

**American Academy of Neurology
Epilepsy Section
Resident Core Curriculum**

10/9/00

1. Goals and Objectives

The graduate should be able to diagnose and care for patients with epilepsy, including those with complications and diagnostic uncertainties; apply outpatient and inpatient EEG evaluation to the management of patients with seizure disorders; and consider, provide, or organize appropriate treatment.

2. Content of subjects to be learned

a. Clinical epileptology

- Epidemiology of epilepsy including risk factors, age distribution, onset.
- Genetics of epilepsy.
- Classification of seizures and of the epilepsies, including the semiology of partial and generalized seizures, characteristics of onset in different cortical areas, and accompanying EEG, imaging, demographic, and clinical findings.
- Prognosis of epilepsies.
- Treatment of new onset epilepsy.
- Identification and treatment of convulsive and non-convulsive status epilepticus, including general anesthesia, nonpharmacological management, airway protection, cardiovascular stabilization.
- Knowledge of treatment options for refractory epilepsy such as surgery, vagus nerve stimulation, ketogenic diet, experimental drugs, and their appropriate patient populations.
- Understanding and approach to managing seizures in special situations (symptomatic seizures, febrile seizures, first seizures, neonatal seizures, seizures in pregnancy and in the elderly).
- Termination of AED treatment in chronic epilepsy.
- Understanding the application of, interpretation of, and indications for diagnostic studies common to, or specific for, epilepsy and its classification (including routine/sleep deprived EEG, provocative techniques, ambulatory EEG, video/EEG monitoring, sleep studies, MRI, functional neuroimaging, neuropsychological evaluation, prolactin level).

b. Antiepileptic drugs

- Principles of pharmacokinetics and pharmacodynamics and application to interactions among AEDs and with other drugs.
- Differential efficacy of each AED for each seizure type and/or epilepsy syndrome.
- Mechanisms of action of major traditional and newly approved AEDs.
- Side effect profiles, end organ toxicities, dose dependent and idiosyncratic reactions.
- Lab monitoring of AEDs; drug levels and other surveillance tests.
- Epilepsy and the use of AEDs in women and in pregnancy, including issues of birth control, teratogenesis, epilepsy effects on fetal development and on seizures.

c. Science of epilepsy

- Neuropathology of epilepsy.
- Mechanisms of epileptogenesis.

d. Knowledge of surgical evaluation and treatment

- Application and evaluation of: temporal and extra-temporal epilepsy, infantile spasms, hemispheric disorders, symptomatic generalized epilepsy and acquired epileptic aphasia for surgical treatment.
- Assessing the adequacy of medical trials as well as the relative risks of surgery and refractory epilepsy.
- Using video/EEG monitoring (including subdural and intracerebral recordings), cognitive assessment, and neuroimaging techniques, (magnetic resonance imaging (MRI), functional MRI and MR spectroscopy; positron emission tomography; and single photon emission computed tomography) for localization.
- The various surgical approaches and their success, impact on quality of life, indications, appropriate evaluation and follow-up procedures (including temporal or extratemporal procedures, multiple subpial transection, corpus callostomy, functional hemispherectomy, vagus nerve stimulation).