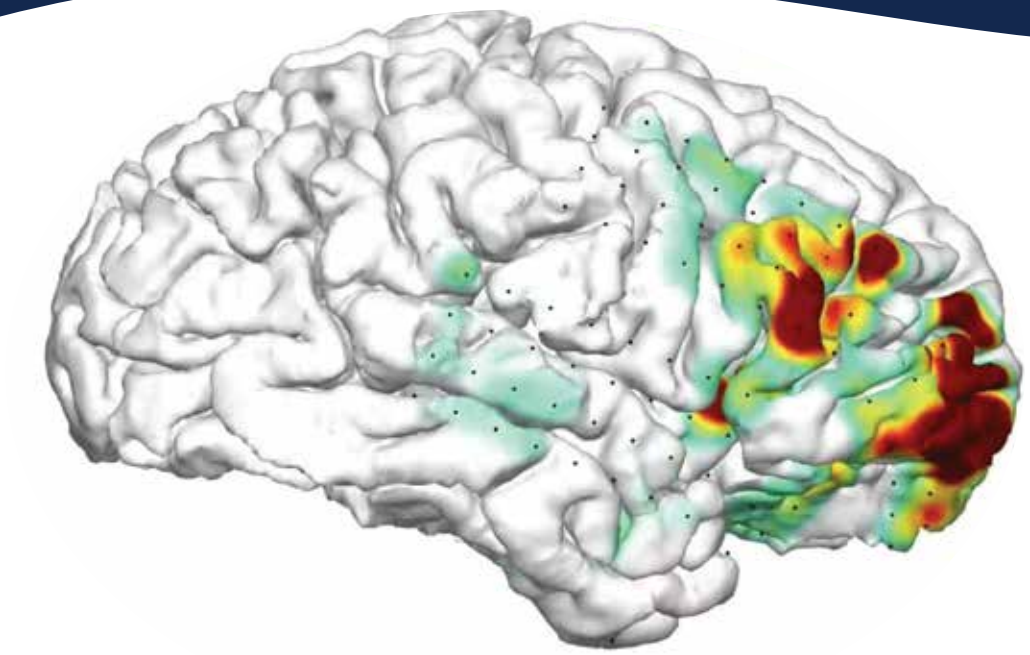
UCSF Health

Hope for a Seizure-Free Life

Patient Guide to Overcoming Epilepsy

UCSF Medical Center is best in the West and No. 3 in the nation for neurology & neurosurgery

BEST HOSPITALS U.S.News & WORLD REPORT NEUROLOGY & NEUROSURGERY 2024-2025



Level 4

Level 4 epilepsy center (highest rating) *National Association of Epilepsy Centers*

If you've tried different epilepsy medications yet seizures are still diminishing your quality of life, you may have what's called drug-resistant epilepsy. Fortunately, it can be treated or even cured with other therapies, such as implanted devices or surgery.

Research shows that the sooner epilepsy surgery is performed, the better the results (although patients who've had seizures for years, or even decades, can still benefit). If you have uncontrolled epilepsy, we recommend getting a thorough evaluation at an epilepsy program with level 4 accreditation from the National Association of Epilepsy Centers, such as the UCSF Epilepsy Center.

Our center specializes in helping people with drug-resistant epilepsy end or dramatically reduce their seizures. We've helped thousands of patients improve their quality of life, including those with severe or complex cases.

If medication isn't controlling your seizures, we can help. Keep reading to learn how.

YOUR TEAM

Comprehensive epilepsy care is a team effort. At UCSF, different types of experts – all with special training in epilepsy – may participate in your care.

