- **barbiturates depress neuronal activity by increasing membrane ion conductance *(primarily chloride)*, reducing glutamate-induced depolarizations and potentiating the inhibitory effects of GABA**
- **compared with benzodiazepines, the barbiturates exhibit a steeper dose-response relationship**
- **barbiturates may precipitate acute porphyria in susceptible patients**

*** The first statement is false**;** barbiturates may **decrease** the half-lives of drugs metabolized by the liver. Barbiturates induce the formation of the liver microsomal enzymes that metabolize drugs. This leads to an increased clearance of the affected drugs and possibly leads to a decrease in the drugs effectiveness.

The uses of the barbiturates are determined by their duration of action:

1. The **ultrashort-acting** agents are used intravenously for the induction of general anesthesia. For extensive procedures, they are used to induce stage III surgical anesthesia. For very brief procedures, they may be used alone.
2. The **short-acting agents** can be used orally for their hypnotic, calming effect. These agents can be given preoperatively, before a dental appointment, to allay anxiety.
3. The **intermediate-acting agents** can also be prescribed to relieve anxiety before a dental appointment, although their effects will last longer than those of the short-acting agents. These agents are used for daytime sedation and for the treatment of insomnia *(they suppress REM sleep)*.
4. The **long-acting barbiturates** are used primarily for daytime sedation and the treatment of epilepsy.

Generally the **primary pharmacological effects** of the barbiturates involve the brain and spinal cord *(CNS — depression of)*. At sedative doses barbiturates do not effect or have little effect on the cardiovascular and respiratory systems. Barbiturates are **metabolized in the liver.** The chronic use of the barbiturates causes an increase in liver microsomal enzyme activity that appears to be the result of increased synthesis of enzyme. These drugs possess **serious drug dependence potential.** They **do not possess** significant analgesic properties.