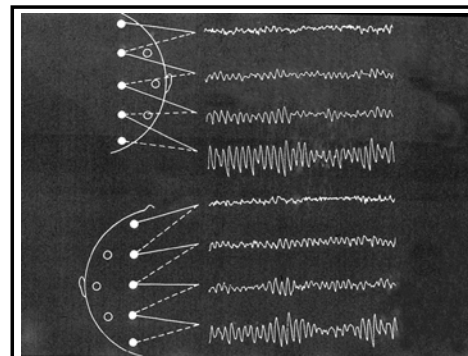
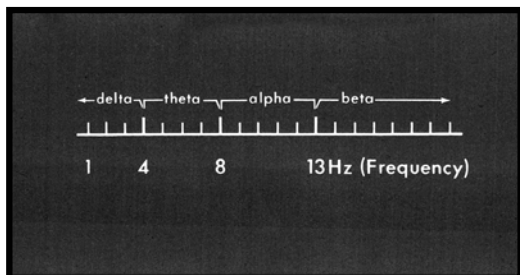
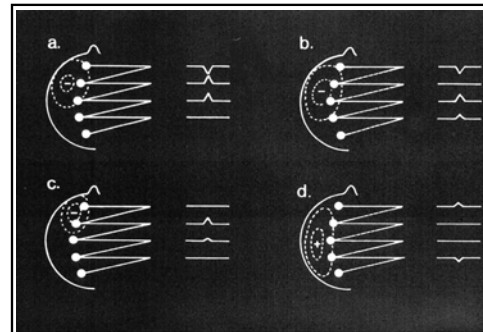
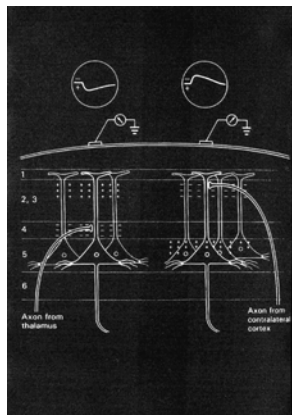
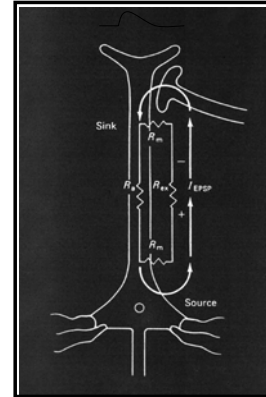
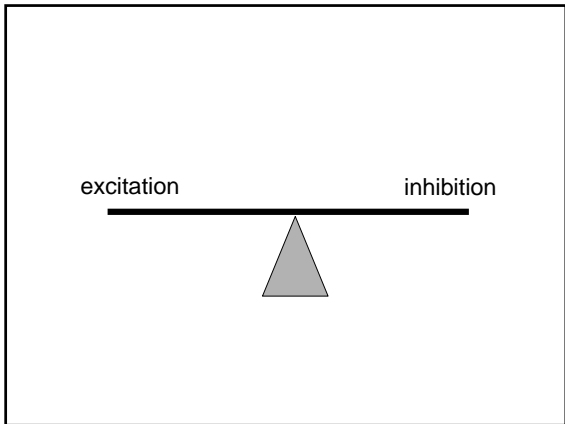
