

**Policy: MP353**

**Section: Medical Policy**

**Subject: Laser Interstitial Thermal Therapy**

**Applicable line of business:**

|                   |          |                 |          |
|-------------------|----------|-----------------|----------|
| <b>Commercial</b> | <b>x</b> | <b>Medicaid</b> | <b>x</b> |
| <b>Medicare</b>   | <b>x</b> | <b>ACA</b>      | <b>x</b> |
| <b>CHIP</b>       | <b>x</b> |                 |          |

**I. Policy:** Laser Interstitial Thermal Therapy

**II. Purpose/Objective:** To provide a policy of coverage regarding: Laser Interstitial Thermal Therapy

**III. Responsibility:**

- A. Medical Directors
- B. Medical Management

**IV. Required Definitions**

1. Attachment – a supporting document that is developed and maintained by the policy writer or department requiring/authoring the policy.
2. Exhibit – a supporting document developed and maintained in a department other than the department requiring/authoring the policy.
3. Devised – the date the policy was implemented.
4. Revised – the date of every revision to the policy, including typographical and grammatical changes.
5. Reviewed – the date documenting the annual review if the policy has no revisions necessary.

**Commercial**

Geisinger Health Plan may refer collectively to health care coverage sponsors Geisinger Health Plan, Geisinger Quality Options, Inc., and Geisinger Indemnity Insurance Company, unless otherwise noted. Geisinger Health Plan is part of Geisinger, an integrated health care delivery and coverage organization.

**Medicare**

Geisinger Gold Medicare Advantage HMO, PPO, and HMO D-SNP plans are offered by Geisinger Health Plan/Geisinger Indemnity Insurance Company, health plans with a Medicare contract. Continued enrollment in Geisinger Gold depends on contract renewal. Geisinger Health Plan/Geisinger Indemnity Insurance Company are part of Geisinger, an integrated health care delivery and coverage organization.

**CHIP**

Geisinger Health Plan Kids (GHP Kids) is a Children's Health Insurance Program (CHIP) offered by Geisinger Health Plan in conjunction with the Pennsylvania Department of Human Services (DHS). Geisinger Health Plan is part of Geisinger, an integrated health care delivery and coverage organization.

**Medicaid**

Geisinger Health Plan Family (GHP Family) is a Medical Assistance (Medicaid) insurance program offered by Geisinger Health Plan in conjunction with the Pennsylvania Department of Human Services (DHS). Geisinger Health Plan is part of Geisinger, an integrated health care delivery and coverage organization

## **V. Additional Definitions**

Medical Necessity or Medically Necessary means Covered Services rendered by a Health Care Provider that the Plan determines are:

- a. appropriate for the symptoms and diagnosis or treatment of the Member's condition, illness, disease or injury;
- b. provided for the diagnosis, and the direct care and treatment of the Member's condition, illness disease or injury;
- c. in accordance with current standards of good medical treatment practiced by the general medical community.
- d. not primarily for the convenience of the Member, or the Member's Health Care Provider; and
- e. the most appropriate source or level of service that can safely be provided to the Member. When applied to hospitalization, this further means that the Member requires acute care as an inpatient due to the nature of the services rendered or the Member's condition, and the Member cannot receive safe or adequate care as an outpatient.

## **Medicaid Business Segment**

Medically Necessary — A service, item, procedure, or level of care that is necessary for the proper treatment or management of an illness, injury, or disability is one that:

- Will, or is reasonably expected to, prevent the onset of an illness, condition, injury or disability.
- Will, or is reasonably expected to, reduce or ameliorate the physical, mental or developmental effects of an illness, condition, injury or disability.
- Will assist the Member to achieve or maintain maximum functional capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for Members of the same age.

## **DESCRIPTION:**

Laser interstitial thermal therapy (LITT) [e.g., MRgLITT , Neuroablate, Visulase]], utilizes a laser fiber probe to deliver thermal energy for the targeted ablation of diseased tissue. The LITT treatment produces focal thermal ablation leading to cellular apoptosis, necrosis, tissue coagulation or tumor cytorreduction and is managed by the use of real-time magnetic resonance (MR) thermography and controlled with the use of actively cooled applicators.

