

**Mohsen A. Hedaya**

Editor PPT

- **Mohsen A. Hedaya, Pharm.D., Ph.D.**, is an associate professor at the Faculty of Pharmacy, Kuwait University, Kuwait. He received his BSc in Pharmacy (1980) from Tanta University, and his PharmD (1984), and PhD (1989) degrees from the University of Minnesota, USA. After completing his graduate studies under the supervision of Professor Roland Sawchuk, Dr. Hedaya was appointed in 1990 as a Lecturer of Clinical Pharmacy, Faculty of Pharmacy, Tanta University. In 1993, he joined the College of Pharmacy, Washington State University, USA as an Assistant Professor of Pharmaceutical Sciences. After returning to Egypt in 1999, he was promoted to the rank of associate professor and then to professor of Clinical Pharmacy. He served as the Chair of the Clinical Pharmacy Department and Vice Dean for Academic affairs at the Faculty of Pharmacy, Tanta University. Currently Dr. Hedaya works at the Faculty of Pharmacy, Kuwait University.

## Biography

- 1- Pharmacokinetic drug-drug interactions
- 2- Pharmacokinetic/pharmacodynamic modeling
- 3- Computer simulations and data analysis
- 4- Drug Delivery and distribution into the central nervous system
- 5- Therapeutic drug monitoring and clinical pharmacokinetics
- 6- Pharmaceutical applications of the microdialysis technique
- 7- Bioequivalence study design and data analysis
- 7- HPLC and LC/MSMS assay development and validation
- 8- Development of computer-aided instructional materials for pharmaceutical education
- 9- Assessment methods for instructional materials

## Research Interests

- Abdel-Hady E., El Hammamsy M., Hedaya M., and Awad H. "The Efficacy and Toxicity of Two Dosing-Regimens of Amikacin in Neonates with Sepsis" J Clin Pharm Therap, 36:45-52 (2011).
- Nada A.H., Zaghloul A.A., Hedaya M.H., and Khattab I.S. "Stability of Vitamin E and Vitamin E Acetate Containing Cosmetic Preparations" J Global Pharma Tech, 4:1-8 (2012).
- Hedaya M.A., and Helmy S.A. "Pharmacokinetic Interactions of Valsartan and Hydrochlorothiazide: An Open-Label, Randomized, Four-Period Crossover Study in Healthy Egyptian Male Volunteers" Clin Therapeutics, 35:846-861 (2013).

## Recent Publications

Pharmacokinetics, sometimes described as what the body does to a drug, refers to the movement of drug into, through, and out of the body.—the time course of its absorption

