

Diagnostic Tests

An audiologic test battery is used to assess the different parts of the auditory system and to estimate hearing sensitivity of each ear (type, degree, and configuration). For infants, the test battery includes physiologic and developmentally appropriate behavioral techniques. A test battery is required to cross-check results.

Case History:

A thorough case history is taken to obtain information regarding past hearing screens/tests and parental observations. Information is also obtained on family hearing loss, pregnancy, birth, and medical history. This information allows the audiologist to determine the direction for testing, contribute to understanding of other test results, and determine what the family feels is important.

Physical Features Examination:

A global examination of the eyes, head, neck, hands, and feet are made to determine similarity and form of body features. This test is used to obtain information on possible syndromes and to make referrals for other professional evaluations.

Otoscopic Examination:

This examination looks at the outer ear, ear canal and eardrum of each ear to determine structure and form.

Behavioral Observation Audiometry:

For this test the child is observed to determine his/her responsiveness to sound. For children under 6 months, a startle response to speech/noise markers is used. For older children, a head turning response is observed. Calibrated sounds (hearing level and frequency) in a sound booth are used in order for the audiologists to obtain global information about the infant's hearing.

Acoustic Immittance Measures:

For this test, a small cushion is placed in the ear that presents a signal and changes air pressure. The amount of the signal that bounces back from the eardrum, when the air pressure is changed, is measured.

- Tympanometry: This test determines the ability of the eardrum to move.
- Acoustic Reflex Thresholds: This test measures the level at which a tiny muscle in the middle ear contracts. This test is dependent on the status of the middle ear, inner ear, and brainstem.

Evoked Otoacoustic Emissions (Transient Evoked, Distortion Product):

For this test, a small cushion is placed in the ear that presents a signal. When the sound reaches the inner ear, the inner ear produces an echo that can be analyzed by the test equipment.

ABR or BAER (Auditory Brainstem Response or Brainstem Auditory Evoked Response): For this test, sensor pads are placed around the head and a small cushion is placed in the ear to present a signal. A computer is used to analyze brainwaves to sound.