

MR Focused Ultrasound

About Your Procedure



What is MR Focused Ultrasound?

MR focused ultrasound is a minimally invasive procedure for the treatment of Essential Tremor. It uses high-intensity ultrasound energy, guided by magnetic resonance imaging (MRI), to heat an exceedingly small, targeted area of the brain, treating the tremor. This procedure does not involve any significant radiation.

Prior to the Procedure

- A video or in-person consultation will be arranged with the neurosurgeon. Patients are educated about the procedure by the nurse practitioner. During this session, patients and family members will have the opportunity to ask questions.
- A CT scan and MRI of the brain are ordered



- Instructions are given to discontinue Essential Tremor medications the night before the procedure, except for Propranolol which should not be discontinued
- If you are on a blood thinner you will be advised to stop taking it two days before the procedure with approval of your prescribing doctor
- Patients are advised not to eat or drink anything after midnight before the procedure



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The Day of The Procedure

- This is an outpatient procedure. You are going to meet your nurse in a very private suite. Your nurse will be with you throughout the procedure and will always keep your family well informed.
- An IV will be placed and you will receive antibiotics, nausea medication, and any other necessary medicine
- Your head will be shaved by your nurse unless you choose to ask your barber to do this for you the day before. We do not recommend shaving much sooner than that. The head must be completely shaved for the ultrasound to work properly.



- Numbing medication will be applied to your scalp and a head frame will be secured. The frame will remain in position during the procedure.

An anesthesiologist will be present to administer medications if needed. You are NOT put to sleep during this procedure—in other words, you do not get general anesthesia.

- After the completion of the frame placement patients are taken to the MRI Suite. There a silicon membrane will be placed on your head that will circulate cool water. This will minimize potential heating near the scalp.



- You will lie flat on your back on a dedicated bed in the MRI suite. If you have difficulty lying flat, please inform your neurosurgeon during the initial consultation.

You must be awake during the process and be able to communicate with the treatment team.

The procedure will be guided by the neurosurgeon and his team sitting on a computer immediately outside the MRI room where you are being closely monitored by the entire team of treatment planning.

Your nurse will be with you throughout the procedure, monitoring your blood pressure, heart rate, and well-being and providing you with warm blankets since the room can get quite cold.



The MRI imaging enables the neurosurgeon to locate and fine-tune

the area that needs to be treated. Small doses of ultrasound energy will be given as a test to help confirm the proper location.

- The treatment team will be in and out of the MRI suite monitoring and testing you on several occasions. They will ask you questions and have you perform simple tasks such as speaking, writing or to pretend you are drinking from a bottle of water. They also ask you to do other tasks which may provoke your tremors.
- Once the neurosurgeon and the team are confident of the location, the focused ultrasound energy will be increased to make further improvement in your tremor. In most cases immediate results are noticeable.
- When the procedure is complete you will leave the MRI treatment area and return to your suite. You will receive pain medication if needed and the head frame will be removed. Usually at this point you can eat and drink.
- An MRI scan is done upon completion of the treatment
- Patients are discharged from the hospital same day after the treatment. A responsible adult must be available to drive the patient home.
- Discharge instructions are reviewed.



Procedure Completion

- A follow-up visit is arranged with the neurosurgeon for about two weeks after the procedure.
- Another follow-up visit is arranged for a few weeks after the procedure. This will be scheduled after the first visit. A repeat MRI would be ordered for four months after the procedure. This MRI can be done at a center close to your home if you are not residing in Richmond, Virginia.

Occasionally some patients may have trouble with balance, dizziness, numbness, or tingling. These effects usually are transient and improve with time. **Always stay in touch with your neurosurgeon's office.**



If you have questions or concerns prior to your procedure, please contact our navigator, Denise Laine, at (804) 483-5711 or janet.laine@hcahealthcare.com.

To learn more, visit hca virginia.com/focusedultrasound.