

as medication therapy and often works when medications have not. It may be an excellent alternative for patients who cannot tolerate the side effects of medications or who have other medical conditions that increase the risks of taking certain medications.



The Menninger team involves the family in the consultation and treatment process.

20-40 minutes. At Menninger, the Center's start-of-the-art technology can cut this time in half, which means patients can experience relief more swiftly than with traditional forms of TMS.

The first step in the process is a consultation with Dr. Coffey and his team, during which he takes into consideration each individual's unique psychiatric and medical history. For a consultation or to make a referral, call 713-275-5328 or email [brainstim@menninger.edu](mailto:brainstim@menninger.edu).

### Ketamine Therapy

Ketamine therapy is another cutting-edge treatment option for individuals suffering from treatment-resistant depression. The therapy involves a brief medical procedure during which a low dose of ketamine is administered through an IV infusion or a nasal inhaler. Ketamine therapy often works when other established forms of depression treatment have not been effective, and for some patients the benefits from ketamine therapy are rapid.

Exactly how ketamine therapy achieves such rapid effects in the brain is not fully understood, but it likely involves complex interactions with the brain's neurotransmitter systems. Researchers in the Menninger Department of Psychiatry & Behavioral Sciences at the Baylor College of Medicine are leading this field of discovery, and they provide consultation on this treatment.

Although ketamine is approved by the FDA for use as a general anesthetic, it is not approved for the treatment of psychiatric conditions. However, substantial published research suggests it is safe and effective in treating depression. It may also help relieve symptoms of post-traumatic stress disorder and some forms of chronic pain.

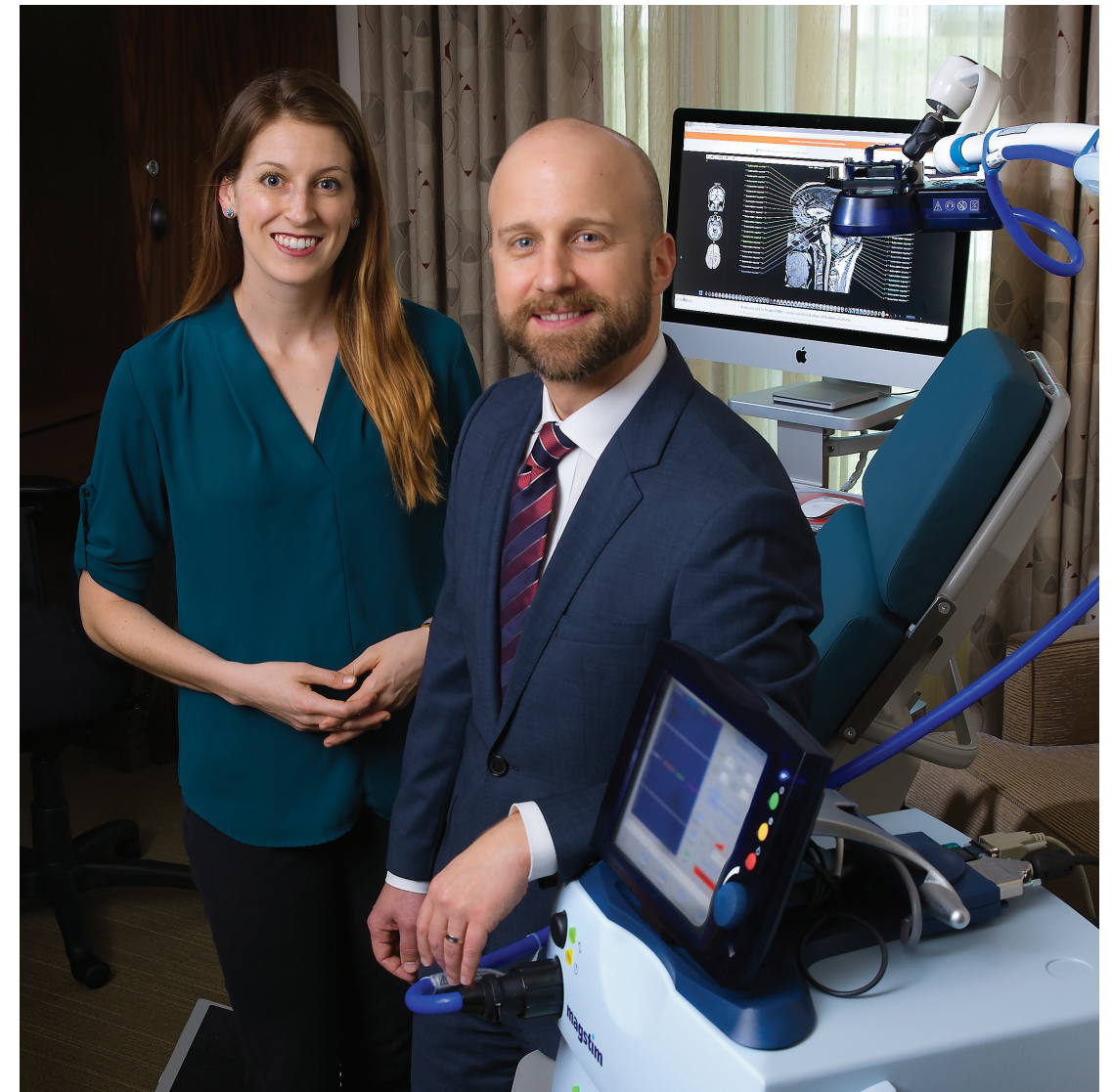
One advantage to ketamine therapy is that individuals learn very quickly if it will be effective for them. Usually, only one or two treatments are enough to determine if additional treatments will be helpful. Because ketamine is a medication that has the potential to be misused, ketamine therapy may not be appropriate for individuals with addiction. A consultation with Dr. Coffey and his team is the first step, during which he considers each person's psychiatric and medical history.