## **INDICATIONS:**

### **Epilepsy**

Laser Interstitial Thermal Therapy (LITT) is considered medically necessary in the treatment of refractory epilepsy when ALL of the following criteria are met:

- there is documentation of medically-refractory epilepsy despite use of two or more antiepileptic drug regimens
- a well-defined epileptogenic focus in the temporal lobe or hypothalamus is identified and is accessible by LITT
- a multidisciplinary team of physicians to include at least two specialists (e.g., neurosurgery, neurology) agree that LITT is the best treatment option

### **Malignant Brain Neoplasms and/or Radiation Necrosis**

Laser Interstitial Thermal Therapy (LITT) is considered medically necessary in the treatment of symptomatic, recurrent metastatic malignant brain neoplasms when ALL of the following criteria are met:

- the neoplasm measures ≤30 cubic centimeters (cc) in volume
- the member is not considered a suitable candidate for craniotomy
- a multidisciplinary team of physicians including at least two specialists (e.g., neurosurgery, oncology) agree that LITT is the best treatment option

## **EXCLUSIONS:**

The Plan does **NOT** provide coverage for LITT for any indication not specifically listed because it is otherwise considered **experimental, investigational or unproven**. The Geisinger Technology Assessment Committee determined there is insufficient evidence in the peer-reviewed published medical literature to establish the effectiveness of this therapy on health outcomes when compared to established treatments or technologies.

**Note: A complete description of the process by which a given technology or service is evaluated and determined to be experimental, investigational or unproven is outlined in MP 15 - Experimental Investigational or Unproven Services or Treatment.**

**Medicaid Business Segment:**

Any requests for services, that do not meet criteria set in the PARP, may be evaluated on a case by case basis.

**CODING ASSOCIATED WITH:** Laser Interstitial Thermal Therapy

***The following codes are included below for informational purposes and may not be all inclusive. Inclusion of a procedure or device code(s) does not constitute or imply coverage nor does it imply or guarantee provider reimbursement. Coverage is determined by the member specific benefit plan document and any applicable laws regarding coverage of specific services. Please note that per Medicare coverage rules, only specific CPT/HCPCS Codes may be covered for the Medicare Business Segment. Please consult the CMS website at [www.cms.gov](http://www.cms.gov) or the local Medicare Administrative Carrier (MAC) for more information on Medicare coverage and coding requirements.***

61736 Laser interstitial thermal therapy (LITT) of lesion, intracranial, including burr hole(s), with magnetic resonance imaging guidance, when performed; single trajectory for 1 simple lesion

61737 Laser interstitial thermal therapy (LITT) of lesion, intracranial, including burr hole(s), with magnetic resonance imaging guidance, when performed; multiple trajectories for multiple or complex lesion(s)

Current Procedural Terminology (CPT®) © American Medical Association: Chicago, IL

**LINE OF BUSINESS:**

**Eligibility and contract specific benefits, limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy. For Medicare, applicable LCD's and NCD's will supercede this policy. For PA Medicaid Business segment, this policy applies as written.**

**REFERENCES:**

Thomas JG, Al-Holou WN, de Almeida Bastos DC, et al. A Novel Use of the Intraoperative MRI for Metastatic Spine Tumors: Laser Interstitial Thermal Therapy for Percutaneous Treatment of Epidural Metastatic Spine Disease. *Neurosurg Clin N Am*. 2017 Oct;28(4):513-524

de Franca SA, Tavares WM, Salinet ASM, et al. Laser interstitial thermal therapy as an adjunct therapy in brain tumors: A metaanalysis and comparison with stereotactic radiotherapy. *Surg Neurol Int*. 2020 Oct 29;11:360

Hayes Inc. Health Technology Assessment. Laser interstitial thermal therapy (LITT) for treatment of Glioblastoma in Adults. Lansdale, PA: Hayes, Inc.; September 2019; updated March 2021.

Kuo CH, Feroze AH, Poliachik SL, et al. Laser Ablation Therapy for Pediatric Patients with Intracranial Lesions in Eloquent Areas. *World Neurosurg*. 2019 Jan;121:e191-e199

Hong CS, Deng D, Vera A, et al. Laser-interstitial thermal therapy compared to craniotomy for treatment of radiation necrosis or recurrent tumor in brain metastases failing radiosurgery. *J Neurooncol*. 2019 Jan 17.

Eichberg DG, VanDenBerg R, Komotar RJ, et al. Quantitative Volumetric Analysis Following Magnetic Resonance-Guided Laser Interstitial Thermal Ablation of Cerebellar Metastases. *World Neurosurg*. 2018 Feb;110:e755-e765.

Kamath AA, Friedman DD, Hacker CD, et al. MRI-Guided Interstitial Laser Ablation for Intracranial Lesions: A Large SingleInstitution Experience of 133 Cases. *Stereotact Funct Neurosurg*. 2017;95(6):417-428

Tovar-Spinoza Z, Choi H. Magnetic resonance-guided laser interstitial thermal therapy: report of a series of pediatric brain tumors. *J Neurosurg Pediatr*. 2016 Jun;17(6):723-33.

Ivan ME, Mohammadi AM, De Deugd N, et al. Laser Ablation of Newly Diagnosed Malignant Gliomas: a Meta-Analysis. *Neurosurgery*. 2016 Dec;79 Suppl 1:S17-S23.

