

Facts About Hearing Loss in Children

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Did you know that...

Hearing loss is the most common congenital anomaly found in newborns...and yet all newborns are not routinely tested for it

Approximately three per 1000 babies are born with a significant hearing loss, and many more children are born with milder forms of hearing loss (White, Mehl and Thompson, 1998)

14.9% of US children aged six to nineteen have a measurable hearing loss in one or both ears (Niskar et al., 1998).

Any degree of hearing loss can be educationally handicapping for children. Even children with mild to moderate hearing losses can miss up to 50% of classroom discussions. Unmanaged hearing loss in children can affect their speech and language development, academic capabilities and educational development, and self-image and social/emotional development.

Studies estimate that as much as 90% of what young children learn is attributable to the reception of incidental conversations around them (Flexer, 1993).

37% of children with only minimal hearing loss fail at least one grade (Bess, 1998).

All children can be evaluated for hearing loss. Even children who are only minutes old can have their hearing assessed using tests that are safe, painless and easy to administer.

Recent NIH studies have shown that children with hearing loss who are identified and receive early intervention prior to six months of age develop significantly better language ability than children identified after six months.

The average age of identification of early-onset hearing loss in the U.S. is two years of age.

Commonly Asked Questions about Hearing Loss in Children

Q: What types of hearing losses are found in children?

A: There are basically three types of hearing loss. The kind of hearing loss that is permanent and is the result of something affecting the inner ear, or the nerve that deals with hearing (the auditory nerve), is called sensorineural hearing loss. There are many different causes of sensorineural hearing loss, including congenital infections, medications, noise, and genetics. In 50 percent of congenital hearing loss cases, a cause is never found. Congenital hearing loss is present in three to six out of every 1000 newborns and is detectable at birth. Sensorineural hearing loss can also develop later in life for various reasons, one of which is excessive exposure to loud noise.

Another type of hearing loss is called conductive hearing loss. Conductive hearing loss is the result of something affecting the outer or middle ear, such as ear infections associated with fluid in the middle ear space. Middle ear infections are the second-most common reason children see physicians. Any time children have middle ear infections with fluid in their ears, they have an accompanying hearing loss. Other common causes of conductive hearing loss include excess wax, foreign bodies, or swelling of the auditory canal. In most cases, conductive hearing losses can be treated either medically or surgically, and are not permanent.

Finally, mixed hearing losses are combinations of sensorineural and conductive hearing losses.

Q: My child has had frequent middle ear infections; will this affect his hearing?

A: A middle ear infection, or otitis media, is caused by a bacterial or viral infection that affects the middle ear. Middle ear infections that are associated with fluid in the middle ear space can cause a mild hearing loss. This hearing loss is an approximately 20 dB hearing loss, and is similar to what it sounds like if you were to put two fingers in your ears and talk. Everything sounds muffled. Any type of infection of the upper respiratory tract, such as the common cold, ear infections or allergies, can cause this type of hearing loss. Young children are particularly susceptible to these types of infections because their Eustachian tubes are smaller and positioned differently than adults.

The average elementary school child has about seven upper respiratory infections in a year. This is important, because the accompanying hearing loss can last for weeks or even months, and impacts a child's ability to learn in a classroom setting. Even a mild hearing loss, such as the kind seen with otitis media, can affect a child educationally. A child with this type of hearing loss can miss up to 30-50 percent of what a classroom teacher says.

If your child's ear infections are treated appropriately and always resolve with treatment, it is unlikely that they will result in a permanent hearing loss. It is important, however, that children be seen and followed closely by a physician or an audiologist for these types of infections to prevent any permanent damage.

Q: How can I tell if my child has a hearing loss?

A: Hearing loss is invisible, and the signs of a hearing loss are subtle in young children. The following are developmental guidelines for children with normal hearing; if your child is not reaching these milestones, they should see their physician or audiologist to have their hearing tested.

Birth to four months:

- Most babies are startled by sudden loud sounds
- When sleeping in a quiet room, the baby moves or wakes up at the sound of voices or noises
- Babies seem to calm down when they are crying—even for a moment—at the sound of mother's voice
- Babies seem to recognize their mother's voice better than other voices
- At three to four months, babies will turn their head toward a sound

4 to 8 months:

- Babies will turn their head and eyes toward a sound when the sound is coming from outside the child's peripheral vision
- Babies begin to enjoy the sound of musical toys (rattles, bells, etc.)
- At approximately six months of age, babies begin babbling in response to someone talking to them

8 to 12 months:

- Babies' voices go up and down in intonation when vocalizing
- Babies turn directly toward a soft noisemaker, or to the calling of their name
- Babies seem to enjoy music and respond by listening, bouncing, or "singing" along

12 to 16 months:

- Children understand many words, and speak about 25 single words

18-24 months:

- Children undergo a "name explosion", they begin to understand that everything has a word that goes with it, and they begin speaking two word sentences. Children know about 100-200 words.

