

APH Epilepsy Surgery Evaluation Guidelines for Parents

Phase I Admission – a series of tests to determine the child’s type of seizures or epilepsy syndrome. The goal is to locate where in the brain the seizure activity starts.

- The primary neurologists will schedule a 24-72 hour EEG in the Pediatric Epilepsy Monitoring Unit (**PEMU**).
- **EEG Monitoring** – this is continuous EEG recording with simultaneous video recording.
- **MRI** – Magnetic Resonance Imaging
This provides a detailed physical picture of the brain. This test requires the child to remain still for approximately 45 minutes. Some causes of seizures are associated with a physical abnormality that is visible on the picture.
- **SPECT** – Single Photon Emission Computerized Tomography – Interictal and Ictal Scans
This is a diagnostic imaging technique. This testing localizes the region of the brain responsible for seizures.
 - **Interictal SPECT** – this testing will be completed first. The child will be admitted to the PEMU or as an outpatient for EEG monitoring. The child will be given a radiotracer through an IV. The EEG monitoring will be stopped and the electrodes will be removed.
The testing will take 45 minutes to one hour. Once the test is completed the child will return to the PEMU or outpatient area.
 - Sedation or Sleep medicine - The nuclear medicine technologists will assist in scheduling the scan with anesthesiology, whom are pediatric trained doctors who will give your child the medicine should this be needed. The child will not be able to eat before SPECT scan if sedation is necessary. Your child must avoid caffeine consumption for 24 hours prior to the scan.
 - **Ictal SPECT** – this testing is the second phase of SPECT. The child will be admitted to the PEMU for EEG monitoring. The testing will be performed Monday-Friday between 7 a.m. – 7 p.m. The Nuclear Medicine Technologist will be notified and available in the PEMU.
The child will be given a radiotracer through an IV when a seizure begins. The testing will take 45 minutes to one hour.
 - 24 hours must be given between performing Interictal and Ictal SPECT testing.
- **Neuropsychology Testing** – A neuropsychological evaluation is a formal assessment of cognitive abilities (memory, concentration, and problem solving), mood, and personality that is conducted by a neuropsychologist. The testing will take approximately 5-6 hours.
- **fMRI** - Functional Magnetic Resonance Imaging – Is a noninvasive test that maps important functional areas of the brain, such as motor and speech. This procedure combines scanning and neuropsychological testing techniques to identify regions of brain functions. The brain is scanned using an MRI machine while the child is asked to perform certain tasks and answer questions. The scan highlights areas of increased blood flow, indicating active areas of the brain.
- Upon completion of the Phase I testing, the primary neurologists will present the child’s case at the **APH Epilepsy Conference** for interdisciplinary review. The neurologists will follow up with the parents in regards to recommendations for surgery.

Phase II Admission - is preparation for epilepsy surgery.

- The child will be admitted by the primary pediatric Neurosurgeon to T3 Pediatric Neuro. Unit. We ask that a parent or adult be present throughout the entire hospital stay.
- The Interdisciplinary team will be notified upon admission to the hospital - Primary Neurologists, Epileptologists, Intensivists, Anesthesiology, General Surgery, Child Life, Social work and the Neuroscience Clinical Coordinator.
- Contact the Neuroscience Clinical Coordinator for assistance – 321-841-8138