

In Iowa, all babies will have their hearing tested before leaving the hospital. The tests are simple, painless, and only take a few minutes. The following are questions you may have about testing.

Why is it important to test your new baby's hearing?

Much of a child's ability to communicate relies on hearing. It is important to find hearing loss as early as possible because babies start learning how to use sound as soon as they are born. Listening in the first months of life prepares babies to speak. Babies start by babbling and using many of the sounds they hear spoken around them. By their first birthday, babies are already learning what words mean. These early steps are building blocks for communication.



Studies show it is important to identify and treat a hearing loss by the time a baby is 6 months old. When this happens, the child's language ability at the age of three years will be nearly the same as that of a child with normal hearing. If identification doesn't happen until after six months, the child's language skills at age three will be about half that of a child with normal hearing. In other words, it is important to identify a child's hearing loss by the time the child is six months old and treatment should begin soon afterward. Newborn hearing screening helps to make this possible.

Given the serious ramifications of late identification of hearing loss, Iowa legislature passed a law (Iowa Code section 135.131) which requires universal hearing screening of all newborns and infants in Iowa.

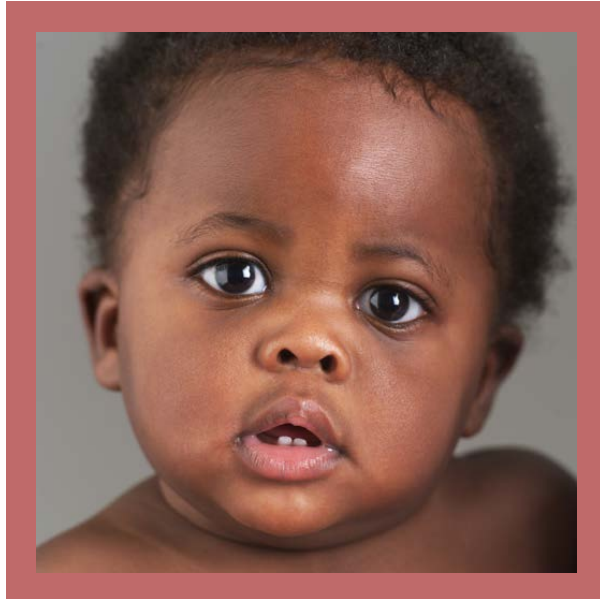
How do you screen a baby's hearing?

Before your baby leaves the newborn nursery, staff will complete a hearing screening. This will tell them if your baby needs hearing tests. The kind of screening used depends on the equipment at the hospital. In Iowa, your baby will have an ABR screen or an OAE screen:

- **Auditory brainstem evoked response system (ABR)**
Band-aid like electrodes are placed on the baby's head to detect responses. Sounds (soft clicking) are played in the baby's ears. This test measures how the hearing nerve responds to sounds and can identify babies who have a hearing loss.
- **Automatic otoacoustic emissions system (OAE)**
A miniature earphone and microphone are placed in the ear, sounds are played and a response is measured. If a baby hears normally, an echo is reflected back into the ear canal and measured by the microphone. When a baby has a hearing loss, no echo can be measured on the OAE test.

Neither test will make your baby uncomfortable. In fact, screening is done while the baby sleeps. Before you leave the hospital, a health care provider will talk with you about the results of your baby's test.

What does it mean if a baby “refers” (does not pass) with the newborn hearing screening?



If a baby refers on the newborn hearing screen, it does **NOT** necessarily mean that a child has a hearing loss. It means that a follow-up screen is needed within a couple of weeks to ensure that your baby has normal hearing. Many babies who need a follow-up screen will have normal hearing.

You may ask why a baby with normal hearing would not pass the newborn hearing-screening test? Common reasons include:

- birth debris in the ear canal
- middle ear fluid
- movement and/or crying of the baby during the screen or noise in the nursery
- Possible hearing loss

A health care provider will visit with you about the importance of follow up and where you can go to have your baby re-screened. Options for a re-screen include:

- birth hospital (many hospitals in Iowa allow babies born at their facility to return for a re-screen)
- local Area Education Agency (AEA) audiologists (hearing screening provided at no cost to the family)
- private practice audiologists

Even though most babies will pass the follow-up hearing screen, it is **VERY** important to take your baby for follow-up screening. A follow-up hearing screen is similar to the hearing screen used in the hospital; however, some hospitals or AEAs may complete a diagnostic test at the time of the hearing re-screen.

Can a baby pass the hearing screen and still have hearing loss?