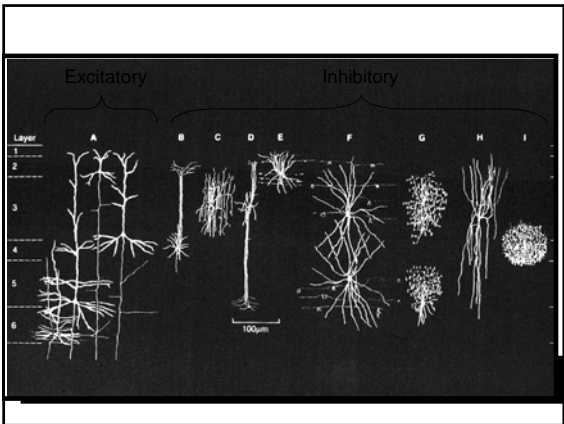
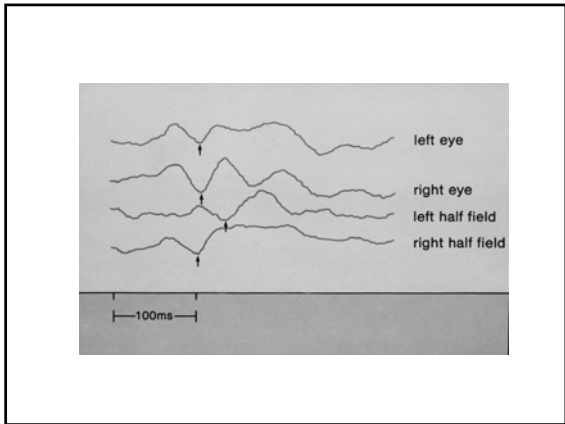
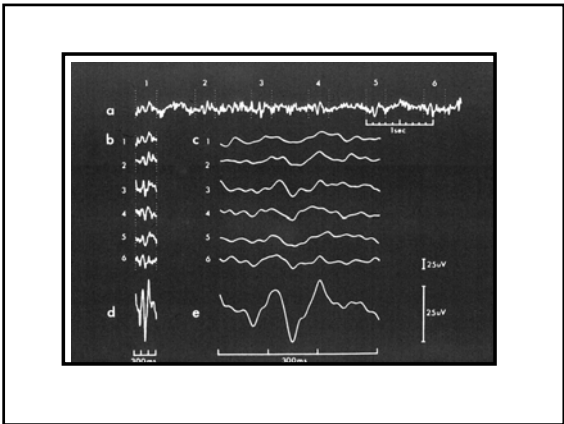
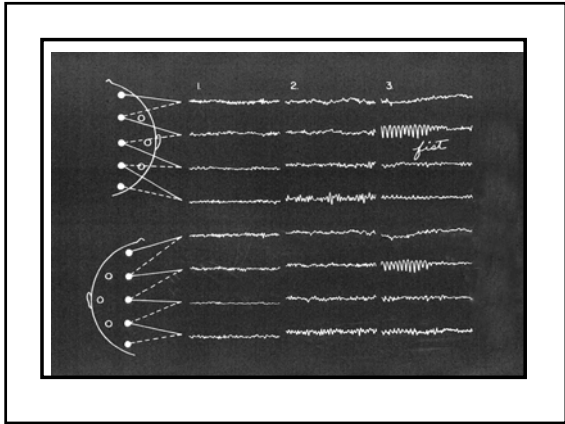
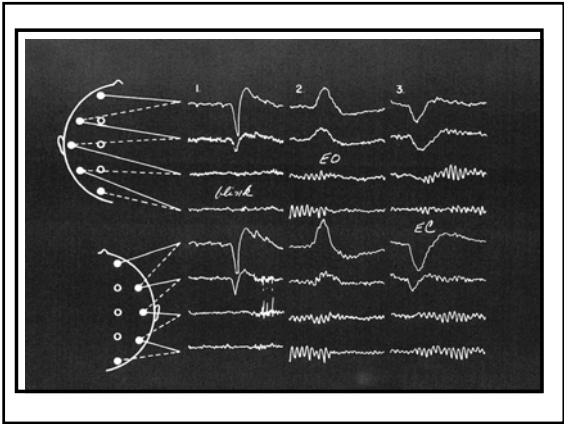
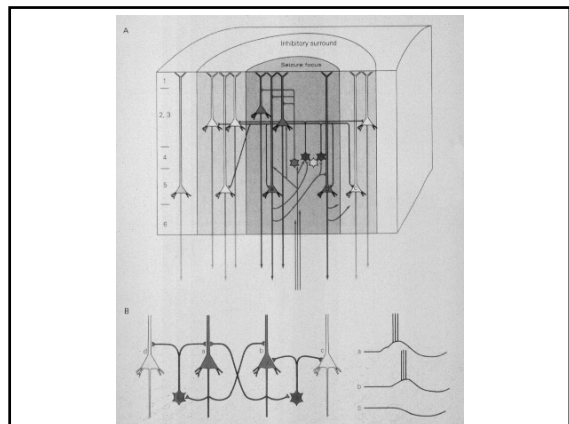
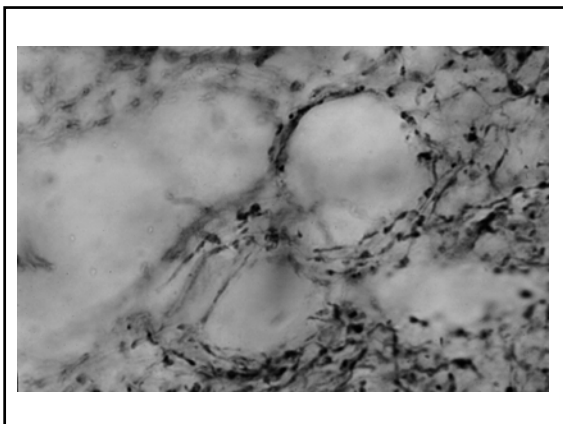