Lee I, Kalkanis S, Hadjipanayis CG. Stereotactic Laser Interstitial Thermal Therapy for Recurrent High-Grade Gliomas. *Neurosurgery*. 2016 Dec;79 Suppl 1:S24-S34

Barnett GH, Voigt JD, Alhuwalia MS. A Systematic Review and Meta-Analysis of Studies Examining the Use of Brain Laser Interstitial Thermal Therapy versus Craniotomy for the Treatment of High-Grade Tumors in or near Areas of Eloquence: An Examination of the Extent of Resection and Major Complication Rates Associated with Each Type of Surgery. *Stereotact Funct Neurosurg*. 2016;94(3):164-73.

Agency for Healthcare Research and Quality (AHRQ). Comparative Effectiveness Review Number 230. Therapies for Clinically Localized Prostate Cancer. AHRQ Publication No. 20-EHC022. September 2020.

ECRI Institute. Clinical Evidence Assessment. Laser Interstitial Thermal Therapy for Breast Cancer. January 2019; updated March 2021

Kerbage Y, Betrouni N, Collinet P, et al. Laser interstitial thermotherapy application for breast surgery: Current situation and new trends. *Breast*. 2017 Apr 7;33:145-152

Haraldsdóttir KH, Ingvar C, Stenram U, et al. Long-term Follow-up After Interstitial Laser Thermotherapy of Breast Cancer. *Anticancer Res*. 2015 Nov;35(11):6147-52

National Institute for Health and Care Excellence (NICE). Interstitial laser therapy for breast cancer. Interventional procedures guidance [IPG89]. Published date: September 2004

Brotis AG, Giannis T, Paschalis T, et al. A meta-analysis on potential modifiers of LITT efficacy for mesial temporal lobe epilepsy: Seizure-freedom seems to fade with time. *Clin Neurol Neurosurg*. 2021 Apr 20;205:106644.

Hayes Inc. Health Technology Assessment. Laser interstitial thermal therapy (LITT) refractory temporal lobe epilepsy. Lansdale, PA: Hayes, Inc.; February 2020; updated March 2021.

Kerezoudis P, Parisi V, Marsh WR, et al. Surgical outcomes of laser interstitial thermal therapy for temporal lobe epilepsy: systematic review and meta-analysis. *World Neurosurg*. 2020 Nov;143:527-536.e3.

Hoppe C, Helmstaedter C. Laser interstitial thermotherapy (LiTT) in pediatric epilepsy surgery. *Seizure*. 2020;77:69-75

Grewal SS, Alvi MA, Lu VM, et al. Magnetic Resonance-Guided Laser Interstitial Thermal Therapy Versus Stereotactic Radiosurgery for Medically Intractable Temporal Lobe Epilepsy: A Systematic Review and Meta-Analysis of Seizure Outcomes and Complications. *World Neurosurg*. 2019 Feb;122:e32-e47.

Tao JX, Wu S, Lacy M, et al. Stereotactic EEG-guided laser interstitial thermal therapy for mesial temporal lobe epilepsy. *J Neurol Neurosurg Psychiatry*. 2018 May;89(5):542-548

Lagman C, Chung LK, Pelargos PE, et al. Laser neurosurgery: A systematic analysis of magnetic resonance-guided laser interstitial thermal therapies. *J Clin Neurosci*. 2017 Feb;36:20-26.

Jermakowicz WJ, Kanner AM, Sur S, et al. Laser thermal ablation for mesiotemporal epilepsy: Analysis of ablation volumes and trajectories. *Epilepsia*. 2017 May;58(5):801-810.

Kang JY, Sperling MR. Epileptologist's view: Laser interstitial thermal ablation for treatment of temporal lobe epilepsy. *Epilepsy Res*. 2018 May;142:149-152.

McCracken DJ, Willie JT, Fernald BA, et al. Magnetic Resonance Thermometry-Guided Stereotactic Laser Ablation of Cavernous Malformations in Drug-Resistant Epilepsy: Imaging and Clinical Results. *Oper Neurosurg (Hagerstown)*. 2016 Mar;12(1):39-48

Waseem H, Vivas AC, Vale FL. MRI-guided laser interstitial thermal therapy for treatment of medically refractory non-lesional mesial temporal lobe epilepsy: Outcomes, complications, and current limitations: A review. *J Clin Neurosci*. 2017;38:1-7

Kang JY, Wu C, Tracy J, et al. Laser interstitial thermal therapy for medically intractable mesial temporal lobe epilepsy. *Epilepsia*. 2016 Feb;57(2):325-34

Lewis EC, Weil AG, Duchowny M, et al. MR-guided laser interstitial thermal therapy for pediatric drug-resistant lesional epilepsy. *Epilepsia*. 2015 Oct;56(10):1590-8.