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TMS is approved by the FDA for the treatment of medication-resistant depression in adults. Substantial research and clinical practice suggest it is also safe in children and adolescents, and that it may also be effective for other conditions, including OCD and other anxiety disorders, addiction, Tourette Syndrome, and certain types of hallucinations, such as hearing voices.

TMS involves a series of treatments given five days a week over a course of four to six weeks. Each treatment typically lasts

# Center for Brain Stimulation





Learn more about Menninger and the Center for Brain Stimulation at [MenningerClinic.com](http://MenningerClinic.com).



The John M. O'Quinn Foundation Commons

## About the Center for Brain Stimulation

The Menninger Center for Brain Stimulation offers cutting-edge treatment options that use advanced medical technology to stimulate the brain in ways that restore its healthy function. Brain stimulation therapies are very safe and effective medical procedures that are alternatives to traditional medication or talk therapies. Brain stimulation therapies often work when other types of treatment have not.

The Center is led by Medical Director M. Justin Coffey, MD, FAPA, CHCIO, and nurse leader Kristina Bullard, MSN, RN, NE-BC. Dr. Coffey and his team use a family-centered approach to delivering brain stimulation therapy, an approach that is recognized internationally as a best practice. The treatment setting differs greatly from a hospital. Patients are encouraged to invite family members and loved ones to be an active part of the care team, and Dr. Coffey's published research demonstrates how such engagement can improve patient outcomes and the experience of care. Dr. Coffey serves as vice president of the International Society for ECT and Neurostimulation and is board certified in psychiatry and behavioral neurology.

The Center offers an expanding range of evidence-based therapies. Brain stimulation therapies currently approved by the FDA include electroconvulsive therapy (ECT), transcranial magnetic stimulation (TMS), vagus nerve stimulation (VNS) and deep brain stimulation (DBS). Other evidence-based and experimental therapies (not approved by the FDA) include ketamine therapy, transcranial direct current stimulation (tDCS), focal electrically administered seizure therapy (FEAST) and magnetic seizure therapy (MST).

At Menninger, brain stimulation therapies are outpatient procedures that take place in a comfortable, yet specialized treatment suite on the Menninger campus for outpatients and inpatients. Patients are generally referred by their mental health professional, although self-referrals are also common and welcomed. We provide in-office and teleconference consultations for brain stimulation options, and also offer referrals.

## Electroconvulsive Therapy

ECT is a brief medical procedure during which a small amount of electrical energy is used to elicit a controlled type of seizure in the brain. The patient is asleep under general anesthesia, and the procedure is painless. ECT works by changing the level of neurotransmitters in the brain, regulating the body's hormone system and eliciting the growth of new brain cells through a process called neurogenesis.



Research shows having a family member participate in the treatment room results in better outcomes for the patient. Dr. M. Justin Coffey thoroughly discusses stages of treatment during each procedure.

**"The first thing I, and others, noticed was the laughter. Even before I had finished all the treatments, I was laughing again. Sometimes a lot. I don't remember the last time I laughed before ECT."**  
*- Former patient*

ECT is the single most effective treatment for severe depression, and it works more rapidly than traditional other forms of depression treatment. ECT is also effective at treating bipolar disorder, schizophrenia and schizoaffective disorder, and catatonia. It is extremely safe in adults, adolescents, the elderly and women who are pregnant. Many people who receive ECT no longer need medication.

ECT involves a course of treatments that occur two to three times per week for two to four weeks. The first step in the process is a consultation with Dr. Coffey and his team, during which he takes into consideration each individual's unique psychiatric and medical history and discusses the number of treatments likely to be most helpful.

For a consultation or to refer a patient, call 713-275-5328 or email [brainstim@menninger.edu](mailto:brainstim@menninger.edu).

## Transcranial Magnetic Stimulation

Like ECT, TMS is brief medical procedure that works by stimulating the brain using advanced technology and without the use of medication. Unlike ECT, TMS uses magnetic energy rather than electrical energy to deliver the stimulation. Only specific targets in the brain receive the stimulation, and this more focal approach has both advantages and disadvantages.

The main advantage of TMS is that it does not require sedation or general anesthesia, which means there is no recovery time and patients can return to their usual activities immediately after the procedure. The main disadvantage is that TMS is not as effective as ECT. However, TMS is as effective