Mild hearing loss or loss that may affect only some pitches might not be picked up by the newborn hearing screen. It is also important to note that some infants may have hearing loss that is not present at birth. There are babies that are born with normal hearing, but later develop a hearing loss. This type of hearing loss may occur because of the following:

- illness or a genetic condition.
- certain medications
- an accident
- disease

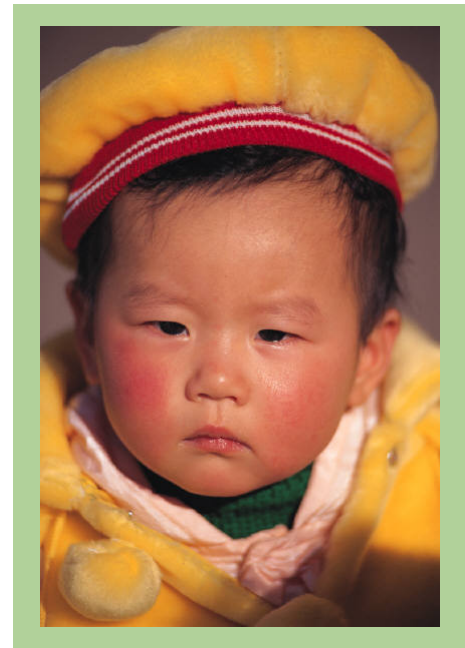
If your baby has risk factors (i.e. family history of hearing loss) for a late on-set hearing loss or if you have concerns about your child's responses to sound or speech development, you should discuss this with your baby's doctor. It is important to keep in mind that regardless of your baby's age, there are safe and accurate tests that can be used to measure how your baby hears.

What should I do if my baby passes the hearing screen, but has been identified with risk factors?

Even if your baby passes screening, certain conditions do not produce immediate hearing loss. Rather, the hearing loss occurs later in the child's development.

A child should see an audiologist for a hearing evaluation by six months of age if one or more of the following risk factors are present:

- Bacterial and viral meningitis
- Congenital Cytomegalovirus (CMV) confirmed in infant
- Extra-corporeal membrane oxygenation (ECMO)
- Family history of hearing loss (permanent, sensorineural hearing loss since childhood)
- Head injury (especially basal skull/temporal bone fracture requiring hospitalization)
- Neurodegenerative disorder (includes Hunter syndrome, Friedreich's ataxia, Charcot-Marie-Tooth syndrome)
- Parental concern regarding hearing status





Iowa's Early Hearing Intervention and Detection Program

- Syndromes (includes: Trisomy 21-Down syndrome, Goldenhar, Pierre Robin, Charge association, Rubinstein-Taybi, Stickler, Usher, osteopetrosis, Neurofibromatosis type II, Treacher Collins)

A child should see an audiologist for a hearing evaluation by 24 to 30 months of age if one or more of the following risk factors are present:

- Cranio-facial anomalies (includes cleft lip or palate, microtia (abnormally small ear), atresia (blocked or abnormally small ear canal), choanal atresia)
- Exchange transfusion for elevated bilirubin
- Herpes infection confirmed in infant
- NICU stay longer than five days
- Other congenital infection
- Ototoxic medications administered (includes: Gentamycin, Vacomycin, Kanamycin, Streptomycin, Tobramycin)
- PPHN (persistent pulmonary hypertension) associated with mechanical ventilation
- Rubella infection confirmed in infant
- Syphilis infection confirmed in infant
- Toxoplasmosis infection confirmed in infant

What should I do if my baby fails the re-screen?

If your baby does not pass the hearing re-screen, please talk with your doctor. Do not continue to have your baby re-screened. It is best to move forward with follow up audiological testing as soon as possible. Your doctor should refer your baby to a pediatric audiologist for diagnostic testing. For best possible outcomes babies should be diagnosed no later than three months of age. Diagnostic testing confirms the presence of hearing loss; determines the type, nature, and (if possible) the cause of the hearing loss. It also helps identify options for treatment.

If follow-up testing is done before a baby is 2 months of age, testing can typically be done while the baby sleeps naturally. For babies older than 2 months of age or for very active babies, your baby may undergo anesthesia. It is very important that babies are quiet and inactive during OAE and ABR (auditory brainstem response) testing.

ABR testing is used for diagnostic testing because it can measure the softest level that the ear responds to sound using different pitches or tones. It can detect damage to the cochlea, the auditory nerve and the auditory pathways in the stem of the brain.



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What should I do if my baby is diagnosed with hearing loss?

Your understanding of your child's hearing loss, and the services available to your baby and family, will play an essential role in helping your child to succeed. Iowa's EHDI program developed a resource guide, with the help of many dedicated professionals and families of children who are deaf or hard-of-hearing, to assist families in their journey. The guide will provide you with the basic knowledge you need to navigate Iowa's service system. For additional assistance, please contact the EHDI program by calling (800) 383-3826.

Secondly, if diagnostic testing shows that your baby has a hearing loss, a number of professionals will help your baby and family. Professionals may include the following:

- **Early ACCESS Service Coordinator** - This person works with early intervention programs. They work closely with families to identify their needs and to make sure that providers work together
- **Early Intervention Specialist** - A teacher who specializes in working with infants who have hearing loss
- **Pediatric Audiologist** - A professional who specializes in testing the hearing of infants and children and recommends hearing aids and other forms of treatment or interventions
- **Ear, Nose and Throat Physician** - A doctor who specializes in problems of the ear, nose and throat
- **Pediatrician or Family Practitioner** - A doctor who provides health care for infants and children.

Many of these professionals will provide support to your family and work together to assist in your baby's development.