



UPDATES ON DATA, EDUCATION AND POLICY

Center for Urban Child Policy

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PROMOTING HEALTHY VISION DEVELOPMENT: THE AMERICAN OPTOMETRIC ASSOCIATION'S INFANTSEE® PROGRAM

In this update, we discuss early childhood vision development and the InfantSEE® program, an initiative designed to promote optimal visual development in young children. Through this initiative, optometrists provide no cost comprehensive vision assessments for children in the first year of life, regardless of income or insurance status.

- Development of the sensory pathways, including those that control vision and hearing, is a critical dimension of early brain development.
- Problems with vision development are more prevalent in low-income, minority, and premature infants. These are particular issues in Memphis, where over half of our children are racial and ethnic minorities and are born into poverty.
- Healthy pregnancies, healthy births, and interactive parenting practices help to promote early childhood vision development, and early vision screens help to identify many vision problems that can be treated when diagnosed early.

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The InfantSEE Program

The InfantSEE® program provides no cost comprehensive vision assessments to children between 6 and 12 months of age. Since its inception in 2005, more than 50,000 infants have received an InfantSEE assessment. Almost 1 in 6 infants seen in the program have some sign of a vision problem (Wingert, Garzia, & Weaver, 2007).

Additionally, there is a relationship between a family's economic status and the likelihood that their infant will have a vision problem. The lower a family's income, the more susceptible their infants will be to having a vision problem requiring treatment. 1 in 4 infants from families below 200% of the poverty line had a vision problem. Among infants in families in poverty (below \$15,000 annual income), 1 in 3 infants presented with vision problems (InfantSEE®, March 30, 2010).

Infants in lower-income families are more likely to have vision problems for several reasons. These families are less likely to have regular prenatal and perinatal health care and are at higher risk for pregnancy and birth complications.

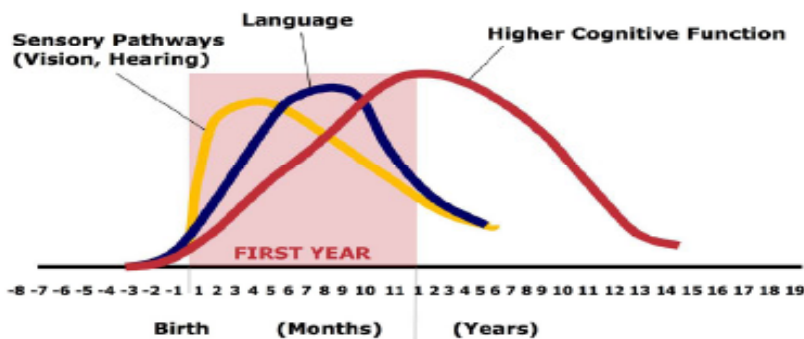
As a community, we can support this critical facet of early childhood development by stressing the importance of early vision screenings, making parents aware that a no cost comprehensive vision assessment is available through the InfantSEE® program, and underscoring that a vision exam is one more step a parent can take to insure their infant's healthy development.

Vision Development in the First Years of Life

Brains are built over time, and from the bottom up. Simpler neural connections - including the sensory pathways - form first, followed by more complex circuits.



Human Brain Development Neural Connections for Different Functions Develop Sequentially



Source: C.A. Nelson (2000)

Early experiences determine whether these circuits are strong or weak. During the first five years of life, the synapses that are responsible for vision and hearing are formed. Early childhood diagnosis of a vision problem makes it possible to intervene and treat common problems like amblyopia (lazy eye) and strabismus (crossed eyes).

The Relationship between Vision and Cognitive and Social Brain Development

Undiagnosed vision problems in early childhood are markers for other early brain development issues, and can lead to developmental delays. The activities that enrich social and cognitive development (including interacting with parents, caregivers, and other children, and participating in preschool activities) are likely to enhance sensory development as well.

Many parents do not understand the importance of making eye-contact with infants and toddlers, or how to help them with their sensory development. Parents may also not understand that it is important to have an infant's vision checked in the first year of life (Optometry's Charity, 2010).

Untreated vision problems in early childhood can impair:

- » **Cognitive development.** Children develop important mental concepts like *object permanence* - the understanding that objects continue to exist even when they cannot be seen, heard or touched- by manipulating objects in their environment. Vision problems hinder their ability to engage in that process, thus hindering their cognitive growth (Zero to Three, 2009).
- » **Social development.** By learning to identify and respond to other human's emotions, infants and toddlers begin to develop basic social skills. Children observe facial expressions and body language in order to properly interpret people's emotional responses. Impaired vision can hinder their ability to participate in processes that are crucial to their social development (Onunaku, 2005).

Diagnosis and treatment of vision problems in infancy can provide significant returns on investment for both the children involved and the community as a whole:

- » Treated early, amblyopia (lazy eye) can be cured. Amblyopia occurs when a child's brain will not send or receive information from one eye and can lead to permanent vision loss (A.D.A.M, 2009; A.O.A., 2002).
- » For every \$1 invested in treating amblyopia, \$22 is returned to the patient and society in terms of increased productivity, reduced health care costs and improved quality of life over the patient's lifetime (Membreno, Brown, Brown, Sharma & Beuchamp, 2002).

Tips for Parents to Support Healthy Vision Development

- » A healthy pregnancy promotes optimal fetal vision development. Pre-natal medical care and healthy choices during pregnancy support positive development.
- » Have your child's vision examined between 6 months and 12 months of age. Early intervention can help to minimize the developmental damage linked to vision problems. To find a local optometrist who will provide no-cost examinations, call (888) 396- EYES (3937).
- » Decorate your baby's room with bright colors. Consider hanging a mobile over her crib to stimulate vision development.
- » Move both of your baby's arms or legs during play to help her use both of her eyes at the same time.
- » Make eye-contact with your baby during play and meal-times. Eye contact plays a large role in overall development. Alternate sides during bottlefeeding, so that baby learns to use both eyes to make eye contact.
- » Provide your baby with the chance to explore objects and her environment. Toys with different textures and colors will stimulate her curiosity and encourage her vision development (Adapted from the AOA, 2009).

For more information on the well-being of children in Memphis and Shelby County, please visit [The Urban Child Institute](#), and [The State of Children in Memphis & Shelby County: Data Book](#).

[The Urban Child Institute](#) promotes optimal brain development for children from conception to age three. The Urban Child Institute's [Center for Urban Child Policy](#) supports that mission by building our understanding of inputs to - and implications of - early brain development in our community.

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