  **Act on Concerns....**

Children generally do not complain about problems with their vision, but sometimes adults (parents and teachers) can take preventive actions.

What PAT leaders can do:

Watch the child while at play, and while looking at books, pets or other people. If something does not seem right or look right, the child should be seen by an eye doctor.

If a child is not performing at expected levels developmentally or academically, suggest that the child be referred to an eye care provider.

Vision problems can impair learning and lead to behavior problems. Make sure that vision issues are NOT the cause by having the child complete an eye exam.

18  **Act on Concerns....**

Children generally do not complain about problems with their vision, but sometimes adults (parents and teachers) can take preventive actions.

What parents/caregivers should be encouraged to do:

Parents/caregivers- Talk with their child's doctor about any family history of vision problems (such as "lazy eye", a "crossed eye", use of an eye patch as a child to correct vision, or need for eyeglasses with a strong prescription).

Ask at every well child visit if the child's eyes and vision have been checked.

Ask for results of the vision screening and make sure the parent understands what they mean.

19  **Make the Referral Easier....**

1. Provide a referral for parents in both a written and verbal format, making sure the parent understands the importance of healthy vision in learning.
2. Set a regular schedule for follow-up on the referral to ensure that parents have connected to an eye care provider.
3. Provide resources that cover the expense of an eye exam and glasses for families that are concerned with costs.
4. Let parents know that you will support any treatment that may be needed for improved vision (such as wearing glasses, patching, or supporting low vision needs.)

20  **Before the exam....**

Prepare your child

- Help them understand why they are going (books, stories from siblings, tour)
- Pick an exam day/time that works best for your child (with an OD or MD) that has services in your native language preferably
- Help the child understand what they will be asked to do during the exam

Prepare yourself

- Be sure you know your family history of vision problems and your child's medical history
- Have the names of other medical conditions your child might have and any medications they are taking
- Have your insurance information ready (if you have vision coverage)
- Bring snacks and some quiet toys for your child that do not require fine vision. Stuffed animals or toy cars are good examples

21  **During the exam....**

- Near vision
- Distance vision
- Binocular (two eyes) coordination
- Eye movement skills
- Focusing skills
- Peripheral awareness
- Hand-eye coordination

An important point to remember.....

Make sure child's eye exam includes dilating eye drops- a procedure called "cycloplegia."

22  **After the exam....**

Don't leave empty handed!

- 2 copies of the exam results; one for you and another for your child's home visiting/Head Start program
- Ask for a copy of your child's prescription
- If your child is diagnosed with a vision issue, ask for educational material written in your native language
- Ask the eye care provider to share the exam results with your child's primary care provider
- Seek out programs that can assist families without insurance coverage for eyeglasses for their child
- Adhere to any treatment that is prescribed for your child- THIS IS A CRITICAL PERIOD!

23  **!Yo no hablo "eye exam"!**

There are a lot of reasons that parents may not follow up on a referral from a vision screening. PAT programs and other parents can help!

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24  **Engage Peer Support Systems**

- PAT- Parent Support Networks can be engaged to improve follow up to eye care:
  - Parent-to-parent
    - *I did this...*
    - *You can try this...*
    - *My eye doctor told me this...*
    - *Personal referrals [of doctors, resources]*
  - Personal advocates (for appointments)
  - Provide translations
  - Help parents access or get child to an eye appointment
  - Peer support in treatment adherence
  - Provide educational sessions to other parents and children
  - Set goals for children's health (incl. eye care) for the PAT program and evaluate success

25  **Establish Community Provider Relationships**

- Meet area eye care providers and discuss the needs of the families you serve
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- Create a resource listing local providers, hours of operation, insurance accepted, location on bus line, and ages seen (*potential project for a parent or college student*)
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- Invite providers to visit your parent groups to talk with families about children's vision and eye care

26  **Helpful Resources**

- NCECHW Vision Fact Sheet
- NCCVEH Family Fact Sheet on Children's Vision (*English, Spanish, Traditional Chinese*)
- Standardized Referral Letters
- Webinars, Fact Sheets, and Printables
- Evidence-based Vision Screening Training

27  **Key Messages for Parents and Caregivers**

- Vision screening is designed to find children who require an eye exam.
- Participate in vision screening with appropriate, evidence-based tools.

- If a child does not pass vision screening, make AND attend an eye exam appointment with an eye doctor who is comfortable and trained to examine young children.
- Children may not behave like they have vision problems.
- An untreated vision problem can lead to permanent vision impairment.
- Only an eye doctor can confirm that the child has a vision problem.
- If the eye doctor suggests treatment, such as glasses, follow the treatment plan.

28  **Resources**

- Year of Children’s Vision
- <http://nationalcenter.preventblindness.org/year-childrens-vision>
- Archived vision screening webinars in Resources
  
- National Center for Children’s Vision & Eye Health
- <http://nationalcenter.preventblindness.org/>

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