

# Epilepsy

Epilepsy physicians at UVA Health System specialize in the treatment of children, adolescents and adults with all types of epilepsy and with all degrees of the disease's severity, from well-controlled to intractable. We care for patients from initial evaluation and diagnosis through treatment and long-term disease management.

We have been at the forefront of epilepsy care, therapy and research for more than four decades, since our F. E. Dreifuss Comprehensive Epilepsy Program was founded in 1975 as one of the first comprehensive epilepsy programs in the world. Today, our program is certified by the National Association of Epilepsy Centers as a Level 4 center, indicating that it has the professional expertise and facilities necessary to provide the highest level of medical and surgical evaluation and treatment for patients with complex epilepsy.

## Conditions Treated

**We care for patients of all ages with all types of epilepsy.**

### Focal Epilepsy

This is the most common type of epilepsy; to target and treat it, we utilize elaborate diagnostic modalities and treatment interventions. Those patients who do not respond to antiseizure medications may be able to live seizure-free lives if they are candidates for surgery to remove the seizure focus.

### Generalized Epilepsy

This type of epilepsy can be caused by many different factors. In the majority of cases, patients with this type of epilepsy can eventually be rendered seizure-free. To make this possible, an epilepsy program must have an elaborate infrastructure with specialized physicians, diagnostic modalities and novel therapies — all of which we offer at UVA. This is part of our long-term commitment to determine the cause of seizures in every single one of our patients.

## Advanced Care

**Our comprehensive approach to care starts with an initial evaluation at our adult or pediatric epilepsy clinics. These clinics are the cornerstones of our epilepsy program, where our patients receive regular care to help treat their disease and manage it long term.**

Treating and managing epilepsy requires industry-leading diagnostic tools. In our inpatient Epilepsy Monitoring Units (EMUs), we utilize technology like continuous video electroencephalography (video-EEG) monitoring to assist in diagnosing seizures and localizing the site of seizure onset. Our industry-leading imaging technologies help our multidisciplinary team to assess a patient's diagnosis and create a plan of care that seeks to address the epilepsy cause and related symptoms.

Our comprehensive epilepsy care includes access to the full spectrum of medications, surgical techniques and devices, including new and novel therapies that offer avenues of

care and relief for an ever-growing number of patients with epilepsy that in the past may have been considered intractable. Our Epilepsy Research Clinic offers studies of almost every drug, device and therapy in development, including treatments developed at UVA.

For patients that can benefit from surgical intervention, we offer the latest approaches, including stereotactic laser surgery, a less-invasive method that ablates brain tissue at the site of the seizure focus. Our presurgical evaluations utilize ictal SPECT where a radiotracer is injected during a seizure to identify the focal point where seizures begin. We also use interictal SPECT when the patient is not having a seizure, allowing us to compare the two images. In addition, our physicians utilize subtraction ictal SPECT co-registered with MRI (SISCOM) and quantified PET compared to a normal dataset co-registered with MRI; both are advanced neuroimaging technologies that provide greater insight into the seizure focal point, leading to enhanced surgical precision.

## Research

**Our dedication to the care of our patients drives our desire to create epilepsy therapies that can provide relief and resolution of seizures in even the most challenging of cases. We are constantly initiating trials of new and novel epilepsy drugs and therapies, as well as seeking out national trials in which we can participate.**

## Clinical Trials

**Currently recruiting clinical trials for epilepsy patients include:**

**Established Status Epilepticus Treatment Trial (ESETT) (NCT01960075; IRB-HSR 18470)**

**Description |** ESETT is an emergency medicine study designed to try to save and improve the lives of people who experience a seizure that will not stop on its own or has not responded to a medicine like valium. Emergency department care of these patients in the U.S. is not the same everywhere.

Because it is not known which drug best stops this type of seizure, different doctors use different medicines. This study plans to look at three commonly used medicines given in emergency departments for a seizure that is not stopping — fosphenytoin, valproic acid and levetiracetam — to learn which treatment is best at stopping a seizure quickly. The best possible outcomes for seizing patients are likely to depend on a treatment that leads to a rapid stop of the seizure. This study will help researchers figure out which drug works best.

Any patient who is 2 years or older with an active recurrent or ongoing seizure lasting longer than five minutes — and has already received an adequate dose of a benzodiazepine (like valium) in the past 5-30 minutes for a generalized tonic-clonic seizure — could be enrolled. Every patient coming to UVA Emergency Department who is eligible for the study will get study treatment.

Multicenter Principal Investigator: Jaideep Kapur, MD, PhD  
UVA Principal Investigator: J. Stephen Huff, MD  
Phone: **434.982.0601**

Additional contact: Lea Becker  
Phone: **434.243.7375**

## MR-Guided Focused Ultrasound in the Treatment of Subcortical Lesional Epilepsy

(EP001) (NCT02804230; IRB-HSR 18914)

**Description |** The purpose of this study is to evaluate the feasibility, safety and initial effectiveness of ExAblate focused ultrasound thermal ablation of a subcortical focal epileptic target area in the brain of patients suffering from medication-refractory epilepsy, using the ExAblate Transcranial System to produce multiple sonications targeted in the lesion of interest. The investigators will establish the feasibility and collect data to establish the basic safety of this type of treatment as the basis for later studies that will evaluate its full clinical efficacy.

UVA Principal Investigator: Nathan Fountain, MD  
Contact: Stacy Thompson  
Phone: **434.982.4315**

We invite referring providers to consider enrolling their patients with epilepsy in one of our clinical trials. Please visit [uvahealth.com/neurologytrials](https://uvahealth.com/neurologytrials) and [uvahealth.com/neurosurgerytrials](https://uvahealth.com/neurosurgerytrials) for up-to-date information on our ongoing studies and trials.

## Our Team

The multidisciplinary physicians of the F. E. Dreifuss Comprehensive Epilepsy Program collaborate in the care of our patients, partnering with their referring providers and primary care physicians every step of the way. The result is the region's highest-quality care for each patient we serve.

**Russell Bailey, MD**  
Pediatric Neurology

**Howard Goodkin, MD, PhD**  
Pediatric Neurology

**Edward Bertram III, MD**  
Neurology

**Laura Jansen, MD, PhD**  
Pediatric Neurology

**Laurie Brenner, PhD**  
Pediatric Neuropsychology

**Jaideep Kapur, MD, PhD**  
Neurology

**J. Nick Brenton, MD**  
Pediatric Neurology

**Jennifer Langer, MD**  
Neurology

**Donna Broshek, PhD**  
Neuropsychology

**Kelly Mahaney, MD**  
Pediatric Neurological Surgery

**Gregory Cooper, MD**  
Neurology

**Mark Quigg, MD**  
Neurology

**W. Jeffery Elias, MD**  
Neurological Surgery

**Justin Smith, MD**  
Psychiatry

**Nathan Fountain, MD**  
Neurology

**UVA Adult Epilepsy Clinic**  
**UVA Pediatric Neurology and Epilepsy Clinic**  
Primary Care Center  
1221 Lee St.  
Charlottesville, VA 22903

Refer a patient: **800.552.3723**

Transfer a patient: **844.XFERUVA (933.7882)**

Learn more about the UVA Neurosciences and Behavioral Health Center:  
[neurosciences.uvahealth.com](https://neurosciences.uvahealth.com)