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Detecting Hearing Loss: What's the Hurry?

by Susie S. Loraine, M.A., CCC-SLP

When Hearing Develops



Our sense of hearing develops before we are born. During gestation, babies are able to respond to sound as early as the fourth or fifth month of pregnancy. Research suggests that babies learn to recognize their parents' voices and may benefit from music they hear before birth. After birth, newborns will startle to loud noises, quiet when they hear their mothers' voice, and their own cries, gurgles, and coos. Quickly, they learn to search for sounds around them and begin to attach meaning to these sounds (e.g., a beep from the microwave means a bottle is coming).

Take into consideration babies who have a hearing loss. The amount of auditory input (hearing experience) during gestation is minimal if not completely absent. Babies who have a hearing loss may not learn the sound of their parents' voices before they are born. As newborns, they miss invaluable auditory experiences. They often do not hear their own vocalizations or quiet to their parents' voices. While most infants search and explore their world visually and auditory, those with a hearing loss explore only visually, therefore missing auditory experiences such as a mom's soothing lullaby.

My Baby Has a Hearing Loss!



Fortunately, many states have Universal Newborn Hearing Screening (UNHS) programs in their hospitals. These programs mandate or give parents the option of having their newborn's hearing screened for possible hearing loss within two weeks after birth. Since the implementation of UNHS programs, many technological advances are making it possible for researchers, audiologists, and other medical professionals to obtain and provide hearing aids for infants as young as four weeks of age.

The Joint Committee on Infant Hearing and U.S. Public Health Service's Healthy People 2010 health objectives recommend that all babies with hearing loss receive appropriate intervention services by six months of age. Research shows a significant difference in the development of deaf and/or hard of hearing children who wear amplification and/or receive services prior to six months of age.



Discovering Hearing Age



By six months of age, babies with normal hearing recognize and react to different tones of voice (e.g., friendly versus angry) and turn to see the source of sounds they hear (the dog, the television, a sibling). They babble, coo, gurgle, and laugh in play in an effort to communicate.

A deaf or hard of hearing baby who begins to wear hearing aids at six months has probably stopped instinctive cooing and babbling due to lack of auditory reinforcement. The only peaceful, quiet world the child knows suddenly becomes a noisy, startling, and confusing place. The dog barking, the telephone ringing, and even mom's voice can be strange and unwelcome. These sounds hold no meaning for this infant who is hearing for the first time. The baby may cry or startle to unfamiliar noises rather than look for the source. The baby must begin from a "hearing age" of zero, which is six months behind his/her peers.

Now that the child can hear sound, it is the responsibility of an early interventionist and the parents to teach the child how to listen. The parents and interventionist must help the child learn to look for the noise, attach meaning to the sound, and begin to vocalize and sound play within his/her environment.

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The Impact of "Hearing Age"



Too often, parents or doctors do not detect a hearing loss early. To demonstrate the impact that "hearing age" has on a child's speech and language development, consider the child who is 2-1/2 years old, and has a hearing loss which goes undetected until he/she is 18 months old.

After several evaluations to confirm the hearing loss, she finally receives hearing aids at 24 months (two years). At 30 months old (two and a half years), this child has a "hearing age" of six months. She is able to search for sounds and make sense of the noises similarly to a six month old baby. She is 24 months (two years) behind her peers in the ability to understand and respond appropriately to sounds in her environment. Her peers, at 2-1/2 years old, understand more than 500 words and use many strings of words to communicate.



In order to close this gap, a child with a hearing loss needs "auditory training." Auditory training refers to the type of intervention necessary to develop the auditory (hearing) channel in the stages of (1) awareness of sound, (2) detection of sound, (3) identification of sound, and (4) comprehension of sound.

For a child with a hearing loss, the early intervention team may include a speech-language pathologist, a special educator, or other hearing specialists (sign language instructors, ear, nose, and throat doctors, etc.). This group of specialists works with the child's family to create the best possible "listening environment" for the child. This may include using amplification such as hearing aids or a cochlear implant, as well as providing a language- and listening-rich environment. For children whose goal is to use speech and understand language auditorily (by hearing it), early interventionists will help families encourage their children to "learn to listen."

Research shows that children with identified hearing losses, who receive intervention by six months of age, later demonstrate better language, speech, and reading comprehension than children identified after six months. Even mild or unilateral hearing loss can significantly and negatively impact language development and educational performance. Many services and support systems exist for families dealing with hearing loss. Early detection of hearing loss and appropriate services can give children the chance to develop speech, language, and reading skills along with their normal-hearing peers.

Early Intervention—Earlier is Better!

"Early intervention" refers to services provided by specialists to infants and toddlers up to three years of age. For children with hearing loss, the purpose of early intervention is to teach them



- that listening is important and meaningful.



- how to make sense of the sounds in their environment.



- to develop their speech and language at a quick rate—in an effort to close the gap between the child's chronological age and hearing age.

Resources:

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