Early Hearing Loss Screenings Can Prevent Developmental Delays in Children

Hearing plays a critical role in a child's cognitive, social, and emotional development; undiagnosed loss can cause serious delays.

With hearing loss occurring in one to three out of every 1,000 newborns, early detection and intervention is critical. Audiologists can work closely with doctors, educators, and speech pathologists to perform tests and implement treatments that will vastly improve a child's future development.

If your patients' parents have voiced concern regarding their children's hearing health, our office provides screenings, evaluations, and interventions that can help keep our community healthy and happy. Thank you for working with us to improve the quality of life in our local community!

EASTPOINT
AUDIOLOGY, LLC

SOUND information brought to you by your local audiology professionals

502.528.3741

Amy Doezema, M.S. • Clinical Audiologist
Melanie Driscoll, Au.D. • Doctor of Audiology

725 Speckman Rd, Louisville, KY 40243
www.eastpointaudiology.com

AUDIGY CERTIFIED

Early Hearing Loss Screenings Can Prevent Developmental Delays in Children

According to the American Speech-Language-Hearing Association, each EHDI program ensures the practice of screening every newborn for hearing loss prior to hospital discharge. If an infant fails the screening, they receive a diagnostic evaluation before the age of three months, and when needed, they are enrolled in early intervention programs before they turn six months old. Babies born in birthing centers or at home are still eligible, and they should be screened before three weeks of age.

A hearing screening is the first step in the hearing evaluation process. Initial screening failure isn't always a result of hearing loss. Infants may fail due to the presence of fluid or debris in the ear, so a second screening should be scheduled to determine if further evaluation is needed. If after further evaluation a diagnosis is made, treatment should begin prior to six months of age, as it is most effective early on. Hearing loss occurs in one to three out of every 1,000 newborns — most often as a result of genetics, maternal infections during pregnancy, complications at birth, or trauma.

When initial screening is passed, the infant's hearing is presumed to be healthy, and regular testing should be scheduled intermittently from the age of 4 until age 18. If the screening is not passed, the child is referred to an audiologist for an in-depth hearing assessment in order to determine the cause and extent of hearing loss so that treatment can begin. There are multiple methods audiologists utilize for testing a child's hearing.

The Behavioral Audiometry Evaluation is commonly used for infants and toddlers. According to the Centers for Disease Control and Prevention, this evaluation determines how the child responds to sound overall. During the test, the patient is observed for changes in their behavior, such as quieting or searching for sound. When they produce the correct response, they receive visual reinforcement. Older children may be given a more play-centered activity.

The Auditory Brainstem Response (ABR) involves placing electrodes on the infant's head. Clicking sounds are then played through tiny earphones while the electrodes measure the hearing nerves' response to the sound. The responses are recorded and wave patterns are mapped. Irregular patterns indicate the abnormal functioning of the inner ear and the brain's hearing pathways.

During the Otoacoustic Emissions (OAE) test, pulse sounds are emitted through a small probe placed in the ear. Echo response from the inner ear's outer hair cells are recorded and averaged by a computer. Though a normal recording typically indicates healthy hearing, hearing loss may still be present due to issues in other parts of the hearing pathways. The OAE is used in collaboration with the ABR to screen newborns.

Tympanometry is a procedure performed in collaboration with a visual ear exam. It is used to identify issues that may be present in the middle ear, such as the presence of fluid, an eardrum perforation, or wax blockage. This test uses the introduction of air pressure into the ear canal to reveal the eardrum's mobility. A tympanogram (the graphic representation of the test) is then created and either results in a peaked pattern, which indicates mobility, or a flat line, indicating a lack of movement — suggesting a disorder might be present.

The Middle Ear Muscle Reflex (MEMR) tests the ear's reaction to loud sounds. A healthy ear will respond to loud noise levels by contracting the muscles of the inner ear. During testing, a series of loud sounds are delivered to the ear canal, and the response or muscle reflex is measured.

There are several milestones that parents can look for as an indicator of normal hearing development:

- Infants are startled by sudden, loud noises
- At around three months, babies will recognize and turn toward their parents' voices
- At six months, infants typically turn their eyes toward sound
- At one year, children will begin to imitate sounds and make attempts at simple words

A child may be suffering from hearing loss if:

- He/she prefers excessively high volume for the television or radio
- Speech development seems impaired
- He/she seems to be struggling academically
- There is a noted lack of response to conversation-level requests or directions

Parents should seek an evaluation for their child if they exhibit any of the hearing loss indicators above or if they fail to meet developmental milestones. An audiologist can work closely with doctors, educators, and speech pathologists to perform tests and implement interventions, which will vastly improve a child's overall future development — and improve the health prospects of the future of our local community. ■

SOUND information brought to you
by your local audiology professionals
502.528.3741

Amy Doezema, M.S., CCC-A
Melanie Driscoll, Au.D. • Doctor of Audiology

EASTPOINT
AUDIOLOGY, LLC

725 Speckman Rd, Louisville, KY 40243
www.eastpointaudiology.com