

Performing the Screen

a. When Hearing Screening Occurs

Screening is preferably done in the hospital before discharge or before one month of age.

b. Types of Screening Equipment

Current New Jersey legislation P.L. 2001, Chapter 373, C.26:2-103.3(a) states "all newborn children in the State shall be screened for hearing loss by appropriate electrophysiologic screening measures." Electrophysiologic screening measures are either Auditory Brainstem Response screening (ABR) or Otoacoustic Emission screening (OAE).

New Jersey hospitals have the option to choose which electrophysiological screening measure is best for them based on hospital resources, available screening personnel, and the cost and number of babies born in the hospital. Some facilities offer the use of both methods in infants who do not pass their initial screening. Administration of either method is most effective while the child is asleep. Each screening takes a few minutes to perform and is safe and painless. Results for either of these screenings are recorded as either "pass" (when both ears pass the screening) or "refer" (when either one or both ears do not pass the screening). *Neither screening tool can measure actual hearing loss.*

Technical Information on the Types of Screening Equipment

1. **Auditory Brainstem Response Screening (ABR)** ABR screening is performed by introducing a soft clicking sound to each ear through the use of earphones placed on the infant's ear or placed at the opening of the ear canal. Adhesive electrodes are taped to various sites on the infant's head, which are able to monitor and record the auditory response as it travels from the ear through the auditory system. The ABR response provides information regarding the integrity of the auditory pathway up to and including the brainstem.

Automated ABR screening differs from a diagnostic ABR study in that the equipment is fully automated, eliciting either a pass or refer response. A diagnostic ABR evaluation allows the audiologist the opportunity to manipulate the test parameters, e.g., the stimulus (click or tone burst); the intensity of the signal and the method of stimulus presented (air conduction versus bone conduction). Additional information regarding diagnostic ABR evaluation is included in the Diagnostic Testing section of this website.

2. **Otoacoustic Emission Screening (OAE)** Soft clicking sounds (Transient Evoked Otoacoustic Emissions - TEOAE) or tones (Distortion Product Otoacoustic Emissions - DPOAE) are presented to the baby's ear via a small test probe gently placed at the opening of the ear canal. A microphone within the probe measures the echo (emission) that is returned from the baby's ear in response to the click or tone delivered by the OAE probe. The echo is analyzed and provides information on the functioning of the outer hair cells of each cochlea. OAE's typically are measured in individuals with normal hearing. A "refer" result indicates that further testing is needed to rule out a hearing loss.

