

## NEURODIAGNOSTIC LABORATORIES

### WHAT ARE EVOKED POTENTIALS (EPs)? :

Evoked Potentials (EPs) are helpful in evaluating a number of different neurological problems including spinal cord injuries, acoustic neuroma and optic neuritis. The EP records electrical activities from the brain, spinal nerves or sensory receptors in response to specific external stimuli. Small electrodes are applied to the scalp and/or other areas of the body, a series of stimuli are introduced, and a computer records the neurological responses. These responses are plotted on a graph and are interpreted by a neurologist. Common types of EPs:

**Auditory:** BAEP evaluates the auditory nerve pathways from the ears to the brainstem. Four electrodes will be applied to your scalp using a water-soluble paste. You will be asked to put on a set of earphones, which deliver a set of tones/clicks to each ear while the computer records wave forms through the electrodes. The only requirement is that you remain relaxed and still. The testing usually takes 45 minutes.

**Visual:** VEPs evaluate the visual nerve pathways from the eyes to the visual (occipital) cortex of the brain. Three electrodes are applied to your scalp using a water-soluble paste. The room will be darkened and you will be asked to stare at a video screen with changing patterns while the computer records wave forms through the electrodes. This test usually takes 20 minutes.

**Somatosensory:** SSEPs assess pathways from the nerves in arms or legs through the spinal cord to the brainstem and cerebral cortex. A small electrical current is applied to the skin overlying the specific arm/leg nerve. The current creates a slight tingling sensation, but is not painful. Each arm or leg is tested separately. This test usually takes about 45 minutes.

### HOW TO PREPARE FOR YOUR EP TEST:

Typical length of test: 20-45 minutes, depending on type of test

- There are no special preparations or contraindications for this type of testing.
- NSMC provides interpreters for non-English speaking patients; please inform the EMG lab whether you will need the interpreter service or if you will bring your own interpreter. Call 978-354-4333 for NSMC Salem Hospital or 781-477-3417 NSMC Union Hospital to discuss our interpreter services.
- For patients who speak English but may not be able to easily communicate their medical histories, it is advisable that a family member or friend familiar with your medical history accompanies you to the testing.

### FOLLOW UP:

Your doctor will receive a report within 4-5 days after testing and will contact you with the results.