- Epileptologists
- Neurosurgeons
- Neuropsychologists
- Neuroradiologists
- Nutritionists
- Nurses
- Pharmacists

Journey to Life-Changing Care

What to Expect at the UCSF Epilepsy Center

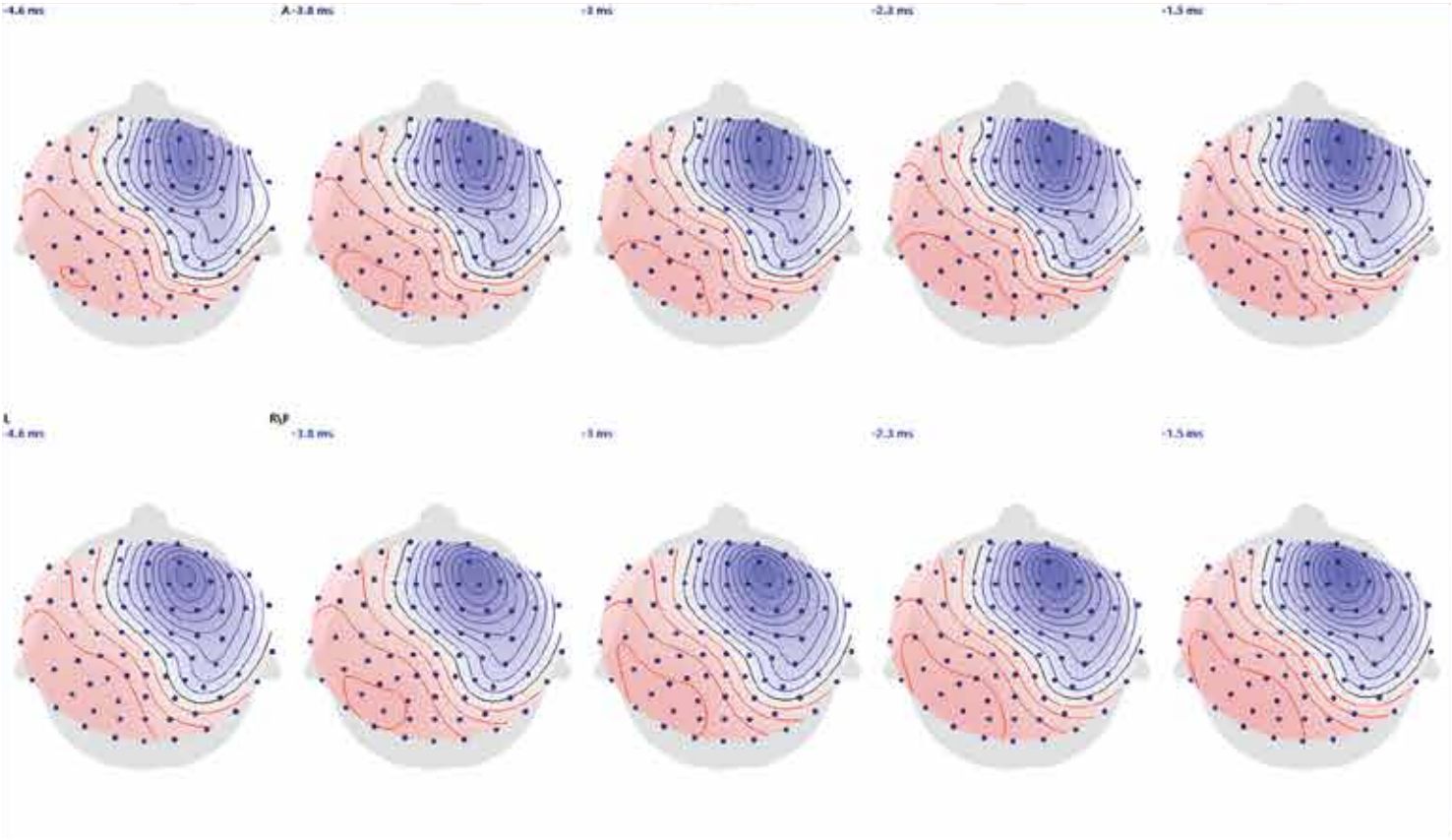


INTENSIVE DIAGNOSTIC CARE

The first step in controlling your seizures is to identify the kind you're having and pinpoint where they start in your brain. To gather this information, we evaluate many of our drug-resistant patients in our state-of-the-art Epilepsy Monitoring Unit (EMU). There, a comprehensive form of electroencephalography (EEG) continuously monitors the patients' brain waves and records seizure activity.