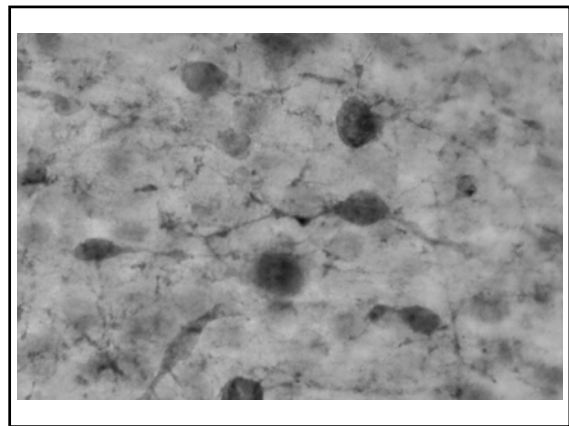
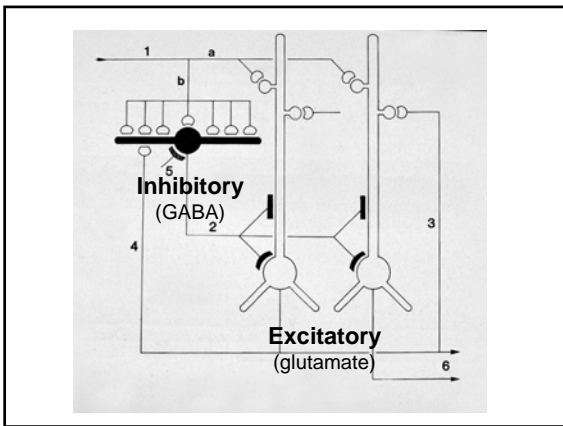
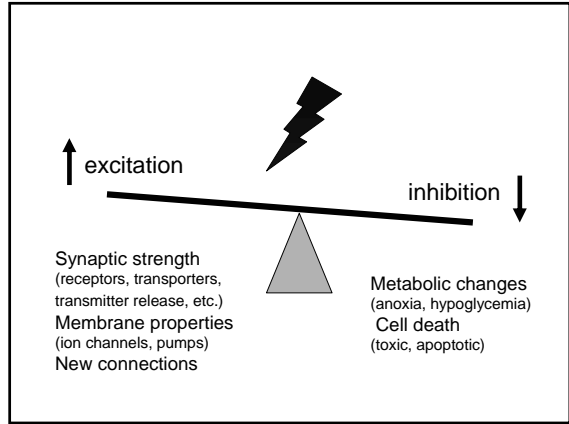
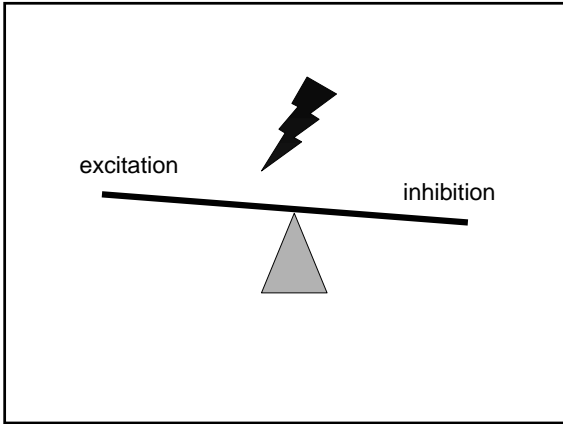
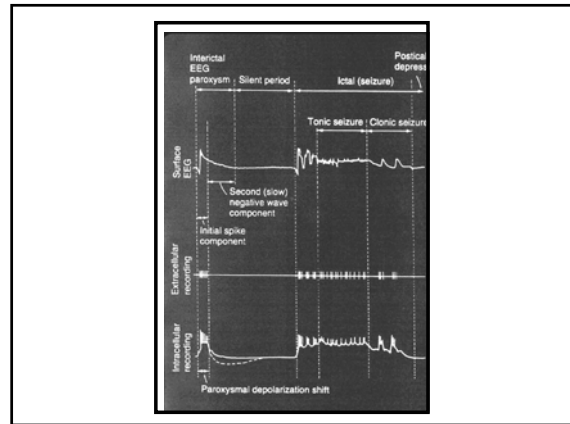
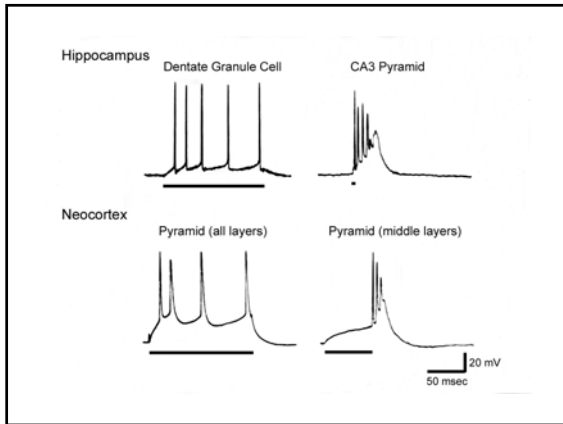


