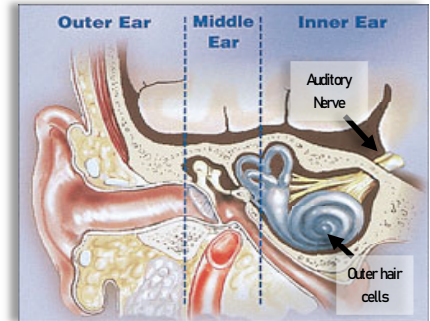


ABR vs. OAE SCREENING

ABR: Auditory Brainstem Response
OAE: Otoacoustic Emissions

ABR or OAE screenings are performed shortly after birth. Each screening method measures a different type of response to sound. Both screening methods determine if further testing is needed and are approved by the Joint Committee on Infant Hearing (JCIH) for well-babies. Babies who stay in the NICU more than five days require an ABR screening prior to discharge from the hospital.



ABR	OAE
Measurement	
The ABR screening tells us how the nerve and brainstem pathways for hearing are working. The ABR records activity at the level of the brainstem in response to sounds played through earphones.	The OAE screening measures the function of the outer hair cells, but does not measure a response from the auditory nerve. The hair cells respond to sound by vibrating. The vibration produces a very quiet sound that echoes back into the middle ear. This sound is the OAE that is measured.
How does it work?	
An earphone is placed in or on the ear and makes clicking or beeping sounds. Electrodes on the scalp/earlobes detect electrical responses that relate to sound moving from the ear to the brain. Testing works best if the infant is asleep.	An earphone with a microphone is placed in the ear canal and measures the cochlea's response to sound. Infant must be resting quietly and be calm. Infant noise or movement, middle ear fluid, or residual vernix may interfere with testing.
Referral Rate: Around 3% of babies will fail the test and need follow up testing.	Referral Rate: Around 10% of babies will fail the test and need follow up testing.
False Negatives: May miss mild, low frequency, and precipitously sloping high frequency hearing losses due to the limited stimuli levels and frequency bands used during the test.	False Negatives: May miss mild or low frequency hearing losses due to measurement limitations. May also miss auditory neuropathy, a condition in which the inner ear detects sound, but has a problem sending sound along the auditory nerve to the brain.
How long does it take?	
Total time for preparation, testing, and documentation is usually around 15-30 minutes.	Total time for preparation, testing, and documentation is usually 10-20 minutes.
How much does it cost?	
Cost: Around \$11/ baby for disposables.	Cost: Around \$1/ baby for disposables.

If your patient fails their newborn hearing screening, encourage the parents to have their child's hearing retested per the JCIH 1-3-6 guidelines

- 1 Repeat hearing screening by **one** month of age
- 3 Diagnostic evaluation by **three** months of age
- 6 Enrolled in early intervention by **six** months of age

A failed outpatient hearing screening warrants referral to a pediatric audiologist for diagnostic testing



Scan the QR code for a list of Pediatric Audiologists in Nebraska or visit ehdi-pals.org for a list of audiologists in other states