



Food-Drug Interactions

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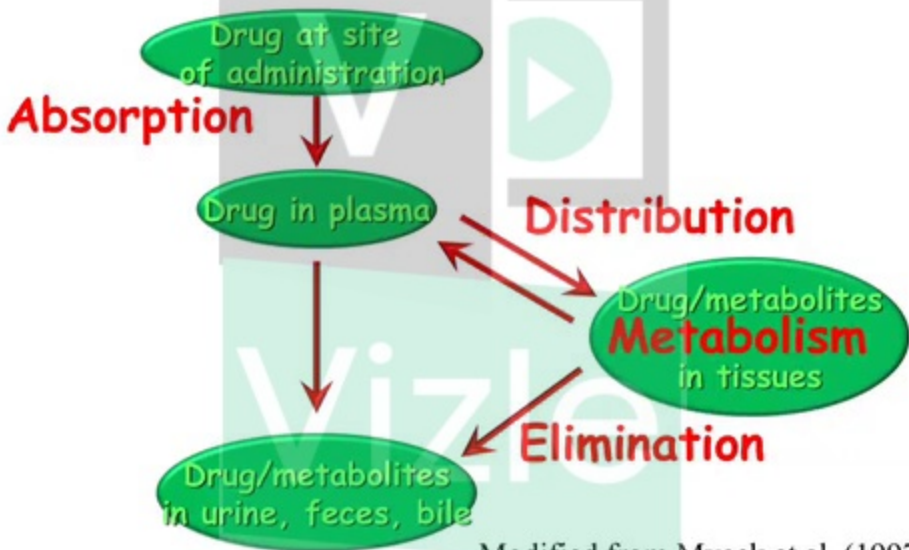
Agenda

- Pharmacology Primer
 - Pharmacokinetics
 - Pharmacodynamics
- Types of Food-Drug Interactions
 - Effects of food on absorption
 - Effects of food on metabolism
 - Specific food-drug Effects

The Basis for Food-Drug Interactions

- Adverse Food-Drug responses occur primarily occur via pharmacokinetic interactions
- A few occur as a result of pharmacodynamic interactions
 - Let's take a minute to review these differences ...

What is 'Pharmacokinetics'?



Modified from Mycek et al. (1997)



Food-Drug Interactions That Affect Absorption

This is the most frequent type
of food-drug interaction

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Mechanisms by which food may alter Drug Absorption ...

- Chelation

- Formation of insoluble complexes
 - Eg: DAIRY and TETRACYCLINE
 - Decreases absorption

- Adsorption

- Formation of complexes that cannot be transported
 - Eg: HIGH FIBRE and DIGOXIN
 - Again, decreases absorption



Food-Drug Interactions and Absorption

- Cannot always predict how a food will affect drug absorption
 - Food may increase, decrease or have no effect
 - Food stimulates stomach acid secretion, increases gastric emptying, and slows intestinal motility
 - Any of these can affect solubility and/or absorption
- Meal **COMPOSITION** may also affect absorption

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Drugs to be Taken on an EMPTY Stomach

- Antihistamines
 - Eg: Allegra, Claritin, Hismanal, Zyrtec
- Analgesics/Antipyretics
 - Eg: Acetominphen (Tylenol)
- Food generally
DECREASES absorption
- Food will delay absorption



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