Medtronic

Visualase™ Laser Ablation FAQ

What is MRI-guided laser ablation?

An MRI-guided laser ablation system is used to perform a minimally invasive surgical procedure called laser interstitial thermal therapy (LITT). LITT is a minimally invasive procedure used to ablate brain tumors, focal epilepsy, and radiation necrosis.

How does laser ablation work?

Laser ablation uses MRI guidance to target and destroy problem brain tissue, such as a seizure or tumor focus. A neurosurgeon carefully directs a laser through a small catheter, heating and removing the tissue while protecting nearby healthy areas.

How is laser ablation different from open brain surgery?

Unlike open brain surgery, which often requires large incisions and recovery time, laser ablation is minimally invasive, typically involving a small incision (4 mm) and allowing for shorter hospital stays.[1-8]

Am I a candidate for laser ablation?

Your eligibility depends on various factors, including the size and location of the tumor or seizure focus, your overall health, and prior treatments. A thorough evaluation by your healthcare team will provide clarity.

What tests or imaging are required before the procedure?

You may need imaging tests such as MRI or CT scans, along with other assessments to determine the best approach.

Will I need to stop any medications before the procedure?

You should discuss your current medications with your doctor.

How is the laser guided during the procedure, and how precise is it?

The laser is MRI-guided in real time, allowing for high precision in targeting the tumor while minimizing harm to surrounding tissues.

Are there risks associated with laser ablation?

As with any surgical procedure, there can be risks associated with Visualase™ MRI-guided laser ablation. Be sure to discuss the safety and potential risks of this procedure with your doctor. A prescription is required. This procedure is not for everyone. Individual results may vary.

Recovery and post-procedure care

How long is the hospital stay after laser ablation?

Hospital stays after laser ablation can vary, but many patients are discharged within a day or two following the procedure.

What is the typical recovery time?

Recovery times can differ, but many patients resume normal activities within a few weeks, depending on their individual circumstances.

When can I get back to normal activities like driving, working, or exercising?

Your doctor will give personalized guidance, but most patients can typically return to normal activities within a few weeks of the procedure.

Questions for your doctor

- How does laser ablation compare to open brain surgery for someone in my situation?
- Do you think laser ablation is a good fit for me?
- Would it be beneficial to consult with a neurosurgeon who specializes in laser ablation to determine if it's a viable option for me?
- If laser ablation is a possibility, how should I prepare for imaging, insurance, or travel?

References

1. Kang JY, Wu C, Tracy J, et al. Laser interstitial thermal therapy for medically intractable mesial temporal lobe epilepsy. *Epilepsia*. 2016;57(2):325–334. doi:10.1111/epi.13284.
2. Waseem H, Osborn KE, Schoenberg MR, et al. Laser ablation therapy: An alternative treatment for medically resistant mesial temporal lobe epilepsy after age 50. *Epilepsy Behav*. 2015;51:152–157. doi:10.1016/j.yebeh.2015.07.022.
3. Jethwa PR, Barrese JC, Gowda A, Shetty A, Danish SF. Magnetic resonance thermometry-guided laser-induced thermal therapy for intracranial neoplasms: initial experience. *Neurosurgery*. 2012;71(1 suppl operative):133–145. doi:10.1227/NEU.0b013e31826101d4.
4. Lewis EC, Weil AG, Duchowny M, Bhatia S, Ragheb J, Miller I. MR-guided laser interstitial thermal therapy for pediatric drug-resistant lesional epilepsy. *Epilepsia*. 2015;56(10):1590–1598. doi:10.1111/epi.13106.
5. Patel P, Patel NV, Danish SF. Intracranial MR-guided laser-induced thermal therapy: single-center experience with the Visualase thermal therapy system. *J Neurosurg*. 2016;125(4):853–860. doi:10.3171/2015.7.JNS15244.
6. Wilfong AA, Curry DJ. Hypothalamic hamartomas: optimal approach to clinical evaluation and diagnosis. *Epilepsia*. 2013;54(suppl 9):109–114. doi:10.1111/ epi.12454.
7. Willie JT, Laxpati NG, Drane DL, 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.
8. Petito GT, Wharen RE, Feyissa AM, Grewal SS, Lucas JA, Tatum WO. The impact of stereotactic laser ablation at a typical epilepsy center. *Epilepsy Behav*. 2018;78:37–44. doi:10.1016/j.yebeh.2017.10.041.

Important Safety Information

Indications for Use

The Visualase™ V2 MRI-guided laser ablation system is a neurosurgical tool and is indicated for use to ablate, necrotize, or coagulate intracranial soft tissue, including brain structures (for example, brain tumor, radiation necrosis, and epileptic foci as identified by non-invasive and invasive neurodiagnostic testing, including imaging) through interstitial irradiation or thermal therapy in pediatrics and adults with 980 nm lasers. The intended patients are adults and pediatric patients from the age of 2 years and older.

Caution: Federal law (United States) restricts this device for sale by or on the order of a physician. Refer to product instruction manual/package insert for instructions, warnings, precautions, and contraindications.

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