

Evidence Based Guideline

Electrocorticography

File Name: electrocorticography
Guideline Number: EBG.SUR6260
Origination: 6/1984
Last Review: 9/2003

Active policy, no longer scheduled for routine literature review.

Description of Procedure or Service

Electrocorticography (ECoG) is a special way of measuring electrical activity of the brain from the [cerebral cortex](#). The [cerebral cortex](#) is the outer portion of the brain where thought processes take place. There are three membranes that cover the brain and spinal cord. The outer and strongest membrane is the [dura mater](#). ECoG uses electrodes placed either outside the [dura mater](#) (epidural) or underneath (subdural) to obtain the [electroencephalogram](#) recording from the [cerebral cortex](#). ECoG is an invasive procedure because it requires a surgical incision into the skull (a craniotomy) to implant the electrodes. The purpose of the ECoG is to localize a suspected seizure focus in the [cerebral cortex](#) in patients who are candidates for surgery. A seizure focus is an abnormal place in the brain where a seizure starts.

Electrocorticography can be performed outside of surgery (extraoperative ECoG) or during surgery (intraoperative).

ECoG is also used for determining neuronal thresholds. For purposes of concurrent review, high frequency of recording sessions or long duration of implantation may indicate that ECoG is being used for stimulation and recording to determine neuronal thresholds. EEGs that result from such sessions may show stimulation artifacts that would not occur if EEG recording was performed without stimulation. However, such stimulation artifacts can be filtered out in the recording process and, therefore, will not always be evident in the EEG.

For information on Electroencephalograms, please refer to policy entitled Electroencephalograms, Policy Number MED1120.

Evidence Based Guideline for Electrocorticography

Extraoperative electrocorticography may be appropriate for the purpose of recording seizures. All of the following criteria must be met:

1. The patient must have debilitating seizures that do not respond to anticonvulsant medication;
2. The patient must have undergone standard testing which did not clearly localize a seizure focus, but strongly indicates the presence of a focus; and
3. The suspected seizure focus must be in an area of the brain which is accessible for surgery.

Policy: Electrocardiography

Medical Evidence regarding Electrocardiography indicates it is not recommended in the following situations:

- ◆ When any of the above criteria are not met
- ◆ For stimulation and recording in order to determine electrical thresholds of neurons as an indicator of seizure focus.

Benefits Application

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the policy.

Intraoperative ECoG is a long-standing technique used to map abnormal brain tissue in the motor and/or sensory cortex prior to resection of the abnormal tissue. As such, intraoperative ECoG is an integral part of surgery which might involve normal motor and/or sensory cortex. Because intraoperative ECoG is an integral part of the surgical procedure, it is not eligible for coverage as a separate procedure.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 61533, 61535, 95829

Medical Term Definitions

Cerebral cortex

outer portion of the brain consisting of layers of nerve cells and pathways that connect them. The cerebral cortex is the part of the brain in which thought processes take place.

Dura mater

the outermost, toughest, and most fibrous of the three membranes (meninges) that cover the brain and spinal cord.

Electroencephalogram

a diagnostic test which measures the electrical activity of the brain (brain waves) using high sensitive recording equipment attached to the scalp by electrodes.

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual - 3/96

Medical Policy Advisory Group - 1/99

Specialty Matched Consultant Advisory Panel - 10/2000

Policy: Electrocardiography

Medical Policy Advisory Group - 10/2000

Specialty Matched Consultant Advisory Panel - 7/2002

BCBSA Medical Policy Reference Manual . 4/15/02. 7.01.34

Policy Implementation/Update Information

- 6/84 Original Policy: Experimental/Investigative for extraoperative ECoG
- 8/88 Evaluated: Eligible for coverage extraoperative ECoG to record seizure activity. Investigational, extraoperative ECoG to determine electrical thresholds of neurons in seizure focus.
- 7/96 Reaffirmed: National Association reviewed 3/96. No changes.
- 1/99 Medical Policy Advisory Group
- 7/99 Reformatted, Description of Procedure or Service changed, Medical Term Definitions added.
- 10/00 Specialty Matched Consultant Advisory Panel. No change recommended in criteria. System coding changes. Medical Policy Advisory Group review. No change in policy. Approve.
- 8/02 Specialty Matched Consultant Advisory Panel review 7/12/2002. No changes.
- 9/03 Policy status changed to: "Active policy, no longer scheduled for routine literature review". Codes 61534, 61536, 61538, 61539, 95950, 95951, 95953 removed from the policy. Added statement to refer to Electroencephalogram policy for information regarding that service.
- 3/04 Benefits Application and Billing/Coding sections updated for consistency.
- 8/28/06 Medical Policy changed to Evidence Based Guideline.

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.