UW Medicine

REGIONAL EPILEPSY CENTER OVERVIEW

The UW Medicine Regional Epilepsy Center offers a multidisciplinary program for the comprehensive clinical care of epilepsy.

The center brings together teams of specialists in adult and pediatric neurology, neurosurgery, neuroradiology, neuropathology, and neuropsychology, as well as nurses, social workers, vocational rehabilitation specialists and electrodiagnostic technicians.

Inpatient care is provided at Harborview Medical Center in Seattle.

Our Faculty

All neurologists, neurosurgeons, neuroradiologists, neuropathologists and neuropsychologists are faculty in the UW School of Medicine.

They have fellowship training and expertise in treating epilepsy, along with special interest, expertise and research accomplishments in particular aspects of epilepsy assessment or treatment.

Their experience includes treating the most rare and difficult forms of epilepsy.

Many faculty members are engaged in pioneering research into the causes and treatments for epilepsy. The Regional Epilepsy Center was the first epilepsy center to use dense array EEG to localize seizures in patients being evaluated for epilepsy surgery.

Faculty members are also engaged in training the next generation of residents and fellows in epilepsy.

Diagnosing Epilepsy

The center's specialists work with referring physicians to diagnose all types of seizure disorders among children and adults.

- Neurological evaluations are based on a comprehensive patient health history and examination by a healthcare provider. Family members and other witnesses are consulted for details about the patient's episodes.
- An EEG detects abnormal electrical activity in the brain by recording brain waves through electrodes placed on the scalp. An outpatient EEG takes about two hours.

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Urgent and emergent care:
Call the UW Medicine Transfer Center at 888.731.4791.

Outpatient care:
Call 206.744.3576 or 800.EPIDOCS.

- **Video EEG** monitoring records brain waves and shows what happens during a patient's seizures. It is performed to clarify a diagnosis when a patient's seizures do not respond to treatment, or to determine whether a patient is a candidate for brain surgery. Usually, the patient is admitted to the hospital.
- **Dense array EEG** monitoring uses a head cap with 256 electrodes to record seizures. The high number of electrodes enables physicians to better identify the brain's source of abnormal electrical signals.
- **Invasive EEG** monitoring involves surgically placing electrodes directly on the surface of the brain to record seizures. Like video EEG monitoring, it can be used to determine if patients are candidates for epilepsy brain surgery.
- **Neuroimaging scans** are used to locate brain abnormalities that can cause epilepsy. Available technologies include magnetic resonance imaging (MRI), positron emission tomography (PET), ictal single photon emission computed tomography (SPECT), functional MRI, computed tomography (CT), and PET-CT.
- **Neuropsychological testing** assesses how epilepsy affects memory, mental abilities and emotions. It can help diagnose a patient's condition or locate the origin of seizures in the brain.
- **Wada testing** is a type of cerebral angiography used prior to epilepsy surgery to determine which side of the brain controls speech and memory functions.

Treating Epilepsy

The UW Medicine Regional Epilepsy Center provides a team approach to treatment. Epilepsy conferences are held twice weekly to determine the most appropriate care plans for inpatients.

- **Medications:** Anticonvulsant and antiepileptic drugs have been used to treat epilepsy for more than 150 years. While medications do not cure epilepsy, they make it possible for the majority of people with epilepsy to live normal, active lives, free of seizures. Others continue to have seizures, but they are fewer or milder.
- **Surgical Treatments:** In about one-third of patients with epilepsy, medication cannot adequately control seizures. Some of these patients can benefit from surgery to remove the part of the brain that causes seizures. In others, a device is implanted to stimulate the vagus nerve to reduce seizures. Improved technology and other advances are making surgery safer and more precise.
- **Vagus Nerve Stimulation:** Vagus nerve stimulation uses an implanted pacemaker-like device to apply a sequence of small electrical shocks to the vagus nerve on the left side of the neck. For patients who have failed many medications and are not candidates for epilepsy brain surgery, vagus nerve stimulation can sometimes reduce seizures.

Referrals

Many patients receive their day-to-day care by a neurologist or epilepsy specialist close to home but come to the center for special tests or treatment.

Referring physicians receive regular communication during and after inpatient evaluations, including discharge summaries, copies of tests results, letters summarizing the opinions and recommendations of epilepsy conference, as well as doctor-to-doctor telephone calls.