

Magnetic Resonance guided Focused Ultrasound (MRgFUS) treatment for essential tremors

Date of Origin: 04/2023

Last Review Date: 05/27/2026

Effective Date: 06/01/2026

Dates Reviewed: 05/2023, 05/2024, 05/2025, 05/2026

Developed By: Medical Necessity Criteria Committee

I. Description

Magnetic resonance-guided focused ultrasound (MRgFUS) is a noninvasive, incisionless, MRI-guided functional neurosurgical procedure that uses high-intensity focused ultrasound to create a precise thermal lesion in targeted brain tissue for the treatment of medication-refractory essential tremor. Under real-time MRI guidance and thermometry, focused ultrasound energy is delivered to the ventral intermediate (VIM) nucleus of the thalamus, producing a unilateral thalamotomy intended to reduce contralateral upper-extremity tremor.

Essential tremors are a common neurologic disorder characterized by postural and action tremor, most often affecting the hands and arms, and may interfere with activities of daily living such as eating, writing, and dressing.

The specific pathophysiology remains unknown. Essential tremors occur sporadically or can be inherited. The frequency of essential tremors depends on the body segment that is affected. Proximal segments are affected at a lower frequency, and distal segments are affected at a higher frequency. Although typically a postural tremor, an essential tremor may occur at rest in severe and very advanced cases. It most commonly affects the hands but can also affect the head, voice, tongue, and legs. Trembling occurs most often in the hands, especially when doing simple tasks such as drinking from a glass or tying shoelaces. The medically refractory essential tremor is one of the most common neurological diseases and annually affects millions of people in the US.

For individuals with medication-refractory essential tremor, defined as failure of at least two pharmacologic therapies (including at least one first-line agent such as propranolol or primidone), MRgFUS may be an alternative to invasive surgical therapies, including deep brain stimulation (DBS) or radiofrequency thalamotomy. MRgFUS for essential tremor is FDA-approved and is performed as a unilateral procedure on the dominant hand. The procedure requires the absence of MRI-incompatible implanted devices or materials.

II. Criteria: CWQI HCS

- A. Magnetic resonance (MR)-guided focused ultrasound is considered medically necessary for the treatment of medicine refractory essential tremors when **ALL** of the following criteria are met;
- Member with medicine-refractory tremor – defined as refractory to at least two trials of medical therapy, including at least one first-line agent (e.g., propranolol or primidone)
 - Member with either a moderate to severe postural tremor or an intention tremor of the dominant hand that affects the activities of daily living (ADLs)
 - And one of the following;
 - Member not eligible for deep brain stimulation (DBS) or has failed DBS, but has no retained cranial implants
 - Have been evaluated by a multidisciplinary team, and considered this is the best course of treatment
- B. MRgFUS is considered investigational for all the following;
- Treatment of medication refractory tremor dominant Parkinson's disease
 - Treatment of uterine fibroids
 - Treatment of other tumors (e.g., prostate cancer, brain cancer, desmoid tumors)

III. Information Submitted with the Prior Authorization Request:

- Chart notes

IV. CPT or HCPC codes covered:

Codes	Description
61715	Magnetic resonance image-guided high intensity focused ultrasound (MRgFUS), stereotactic ablation lesion, intracranial for movement disorder including stereotactic navigation and frame placement when performed

V. CPT or HCPC codes NOT covered:

Codes	Description

VI. Annual Review History

Review Date	Revisions	Effective Date
5/24/2023	New policy	7/1/2023
5/22/2024	Annual Review: No changes	6/1/2024
5/28/2025	Annual Review: CPT code update	6/1/2025
5/28/2026	Annual Review: updated description	6/1/2026

VII. References

1. Kapadia, A. N. 2020. Multimodal MRI for MRgFUS in essential tremor: post-treatment radiological markers of clinical outcome. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/32651242/>
2. Chou KL (2022). Surgical treatment of essential tremor. Retrieved from <https://www.uptodate.com/contents/surgical-treatment-of-essential-tremor>
3. Gerbasi, ME et al 2022. Essential tremor patients experience significant burden beyond tremor: A systematic review. Frontiers in Neurology. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9354397/>
4. Charles, P. D et al 1999. Classification of Tremor and Update on Treatment. American Family Physician. Retrieved from <https://www.aafp.org/pubs/afp/issues/1999/0315/p1565.html>

Appendix 1 – Applicable Diagnosis Codes:

Codes	Description
G25.0	Essential Tremor

Appendix 2 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD) and Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable. They can be found at: <http://www.cms.gov/medicare-coverage-database/search/advanced-search.aspx>. Additional indications may be covered at the discretion of the health plan.

Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD):

Jurisdiction(s): 5, 8	NCD/LCD Document (s):
L37421 Magnetic Resonance Image Guided High Intensity Focused Ultrasound (MRgFUS) for Tremor	

NCD/LCD Document (s):

Medicare Part B Administrative Contractor (MAC) Jurisdictions		
Jurisdiction	Applicable State/US Territory	Contractor
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC