

Newborn Hearing Screening and Your Baby



Before you bring your newborn home from the hospital, your baby needs to have a hearing screening.

Although most babies can hear normally, 1 to 3 of every 1,000 babies are born with some degree of hearing loss. Without newborn hearing screening, it is difficult to detect hearing loss in the first months and years of your baby's life. About half of 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. If a possible hearing loss is found, further tests will be done to confirm the results. When hearing loss is confirmed, treatment and early intervention should start as soon as possible. *Early intervention* refers to programs and services available to babies and their families that help with hearing loss and learning important communication skills.

That is why the American Academy of Pediatrics (AAP) recommends that all babies receive newborn hearing screening before they go home from the hospital.

What is hearing loss?

Hearing loss is the decreased ability or inability to hear sounds. It may range from mild to severe, or even complete loss of hearing. Hearing loss can be temporary or permanent, and may affect the ability to hear different kinds of sounds that are essential in learning to talk.

It can affect one or both ears, and can occur anywhere along the hearing pathway, including the following:

- **Outer ear** (eg, because of too much wax or a block in the outside ear canal)
- **Middle ear** (eg, because of an infection or fluid in the middle ear)
- **Cochlea** (inner ear), where sound waves are detected and passed on to the hearing nerve
- **Hearing nerve**, which connects to the brain
- **The hearing center in the brain**

Why do newborns need hearing screening?

Babies learn from the time they are born. One of the ways they learn is through hearing. If they have problems with hearing and do not receive the right treatment and early intervention services, babies will have trouble with speech and language development.

For some babies, early intervention services may include the use of sign language and/or hearing aids. Studies show that children with hearing loss who receive appropriate early intervention services by age 6 months usually develop good language and learning skills.

Some parents think they would be able to tell if their baby could not hear. This is not always the case. Babies may respond to noise by startling or turning their heads toward the sound. This does not mean they have normal hearing. Most babies with hearing loss can hear some sounds but still not hear enough to develop full speaking ability.

Timing is everything. Your baby will have the best chance for normal language development if any hearing loss is discovered and treatment begins by the age of 6 months—and the earlier, the better.

How is newborn hearing screening done?

There are 2 screening tests that may be used.

Automated Auditory Brainstem Response (AABR)—This test measures how the hearing nerve responds to sound. Clicks or tones are played through soft earphones into the baby's ears. Three electrodes placed on the baby's head measure the hearing nerve's response.

Otoacoustic Emissions (OAE)—This test measures sound waves produced in the inner ear. A tiny probe is placed just inside the baby's ear canal. It measures the response (echo) when clicks or tones are played into the baby's ears.

Both tests are quick (about 5 to 10 minutes), painless, and may be done while your baby is sleeping or lying still. One or both tests may be used.

Will my hospital automatically screen my newborn's hearing?

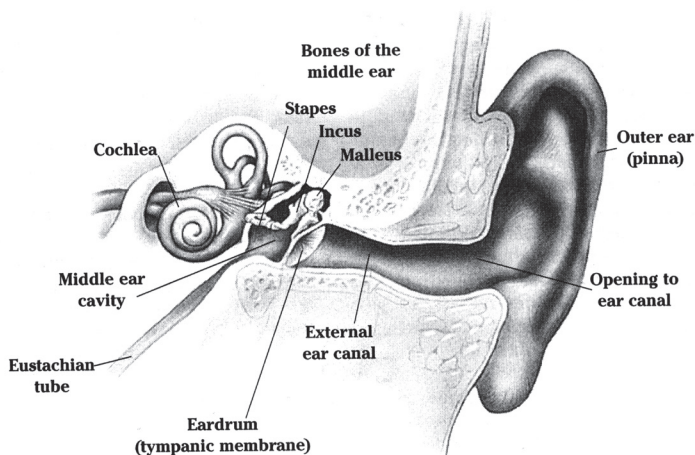
It is best to ask. Most hospitals do hearing screening for all newborns. Some only screen newborns who are considered high risk, such as those with a family history of hearing loss.

Most states now have Early Hearing Detection and Intervention (EHDI) programs. These programs try to ensure that all newborns in the state are screened for hearing loss and that those who need help get it.

Make sure to find out the results of your baby's hearing screening while you are still in the hospital. The hospital can sometimes assist in arranging follow-up testing before you and your baby are discharged.

