Mechanisms of Actions of Drugs

- **Phenytoin (Dilantin)**-
  - Selective inhibition of sodium channels inhibiting entry of $\text{Na}^+$ into nerve membranes

- **Carbamazepine (Tegretol)**
  - Same as phenytoin

- **Valproic Acid (Depakote)**
  - Blockade of sodium channels
  - Suppresses calcium influx
  - Augments inhibitory action of GABA
Mechanisms of Actions of Drugs

• Phenobarbitol (a barbiturate which produces generalized suppression of CNS). Can reduce seizures without causing sedation
  – Potentiates the action of GABA by binding to the GABA receptors and causing the receptors to respond more strongly to GABA itself

• GABA- gamma-aminobutyric acid
  – An inhibitory neurotransmitter widely distributed throughout the brain. Activation of GABA increase inhibitory action
  – Benzodiazapines and barbiturates increase GABA by binding to GABA receptors-- Gabapentin acts by promoting GABA release-- Vigabatrin inhibits enzyme that degrades GABA-- Tiagabine inhibits GABA reuptake