Before surgery, some patients undergo an even more precise form of monitoring called intracranial EEG, which can be performed only at a level 4 epilepsy center. It provides highly detailed data that we use to meticulously plan your procedure.

Medications don't control seizures in 1 out of 3 people living with epilepsy

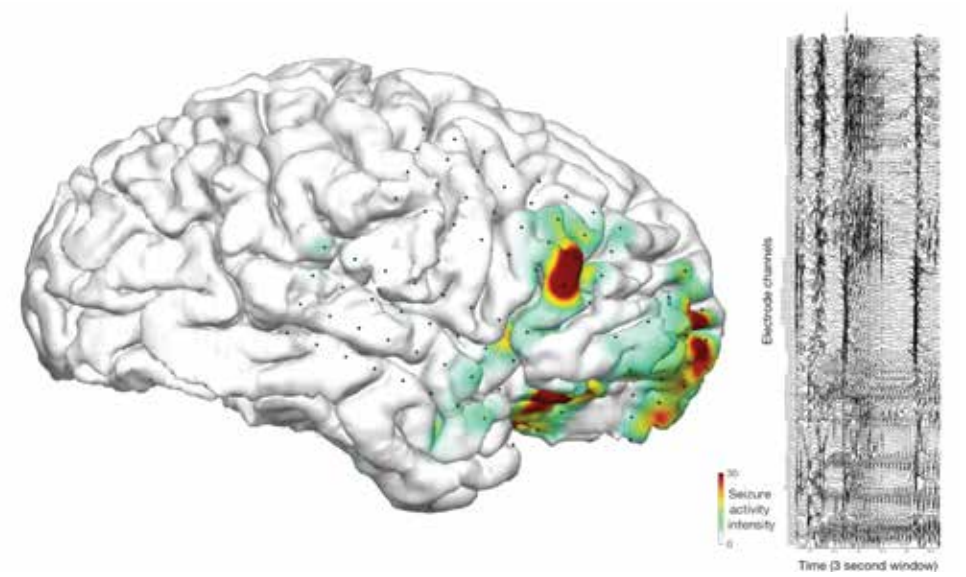


About the UCSF Epilepsy Monitoring Unit (EMU)

- It has the latest monitoring technology and is one of the few EMUs to have on-site EEG technologists around the clock, ensuring that we get the highest quality data. This enables us to pinpoint where your seizures start, so we can choose the best treatment approach.
- It's the first EMU in the San Francisco Bay Area to receive three different accreditations from the American Board of Registered EEG Technologists (ABRET).
- We recently remodeled and expanded, so we can help more patients get the right diagnosis and care quickly.

UCSF has world-renowned expertise in determining the “seizure focus,” the place where seizures start in the brain. To locate the seizure focus, our team uses complex computer modeling to combine data from EEG and other tests. These may include:

- MEG scans, which use special sensors to measure brain activity, including abnormal seizure-related activity and activity of brain areas needed for functions such as speech and sensation. UCSF has one of the only MEG labs in the West to provide this service.
- PET scans to look for areas of reduced metabolism, a sign that the brain tissue there may be involved in starting seizures
- SPECT scans to examine how the brain's blood flow patterns change during seizures, another way to pinpoint where they start
- MRI scans to provide images of the brain. UCSF neuroradiologists use a strong 3 Tesla MRI scanner and a special epilepsy protocol to produce highly detailed images.



NEXT-GENERATION SEIZURE MAPPING

UCSF epileptologist Dr. Jonathan Kleen has developed software to turn a patient's intracranial EEG data into a personalized seizure "heat map," a 3D video that shows how seizures move through someone's brain. Heat maps make it easier for the team to identify where patients' seizures start and how they spread.

Heat maps have already proved useful for patients, including Rashetta Higgins, who was cured after 29 years of epilepsy.



Meet Rashetta

For 29 years, Rashetta was racked by seizures – as many as 10 a week. When medications failed to bring them under control, her UCSF doctors recommended intracranial EEG testing so they could take detailed recordings of her brain activity during seizures.

