

Fact Sheet

Why is Hearing so Important for Children?

Newborns start to learn about the world and communicate during the first months of life as they interact with their parents using all of their senses. When babies hear their parents speak and sing, they start to learn spoken language. When babies hear every day sounds, their hearing system develops as one way to continue to learn about the world. By about 3 months of age, babies will usually smile when spoken to. By 6 months of age, they will begin to babble and imitate simple sounds. By one year, most babies will say their first word.

A young child who does not hear well can communicate, learn and thrive too! However, it is important that we know about the child's ability to hear as soon as possible in the child's life so we can be sure the child is not missing opportunities to learn to communicate and interact with the world they are rapidly learning about.

What is Hearing Loss?

A hearing loss can happen when any part of the ear is not working in the usual way. This includes the outer ear, middle ear, inner ear, hearing (acoustic) nerve, and auditory system.

How We Hear

1 Sound causes air molecules to move or vibrate. These vibrations are picked up by the outer ear and travel down the ear canal to the eardrum.

2 The eardrum detects these tiny vibrations, which set the eardrum and the three bones in the middle ear into motion.

3 These movements travel through a small, covered opening into the cochlea or inner ear.

! **Note:** The cochlea is filled with two types of fluid, separated by two membranes. Along one membrane, the basilar membrane, are microscopic structures that help to turn these sound vibrations into the electrical signals that the brain recognizes as sound. Hair cells are one of the microscopic structures found along the basilar membrane. Each ear contains thousands of these hair cells. They are arranged by frequency, or pitch, just like the keyboard of a piano. Nerves are attached to the bottom of these hair cells.

4 When sound vibrations set the fluids of the inner ear into motion, each hair cell responds to a specific frequency by moving back and forth. These movements trigger the nerve endings, which send an electrical signal to the brain along the auditory (hearing) nerve.

5 The brain then interprets these signals, and we perceive sound.

***** For more information about how the ear works, go to <http://www.asha.org/public/hearing/How-We-Hear/>.



Newborn Hearing Screening

A hearing screening at birth is a simple test to tell parents if a baby might have hearing loss. Some babies who do not pass may still have normal hearing. Others may not hear as well and will need some help. Hearing screening is easy and not painful. In fact, babies are often asleep while being screened. It takes a very short time — usually only a few minutes.

What's next if my child didn't pass the newborn hearing screening?

If a child does not hear well, we can act on this right away so that the child continues to learn and develop without unnecessary delays. That is why it is important for you to complete a follow-up screen as soon as possible. You may be asked to bring your baby back to the hospital for another hearing screen or you may be told to see an audiologist. If your child does not pass the outpatient hearing re-screen, your child should be referred to a pediatric audiologist for more detailed diagnostic testing. Be sure to find out whether the audiologist has the right equipment to test infants and young children. For a list of diagnostic centers go to www.idph.iowa.gov/ehdi.

Knowing your child's hearing ability is very important in promoting learning and communication. So don't delay!

Check out these statistics:

2 to 3 per 1,000 children
in the United States are born with a hearing loss in one or both ears.

95% of babies
with a hearing loss are born to hearing parents.

2 to 3 per 1,000 children
develop a hearing loss after birth.

Over 50%
of babies born with hearing loss have no known risk factors for hearing loss

Hearing loss can affect a child's ability to develop speech, language, and social skills. The earlier children with hearing loss start getting services, the more likely they are to reach their full potential.

Want more information?

Visit the Iowa Early Hearing Detection and Intervention Website at www.idph.iowa.gov/ehdi or call us at 1-800-383-3826.



Iowa's Early Hearing Detection & Intervention Program