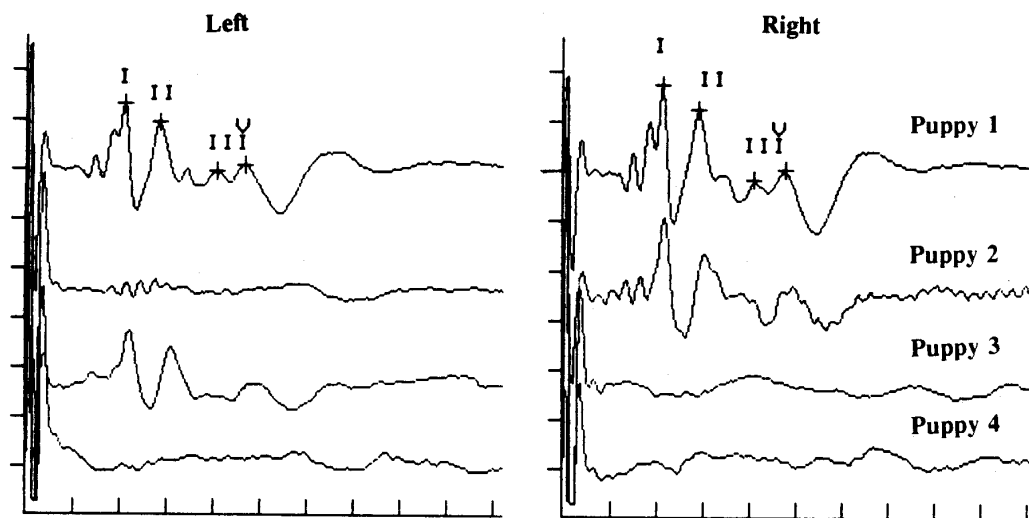


What is the BAER test?

The hearing test known as the brainstem auditory evoked response (BAER) or brainstem auditory evoked potential (BAEP) detects electrical activity in the cochlea and auditory pathways in the brain in much the same way that an antenna detects radio or TV signals or an EKG detects electrical activity of the heart. The response waveform consists of a series of peaks numbered with Roman numerals: peak I is produced by the cochlea and later peaks are produced within the brain. The response from an ear that is deaf is an essentially flat line. In the sample recordings shown below, Puppy 1 heard in both ears, Puppy 2 was deaf in the left ear, Puppy 3 was deaf in the right ear, and Puppy 4 was deaf in both ears. Because the response amplitude is so small it is necessary to average the responses to multiple stimuli (clicks) to unmask them from the other unrelated electrical activity that is also present on the scalp (EEG, muscle activity, etc).

The response is collected with a special computer through extremely small electrodes placed under the skin of the scalp: one in front of each ear, one at the top of the head, and one between and behind the eyes. It is rare for a dog to show any evidence of pain from the placement of the electrodes - if anything the dog objects to the gentle restraint and the irritation of wires hanging in front of its face. The stimulus click produced by the computer is directed into the ear with a foam insert earphone. Each ear is tested individually, and the test usually is complete in 10-15 minutes. Sedation or anesthesia are usually not necessary unless the dog becomes extremely agitated, which can usually be avoided with patient and gentle handling. A printout of the test results, showing the actual recorded waveform, is provided at the end of the procedure. Test results are confidential, but anonymous details will be used in Dr. Strain's ongoing deafness research for later publication and education of veterinary practitioners.



Dr. George M. Strain
Louisiana State University
Comparative Biomedical Sciences
School of Veterinary Medicine
Baton Rouge, Louisiana 70803
Phone: 225-578-9758
Fax: 225-578-9769
E-mail: strain@lsu.edu