Using Dr. Kleen's software, the squiggly lines of EEG recordings were then turned into a cinematic heat map of Rashetta's brain during a seizure. It clearly showed the seizures originating from a single hot spot, which her surgeon, Dr. Edward Chang, was able to remove. The procedure has been a life-changing success.

Visit **ucsfhealth.org/rashetta** to read her story.



With top-of-the-line technology and expertise, we're able to treat the most complex cases and offer surgery to patients who might be considered inoperable elsewhere.

As a new patient, you're welcome to send us any scans you had outside UCSF, to avoid repeating tests unnecessarily. To reduce the number of trips you make to UCSF, we consolidate all the testing you need into the minimum number of visits and offer telehealth video appointments.

360-DEGREE EXPERTISE FOR DECISION-MAKING

If you're being considered for surgery or you have a complex case, a large team of epilepsy experts, ranging from brain surgeons to neuropsychologists and neuroradiologists, will gather to discuss your case in detail and determine the best treatment for you. Your epileptologist will go over the group's recommendations with you in depth, so you can decide on your next step together.

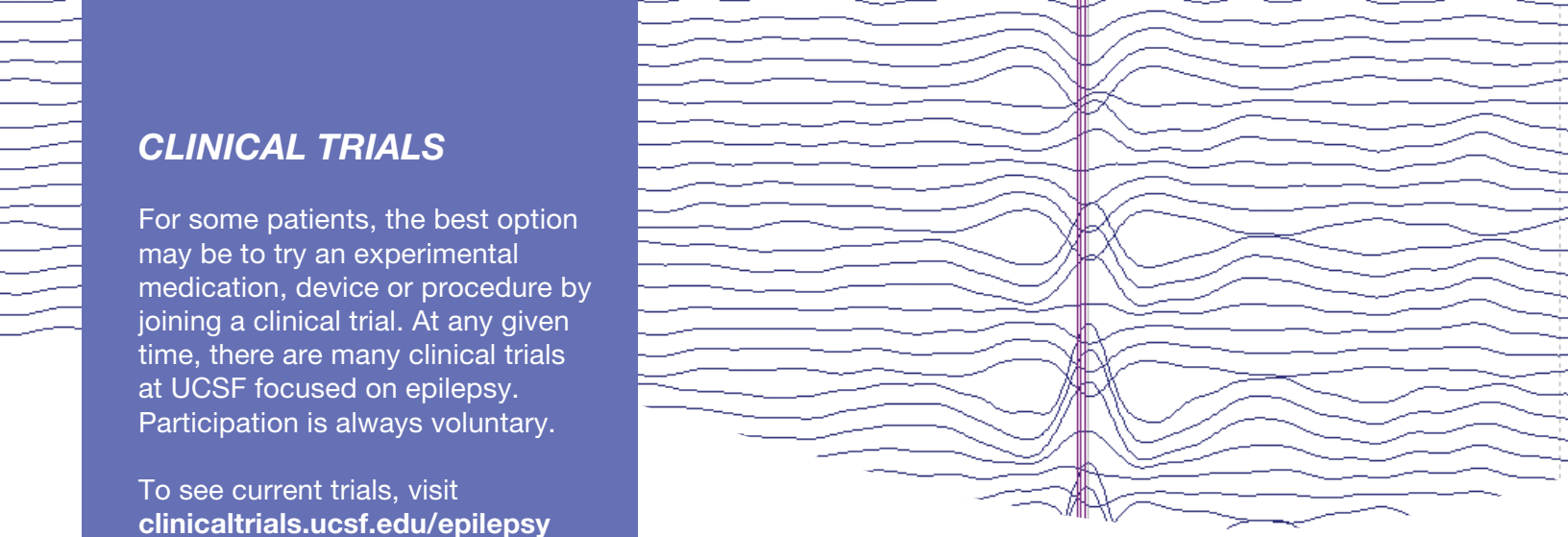
LATEST TREATMENT OPTIONS

The right treatment option can be life-changing for patients with drug-resistant epilepsy, giving them near or total freedom from seizures and allowing them to return to work and the activities they enjoy. At UCSF, we offer the latest therapies and perform more epilepsy procedures than any other center in the West. We excel at selecting the option that will give patients the best seizure control possible while protecting their overall brain function and quality of life.

