

Factors affecting absorption

related to pt

related to drug

Route of administration

Water + lipid solubility

IV + inhalation > IM > S.C >

$\frac{\text{Lipid}}{\text{Water}}$ partition co magnitude \propto absorption

Oral > topical (gingiva)

Absorbing surface

Pharmaceutical Preparation

Vascularity direct correlation

Dosage form solution > suspension > tablet

surface area = =

shape, size of particle + rate of

pathological conditions

disolution of tablet

Diarrhea \downarrow oral absorption

Excipient (filler) ... مواد تضاف للمواد الفعالة

Systemic circulation

Ionization of the drug

shock \downarrow oral + SC

ionization \downarrow lipid solubility

absorption

Uncharged / Non ionized $\uparrow\uparrow$ absorption

Specific factor

depend on pKa of drug + pH of medium

why gastric sleeve pt take

- NR₄⁺ \rightarrow ionized \rightarrow poor absorption

vitamin B12 IV? such

- streptomycin have +3 charge \rightarrow ionized

surgery leads to intrinsic

always \rightarrow not absorbed

factor deficiency ...

Co-administration of other

Weak acids absorbed in acidic media

drugs + food

base = = basic

avoid Ca²⁺ with antibiotics ...

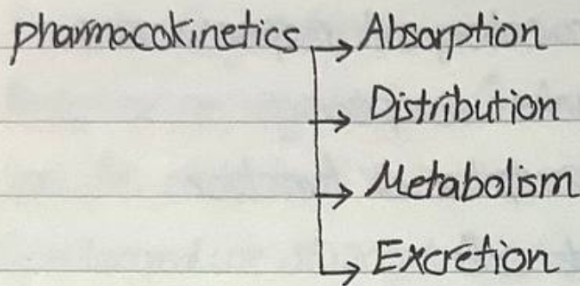
pKa: the pH at which

take adrenalin SC + local anesthetics

[ionized forms] = [unionized one]

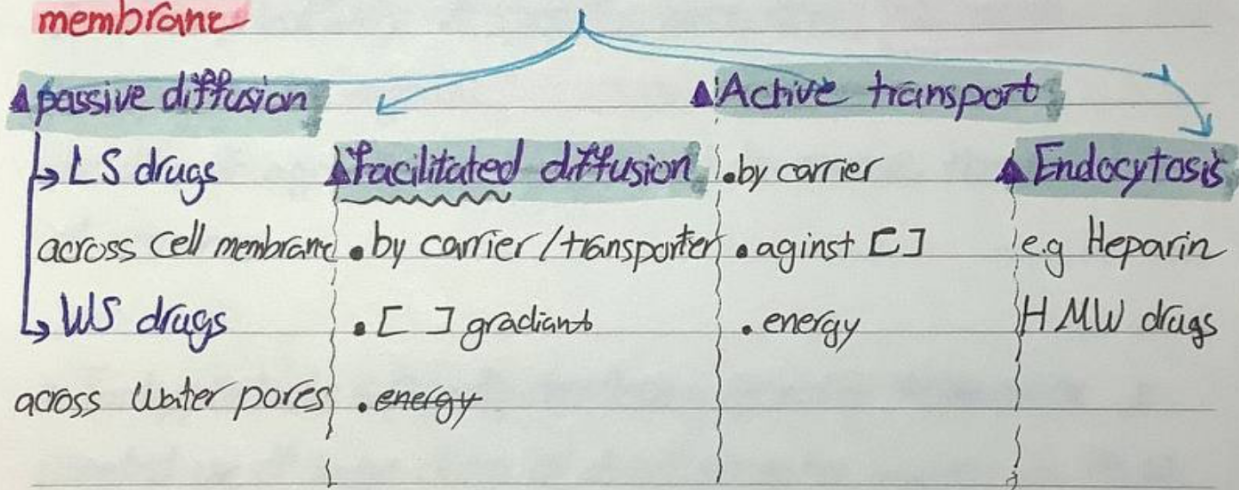
NO

Date: Lec: pharmacokinetics - 1. What body does to drug?



Absorption: passage of drug from site of administration to systemic circulation

Mechanism of Absorption / How drug cross biological membrane



*** Bioavailability: (F)**

percentage of drug that reaches the systemic circulation and becomes available for biological effect

$$F = \frac{AUC_{oral}}{AUC_{IV}} \times 100$$

F is affected by → 1st pass metabolism → Hepatic
 → Intestinal
 → pulmonary
 → extent of drug absorption