

## **Medication Administration: Class Preparation**

### **Pharmacokinetics of an Oral Medication**

#### **Nursing 101 Fall 2021**

**GI SYSTEM:** The oral medication reaches the systemic circulation through the GI system. As a result, numerous factors can affect the absorption of the pill.

Questions:

1. A client is experiencing diarrhea. How could this affect absorption of an oral drug?  
For the drug to be absorbed it needs to be in the GI tract for a certain amount of time but if the client has diarrhea, then the contents of the GI tract will be eliminated much sooner than they should be.
2. How could the presence of food in the stomach affect the rate of absorption?  
The presence of food in the stomach can slow/delay the rate of absorption.

**CARDIOVASCULAR SYSTEM:** Once the pill is absorbed into the bloodstream, it is carried or delivered to the sites of pharmacologic action where the drug produces its effects.

Question:

3. How do you think the distribution of the oral medication affected if a client has less than normal cardiac output? The distribution of an oral medication by a client who has decreased cardiac output will be altered. It would take longer for the medication to get to the needed parts of body.

**LIVER:** Most biotransformation takes place in the liver. Any decrease in the ability of the liver to metabolize medication could lead to an accumulation of the active drug in the bloodstream. This could put the client at risk for toxic effects and adverse reactions.

Questions:

4. How might nutritional status affect metabolism? A good nutritional status affects metabolism of medications because it allows the drug to have something to adhere to.
5. What factors influence the rate of medication metabolism? Age, nutritional status, and an increase in some medications.

**KIDNEYS:** Drug excretion/elimination occurs mainly through the kidneys into the urine. If there is any impairment in kidney function, medications may not be excreted at the anticipated speed. Subsequent medication administration may lead to accumulation and potential toxicity.

Questions:

6. Why would very young and very old clients need to be closely monitored by nurse for signs and symptoms of drug toxicity? They need to be monitored because their body

function isn't the same as a normal adult. They don't have 100% kidney and liver function which would cause an accumulation of the drug in their body.

7. How can the nurse assess kidney function? To assess kidney function you can perform a ACR (Albumin to Creatinine ratio) and GFR (Glomerular filtration rate). Another way to check kidney function is to monitor input and output.