FIGURE 145. Hans Berger first recorded the electrical activity of the brain through the intact skull and discovered and named the electroencephalogram.



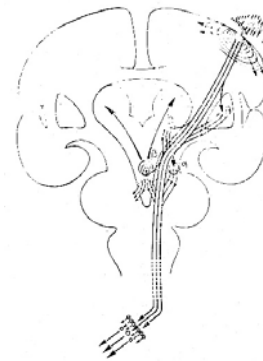






Classification of Epilepsy

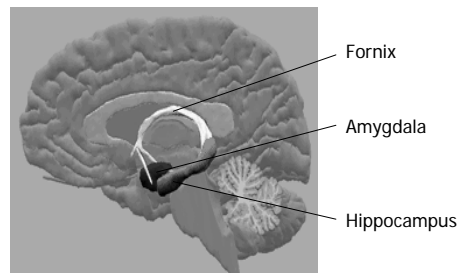
- Generalized
 - Convulsive (grand mal)
 - Nonconvulsive (petit mal)
 - Myoclonic
 - Febrile
- Partial (focal)
 - P. seizures with elementary symptoms
 - P. seizures with complex symptoms
 - P. seizures with secondary generalization

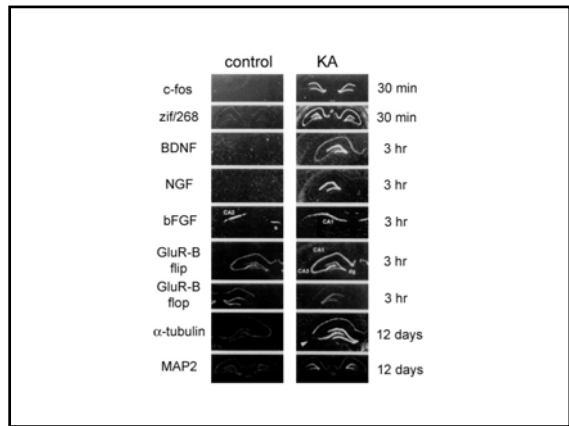
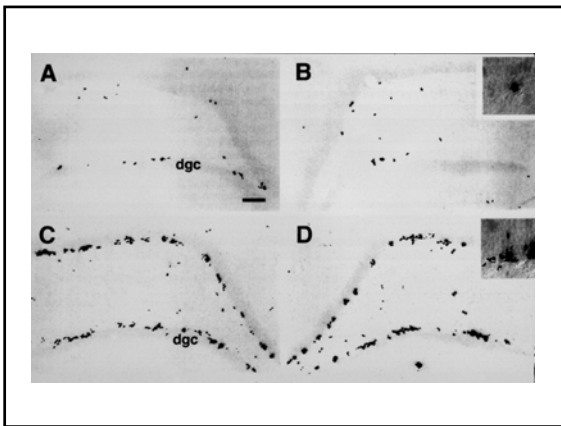
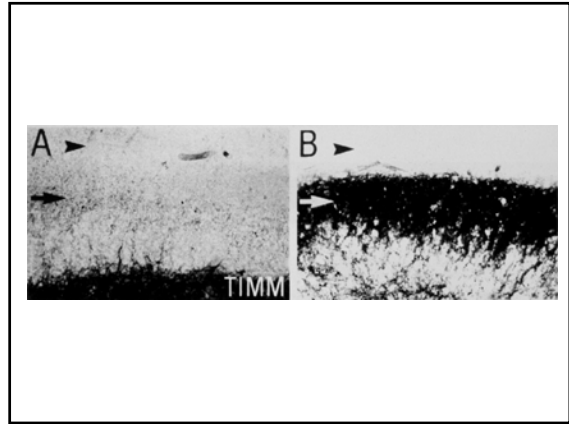
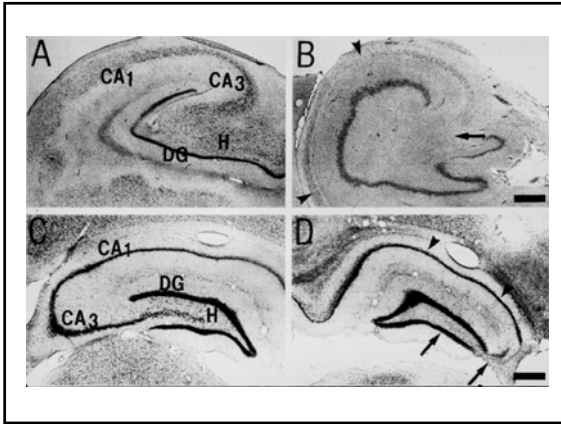


Complex partial seizures -localization

- Orbital frontal
Olfactory hallucinations, autonomic phenomena.
- Anterior temporal, amygdalar
Lip smaking, forced searching, blank staring, epigastric distress, respiratory irregularity.
- Posterior temporal
Auditory, vestibular, and visual phenomena.
- Temporal, limbic
Dysmnestic states (déjà vu, j'amais vu), dream states, mind-body dissociation, fear, panic, and anxiety.

Hippocampus





Insights from genetics

- Mendelian inheritance
 - Neonatal convulsions
 - Nocturnal frontal lobe epilepsy
 - Progressive myoclonic epilepsy
 - Cortical malformation syndromes
- Complex inheritance (alters synaptic function, ion channels, neuronal structure)

Most epilepsies

Molecular genetics of idiopathic epilepsies

Disease	Mode of Inheritance	Gene
Generalized epilepsy with seizures plus	AD	Na ⁺ channel (β 1 subunit)
		Na ⁺ channel (α 1 subunit)
Benign familial neonatal convulsions	AD	K ⁺ channel (KCNQ2)
		K ⁺ channel (KCNQ3)
Autosomal dominant nocturnal frontal lobe epilepsy	AD	nACh receptor subunit

Lord, have mercy on my son, for he is an epileptic and he suffers terribly; for often he falls into the fire, and often into the water, And I brought him to your disciples, And they could not heal him.

- Matthew 17:15-16



Both Pat and Shirley believe that exorcism is a much-too-neglected therapy for the epileptic, “What we call fits - seizures and epilepsy today” he explained, “Jesus recognized as possession by demons. Jesus saw epilepsy for what it is - the work of Satan.”

