



Newborn Hearing Screening OAE vs AABR

Why should you not rescreen using OAE if ABR was initially performed?

Otoacoustic Emission Hearing Screening (OAE) - OAE measurements are obtained from the ear records cochlear responses to acoustic stimuli. Thus, OAEs reflect the status of the peripheral auditory system extending to the cochlear outer hair cells.

Automated Auditory Brainstem Response Testing (AABR) - ABR measurements record neural activity generated in the cochlea, auditory nerve, and brainstem in response to acoustic stimuli delivered via an earphone. Automated ABR measurements reflect the status of the peripheral auditory system, the eighth nerve, and the brainstem auditory pathway.

Because OAEs are generated within the cochlea, OAE technology cannot be used to detect neural (eighth nerve or auditory brainstem pathway) dysfunction. Thus, neural conduction disorders or auditory neuropathy without concomitant sensory dysfunction will not be detected by OAE testing.

Auditory neuropathy is a variety of hearing loss in which the outer hair cells within the cochlea are present and functional, but sound information is not transmitted to the auditory nerve and brain properly. **The hallmark of auditory neuropathy is an absent or very abnormal ABR reading together with a normal OAE reading.**

Outpatient Rescreening for Infants Who Do Not Pass the Birth Admission Screening

Infant screening protocols recommend an outpatient rescreening within 1 month of hospital discharge to minimize the number of infants referred for follow-up audiological and medical evaluation. The outpatient rescreening should include the testing of both ears, even if only 1 ear failed the inpatient screening.

The baby who **Did Not PASS the hospital AABR** testing should not be rescreened by OAE testing because such infants are presumed to be at risk of having auditory neuropathy.

The baby who **Did Not PAS the hospital OAE** screening can be rescreened using OAE testing. If the well baby was not screened before hospital discharge then OAE screening is appropriate.