Transcranial Magnetic Stimulation

Clinical Guidelines for Medical Necessity Review

Version: 1.0
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Important Notices

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Guideline Information:

Specialty Area: Mental and Behavioral Health
Guideline Name: Transcranial Magnetic Stimulation (Single Service)

Literature review current through: 12/8/2023
Document last updated: 12/8/2023
Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Transcranial Magnetic Stimulation

General Guidelines

- **Units, Frequency, & Duration:** The typical treatment duration is six weeks.
- **Criteria for Subsequent Requests:** Approval when the patient meets the medical necessity criteria below.
- **Recommended Clinical Approach:** Transcranial Magnetic Stimulation (TMS) is a non-invasive FDA-approved treatment for depression. Pulsed magnetic fields induce an electric current in a localized region of the cerebral cortex. An electromagnetic coil on the scalp induces a focal current into the brain that temporarily modulates cerebral cortical function. A capacitor discharge provides electrical current in an alternating on/off pulse. Necessary adjustments can alter the excitability of the targeted structures in specific cortical regions.[1]
- **Exclusions:** Presence of a medically implanted magnetic-sensitive device or other implanted metal items, history of seizures, psychotic symptoms or disorders in the current depressive episode, or neurological conditions (e.g., epilepsy, cerebrovascular disease, dementia, increased intracranial pressure, history of repetitive or severe head trauma, or primary or secondary tumors in the central nervous system).

Medical Necessity Criteria

Indications

➔ **Transcranial Magnetic Stimulation (TMS)** is considered appropriate when **ALL** of the following are **TRUE**[1-6]:

- ◆ The patient has a confirmed diagnosis of severe major depressive disorder (MDD) as defined by the current DSM; **AND**
- ◆ Demonstration of **ANY** of the following[1,7]:
  - Resistance to treatment with psychopharmacologic agents as evidenced by a failure to achieve a clinically significant response to 2 trials of psychopharmacologic agents in the current depressive episode from at least 2 different agent classes; **OR**
  - The patient cannot tolerate psychopharmacologic agents as evidenced by two trials of psychopharmacologic agents

from at least two different agent classes, with distinct side effects; **OR**
    - History of response to rTMS in a previous depressive episode; **OR**
    - If the patient is currently receiving electro-convulsive therapy, rTMS may be considered reasonable and necessary as a less invasive treatment option; **AND**
- Documentation of evidence-based psychotherapy indicated for the treatment of MDD of an adequate frequency and duration that does not result in a significant improvement of symptoms (e.g., standardized rating scales for measurement of depressive symptoms)[7]; **AND**
- The order for treatment (or retreatment) is written by a psychiatrist (MD or DO) who has examined the patient and reviewed the record.

Non-Indications

➔ **Transcranial Magnetic Stimulation (TMS)** is not considered appropriate if **ANY** of the following is **TRUE**:

- For use as maintenance therapy[7]; **OR**
- Obsessive-compulsive disorder (OCD); **OR**
- Presence of a medically implanted magnetic-sensitive device or other implanted metal items within 30 cm of the treatment coil, including, but not limited to, **ANY** of the following:[1,8-9]
    - Cochlear implant; **OR**
    - Implanted cardiac defibrillator (ICD); **OR**
    - Pacemaker; **OR**
    - Vagus nerve stimulator (VNS); **OR**
    - Metal aneurysm clips/coils; **OR**
    - Staples; **OR**
    - Stents; **OR**
- The patient has **ANY** of the following relative contraindications that may not be indicated for TMS:
    - Seizure disorder[1]; **OR**
    - History of seizures (except those induced by electroconvulsive therapy [ECT] or isolated febrile seizures in infancy without subsequent treatment or recurrence)[1]; **OR**
    - Psychotic symptoms or disorders (e.g., schizophrenia, schizophreniform, schizoaffective disorder) in the current depressive episode[1,7]; **OR**
    - Neurological conditions (e.g., epilepsy, cerebrovascular disease, dementia, increased intracranial pressure, history of repetitive or severe head trauma, or primary or secondary tumors in the central nervous system)[1];

Level of Care Criteria

Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description
90867	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; initial, including cortical mapping, motor threshold determination, delivery and management
90868	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; subsequent delivery and management, per session
90869	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; subsequent motor threshold re-determination with delivery and management

Medical Evidence

The American Psychological Association (APA) *Clinical Practice Guideline for the Treatment of Depression Across Three Age Cohorts* does not address transcranial magnetic stimulation (TMS).[14]

The International Federation of Clinical Neurophysiology (IFCN) recommends conventional and patterned TMS protocols and neurophysiological monitoring for new protocols, utilization of reference thresholds of stimulation, and the list of minor side effects of TMS. The guidelines provide an update to guidelines published in 2009 for TMS. Additions include safety issues of newly developed devices and pulse configurations; novel scenarios of TMS applications (e.g., neuroimaging context or imaging-guided, robot-guided TMS); TMS combined with transcranial electrical stimulation; and risks of TMS to induce therapeutic seizures (magnetic seizure therapy).[15]

The National Institute for Health and Care Excellence (NICE) provides guidance on repetitive TMS (rTMS) for treating depression. The medical literature supports short-term; major safety concerns are absent. Additional research regarding regime type, stimulation used, long-term outcomes, and maintenance treatment is needed.[16]

The National Network of Depression Centers (NNDC) and the American Psychiatric Association (APA) Council on Research developed guidelines to address the use of rTMS for the treatment of major depressive disorder (MDD). Randomized control trials (RCTs) demonstrate the efficacy of rTMS and support its use.[3]

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