Valerio M, Cerantola Y, Eggener SE, et al. New and Established Technology in Focal Ablation of the Prostate: A Systematic Review. *Eur Urol*. 2017 Jan;71(1):17-34

Eggener SE, Yousuf A, Watson S, et al. Phase II Evaluation of Magnetic Resonance Imaging Guided Focal Laser Ablation of Prostate Cancer. *J Urol*. 2016 Dec;196(6):1670-1675.

American Society of Breast Surgeons (ASBrS). Consensus Guideline on the Use of Transcutaneous and Percutaneous Ablation for the Treatment of Benign and Malignant Tumors of the Breast. October 2018

Ryken TC, Parney I, Buatti J, et al. The role of radiotherapy in the management of patients with diffuse low-grade glioma: a systematic review and evidence-based clinical practice guideline. J Neurooncol. 2015 Dec;125(3):551-83. NGC:010937, Agency for Healthcare Research and Quality. U.S. Department of Health and Human Services, Rockville, MD

Olson JJ, Nayak L, Ormond DR, et al. AANS/CNS Joint Guidelines Committee. The role of targeted therapies in the management of progressive glioblastoma: a systematic review and evidence-based clinical practice guideline. J Neurooncol. 2014 Jul;118(3):557-99. NGC:010488, Agency for Healthcare Research and Quality. U.S. Department of Health and Human Services, Rockville, MD.

Elder JB, Nahed BV, Linskey ME, et al. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guidelines on the Role of Emerging and Investigational Therapies for the Treatment of Adults With Metastatic Brain Tumors. Neurosurgery. 2019 Mar 1;84(3):E201-E203

Cabrera A, Kirkpatrick J, Fiveash J, et al. Radiation therapy for glioblastoma: Executive summary of an American Society for Radiation Oncology Evidence-Based Clinical Practice Guideline. Practical Radiation Oncology, July 2016, Volume 6, Issue 4, 217-225

Ogasawara C, Watanabe G, Young K, et al. Laser interstitial thermal therapy for cerebral cavernous malformations: A systematic review of indications, safety, and outcomes. World Neurosurg. 2022;166:279-287

Yousefi O, Sabahi M, Malcolm J, et al. Laser interstitial thermal therapy for cavernous malformations: A systematic review. Front Surg. 2022;9:887329

Alkazemi M, Lo YT, Hussein H, et al. Laser interstitial thermal therapy for the treatment of primary and metastatic brain tumors: A systematic review and meta-analysis. World Neurosurg. 2023;171:e654-e671

Cardia A, Cannizzaro D, Stefini R, et al. The efficacy of laser interstitial thermal therapy in the management of spinal metastases: A systematic review of the literature. Neurol Sci. 2023;44(2):519-528

Nabulsi O, Abouelleil M, Patra S, Mazaris P. Laser interstitial thermal therapy for the treatment of a pineal region glioma through an infratentorial approach: A case report. Cureus. 2023;15(1):e33607.

Jared Reese, Hassan Fadel, Jacob Pawloski, Mariam Samir, Laser interstitial thermal therapy for deep-seated perivascular brain tumors is not associated with distal ischemia. 2023 Journal of Neuro-Oncology (2024) 166:265-272

This policy will be revised as necessary and reviewed no less than annually.

**Devised:** 08/22

**Revised:**

**Reviewed:** 3/23, 2/24, 2/25

**CMS UM Oversight Committee Approval:** 12/23, 5/24, 4/25

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Coverage for experimental or investigational treatments, services and procedures is specifically excluded under the member's certificate with Geisinger Health Plan. Unproven services outside of an approved clinical trial are also specifically excluded under the member's certificate with Geisinger Health Plan. This policy does not expand coverage to services or items specifically excluded from coverage in the member's certificate with Geisinger Health Plan. Additional information can be found in MP015 Experimental, Investigational or Unproven Services.

Prior authorization and/or pre-certification requirements for services or items may apply. Pre-certification lists may be found in the member's contract specific benefit document. Prior authorization requirements can be found at <https://www.geisinger.org/health-plan/providers/ghp-clinical-policies>

Please be advised that the use of the logos, service marks or names of Geisinger Health Plan, Geisinger Quality Options, Inc. and Geisinger Indemnity Insurance Company on a marketing, press releases or any communication piece regarding the contents of this medical policy is strictly prohibited without the prior written consent of Geisinger Health Plan. Additionally, the above medical policy does not confer any endorsement by Geisinger Health

Plan, Geisinger Quality Options, Inc. and Geisinger Indemnity Insurance Company regarding the medical service, medical device or medical lab test described under this medical policy.