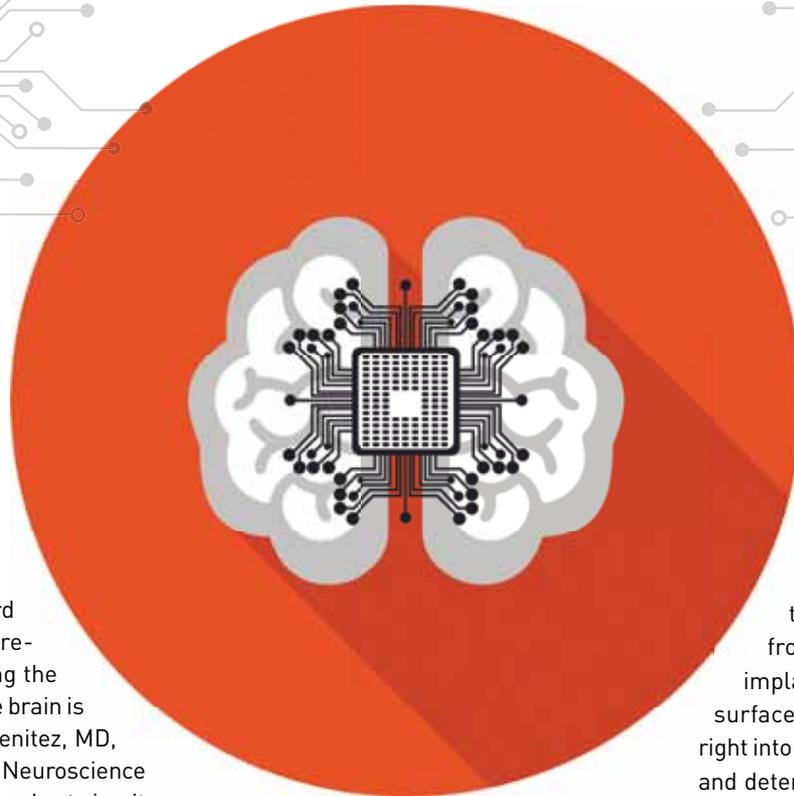


Under Control

Computer implanted in the brain helps manage epileptic seizures



More than three million people in the United States suffer from epilepsy and roughly one-third of them do not become seizure-free with medications. “Managing the condition can be challenging. The brain is like a computer,” says Ronald Benitez, MD, surgical director for the Atlantic Neuroscience Institute. “With epilepsy, there is a short circuit in the computer. This uncontrolled electrical activity that occurs in the brain makes the computer go haywire.”

Doctors at Atlantic Neuroscience Institute have been using new technology called Responsive Neurostimulation (RNS)[®], developed by NeuroPace, Inc., to help epilepsy patients. This implantable device allows direct recording from the brain and direct stimulation to the brain in an effort to interrupt seizure activity before abnormal electrical activity spreads to adjacent brain regions, resulting in clinical seizures.

“We place up to two electrodes per hemisphere as close as possible to the seizure focus. The wire from each electrode is connected to a battery-operated generator that sits recessed

in the skull,” says Dr. Benitez. “The device records EEG activity continually, which can be uploaded to a computer and analyzed. When the device detects a seizure coming, it emits a pulse through the electrodes that cancels the seizure out.” The earlier the seizures are interrupted, the less intense the seizures become.

EXCITING ADVANCES

According to Jeffrey Politsky, MD, FRCP-C, medical director for Atlantic Neuroscience Institute Epilepsy Center, “Epilepsy surgery becomes a viable option for patients who receive incomplete benefit from conventional medications. When implantation of the RNS device is one of the surgical options, it may be the only surgical option or it may be implanted as part of a multistep procedure that also

involves tissue resection. When the device is implanted, we utilize all of the information we have obtained up to that point, derived to a great extent from stage of evaluation that involves implantation of grids and strips onto the surface of the brain and depth electrodes right into the brain, designed to record seizures and determine exactly how seizures start and how they spread. Prior to the RNS, the only previously available implantable device to treat epilepsy has been the vagus nerve stimulator (VNS), which is implanted peripherally (outside of the skull and brain) in an effort to indirectly decrease seizure frequency. This technology offers an exciting advancement in the treatment of epilepsy.”

Patients with medically intractable epilepsy can undergo an evaluation to determine the most appropriate treatment method at the Atlantic Neuroscience Institute Epilepsy Center. Overlook Medical Center is the primary location for these services, with pediatric services primarily at Morristown Medical Center. ▶

For additional information, contact the Epilepsy Center at 908-522-4990.