Childhood Hearing Loss

Hearing loss can affect how children learn language and communication skills. Early detection helps families set goals and make decisions to support their child in a timely manner, which can maximize their child's developmental progress and promote early language access. Audiologists and other related service providers can support families by helping them understand hearing loss and assist them in making informed decisions. To promote early detection of hearing loss, children undergo frequent hearing screenings beginning at birth.

Detecting Childhood Hearing Loss

Newborn Hearing Screening: All babies should receive a newborn hearing screening within the first month of life. Infants who do not pass an initial screening and a rescreening should receive a comprehensive hearing evaluation with a pediatric audiologist within the first few months of their life.

Childhood Hearing Screenings: All children should receive yearly hearing screenings starting at age 4 during well-child visits at the primary care physician as well as yearly public-school hearing screenings. Children who do not pass a screening and rescreening should be referred to an audiologist for a more detailed hearing evaluation.

Developmental Screenings and Family Concerns: At children's yearly checkups, their primary care physician asks questions about the child's developmental skills, including speech and language development. If the physician has concerns, they refer the child to a pediatric audiologist for a complete hearing assessment.

Understanding Hearing Loss

How We Hear

There are four parts to the auditory system. To hear, we need all of these parts to work.

- Outer ear: Sound travels down the ear canal to the eardrum, causing the eardrum to move or vibrate.
- Middle ear: Eardrum vibrations cause three tiny bones to move and then move the fluid in the inner ear.
- Inner ear: Movement of the inner ear fluid stimulates the sensory receptor hair cells within the inner ear.
- Auditory nerve and neural pathways: Stimulation of the hair cells sends electrical signals through the auditory nerve and neural pathways to the brain. The brain interprets these signals as sound.

Hearing loss can be either temporary or permanent, depending on the area of the auditory system that is affected and the underlying cause.

Temporary Hearing Loss

Children can get a temporary hearing loss due to a blockage in the outer ear or middle ear. Most often, the blockage is caused by middle ear fluid with or without infection. Temporary hearing loss is typically mild to moderate and will usually get better within a short time. For some children, the temporary hearing loss may last longer, which could impact speech and language development as well as learning. These children may be treated with antibiotics and/or ear tubes.

Permanent Hearing Loss

Children can be born with permanent hearing loss or get permanent hearing loss at any age. Permanent hearing loss can be a partial hearing loss, varying from mild to severe, or total profound hearing loss, which may be referred to as deafness. Permanent hearing loss can involve one or both ears. It is important for parents to understand their child's hearing loss and that additional testing may help understand the underlying cause. Hereditary hearing loss is the leading cause of permanent

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hearing loss. This is most common in children of parents who do not have hearing loss themselves. Hearing loss can be caused by an infection during pregnancy, most commonly cytomegalovirus (CMV). In addition, children who have spent significant time in a neonatal intensive care unit (NICU) at the hospital may have health complications that put them at higher risk for developing permanent hearing loss.

Hearing Assessments

Pediatric audiologists assess hearing in children and help families understand the impact of hearing loss on their children. Infant hearing assessment is often done while a child is sleeping using physiological measures of hearing. Toddlers and older children can participate in hearing assessments and can learn a listening game. Pediatric audiologists use a number of different tests to help determine the type and amount of the child's hearing loss.

Addressing Hearing Loss

Language and Communication

Children who are deaf or hard of hearing can communicate through listening and spoken language, a visual sign language, and/or a combination. They can also use augmentative and alternative communication methods such as picture communication boards or speech-generating devices. Families may modify their language and communication approaches over time based on the needs of the child and their family.

Hearing Technology

Hearing aids and cochlear implants help children hear better. These technologies can improve listening and spoken language abilities in children whose families choose this communication method. Children with permanent hearing loss ranging from mild to severe may benefit from a hearing aid for one or both ears. Children with hearing loss in the severe to profound range may have the best chance for developing listening and spoken language with the use of cochlear implants. A pediatric audiologist should closely monitor any child who is using hearing technology to ensure that the technology is working well.

Support Services

All types of hearing loss can impact a child's language and communication, learning, and brain development if intervention occurs too late. Support services that promote early language—whether spoken, signed, or both—help ensure that language development in children who are deaf or hard of hearing progresses at the same rate as that of children without hearing loss.

Early Intervention Services

Birth to 3: Early intervention services are available in most communities to support families from the time of birth until the child's third birthday if the child is eligible for services under the Infant and Toddlers Program of the Individuals with Disabilities Education Act (IDEA). Services are provided in the family home and/or at the location where the child spends most of their waking hours. Services are provided by a professional who specializes in working with children who are deaf or hard of hearing and their families. The services are based on family goals for their child's language, communication, and school readiness. Contact your local early intervention system to ask about these services if you are not sure where to start.

Children 3 and older: Children who are deaf or hard of hearing may qualify to receive special services to support their communication development and learning in school. These services may be incorporated into a child's individualized education program (IEP) or 504 plan. Contact your child's school district if you have any concerns about your child.

Additional Support

Community Support: On the journey of raising a child who has permanent hearing loss, families can benefit from the support of others in their community—including other parents who are raising a child who is deaf or hard of hearing or adults who are deaf or hard of hearing.

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Resources: Families typically receive written and electronic resources from audiologists, speech-language pathologists, and other providers that offer general information about childhood hearing loss as well as local resources (e.g., educational programs; local, state, and national organizations). The following websites may be helpful resources for families:

- Babyhearing.org
- Hands and Voices
- Early Hearing Detection & Intervention Pediatric Audiology Links to Services
- National Center for Hearing Assessment and Management (NCHAM)
- Hear to Learn
- Hearing First

Content contributed by ASHA member Lisa Mancl, MS, CCC-A.

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For more information and to view the entire Audiology Information Series library, visit **www.asha.org/aud/pei/**.

For more information about balance problems, preventing falls, hearing loss, hearing aids, or referral to an ASHA-certified audiologist, contact:

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