



### **Laser Catheter Placement:**

Bjartmarz, H. **Laser Interstitial Thermal Therapy using an Uncooled Laser Catheter in a Diagnostic MR Suite**. *25th Congress of the ESSFN. Stereotact Funct Neurosurg* 2024;102(suppl 1):20, August 15, 2024.  
[doi:10.1159/000539984](https://doi.org/10.1159/000539984)

Youssef HJ, Dharnipragada R, Chen CC. **The ClearPoint Array Frame: An MRI Compatible System that Supports Non-craniotomy, Multi-trajectory (NCMT) Stereotactic Procedures**. *World Neurosurgery*. 184:e754-e764, April 2024. [doi:10.1016/j.wneu.2024.02.029](https://doi.org/10.1016/j.wneu.2024.02.029)

Singh H, Osswald CR, Rossman A, et al. **Preclinical assessment of a noncooled MR thermometry-based neurosurgical laser therapy system**. *Journal of Neurosurgery*. Published online March 08, 2024.  
[doi:10.3171/2023.12.JNS232154](https://doi.org/10.3171/2023.12.JNS232154)

Wilson H, Dhawan S, Do TH, et al. **The ClearPoint Prism® Laser Ablation System: A New Platform for Laser Interstitial Thermal Therapy (LITT) in Neuro-Oncology**. *Neurosurgery Practice*. 5(1):e00084, March 2024.  
[doi:10.1227/neuprac.00000000000000084](https://doi.org/10.1227/neuprac.00000000000000084)

Zagorchev L, Hyde DE, Li C, et al. **Shape-constrained deformable brain segmentation: Methods and quantitative validation**. *NeuroImage*. Volume 289, 2024, 120542, ISSN 1053-8119. [doi:10.1016/j.neuroimage.2024.120542](https://doi.org/10.1016/j.neuroimage.2024.120542)

Hamade YJ, Mehrotra A, Chen CC. **Stereotactic needle biopsy and laser ablation of geographically distinct lesions through a novel magnetic resonance imaging-compatible cranial stereotaxic frame: illustrative case**. *J Neurosurg Case Lessons*. 2023;5(2):CASE22448. Published 2023 Jan 9. [doi:10.3171/CASE22448](https://doi.org/10.3171/CASE22448)

Chen B, Grewal SS, Middlebrooks EH, Tatum WO, et al. **Intraoperative electrocorticography during laser-interstitial thermal therapy predicts seizure outcome in mesial temporal lobe epilepsy**. *Clin Neurophysiol*. 2023;146:118-123. [doi:10.1016/j.clinph.2022.12.003](https://doi.org/10.1016/j.clinph.2022.12.003)

Buch VP, Mirro EA, Purger DA, Zeineh M, et al. **Magnetic resonance imaging-guided laser interstitial thermal therapy for refractory focal epilepsy in a patient with a fully implanted RNS system: illustrative case**. *Journal of Neurosurgery: Case Lessons*. 2022; 3(21), CASE22117. [doi:10.3171/CASE22117](https://doi.org/10.3171/CASE22117)

Sterk B, Taha B, Osswald C, Bell R, Chen L, Chen CC. **Initial clinical experience with ClearPoint SmartFrame Array®-aided stereotactic procedures**. *World Neurosurg*. 2022;162:e120-e130. [doi:10.1016/j.wneu.2022.02.095](https://doi.org/10.1016/j.wneu.2022.02.095)

Rich CW, Fasano RE, Isbaine F, Saindane AM, et al. **MRI-guided stereotactic laser corpus callosotomy for epilepsy: distinct methods and outcomes**. *Journal of Neurosurgery*. 2021; Published online ahead of print.  
[doi:10.3171/2020.7.JNS20498](https://doi.org/10.3171/2020.7.JNS20498)

Hong CS, Beckta JM, Kundishora AJ, Elsamadicy AA, Chiang VL. **Laser interstitial thermal therapy for treatment of cerebral radiation necrosis**. *International Journal of Hyperthermia*. 2020;37(2):68-76.  
[doi:10.1080/02656736.2020.1760362](https://doi.org/10.1080/02656736.2020.1760362)

Gupta K, Cabaniss B, Kheder A, Gedela S, et al. **Stereotactic MRI-guided laser interstitial thermal therapy for extratemporal lobe epilepsy**. *Epilepsia*. 2020; 00:1-12. [doi: 10.1111/epi.16614](https://doi.org/10.1111/epi.16614)

\*Zervos TM, Scarpace L, Robin AM, Schwalb JM, Air EL. **Adapting to space limitations during prone real-time magnetic resonance imaging-guided stereotactic laser ablation: Technical pearls**. *Operative Neurosurgery*. 2019;18(4). [doi:10.1093/ons/opz173](https://doi.org/10.1093/ons/opz173)

Bartek J, Alattar A, Jensdottir M, Chen CC. **Biopsy and ablation of H3K27 glioma using skull-mounted Smartframe device: Technical case report.** *World Neurosurgery*. 2019;127:436-441. [doi:10.1016/j.wneu.2019.04.029](https://doi.org/10.1016/j.wneu.2019.04.029)

Ahluwalia M, Barnett GH, Deng D, Tatter SB, et al. **Laser ablation after stereotactic radiosurgery: a multicenter prospective study in patients with metastatic brain tumors and radiation necrosis.** *Journal of Neurosurgery*. 2019;130(3):804-811. [doi:10.3171/2017.11.jns171273](https://doi.org/10.3171/2017.11.jns171273)

Harris M, Steele J, Williams R, Pinkston J, Zweig R, Wilden JA. **MRI-guided laser interstitial thermal thalamotomy for medically intractable tremor disorders.** *Movement Disorders*. 2018;34(1):124-129. [doi:10.1002/mds.27545](https://doi.org/10.1002/mds.27545)