What if my baby passes the hearing screening?

If your baby does not have any risk factors for hearing loss and has passed the newborn screening test, then your baby's doctor will continue to assess your baby's hearing and speech/language development along with other milestones



Cross-section of the ear

Illustration adapted from *Middle Ear Fluid in Young Children* brochure from the US Department of Health and Human Services (1994).

at each of your baby's regular visits. Be sure to tell your baby's doctor if you have any concerns about your child's hearing and/or speech/language development. This is important since some forms of hearing loss develop as a child gets older.

If your baby has certain risk factors, your baby's doctor may arrange additional hearing testing to make sure that your baby continues to hear well. Risk factors may include the following:

- Family history of hearing loss
- Premature birth
- In utero or postnatal infections
- Face/skull deformities

What if my baby does not pass the hearing screening?

If your baby does not pass the hearing screening at birth, it does not necessarily mean that your baby has hearing loss. In fact, most babies who do not pass the screening test have normal hearing. But to be sure, it is extremely important to have further testing. This should include a more thorough hearing evaluation and a medical evaluation. These tests should be done as soon as possible, but definitely before your baby is 3 months old. These tests can confirm whether hearing is normal or not. Be sure to talk with your child's doctor about scheduling further testing.

If hearing loss is found, what can be done?

This depends on the type of hearing loss that your baby has. Every baby with hearing loss should be seen by a hearing specialist (audiologist) experienced in testing babies, a pediatric ear/nose/throat doctor (otolaryngologist), and a pediatric eye doctor (ophthalmologist). Some children with hearing loss can also have problems with their vision. Many children are also seen by a geneticist to determine if there is a hereditary cause of hearing loss.

Special hearing tests can be performed by the audiologist who, together with the otolaryngologist, can tell you the degree of hearing loss and what can be done to help.

If the hearing loss is permanent, hearing aids and speech and language services may be recommended for your baby. Occasionally, surgical procedures may be helpful for hearing loss. You will be informed of choices for communicating with your baby including total communication, oral communication, cued speech, and American Sign Language.

The Individuals with Disabilities Education Act (IDEA) requires that free early intervention programs be offered to babies and children with hearing loss, beginning at the time the child's hearing loss is identified.

The outlook is good for children with hearing loss who begin an early intervention program before the age of 6 months. Research shows these children usually develop language skills on a par with those of their hearing peers.

What if I do not receive my baby's hearing screening results?

You should receive the results of your baby's hearing screening before you leave the hospital. If you did not get the results of your baby's hearing screening, call your baby's doctor for the results.

What if my baby did not receive hearing screening as a newborn?

If your baby did not receive hearing screening as a newborn in the hospital, call your baby's doctor and ask to have your baby screened (with AABR and/or OAE) as soon as possible. It is important to know that hearing can be tested at any age. Talk with your baby's doctor if you are concerned at any time about your baby's hearing or speech development.

Resources

Alexander Graham Bell Association for the Deaf and Hard of Hearing

Voice: 202/337-5220 (TTY: 202/337-5221)
www.agbell.org

American Society for Deaf Children

Voice/TTY: 800/942-2732
www.deafchildren.org

American Speech-Language-Hearing Association

Voice: 800/638-8255 (TTY: 301/296-5650)
www.asha.org

Boys Town National Research Hospital

Voice: 408/498-6540
www.babyhearing.org

Centers for Disease Control and Prevention

Voice: 800/232-4636 (TTY: 888/232-6348)
www.cdc.gov/ncbddd/ehdi

To find out more information about the EHDI program in your state, visit www.cdc.gov/ncbddd/ehdi/documents/EHDI_Contact.pdf.

Family Voices

Voice: 888/835-5669
www.familyvoices.org

Hands and Voices

Voice: 303/492-6283
www.handsandvoices.org

National Association of the Deaf

Voice: 301/587-1788 (TTY: 301/587-1789)
www.nad.org

National Center for Hearing Assessment and Management

Voice: 435/797-3584
www.infantheating.org

National Institute on Deafness and Other Communication Disorders

Voice: 800/241-1044 (TTY: 800/241-1055)
www.nidcd.nih.gov

Inclusion in this list does not imply an endorsement by the American Academy of Pediatrics (AAP). The AAP is not responsible for the content of the resources mentioned above. Phone numbers and Web site addresses are as current as possible, but may change at any time.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

