

# IT'S TIME FOR MORE MINIMALLY INVASIVE OPTIONS IN NEUROSURGERY



**Visualase™**  
**MRI-Guided Laser Ablation**

**Medtronic**  
Further. Together



# MINIMALLY INVASIVE. SHORTER HOSPITAL STAY.\*<sup>1-6</sup> LESS COSMETIC IMPACT.\*

Together, we prioritize the patient. First line medical therapies, radiation-based therapies, and invasive surgical interventions may not be appropriate in all cases. Visualase™ offers a minimally invasive option for you to reach more patients.

\*Compared to open craniotomy

## Advantages of Visualase™

- Smallest laser catheter on the market
- Requires only a small incision and 3.2mm burr hole
- Most patients have little or no hair removed
- Minimal sutures required, typically a 1-stitch suture<sup>7,8</sup>
- Most patients are discharged after a shorter stay as compared to open procedures — typically one day<sup>1-6</sup>
- Reduced scarring compared to open procedures
- Requires no ionizing radiation or large skull flap

# **VISUALASE™** GIVES YOU THE ABILITY **TO ABLATE SOFT TISSUE** **YOU MIGHT OTHERWISE** **WANT TO RESECT**

Visualase™ is an MRI-guided, minimally invasive laser ablation system which allows monitoring of the tissue ablation in real-time.

The Visualase™ System utilizes a laser to destroy unwanted soft tissue. Light energy is delivered to the target area using a small laser catheter. As laser light is delivered, temperature in the target area begins to rise and is observed under real-time MRI imaging, allowing the surgeon precise control of the tissue ablation.



# PRECISION: LIVE MR THERMOMETRY LETS YOU MONITOR TISSUE ABLATION IN REAL-TIME

With real-time MRI thermal imaging in multiple planes, clinicians can define and monitor the ablation zone. Large screen monitors superimpose the damage estimate and MR thermometry data in real-time, giving surgeons the precision they need to deliver the results they expect.<sup>9,10</sup>



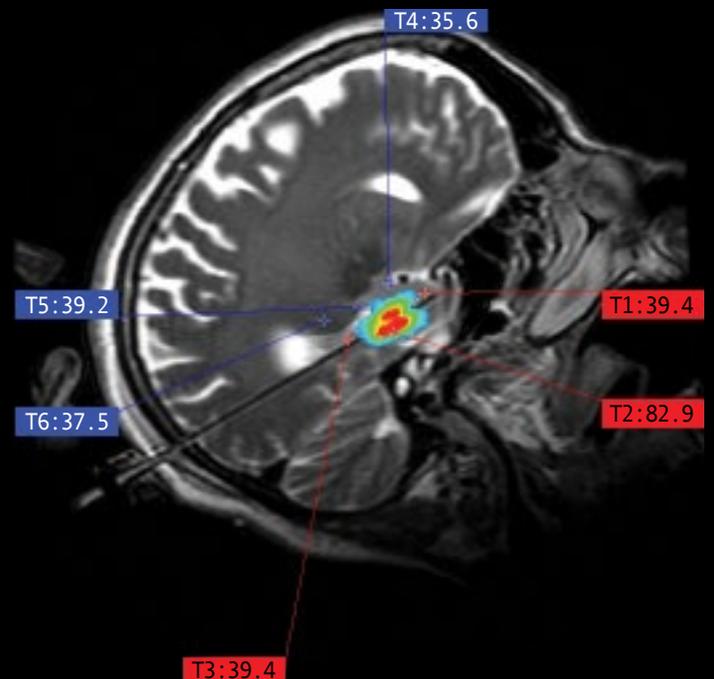
Real-Time Thermal Monitoring

Damage Model

Post-Procedure T1 + Contrast

# CONTROL: PROTECT CRITICAL STRUCTURES WITH REAL-TIME TEMPERATURE CHECK POINTS

Visualase™ is the only system with easy-to-set temperature check points for added confidence when ablating near critical structures. If the check point thresholds are exceeded, the laser immediately shuts off, preventing unwanted damage. Set temperature check points on either screen, in any plane.



# **EFFICIENCY:** **EASY PATIENT POSITIONING.** **360° DIFFUSING LASER TIP.** **IN-PLANE THERMAL IMAGING.**

Smaller than a biopsy needle, the Visualase™ 1.65mm flexible catheter and shallow bone anchor enable broad surgical access. With Visualase™, there is no need to sacrifice surgical trajectory or imaging coil selection due to the laser design or patient positioning.