\*Ho AL, Sussman ES, Pendharkar AV, Le S, et al. **Improved operative efficiency using a real-time MRI-guided stereotactic platform for laser amygdalohippocampotomy.** *Journal of Neurosurgery*. 2018;128(4):1165-1172. [doi:10.3171/2017.1.jns162046](https://doi.org/10.3171/2017.1.jns162046)

Larson PS, Vadivelu S, Azmi-Ghadimi H, Nichols A, Fauerbach L, Johnson HB. **Neurosurgical laser ablation and MR thermometry: Risks of multisite workflow pattern.** *Journal of Healthcare Risk Management*. 2017;36(4):7-18. [doi:10.1002/jhrm.21258](https://doi.org/10.1002/jhrm.21258)

Rennert RC, Carroll KT, Ali MA, Hamelin T, et al. **Safety of stereotactic laser ablations performed as treatment for glioblastomas in a conventional magnetic resonance imaging suite.** *Neurosurgical Focus*. 2016;41(4). [doi:10.3171/2016.8.focus16217](https://doi.org/10.3171/2016.8.focus16217)

Ali MA, Carroll KT, Rennert RC, Hamelin T, et al. **Stereotactic laser ablation as treatment for brain metastases that recur after stereotactic radiosurgery: a multiinstitutional experience.** *Neurosurgical Focus*. 2016;41(4). [doi:10.3171/2016.7.focus16227](https://doi.org/10.3171/2016.7.focus16227)

\*Torcuator RG, Hulou MM, Chavakula V, Jolesz FA, Golby AJ. **Intraoperative real-time MRI-guided stereotactic biopsy followed by laser thermal ablation for progressive brain metastases after radiosurgery.** *Journal of Clinical Neuroscience*. 2016;24:68-73. [doi:10.1016/j.jocn.2015.09.008](https://doi.org/10.1016/j.jocn.2015.09.008)

McCracken DJ, Willie JT, Fernald BA, Saindane AM, et al. **Magnetic resonance thermometry-guided stereotactic laser ablation of cavernous malformations in drug-resistant epilepsy: Imaging and clinical results.** *Operative Neurosurgery*. 2015;12(1):39-48. [doi:10.1227/neu.0000000000001033](https://doi.org/10.1227/neu.0000000000001033)

Gross RE, Willie JT, Drane DL. **The role of stereotactic laser Amygdalohippocampotomy in Mesial temporal lobe epilepsy.** *Neurosurgery Clinics of North America*. 2016;27(1):37-50. [doi:10.1016/j.nec.2015.08.004](https://doi.org/10.1016/j.nec.2015.08.004)

\*Gross RE, Willie JT. **Response to journal club: Real-time magnetic resonance-guided stereotactic laser Amygdalohippocampotomy for Mesial Temporal Lobe Epilepsy.** *Neurosurgery*. 2015;77(3). [doi:10.1227/neu.0000000000000876](https://doi.org/10.1227/neu.0000000000000876)

Drane DL, Loring DW, Voets NL, Price M, et al. **Better object recognition and naming outcome with MRI-guided stereotactic laser amygdalohippocampotomy for temporal lobe epilepsy.** *Epilepsia*. 2014;56(1):101-113. [doi:10.1111/epi.12860](https://doi.org/10.1111/epi.12860)

Willie JT, Tung JK, Gross RE. **Chapter 16: MRI-guided stereotactic laser ablation.** *Image-Guided Neurosurgery*. 2015;375-403. [doi:10.1016/b978-0-12-800870-6.00016-9](https://doi.org/10.1016/b978-0-12-800870-6.00016-9)

\*Willie JT, Laxpati NG, Drane DL, Gowda A, et al. **Real-time magnetic resonance-guided stereotactic laser Amygdalohippocampotomy for Mesial Temporal Lobe Epilepsy.** *Neurosurgery*. 2014;74(6):569-585. [doi:10.1227/neu.0000000000000343](https://doi.org/10.1227/neu.0000000000000343)

\*The ClearPoint Navigation System enables intraprocedural MRI guidance for a number of neurological therapies and approved clinical trials.

**ClearPoint Neuro, Inc. Indications for Use (K142505):** The ClearPoint® System is intended to provide stereotactic guidance for the placement and operation of instruments or devices during planning and operation of neurological procedures within the MRI environment and in conjunction with MR imaging. The ClearPoint System is intended as an integral part of procedures that have traditionally used stereotactic methodology. These procedures include biopsies, catheter and electrode insertion including deep brain stimulation (DBS) lead placement. The System is intended for use only with 1.5 and 3.0 Tesla MRI scanners and MR Conditional implants and devices. The user should consult the “Navigational Accuracy” section of the User’s Guide to assess if the accuracy of the system is suitable for their needs.

The SmartFlow® Neuro Cannula has received 510(k) clearance from the FDA for use in the US for the aspiration of CSF, injection of the chemotherapy drug Cytarabine into the ventricles, or delivery of the gene therapy KEBILIDI to the brain parenchyma. It has also been CE marked for use in Europe for the delivery of approved fluids into the brain during intracranial procedures, or aspiration of CSF with the 14ga cannulas. The device is not intended for implant and is single patient use.

The ClearPoint Prism® Neuro Laser Therapy System is compatible with the following 3.0T MR scanner systems: Siemens MRI Magnetom and GE MRI Signa. When interpreted by a trained physician, this device provides information that may be useful in the determination or assessment of thermal therapy. Patient management decisions should not be made solely on the basis of analysis using the ClearPoint Prism® Neuro Laser Therapy System.