



# Newborn Hearing Screening

## What are the two types of Hearing Screens?

**Automated Auditory Brainstem Response (AABR) and Otoacoustic emissions (OAE)**

## What do the two types of Hearing Screens have in common?

- Both are designed to detect hearing loss of 40dB or greater
- Both can be used as the initial hearing screen in Well Baby nurseries
- Both types are non-invasive, easily performed on neonates, and proven successful for Universal Hearing Screening

## How are the two types of Hearing Screens different?

### **Automated Auditory Brainstem Response (AABR)**

1. Measurements reflect the status of the peripheral auditory system, the VIII nerve, and the brainstem auditory pathway
2. Recommended as the initial hearing screen for ALL NICU babies, due to their increased risk of Auditory Neuropathy Spectrum Disorder (ANSD)
3. Can be used as the follow up re-screening for both AABR and OAE failed screens
4. Used by most birthing hospitals in North Carolina as the initial hearing screen
5. ENT and Pediatrician offices do not typically have this technology for re-screenings so are not the best locations for re-screens

### **Otoacoustic emissions (OAE)**

1. Measures reflect the status of the peripheral auditory system extending to the cochlear outer hair cells
2. Appropriate for an initial Well Baby hearing screen but is not recommended for babies in the NICU as the initial hearing screen
3. Can be used as the re-screen only if OAE was the initial screen which was failed. It cannot be the re-screen following a failed AABR screen because it will not detect neural disorders
4. In NC, used by birthing facilities and a few hospitals for Well Baby hearing screens as their initial hearing screen
5. ENT and some pediatrician offices have OAE screening abilities, so if OAE was the initial failed screen the re-screen can be performed at these offices.

## What should I do if one of my newborn patients failed the initial hearing screen in the hospital?

If the infant cannot return to the birthing facility at which they were born, it is best to refer to a NC State approved diagnostic testing site. These sites have experience in assessment and treatment of hearing disorders in very young infants and have agreed to follow the NC state guidelines for re-screening and diagnostic testing. This list is available at

<http://www.ncnewbornhearing.org/files/InfantDiagnosticSiteListChart-Web-April2013.pdf>

### **Take away**

- **AABR failed screens must have a re-screen with AABR**
- **AABR failed screens should never be rescreened with OAE**
- **When in doubt where to refer for a failed screen – send to the closest site listed on the Infant Diagnostic Site List provided by NC Department of Public Health**