

## Pharmacokinetics Class Preparation

### Nursing 101

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?  
**It could prevent it from being fully absorbed.**
2. How could the presence of food in the stomach affect the rate of absorption?  
**It could slow the rate of absorption due to food being absorbed as well.**

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? **It could take longer to be distributed.**

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?  
**Poor nutritional status could slow down metabolism as the body tries to save what it can.**
5. What factors influence the rate of medication metabolism?  
**Liver disorders, liver failure**

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? **Their kidneys take longer to filter, therefore medication can build up.**
7. How can the nurse assess kidney function? **Urinalysis and blood test**