Surgical resection

In surgical resection, surgeons remove the brain tissue where seizures start. This procedure gives the best chance of a cure – more than half of recipients become seizure-free. It's not the right choice for everyone, though, because removing the seizure focus safely is not always possible. Resection carries a small risk of long-term changes to functions such as speech, memory and movement. However, our experienced epilepsy surgeons have had excellent results, with patients experiencing no or minimal side effects.

(continued)



CLINICAL TRIALS

For some patients, the best option may be to try an experimental medication, device or procedure by joining a clinical trial. At any given time, there are many clinical trials at UCSF focused on epilepsy. Participation is always voluntary.

To see current trials, visit **clinicaltrials.ucsf.edu/epilepsy**

LATEST TREATMENT OPTIONS (CONT.)

Intraoperative brain mapping

When needed, we use a groundbreaking technique pioneered at UCSF, called intraoperative brain mapping, to make resection safer. During the procedure, patients are awakened and asked to perform simple tasks – moving a finger or counting, for example – while we stimulate different areas of the brain. This helps us remove as much of the seizure focus as possible without damaging brain tissue that's important for functions such as speech and movement.

Patients receive medications to prevent pain and anxiety, and they are completely asleep before and after the intraoperative brain mapping.

Laser ablation

This treatment uses heat to destroy the seizure focus instead of removing it surgically. Because the procedure requires only a small incision in the skull, patients recover relatively quickly.

Compared to resection, laser ablation is less likely to provide a complete cure, but it can be a good option for patients who can't have (or don't want) surgical resection. UCSF specialists are leading research on laser ablation and are very experienced at performing it.

Neurostimulation devices

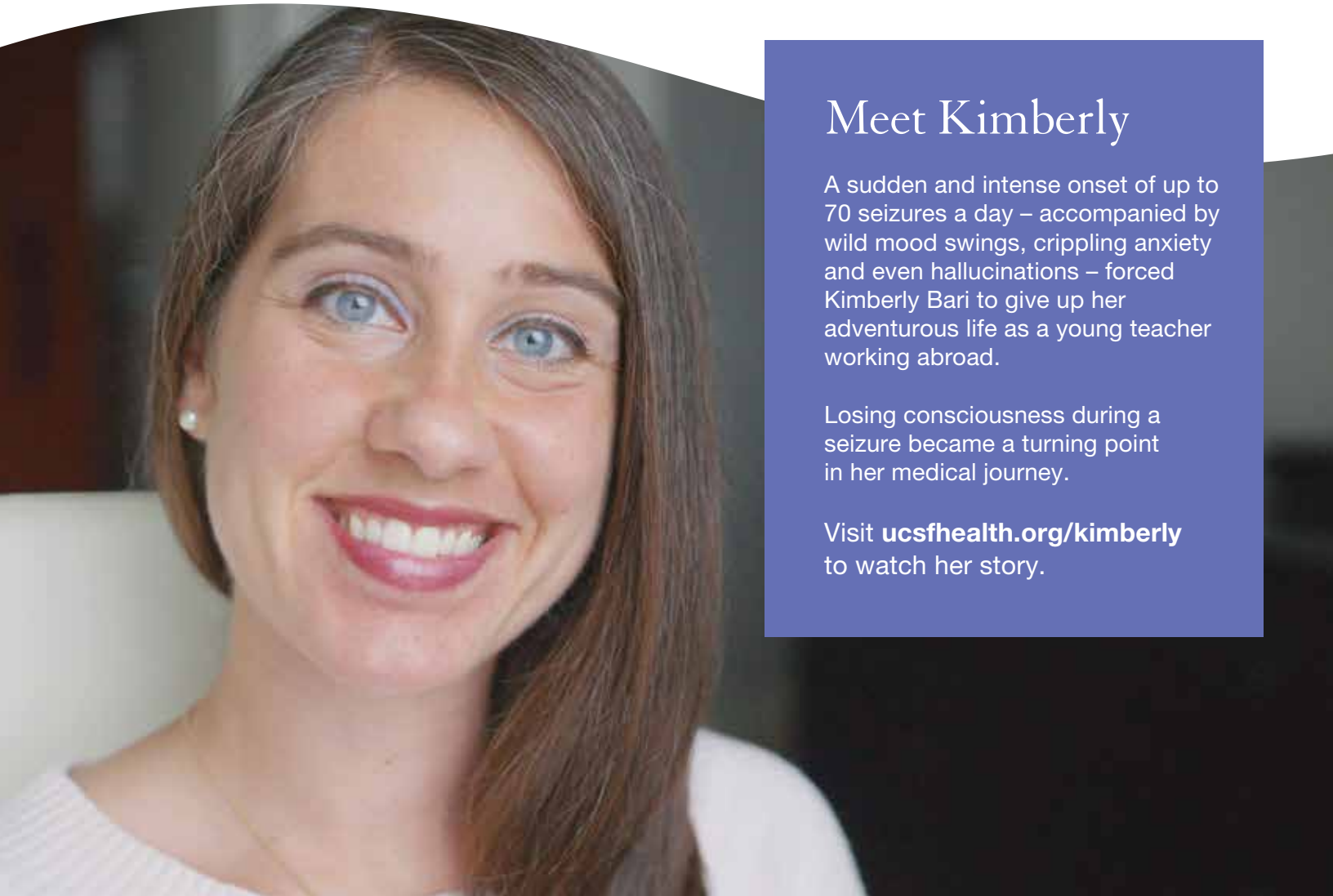
These medical implants send mild electrical pulses to the brain to stop or prevent seizures, similar to how a pacemaker prevents abnormal heart rhythms. They can make seizures less frequent and severe but don't provide a total cure. If your seizures originate in an area of the brain that's needed for you to move, speak or see, a neurostimulation device may be a good option, since no brain tissue is removed.