The 360° diffusing laser tip permits individual ablation times lasting only a few minutes.<sup>11,12</sup> Our in-plane thermometry approach eliminates readjustment of the MRI acquisition planes for a streamlined procedure.



# **FLEXIBILITY:** **HOUSED ON A** **MOVEABLE CART.** **NO PERMANENT** **INSTALLATIONS.**

The mobile cart-based system allows easy movement between multiple magnets. Connect to your MRI with a standard ethernet cable on the day of surgery. Visualase™ features large dual monitors so you can view multiple ablation planes simultaneously. The result is unmatched flexibility when starting your laser ablation program, centered around a mobile system that's easy to upgrade.



# A WORKFLOW THAT WORKS FOR YOUR HOSPITAL

We believe that innovative technology should enable, not limit, your clinical decisions when it comes to your patient. The unique challenges of performing a procedure within the MRI bore must be carefully considered, and every design aspect of the Visualase™ system supports these procedures by featuring:

- Small, flexible laser catheter and low profile bone anchor for more patient positioning options
- Mobile system and a low-impact installation
- In-plane thermometry and a diffusing laser tip design
- Simple laser design which is broadly applicable regardless of target location, allowing straightforward inventory management of only 2 laser bundles



## Plan

The surgeon plans the approach using stereotactic planning software, taking into account ablation coverage and catheter placement trajectory.



## Laser Placement

A small, flexible laser catheter is inserted in the target area. Visualase™ is compatible with many common stereotactic platforms so the surgeon and staff can stick to a workflow that is most familiar to them.



## Transport to MRI

The patient is transported to the MRI in radiology, or an intraoperative MRI is brought to the patient.



## MRI-Guided Laser Ablation

A pre-ablation scan is obtained. The surgeon then selects the preferred thermal imaging planes, identifies temperature check points, and starts the ablation. As tissue heats up, the system displays the thermal damage progress.



## Close

The laser applicator is removed and the small incision is typically closed with just one suture required.<sup>7,8</sup> The patient is then moved to recovery and in many cases goes home the next day.<sup>1-6</sup>

## BUNDLE NUMBER

## DESCRIPTION

NeuroKit-400-T10	10mm laser diffusing tip & accessories
NeuroKit-MRI-T10	10mm laser diffusing tip & MR-conditional accessories
NeuroKit-400-T03	3mm laser diffusing tip & accessories
NeuroKit-MRI-T03	3mm laser diffusing tip & MR-conditional accessories

## References

1. Jethwa et al. Neurosurg 2012; 71(ONS Suppl 1):ons133-ons145
2. Kang et al. Epilepsia 2015; doi:10.1111/epi.13284
3. Lewis et al. Epilepsia 2015; doi:10.1111/epi.13106
4. Patel et al. J Neurosurg 2016; doi: 10.3171/2015.7.JNS15244
5. Wilfong and Curry Epilepsia 2013; 54(9):10
6. Willie et al. Neurosurg 2014; 74(6): 569-584
7. Jethwa, et al. J Neurosurg Peds 2011; 8:468
8. Torres-Reveron, et al. J Neurooncol 2013; 113:495
9. Graham et al. Mag Reson Med 1999; 41:321
10. Sherar et al. Phys Med Biol 2000; 45:3563
11. Fabiano and Alberico World Neurosurg 2014; 10:34
12. Carpentier et al Lasers Surg Med 2011; 43:943



## Medtronic plc Brain Therapies

826 Coal Creek Circle  
Louisville, CO 80027 USA  
Toll free: (877) 242-9504  
Telephone: (720) 890-3200  
Fax: (720) 890-3500

medtronic.com

Caution: Federal Law (USA) restricts these devices for sale by or on the order of a physician. Refer to product instruction manual/package insert for instructions, warnings, precautions, and contraindications. Healthcare professionals must review the product technical manual prior to use for detailed disclosure. For information on Indications, Safety, and Warnings, call Medtronic at (800) 328-0810. For further information, please contact Medtronic Neurosurgery at (877) 242-9504, and/or consult Medtronic's website at [www.medtronic.com](http://www.medtronic.com).

Healthcare professionals must review the product technical manual prior to use for detailed disclosure. For information on Indications, Safety, and Warnings, call Medtronic at (877) 242-9504, or visit Medtronic's website at [www.medtronicneurosurgery.com](http://www.medtronicneurosurgery.com).

UC201502921fEN 10.2019

©2019 Medtronic. All rights reserved. Medtronic, Medtronic logo and Further, Together are trademarks of Medtronic.™\* Third party brands are trademarks of their respected owners. All other brands are trademarks of a Medtronic company.

**Medtronic**  
Further, Together