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# EVOKED POTENTIALS

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## Evoked Potentials

### What are evoked potentials?

Evoked potentials are used to measure the electrical activity in certain areas of the brain and spinal cord. Electrical activity is produced by stimulation of specific sensory nerve pathways. These tests are used in combination with other diagnostic tests to assist in the diagnosis of neurological disorders.

Evoked potentials test and record how quickly and completely the nerve signals reach the brain. Evoked potentials are used because they can indicate problems along nerve pathways that are too subtle to show up during a neurologic examination or to be noticed by the patient. The disruption may not even be visible on MRI exam.

These tests can be helpful in making the diagnosis of multiple sclerosis (MS) and other neurological disorders. Evoked potentials are used to show abnormalities in the function of nerve pathways that can be caused by neurological disorders.

### Types of evoked potentials

You are scheduled for one or more of the following tests. Please wear loose-fitting clothing and have your hair clean. Do not apply hair sprays, oils, or gels.

- **Visual Evoked Potentials (VEP):** This test will require that you observe a flashing checkerboard pattern projected on a monitor. If you have eyeglasses, please bring them to use during testing. Electrodes will be placed on your scalp and shoulder. This procedure may take up to 60 minutes to complete. Patients unable to focus on the screen, such as young children, will be given special goggles.
- **Auditory Evoked Potentials (AEP):** This examination involves listening to clicking noises generated in a set of headphones. The test requires the application of a few electrodes to the scalp. This exam may take 60 minutes to complete.
- **Median Nerve Sensory Evoked Potentials (MNSEP):** This test requires the stimulation of your median nerve located near your wrist. The test

requires the application of electrodes on the scalp, neck, chest, and wrists. This exam may take up to 1 to 1½ hours to complete.

- **Posterior Tibial Nerve Sensory Evoked Potentials (PTNSEP):** This test requires stimulation of your posterior tibial nerve located near your ankle. This test requires the application of electrodes on the scalp, back, hips, knees, and inner ankles. This exam may take up to 1½ hours to complete.
- **Evoked Potential Back Averaging:** This test involves recording EEG and multiply jerking movements (100-200). This test requires the application of electrodes to the scalp and electrodes where the jerking movements occur. The test can take up to 4 hours, depending on the frequency of the jerking movements. Please contact your physician, the day prior to testing, if you are not having jerking movements.

Evoked potentials are used to assist with the diagnosis of MS and other neurological disorders. Specially trained neurologists or neurophysiologists will interpret the results. Information provided by these tests will be considered, along with other findings from clinical history, neurological examination, MRI, and other clinical or laboratory information when diagnosing a medical condition.

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