Neurostimulation devices need expert adjustment to deliver the best results, so it's important to find a center that's experienced with them. Patients' results often improve over time.

The Food and Drug Administration (FDA) has approved several types of neurostimulation devices for epilepsy. All are available at UCSF.

Vagus nerve stimulation

To prevent seizures, a small implant in the chest regularly sends mild electrical signals through lead wires to the vagus nerve – a major nerve connecting the brain to the rest of the body – where it runs through the neck. Patients also can manually trigger the device to stop or minimize a seizure that has already started.



Meet Kimberly

A sudden and intense onset of up to 70 seizures a day – accompanied by wild mood swings, crippling anxiety and even hallucinations – forced Kimberly Bari to give up her adventurous life as a young teacher working abroad.

Losing consciousness during a seizure became a turning point in her medical journey.

Visit **ucsfhealth.org/kimberly** to watch her story.

Neurostimulation devices (cont.)

Responsive neurostimulation (RNS)

A small implant in the skull monitors electrical signals in the brain. When it detects activity that could lead to a seizure, it sends an electrical pulse to the site (or sites) where the patient's seizures start, helping stop seizures before they begin.

UCSF specialists are among the most experienced in the nation at helping patients get the best results from the RNS device.

Deep brain stimulation

Deep brain stimulation was approved for epilepsy treatment in 2018, although it's been used for many years to treat movement disorders. The device is implanted in the chest area, beneath the collarbone. It sends regular electrical pulses to an area of the brain called the thalamus, thought to be involved in the start and spread of seizures.

LONG-TERM EXPERT CARE

Although we're among the most experienced epilepsy surgery centers in the world, we're equally passionate about the long-term care needed after surgery. Our team provides expert monitoring and follow-up care over the years to make sure patients are living seizure-free or as close to it as possible.

READY TO TAKE THE FIRST STEP?

We've helped thousands of patients become seizure-free. If you have questions about our program, already have a referral and would like to schedule an appointment, or if you need help getting a referral, please contact us. We're here to make the process as fast and efficient as possible.

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