

## Hearing Evaluation - Brainstem Evoked Response Connecticut Pediatric Otolaryngology

### **What is the brainstem evoked response (BSER) test?**

- The Brainstem evoked response (BSER) is a hearing test. This test measures the brainstem's responses to clicking sounds which checks the auditory (hearing) pathways of the brainstem.
- This test is often referred to by many different names, however they are all the same test:
  - brainstem auditory evoked response (BAER)
  - brainstem auditory evoked potential (BAEP)
  - auditory brainstem response (ABR)
  - automated auditory brainstem response (AABR)
  - evoked auditory potential
  - evoked response audiometry

### **Who should get tested with the BSER?**

- Any infant who fails the newborn hearing screening
- Family history of permanent childhood hearing loss.
- Infants with various genetic syndromes associated with hearing loss (Trisomy 21, Neurofibromatosis, Osteopetrosis, Usher syndrome, Hunter syndrome, Friedreich ataxia, Charcot-Marie-Tooth syndrome).
- Infants following various illnesses, traumas, medications which can impact on hearing (bacterial meningitis, head trauma, ototoxic medications, high bilirubin level requiring a blood transfusion, ECMO)
- Older children with clinical indication (for example an abnormal ear structure) or parental concern regarding hearing, speech, language, and/or developmental delay who are unable to participate in routine hearing evaluations.

### **How is the test performed?**

The test is performed with the child lying still (or sleeping) and remaining quiet. Often sedation with medication or general anesthesia is required in order to conduct the test because any muscle movement or crying will distort the results. Electrodes are placed on the child's forehead, neck and shoulder. The child will hear clicking sounds or tone bursts through rubber earphones, and the electrodes will pick up the brain's responses to the sounds and record it on a graph. The test will take approximately 20 to 60 minutes to complete.



### **Why does my child need to take this test?**

Hearing is an important tool in communication. Early identification of hearing problems in children will enable earlier intervention with speech and language services as well as any necessary assistive devices (e.g. hearing aid). Delayed identification of even of mild hearing loss may result in language delays and behavior problems.