24-36 months:

- Children begin speaking more fully in sentences, and usually know about 200-400 words

Q: My child is a newborn. Can children that young be assessed for a hearing loss?

A: Absolutely. Children of any age can have their hearing assessed. Children even minutes old can be screened for hearing loss. Newborns can be tested by several methods (an evoked otoacoustic emissions test, or an automated auditory brainstem response test) which are non-invasive, computerized and take only a short period of time. The earlier a child is diagnosed with a hearing loss, the earlier they can obtain appropriate treatment, and consequently develop speech and language skills along with their peers.

Hearing loss is one of the most common health conditions to affect newborns, and National Institutes of Health, American Academy of Pediatrics, along with the Joint Committee on Infant Hearing, recommend that all newborns be screened for hearing loss prior to discharge from the hospital. In fact, on November 22, 1999, just before Congress adjourned, the members passed the "Newborn and Infant Hearing Screening and Intervention Act of 1999." For the past several years, Congressman James T. Walsh (R-NY) has been garnering support for this bill, which allocates new funding -- \$7 million next year -- for state grants for newborn hearing screening and intervention programs.

Q: What should I do if I suspect that my child has a hearing loss?

A: The first thing to do if you suspect a hearing loss in your child is to have his or her hearing assessed. Begin by taking your child to their primary care physician, who should examine your child and interact with him or her. Your physician will ask you several questions regarding family history of hearing loss, your family's and your child's past medical history, and your concerns about why you believe your child has a hearing loss. Your primary care physician will then refer you to an ENT doctor (an otolaryngologist) and/or an audiologist who will perform a series of tests to assess your child's hearing. Parents are the ones who most frequently suspect hearing loss in their children, not healthcare professionals. Trust your instincts, and if you are concerned about a hearing loss in your child, have his or her hearing tested by an audiologist!

Q: What can I expect to be done for my child if she does have a hearing loss?

A: There are many options available for children with hearing loss today. Children as young as three months of age can be fitted with hearing aids. Toddlers with profound hearing loss are now utilizing cochlear implants. Options exist in terms of modes of communication as well, ranging from auditory-oral, auditory-verbal and Cued Speech approaches, to American Sign Language and Total Communication. The book *Choices in Deafness* by Sue Schwartz, Ph.D. (available through AG Bell) provides parents with a solid background in each of these options.

It is crucial to diagnose hearing loss in children as early as possible so that amplification technology can be used to get sound to the child's developing brain as soon as possible. Children who are diagnosed prior to six months of age and fitted with either hearing aids or cochlear implants, along with vigorous speech, language, and aural rehabilitation, develop close to—or at the same rate—as their peers. The key is early diagnosis, early intervention and early brain development.

Q: Can loud noises affect children's hearing?

A: Yes, it is important to protect whatever hearing a child or an adult has. Very loud noises can damage one's hearing, and can do so permanently. Exposure to high intensity noise can permanently damage the inner ear. Headphones, rock concerts, video arcades, and very loud noises should be avoided if possible, and if unavoidable, protective earplugs should be worn during exposure. The incidence of noise-induced hearing loss in this country is growing. It is more important than ever to avoid this unnecessary type of hearing loss... through prevention.

Q: What types of modifications can be made in a classroom for children with hearing loss?

A: There are many modifications that can be made in a classroom to help children with hearing loss. In conjunction with hearing aids or cochlear implants, there are modifications that can be made to the classroom itself to make it a more acoustically favorable environment. Minor modifications such as wall-to-wall carpeting, acoustically treated tiles on the ceilings and walls, well-fitted and closed windows and doors and quiet heating/ventilation systems are helpful. Additionally, there are assistive listening devices such as personal FM systems and sound field amplification systems that amplify the teacher's voice over the background noise, and are quite helpful in classroom settings for children with hearing loss. In fact, amplifying the entire classroom with a sound field amplification system benefits every child in the class—not just the child with hearing loss.

Resources Available through AG Bell—Call 202-337-5220 (v/tty) or log onto <http://www.agbell.org> to order.

Choices in Deafness: A Parent's Guide to Communication Options, Second Edition by Sue Schwartz, Ph.D.

Facilitating Hearing and Listening in Young Children: Early Childhood Intervention Series by Carol Flexer

When Your Child is Deaf: A Guide for Parents by David M. Luterman

Listening Games for Littles by Dave Sindrey, Cert. AVT

Sound-field FM Amplification: Theory and Practice by Carl C. Crandell, Joseph J. Smaldino and Carol Flexer