1. Overview of drug distribution  
2. Explain apparent volume of distribution with clinical implications  
3Discuss drug binding to plasma proteins and tissues with clinical implications  
4. Discuss plasma half-life and its clinical implications  
5. Explain redistirbution

**OBJECTIVES**

Basic PK Definitions and Principles

Volume of distribution (Vd)

Elimination constant (Ke) and half-life (t1/2)

“Steady state”

Loading dose

Volume of Distribution

* A proportional constant that relates the amount of drug in the body to the serum concentration
* If you know a drug’s Vd, you can determine how much of the drug should be given to achieve a desired plasma concentration.

**FACTORS AFFECTING THE RATE OF DRUG DISTRIBUTION**

* **LIPID SOLUBILITY (Kp)**
* **IONISATION CONSTANT**
* **MOLECULAR WEIGHT**
* **BLOOD FLOW**

1 LIPID SOLUBILITY  
  
2. PROTEIN BINDING  
  
3. TISSUE BINDING  
  
*FREE DRUG IS ACTIVE  
BOUND DRUG IS INACTIVE*

FACTORS AFFECTING THE EXTENT OF DRUG DISTRIBUTATION

THANK YOU