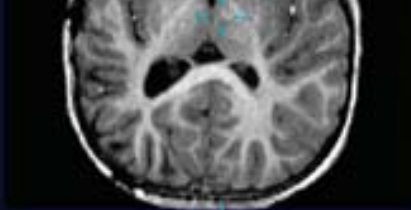


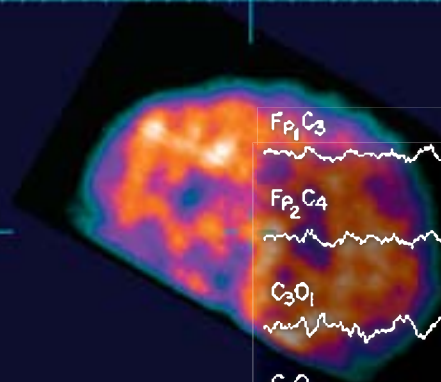
THE  
COMPREHENSIVE  
THE  
**Epilepsy**  
Center

AT NEW YORK METHODIST HOSPITAL

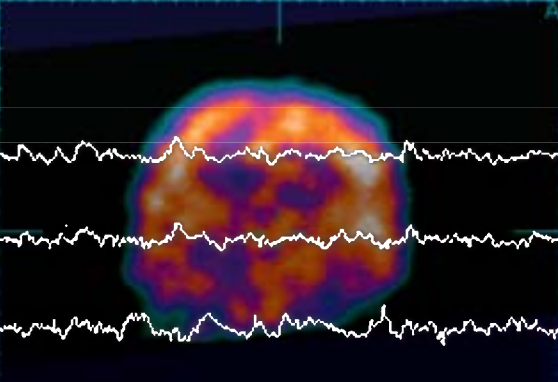


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F<sub>P1</sub>C<sub>3</sub>

F<sub>P2</sub>C<sub>4</sub>

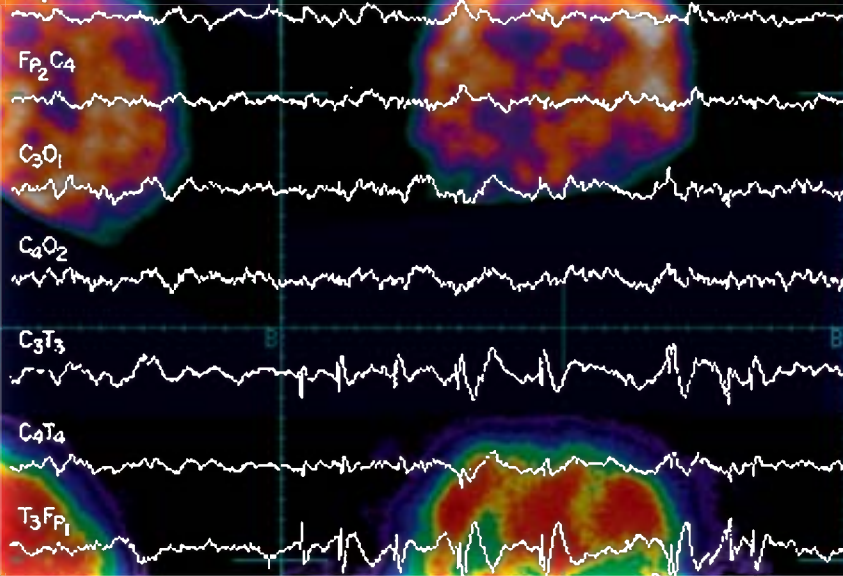
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C<sub>4</sub>O<sub>2</sub>

C<sub>3</sub>T<sub>3</sub>

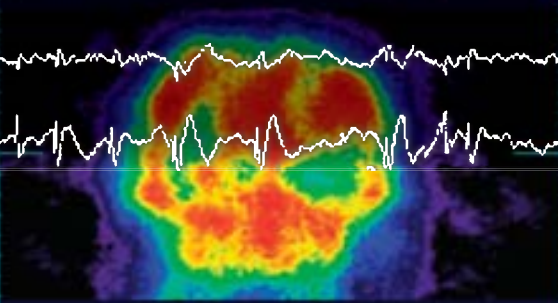
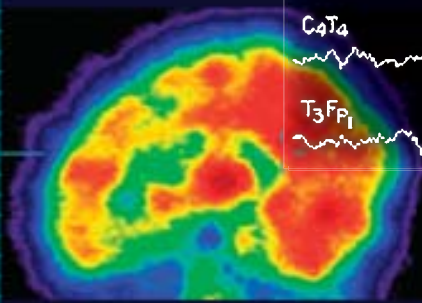
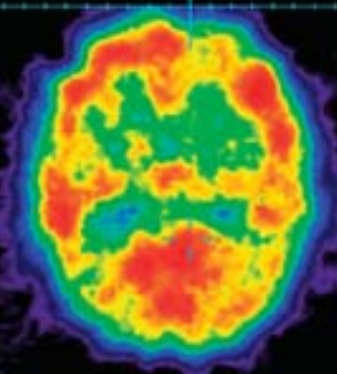
C<sub>4</sub>T<sub>4</sub>

