HOW CAN A BABY'S HEARING BE TESTED?

NEWBORN HEARING SCREENING

Currently there are two computerized tests that hospitals use to screen babies for hearing loss. Both of these tests are safe and cause no discomfort to the baby.

Otoacoustic Emissions (OAEs). A miniature earphone and microphone are placed in the baby's ear, sounds are played and a response is measured. If a baby hears normally, a sound response from the cochlea (inner ear) is reflected back into the ear canal and is picked up by the microphone. When a baby has a hearing loss, no response can be measured on the OAE test.

Automated Auditory Brainstem Response (AABR). For this test sounds are played into the baby's ear. Band-aid-like electrodes, which are placed on the baby's head, detect the brain's responses to sound and send it back to the computer.

FOLLOW-UP HEARING TESTING

Babies who do not pass the hospital's hearing screening tests are referred for a more complete diagnostic hearing evaluation. These follow-up hearing tests should always be completed by an audiologist who is familiar with testing young children.

If the baby does not pass the hearing screening, a **Diagnostic Auditory Brainstem Response (ABR)**, also known as a **Brainstem Auditory Evoked Response (BAER)** test should be administrated immediately. A diagnostic ABR is completed in a similar way as the screening AABR described above, but it is a more thorough test of the baby's hearing. If a baby is tested before 4 months of age, testing usually can be done while the baby is sleeping. If the baby is older or very active, sedation may be necessary for the diagnostic ABR procedure.

OTHER HEARING TESTS FROM BIRTH TO AGE 5

As a child develops from infancy to age 5, other types of hearing assessments may be given.

Behavioral Observation Audiometry (BOA) assesses responses to very quiet sounds in hearing infants from birth through age 7 months. The infant is positioned on a caregiver's lap in a sound-treated room. Sounds are presented through loudspeakers and changes in the infant's behavior are observed (e.g., breathing changes, facial expression, body movement, startle response).

Visual Reinforcement Audiometry (VRA) is appropriate for testing children from 7 through 30 months of age. In a sound-treated booth, the child is seated on the caregiver's lab and conditioned to turn in the direction of a sound played through a speaker. When the child looks in the direction of the sound, the audiologist rewards him/her by activating an animated toy. Once the child has learned the task, the intensity of the sound is reduced to determine the threshold of hearing-the quietest sounds to which the child will respond.

With **Conditioned Play Audiometry (CPA)**, the child is conditioned to perform a play activity (e.g., dropping a block in a bucket) whenever a sound is heard through a speaker or earphone. The audiologist reduces the loudness of the sounds in order to determine the softest sound the child can hear. Play techniques are appropriate for testing children from age 30 months through 5 years of age.

Tympanometry may be used for children, 6 months and older, to provide information about the eardrum and middle ear space (e.g., middle ear infection or fluid). A small tip is placed in the ear canal. The child hears a humming sound and feels a slight change of pressure in the ear. Tympanometry does not provide information about the child's hearing levels.