

BACK TO BASICS

Identify hearing loss early

A child's ability to hear provides a connection to the environment. Through the ear, a child—even before birth—receives the sounds that help establish links to people, events, and activities. A child with a hearing impairment cannot rely on sound as the primary channel for receiving and sending messages.

How we hear

The outer ear—the part we can see—is the *auricle*. Sound enters the auricle and funnels down the auditory canal to the eardrum where it is amplified.

The middle ear is on the other side of the eardrum. There three tiny bones—the *malleus* (hammer), the *incus* (anvil), and the *stapes* (stirrup)—amplify the sound.

The inner ear contains the organ that affect hearing, the *cochlea*, and those that affect a person's balance, the *semicircular canals*. The cochlea, is filled with fluid and hair cells. It sends signals to the brain through the auditory nerve. The brain translates these signals into sounds we understand.

Hearing impairments

There are two types of hearing loss: conductive and sensori-neural. Conductive loss originates in the outer or middle ear so sounds cannot travel any farther. The cause might be an obstruction—a bean or ear wax—or damage from illness—an ear infection or persistent cold—or injury. Sensori-neural impairments occur in the inner ear. Nerve cells or pathways to the brain don't function properly and result in incomplete, garbled, or diminished hearing.

Some children have both types of hearing loss, and some only one. Sometimes only one ear is involved, and sometimes both. Some hearing losses can be regained by treating an infection, while others are permanent. All types require special attention.

Identifying a child with hearing loss

Infants should respond to sound and turn to look for the source. Toddlers and preschoolers should steadily develop speech—both increasing vocabulary and clarity and complexity of sentences. If a child shows signs of a hearing impairment, alert the child's parents to the possible need for medical attention. Children from birth to 3 with hearing loss can receive services from the Early Intervention (EI) program. Older children may qualify for services from their local school district.

More than 12,000 babies are born each year with a hearing loss. Typically, the cause is unknown. In the past the loss might have gone unnoticed for years. Today most babies have a hearing screening soon after birth, usually before they leave the hospital. This Universal Newborn Hearing Screening can help make sure children get needed services at an early age. This helps children develop communication and language skills that last a lifetime.

Working with children with hearing loss

Children with hearing loss differ from other children only in their ability to learn through sounds. Many activities appropriate for children developing without disabilities are also appropriate for children with hearing impairments.

Infants:

- Provide visual stimulation. Rotate mobiles and pictures often to keep a baby's interest.
- Offer materials with different textures. Encourage children to develop all their senses.
- Communicate—with song, body language, and conversation. Your gestures will help babies understand even if your voice isn't clear.
- Expose babies to lots of different sounds. Children with even minimal hearing need to practice listening.

Preschool children:

- Use visual aids. Pictures, displays, and hands-on materials are important for every preschooler's development.
- Keep the room well lit. Try to keep your face in the light so the children can see your mouth and hand movements easily.
- Avoid excessive noise that could be confusing to a child with minimal hearing. Help all children be aware of sounds.

Hearing loss

A child in my program was diagnosed with a hearing loss. The family was referred to EI. What happens next?

The EI program will contact the family and arrange a home visit so that a team of early intervention specialists can evaluate the child. The evaluation will include a detailed discussion of the child's developmental strengths as well as the family's resources and concerns.

If the child qualifies, the family will be eligible to receive developmental services from early intervention specialists, speech language pathologists, physical and occupational therapists, teachers, social workers, and nutritionists. If the family needs other services, the EI service coordinator will assist the family in locating and accessing resources in the community.

EI teams help families and caregivers:

- learn strategies to promote development,
- use therapeutic intervention activities in daily life,
- foster and enhance children's engagement in routine activities and social interactions,
- monitor children's progress, and
- support children to fully participate in their communities.

I mentioned EI to a parent whose child is obviously having some hearing problems. The mother wants to wait. Should she call EI?

If a child has a hearing loss, early referral and identification are important to speech and



Early Intervention

language development. EI encourages families and providers not to take a wait-and-see approach to a child's development. A referral to EI can be based on professional judgment or a family's concern. It is not necessary to have a medical diagnosis or a confirmed developmental delay at this point. A referral should be made as soon as a hearing loss or a delay is suspected, or there is any question about a child's development, even as early as birth.

I provide child care in my home, and one of my newborns failed his ABR test. What is an ABR screening?

The auditory brainstem response (ABR) test, which is performed in the hospital, measures how the brain responds to sound. Clicks or tones are played through soft earphones on the baby's ears, and three electrodes on the baby's head measure the brain's response.

Another newborn screening is otoacoustic emissions (OAE). This test measures sound waves produced in the inner ear. A tiny probe placed just inside the baby's ear canal measures the response (echo) when clicks or tones are played into the baby's ears.

Both tests are quick (about 5 to 10 minutes) and painless, and both may be done while

the baby is sleeping or lying still. Either or both tests may be used to screen a baby's hearing.

Without newborn hearing screening, it can be difficult to detect hearing loss in the important first months of the baby's life. About half the children with hearing loss have no risk factors for it. Newborn hearing screening can detect possible hearing loss in the first days of a baby's life.

A baby who fails the ABR or OAE needs further testing, and EI can assist families in referrals for it.

What does an audiologist look for before referring a child to EI? Who does the referral?

Remember, anyone can refer to EI. We strongly encourage audiologists to refer infants and toddlers when:

- a newborn does not pass the outpatient screenings. A failed screening indicates a high probability of hearing loss, and EI can help make sure the baby receives all other necessary testing and follow-up.
- an audiology test indicates a hearing loss.
- the parents have indicated a concern about the child's language, cognitive, or physical development.