T<sub>3</sub>F<sub>P1</sub>



B

B



*The Center's goal is to help patients gain control of their seizure disorders and optimize the quality of their lives.*



## THE COMPREHENSIVE Epilepsy Center

**T**HE COMPREHENSIVE EPILEPSY CENTER at New York Methodist Hospital is dedicated to the management of adults and children with epilepsy. The Center provides a multidisciplinary approach to the complex medical and social needs of patients with epilepsy. Patients benefit from the intervention of an experienced team that includes adult and pediatric neurologists who specialize in epilepsy, neurosurgeons, neuroradiologists, EEG technologists, clinical nurse specialists, neurophysiologists and psychiatrists.

The treatment of epilepsy has changed dramatically over the past decade. State-of-the-art technology is now available for diagnosis, seizure classification, and evaluation to achieve the most

effective treatment of epilepsy. The Center's goal is to help patients gain control of their seizure disorders and optimize the quality of their lives.

A variety of inpatient and outpatient diagnostic services are available at the Center. Treatment plans are individually designed.

Patients who need a thorough evaluation or who are not responding to their current medical therapy are appropriate for referral. They may be referred by their primary care physicians, or they can directly contact the Comprehensive Epilepsy Center for an appointment. We invite patients with a suspected or confirmed diagnosis of epilepsy or seizures to explore and learn more about our Center.



*More than 30,000 people in Brooklyn have been diagnosed with epilepsy.*

## What is Epilepsy?

**E**PILEPSY (seizure disorder) is a chronic neurological condition characterized by recurrent seizures caused by abnormal electrical brain activity. The types of epilepsy are classified as either idiopathic or symptomatic. Idiopathic epilepsy has no known cause, and the patient has no other signs of neurological disease or mental deficiency. Symptomatic epilepsy results from a known condition such as stroke, head injury, tumors, congenital abnormality, etc.

### How Common is Epilepsy?

Epilepsy is a common chronic disorder. About five percent of individuals in the general population will have a seizure during their lifetime. Approximately one and a half percent of the

population will be diagnosed with epilepsy. This translates into more than two million people in the United States, 110,000 in New York City and more than 30,000 in Brooklyn. More patients have epilepsy than Parkinson's, multiple sclerosis and cerebral palsy combined.

### What Causes Epilepsy?

Just as there are different types of epilepsy, there are many different causes of the disease. Some people are born with a gene that causes epilepsy, others may suffer from a head injury that leads to the disorder. Other causes include brain tumors, stroke or infection. Although the cause of the disease is unknown in 60 percent of cases, this does not preclude diagnosis and treatment.





## Types of Seizures

**S**EIZURES MAY VARY in type and severity but they are often frightening—for the patient, the family and any onlookers. They may last anywhere from a few seconds to several minutes. Some 85 percent of seizures stop spontaneously within two minutes. They may recur frequently (several times within a day) or infrequently (not for several weeks). Symptoms of seizures include confusion, behavior changes, convulsions and a sudden loss of consciousness. Seizures may be preceded by an “aura” that provides a warning.

There are two main categories of seizures: partial and generalized seizures. A partial seizure can evolve into a generalized seizure. There are several subtypes of each.

*Symptoms of seizures include confusion, loss of consciousness, behavior changes, an “aura” or convulsions.*

### Partial Seizures

The site of origin is a localized or discrete area in one hemisphere of the brain. The two most common subtypes are:

*Simple partial seizures:* These seizures originate from a localized focus in the brain. The nature of the symptoms depends on the function of the particular focus from which the seizure originates. There may be motor signs, sensory symptoms, autonomic signs and symptoms (involuntary control of the heart, lungs, blood pressure, etc.), and psychic symptoms (fear, sadness, joy). Consciousness remains intact in simple partial seizures.

*Complex partial seizures:* Impairment of consciousness, characteristic of complex partial seizures, results in the inability to respond to or carry out simple commands or to execute willed movement. There may be a lack of awareness of one’s surroundings. Automatism may occur. An automatism is a more or less coordinated, involuntary motor activity such as lip smacking or blinking.

### Generalized Seizures

At the onset, seizure activity occurs simultaneously in large areas of the brain, often in both hemispheres. These seizures involve the whole body, and can be convulsive or nonconvulsive.

