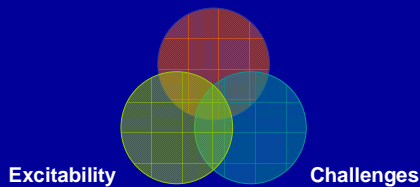


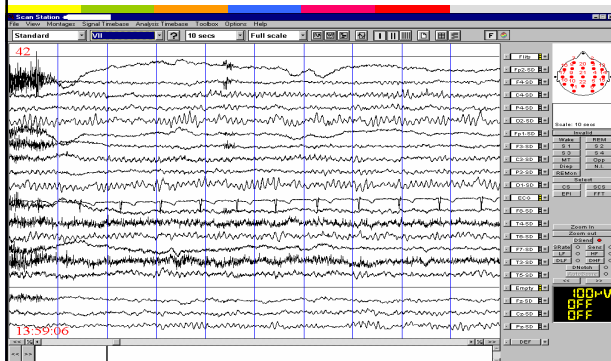
Clinical appearance



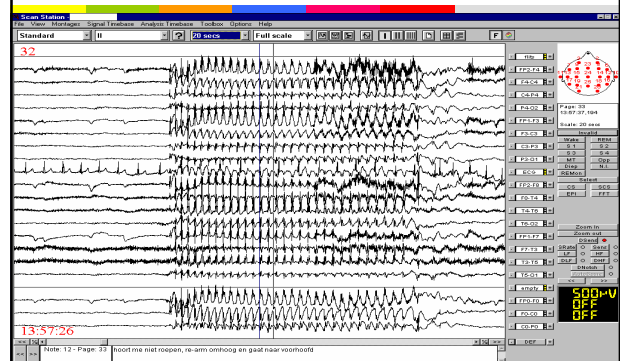
I Clinical Appearance

- Definition > 2 recurrent unprovoked seizures (seizure recognition course)
- Multidimensional disease
 - Societal/cognitive/medical impact
 - Etiology
 - Epilepsy syndromes
 - Seizure type / EEG characteristics

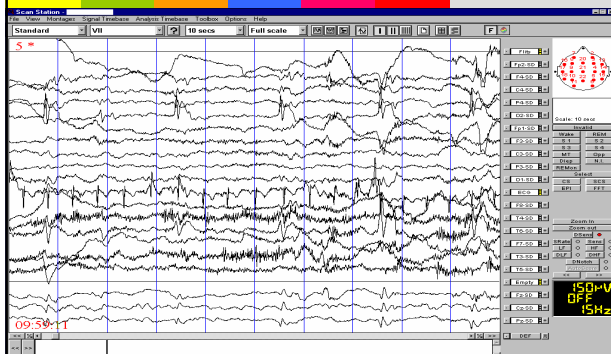
Seizure/EEG characteristics Normal EEG



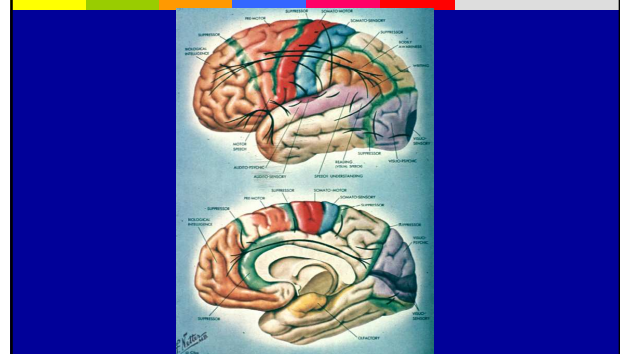
Seizure/EEG characteristics Absence



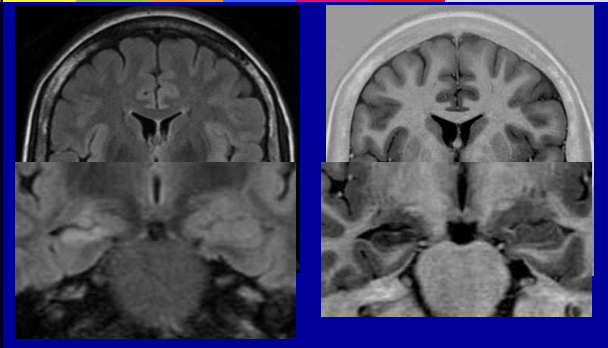
Seizure/EEG characteristics Focal spike wave



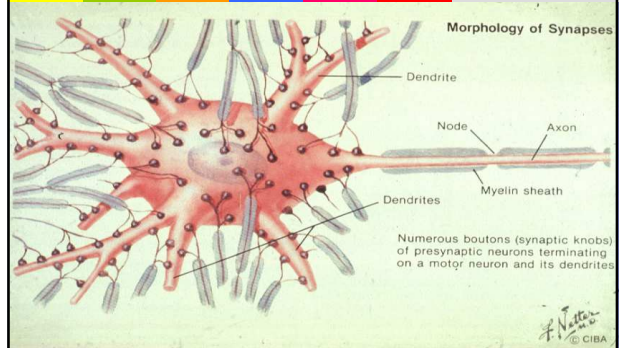
Seizure/EEG characteristics Semiology



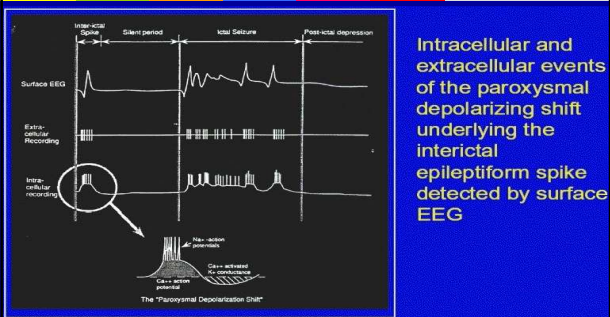
Epilepsy Syndromes / Etiology MesioTemporal Sclerosis: FLAIR en IR



II Excitability

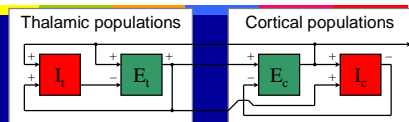


Paroxysmal Synaptic Depolarization



Ayala et al., 1973

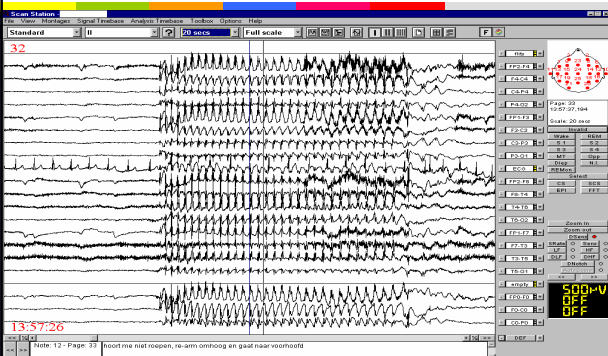
Cortico-thalamic interactions (Steriade)



Scalp EEG

- Thalamic populations
 - Thalamocortical neurons
 - Reticular neurons
- Cortical populations
 - Corticothalamic neurons
 - Cortical interneurons

Excitability network 3 Hz spike-waves



III Challenges

- Clinical appearance
 - Diagnosis:** detection, monitoring and prediction of seizures, etiology
 - Therapy resistance:** electrical stimulation, closed loop drug application improved presurgical analysis
 - Cognitive Impact:** short and long term functional consequences
- Excitability
 - General versus local excitability
 - Networks (EEG, f-MRI)