

Types of Hearing Tests

If a child does not pass a hearing screening an audiologist may do diagnostic testing to find out more specific information about:

- If the child has a hearing loss
- Whether the loss is medically treatable
- Degree or amount and type of hearing loss

Different hearing tests may be done depending on the age of the child and the information the audiologist is looking for. The following is a description of different tests and the ages of children they work best with.

Otoacoustic Emissions Testing (OAE, DPOAE, TEOAE)

How it is done: A small earphone is placed in the ear canal and sound is sent to the eardrum. When the inner ear hears the sound, an echo is sent back. A microphone in the earphone listens for the echo. A strong echo means the ear is working normally.

What it will show: Along with other diagnostic tests, the OAE can find a hearing loss that is greater than a mild loss that occurs in the inner ear. However, wax in the ear, a noisy test environment or fluid in the middle ear can cause an absent response to this test.

Who is it for: It is used for children of all ages.

Auditory Brainstem Response (BSER, BAER, ABR)

How it is done: This is a more thorough test than the OAE described above because it tests both the ear and the brain's response to sound. This test must be done if the child is either asleep or sedated. Electrodes are attached to the child's head and tiny earphones are placed over or in the child's ears. Sounds are given through the ear piece and the electrodes measure how the child's brain responds. The audiologist will compare your child's hearing response to information gathered on infants and children with normal hearing. This test gathers specific information about the child's hearing at different pitches and loudness levels.

What it will show: This test gives an approximation of the amount of hearing. If there is a loss, the type of hearing loss can be found.

Who it is for: This test is typically used for infants up to 6 months of age and for children who cannot respond to other types of hearing tests.

Visual Reinforcement Audiometry (VRA)

How it is done: The child will sit either in a chair or on the lap of an adult in the sound booth. A toy that is of interest to the child is near the speaker where the sound will come from. When sound is introduced the toy will light up. Children will learn to look at the toy in response to the sound. Children naturally turn to the sound source and this process uses that tendency. Earphones may or may not be used for this test.

What it will show: This test will give information about how your child hears different pitches at different loudness levels. Earphones are used to collect individual ear information. If earphones are not used, the information will reflect the better ear.

Who it is for: This test is used for children of about 6 months to about 2 years of age.

Play Audiometry

How it is done: Children learn to drop a block or perform some other task when they hear a sound. The child is rewarded for a correct response. Some listening activities may include stringing beads, building block towers, putting pegs in a peg board, putting pennies in a bank, or doing a puzzle. Earphones may or may not be used with this test.

What it will show: This test will give information about how your child hears different pitches at different loudness levels. Earphones are used to collect individual ear information. If earphones are not used, the information will reflect the better ear.

Who it is for: This test is used with children older than 17 months.

Pure Tone Audiometry

How it is done: Tones of different pitch and loudness levels are introduced to your child. Your child will indicate if they have heard the tone, usually by raising their hand. The tones are presented either through earphones or through a vibrator placed behind the ear.

What it will show: This test will give information about how your child hears different pitches at different loudness levels. Earphones are used to collect individual ear information. If earphones are not used, the information will reflect the better ear.

Who it is for: This test is used with children older than 48 months.

Tympanometry/Acoustic Reflexes

How it is done: A probe is placed in your child's ear and a signal presented. The signal can be a sound or change in pressure depending on what information the audiologist is trying to gather. The signal bounces off the eardrum and back to the probe. It only takes between 3-30 seconds per ear.

What it will show: Tympanometry will chart the way the eardrum is moving which shows how the middle ear is functioning. It determines if there is fluid in the middle ear or if the middle ear bones are working properly. It can determine if there is a hole in the eardrum or if the child's tubes are open. Acoustic reflex measure how loud the sound must be to cause the middle ear muscles to contract. Individuals with severe to profound hearing losses do not have these reflexes.

Who it is for: This test is used for any child where a middle ear problem is suspected.