## Diagnosis of Epilepsy

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**ATIENTS SHOULD BE EVALUATED** thoroughly after their first seizure. A physician at our Center will obtain a complete patient history including details of birth, childhood, family history and a thorough medical history, including illnesses of the nervous system and medication regimen. A detailed description of the seizures is important to distinguish seizure types. Eyewitness accounts are very helpful.

### [Electroencephalogram \(EEG\)](#)

**EEG** monitoring is the foundation of an epilepsy diagnosis. The EEG measures electrical activity on the surface of the brain through small

*NYM's Comprehensive Epilepsy Center has the most sophisticated equipment available to help diagnose the disease. All EEGs are evaluated by both neurologists and computerized analysis.*

electrodes that are placed on the scalp. An EEG recording can identify abnormal electrical activity in the brain, provide information about the type of seizure disorder, and locate the area of seizure focus.

Some of the findings from an EEG are specific to particular disorders and subtypes of epilepsy. Activity during a seizure can be identified by a pattern on the recording. Correlating this type of data with clinical symptoms of seizures often helps make an accurate diagnosis. Additionally, the EEG recording between seizures is often abnormal in patients with epilepsy.





*A Routine-EEG* can record between 30 minutes and a few hours of EEG on an inpatient or outpatient basis in the Center.

*An Ambulatory-EEG* is used to record a patient's EEG over one to three days in their home environment. As is the case with the cardiac "Holter" monitor, patients have a box strapped to their waist. EEG electrodes are placed on the head. Recordings saved in the box are later evaluated in our Center.

*A Video-EEG* consists of simultaneous continuous EEG, video recording and EKG. When the patient experiences a seizure, the clinician can compare the clinical manifestation recorded by

video with the brain's electrical activity recording. This process assists in characterizing and treating the seizure disorder. The patient is usually admitted for a few days of video-EEG epilepsy monitoring in a dedicated unit under the supervision of physicians and nurses with advanced training in epilepsy.

The results of these monitoring tests are supplemented by other diagnostic procedures, including magnetic resonance imaging (MRI), single photon emission computerized tomography (SPECT), neuropsychological tests, the Wada test, and positron emission tomography (PET).

FP<sub>1</sub>C<sub>3</sub>

Video-EEG Monitoring is the best way to:

- 1. Diagnose epilepsy** Video-EEG monitoring can differentiate epileptic seizures from non-epileptic events such as syncope, movement disorders, conversion disorder, sleep disorders, anxiety attacks and migraine headaches.
- 2. Determine the type of epilepsy** Determining the type of seizures is important since different types of seizures may require different medical treatments.
- 3. Determine the frequency of seizures** Video-EEG monitoring can allow estimates of seizure frequency. Some patients have frequent, unrecognized seizures because they live alone or have minimal behavioral manifestations. For example, complex partial seizures may be mistaken for a prolonged confusional state. Or, young infants may have seizures that are under-diagnosed.
- 4. Modify treatment** During a video-EEG, it is possible to make rapid changes in the medication regimen. The efficacy of antiepileptic medications can be identified promptly. Ineffective or unnecessary drugs can quickly be discontinued or replaced.
- 5. Evaluate candidacy for surgery** Some patients have frequent disabling seizures that are unresponsive to more than two antiepileptic medications. These patients may be treated effectively with epilepsy surgery. Prior to surgery, the focus of seizure onset in the brain must be determined as accurately as possible.

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## Treatment

### Medication

**ANTIPILEPTIC DRUGS (AEDs)** can prevent seizure activity by altering neurotransmitter activity in nerve cells, but cannot correct the underlying condition. Approximately 70 percent of patients successfully control seizures with AEDs. Many may require more than one medication to be seizure free. Over the past decade, more effective antiepileptic medications have been developed.



*Epilepsy surgery is performed by neurosurgeons affiliated with NYM's Comprehensive Epilepsy Center.*

### Surgery

**IF MEDICAL TREATMENT FAILS** to control seizures, the patient may benefit from epilepsy surgery. In some patients, after extremely careful evaluation, it might be concluded that a small area of the brain can be resected without compromising any functions. This selective surgery can have an extremely successful outcome.

Certain patients may benefit from insertion of a device called a vagal nerve stimulator (VNS). The VNS is a small device that is surgically inserted under the skin in the chest area. It can act as a generator of a small electrical current that can abort seizure activity.

For information  
or an appointment

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THE COMPREHENSIVE EPILEPSY CENTER is located at 263 Seventh Avenue, Suite 5C, across the street from the main New York Methodist Hospital campus.

Nearly all major insurance plans are accepted.

