DEFINE BIOAVAILABILITY: it is percentage of drug reach systemic circulation and become available to do biological effects.–particle size 2–PHARMACEUTICAL FACTORS –Dosage form and formulation variables –Dissolution rate 3–PHYSIOLOGICAL FACTORS –Effect of GIT fluids –GI Transit –First pass effect –Absorbing surface –Diseased state Physical factors pka : at pH = to pKa 50% of ionized form drug and 50% of unionized form of drug which is readily absorbed.Pharmaceutical factors –Dosage form and formulation variables Absorption of aqueous solution >oily solution>oral solid dosage form – Dissolution rate : increase in dissolution rate lead to increase of bioavailability Physiological factors – effect of GIT fluids Mucin forms complex with some drugs lead to decrease bioavailability.–GI transit time Delyed gastric emptying time lead to reduced absorption of aspirin Food lead to prolong gastric emptying time Food decrease absorption of amoxil, penicillin and cephalexin.Some drugs that are greatly effected by first pass metabolism: Morphine, Propranolol, Diazepam, Midazolam, Cimetidine, Lidocaine.First pass effect via hepatic portal system Lead to small fraction of drug reach systemic circulation.means reduced bioavailabilty.FACTORS AFFECTING BIOAVAILABILITY: 1–PHYSICAL FACTORS –pKa –partition coefficient.E,g Griesofulvin.