NAVIGATED TRANSCRANIAL MAGNETIC STIMULATION FOR PRESURGICAL EVALUATION OF ELOQUENT BRAIN AREAS

Coverage for services, procedures, medical devices and drugs are dependent upon benefit eligibility as outlined in the member's specific benefit plan. This Medical Coverage Guideline must be read in its entirety to determine coverage eligibility, if any.

This Medical Coverage Guideline provides information related to coverage determinations only and does not imply that a service or treatment is clinically appropriate or inappropriate. The provider and the member are responsible for all decisions regarding the appropriateness of care. Providers should provide BCBSAZ complete medical rationale when requesting any exceptions to these guidelines.

The section identified as “Description” defines or describes a service, procedure, medical device or drug and is in no way intended as a statement of medical necessity and/or coverage.

The section identified as “Criteria” defines criteria to determine whether a service, procedure, medical device or drug is considered medically necessary or experimental or investigational.

State or federal mandates, e.g., FEP program, may dictate that any drug, device or biological product approved by the U.S. Food and Drug Administration (FDA) may not be considered experimental or investigational and thus the drug, device or biological product may be assessed only on the basis of medical necessity.

Medical Coverage Guidelines are subject to change as new information becomes available.

For purposes of this Medical Coverage Guideline, the terms "experimental" and "investigational" are considered to be interchangeable.

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Navigated transcranial magnetic stimulation (nTMS) is a noninvasive imaging method for the evaluation of eloquent brain areas (e.g., controlling motor or language function). nTMS is being evaluated as an alternative to other noninvasive cortical mapping techniques for presurgical identification of eloquent areas.

Transcranial magnetic pulses are delivered to the individual as a navigation system calculates the strength, location and direction of the stimulating magnetic field. The locations of these pulses are registered to an MRI image of the individual’s brain. Surface electromyography (EMG) electrodes are attached to various limb muscles of the individual. Moving the magnetic stimulation source to various parts of the brain causes the EMG electrodes to respond, indicating the part of the cortex involved in particular muscle movements. For evaluation of language areas, magnetic stimulation areas that disrupt specific speech tasks are thought to identify parts of the brain involved in speech function. nTMS can be considered a noninvasive alternative to direct cortical stimulation (DCS), in which electrodes are directly applied to the surface of the cortex during craniotomy. nTMS is being evaluated as an alternative to other noninvasive cortical mapping techniques, such as functional magnetic resonance imaging (fMRI) and magnetoencephalography (MEG), for presurgical identification of cortical areas involved in motor and language functions.

FDA-approved nTMS devices, include, but are not limited to:

- Nexstim® eXimia navigated Brain Stimulation (NBS)
- Nexstim NBS System 4
- Nexstim NBS System 4 with NexSpeech®
Navigated Transcranial Magnetic Stimulation for Presurgical Evaluation of Eloquent Brain Areas (cont.)

Criteria:

For transcranial magnetic stimulation for treatment of depression and other psychiatric/neurologic brain disorders, see BCBSAZ Medical Coverage Guideline #O352, “Transcranial Magnetic Stimulation of the Brain as Treatment for Depression and Other Psychiatric/Neurologic Disorders”.

- Navigated transcranial magnetic stimulation for all indications is considered experimental or investigational based upon:

  1. Insufficient scientific evidence to permit conclusions concerning the effect on health outcomes, and
  2. Insufficient evidence to support improvement of the net health outcome, and
  3. Insufficient evidence to support improvement of the net health outcome as much as, or more than, established alternatives, and
  4. Insufficient evidence to support improvement outside the investigational setting.

Indications include, but are not limited to:

- Preoperative evaluation of individuals being considered for brain surgery, when localization of eloquent areas of the brain (e.g., controlling verbal or motor function) is an important consideration in surgical planning.

Resources:

Literature reviewed 07/19/16. We do not include marketing materials, poster boards and non-published literature in our review.

The BCBS Association Medical Policy Reference Manual (MPRM) policy is included in our guideline review. References cited in the MPRM policy are not duplicated on this guideline.