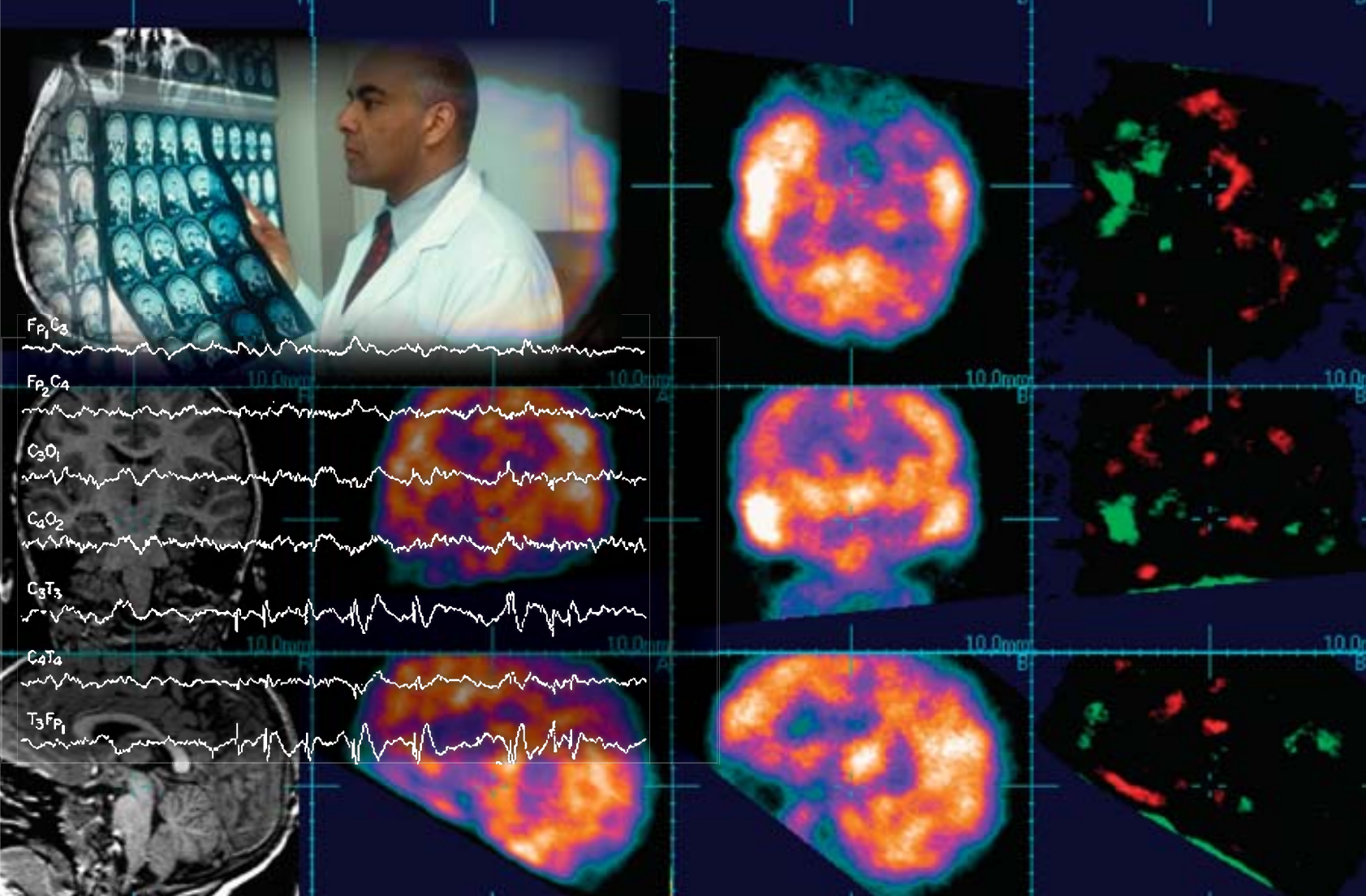
English, Spanish, French, Russian, German, Polish, Persian, Sinhala, Hungarian, Cantonese and Hebrew are spoken by staff members at the Center.

**For information or an appointment, please call 718/246-8810.** (Fax: 718/246-8656 )

Visit us on the web at  
<http://nym.org/services/neuro/epilepsy.html>

*The Comprehensive Epilepsy Center at New York Methodist Hospital is a program of the Hospital's Institute for Neurosciences.*

*New York Methodist Hospital is a 612-bed (with bassinets) voluntary acute-care teaching facility whose main campus is located in the historic brownstone neighborhood of Park Slope, Brooklyn. It is affiliated with NewYork-Presbyterian Hospital.*





Member  
NewYork-Presbyterian Healthcare System  
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