Health & Safety Notes
California Childcare Health Program

Hearing Evaluations in Young Children

Good hearing is necessary for a child to learn to talk. Newborn infants can hear a full range of sounds from the moment they are born (and even before)! Infants demonstrate that they hear as they quickly learn to recognize and respond to familiar voices. Hearing children turn to new sounds and their language development generally progresses along a predictable course.

What causes hearing loss?

Hearing loss is one of the most common birth defects in the United States. Permanent childhood hearing loss can also be due to exposure to loud noise, certain medications, diseases such as meningitis and rubella, head or ear injury, and other causes. Temporary hearing loss can be caused by a build-up of wax in the ear canal, severe colds, sinus infections or ear infections, which can be resolved with medical treatment.

If a permanent hearing loss is discovered, there are treatments and programs that can help a child of any age, including hearing aids (even for infants), sign language classes and support groups.

What if I think a child has a hearing loss?

An infant or child suspected of having a hearing loss should be evaluated by a trained professional. If a child does not seem to be meeting language development milestones, if there are risk factors for hearing problems, or if a child fails a hearing screening, he or she may be referred for a more complete medical and hearing evaluation.

To arrange for a hearing assessment for a child, parents or guardians should contact their health care provider. The health care provider may want to examine the child before recommending the appropriate hearing test for the developmental age of the child.

Infants or children who fail a hearing screening should be referred for a physical exam and more comprehensive testing as necessary.

What are the warning signs of hearing loss?

Some factors put a child at risk for a hearing loss. It is recommended that children with one of the following risk factors have a hearing test as early as possible:

- Family member with a permanent childhood hearing loss.
- Serious infection at birth.
- Infection or disorder affecting the brain, such as bacterial meningitis, measles or mumps.
- Mother was exposed to or had infections while pregnant such as cytomegalovirus (CMV), herpes, rubella, syphilis, and/or toxoplasmosis.
- Difficult birth which affected the baby's breathing or APGAR scores (low.)
- Baby required neonatal intensive care for more than two days after birth or required mechanical ventilation.
- Neonatal jaundice (hyperbilirubinemia) which required an exchange transfusion.
- Low birth weight.
- Treatment with drugs, such as certain antibiotics, that can cause damage to hearing.
- Syndromes associated with progressive hearing loss such as neurofibromatosis, neuro-degenerative disorders such as Hunter syndrome, or sensory motor neuropathies such as Charcot-Marie-Tooth syndrome.
- Recurrent or persistent ear infections for at least three months.
- Unusual appearance of child's head, face or ear including cleft lip and/or palate.
- Down's syndrome.
- Head trauma.

When are infants and children usually tested?

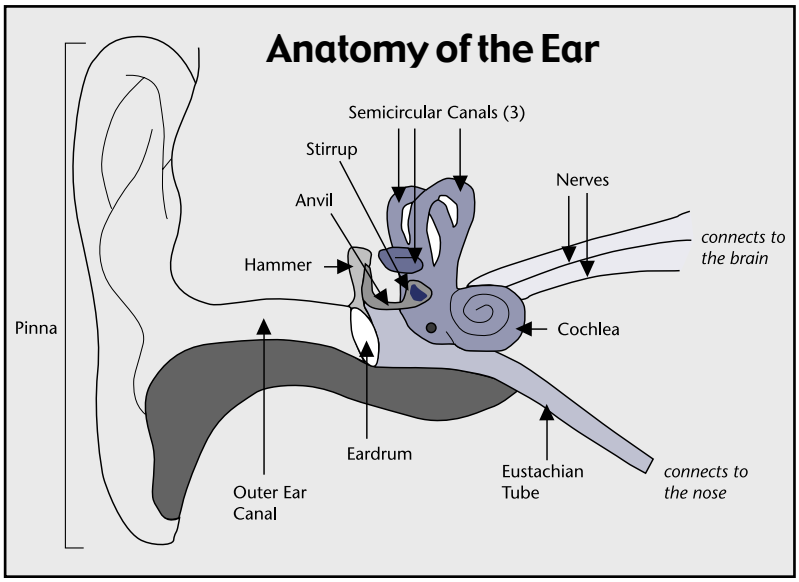
Infants

In California, a law was passed in 1998 that requires most hospitals (those approved for California

Children Services funding) to offer hearing screenings to all infants born in their facilities. If a child is diagnosed with a hearing loss, parents should receive information about community resources and appropriate follow-up services.

Young Children

Many preschools have hearing screening programs. In California, state regulations require hearing screening for each student in kindergarten or first grade, second, fifth, eighth, tenth or eleventh grades and also at first entry to public school. Children in special education services should receive hearing screening tests as part of their individualized plan.



What are the types of hearing evaluations?

With the help of modern technology hearing tests for newborn infants and children are done with great accuracy. Unlike hearing tests for older children, which require the child to respond to a sound by raising a hand, hearing tests for infants and children measure vibrations produced in the inner ear.

Otoacoustic Emissions (OAE) Testing

OAE testing is simple, painless, inexpensive and fast. In this test a small microphone resembling an earplug with an attached cord is placed in the ear canal. The infant or child hears a series of rapid clicks or tones about the loudness of a telephone dial tone. The microphone picks up vibrations and sends them to the computer for processing. Results are displayed as a computer graph. This test does not require the child's active participation.

Auditory Brainstem Response (ABR) or Brainstem Auditory Evoked Response (BAER)

This test involves placing electrodes on the child's head while he or she is very still or sleeping. Clicking sounds are presented to the child through earphones. A computer records the brain waves generated by the auditory nerve and auditory brain pathways in response to the clicking sounds. Children who fail the ABR or BSER test are referred for more comprehensive testing.

Behavioral Hearing Tests

These types of hearing tests are used with children who are able to respond to sounds. These tests measure the degree of hearing loss, assist in locating the source of problem, and can indicate how the hearing loss will affect the child's ability to communicate. These tests involve observing a child's responses to sound and are useful in infants and those with limited language skills. The behavioral response might be an infant's eye movements, a head-turn by a toddler, placement of a game piece by a preschooler, or a hand-raise by a school-age child. Very young children can respond to a number of behavioral tests.

Resources

Developed by a team of professionals at Boys Town National Research Hospital, this Web site contains information about infant hearing screening and infants with hearing loss: www.babyhearing.org

American Speech and Hearing Association: (800) 638-8255, www.asha.org

Alexander Graham Bell Association for the Deaf and Hard of Hearing: (202) 337-5220, www.agbell.org

California Department of Education, Special Education Division: (916) 445-4613.

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