- Pat Boone Believes in Miracles
McCalls Magazine, February 1973, p. 122



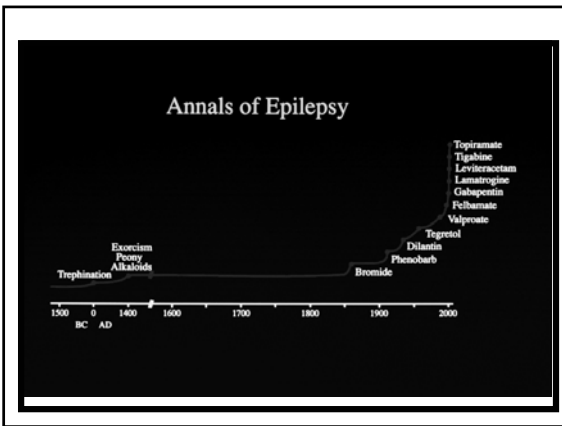
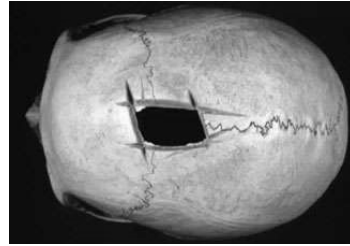
Two mandrake plants from the Codex Neapolitanus, written about A.D. 780, supplement, p. 26 of the Bibliotheca Nazionale in Naples. The mandrake pictures of the Wiener Dioskorides probably looked similar.



The Ginseng root is the East Asiatic counterpart of the mandrake. It contains vitamins, volatile oils and glycoside as active ingredients. From a Chinese reference book on healing herbs, *Yen Tzu Kang Mo* (1907).



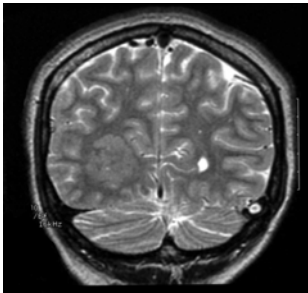
Trephination was practiced in the Old and New world 7,000 - 3,000 B.C.



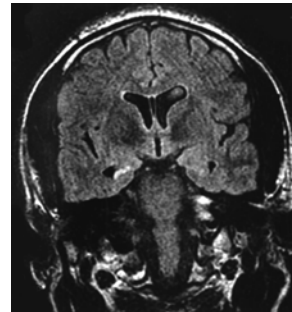
Pharmacotherapy

- ↓Burst firing (Na^+ channel blockade)
Phenytoin, Carbamazepine, Felbamate, Topiramate
- ↑Inhibition (GABA potentiation)
Barbituates, Benzodiazepines, Valproate, Gabapentin, Tiagabine, Topiramate
- ↓Coupling (Glutamate receptor antagonist)
Topiramate, Felbamate

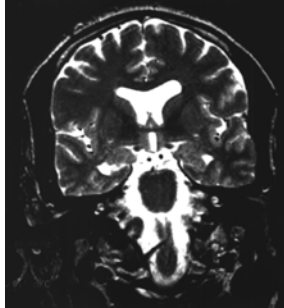
Neuroimaging



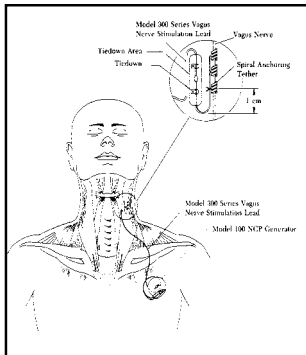
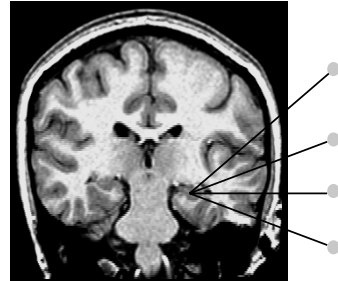
Neuroimaging:
mesial temporal lobe sclerosis (Flair)



Neuroimaging: MTS (T2)



Gamma Knife Surgery



Cyberonics, Webster, Texas

Figure 1: The Vagus Nerve Stimulator: NCP 101 generator (with leads attached). Reprinted with permission of Cyberonics, Webster, Texas.



Tacuinum sanitatis, 15th century, Rx for insomnia



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