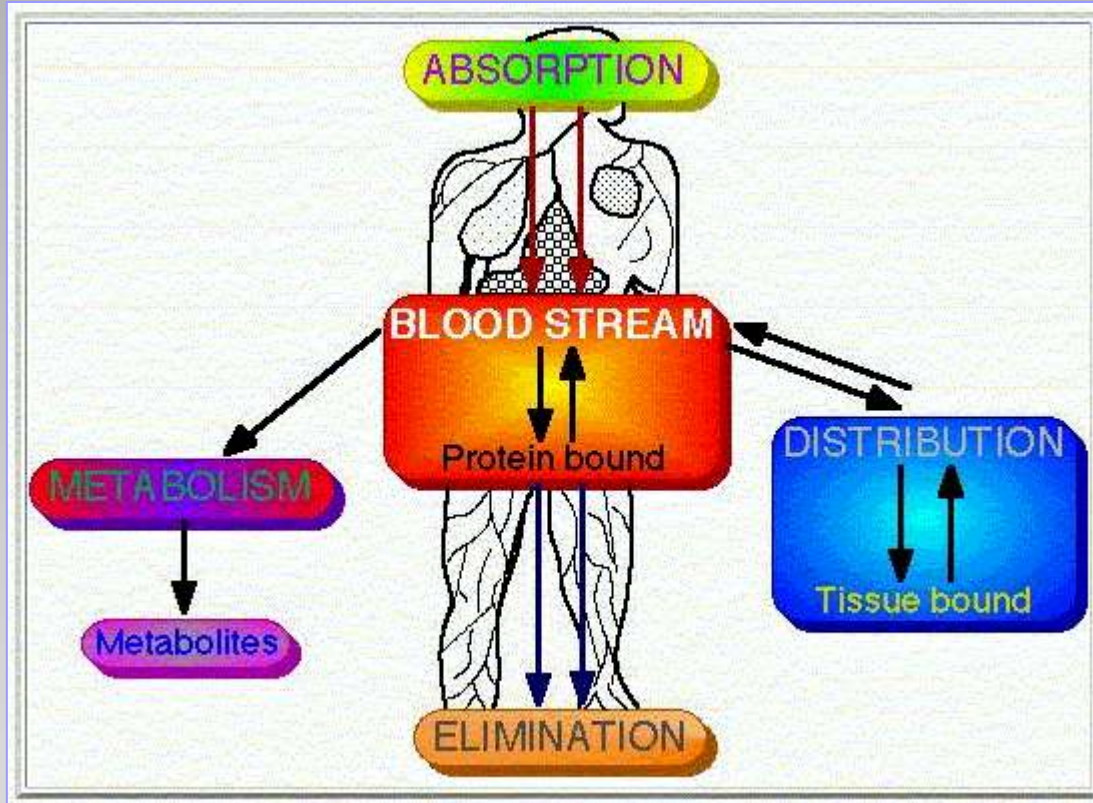
## **Pharmacokinetics**

# PHARMACOKINETICS

**“What the body does to the drug”**

# *Pharmacokinetics (PK)*

- ★ The study of the **disposition** of a drug
  - ★ The disposition of a drug includes the processes of **ADME**
    - **Absorption**
    - **Distribution**
    - **Metabolism**
    - **Excretion**
    - **Toxicity**
- } **Elimination**



**ADMET**



## DISCOVERY PHASE



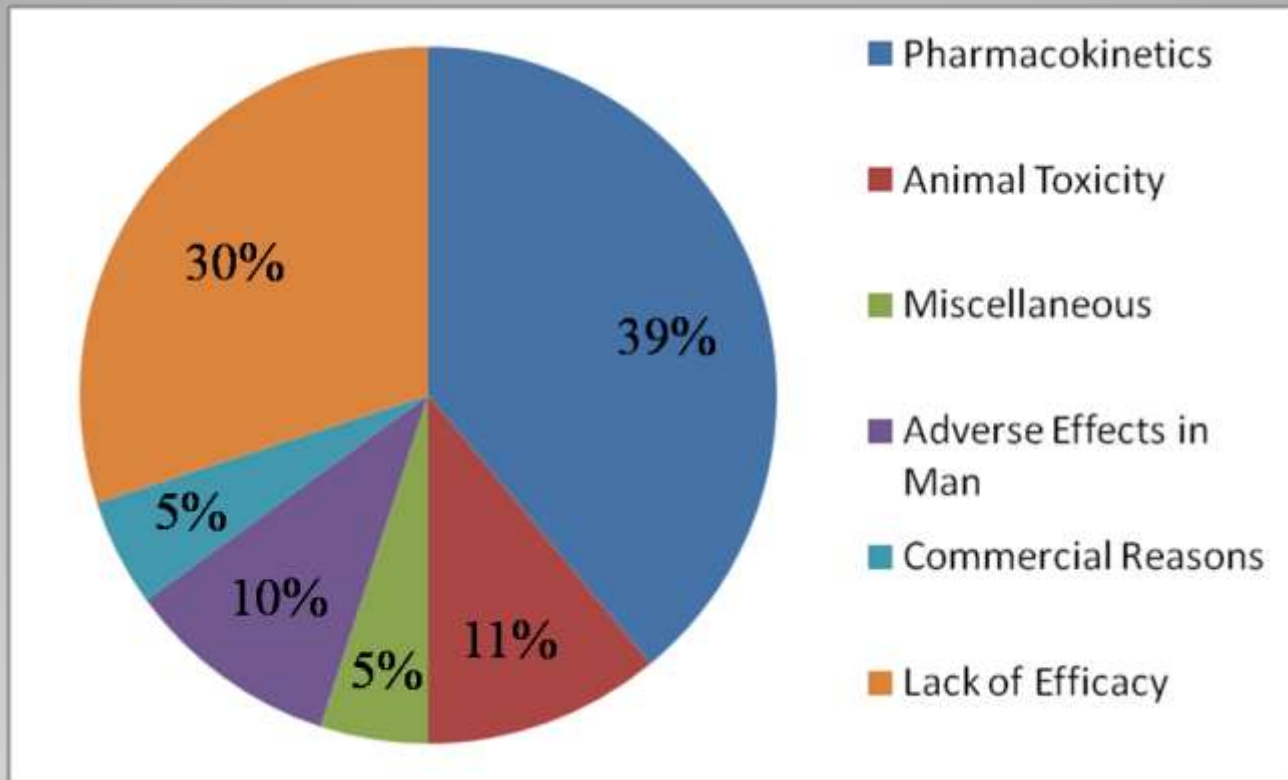
## DEVELOPMENT PHASE



## Drug discovery and development

- 10-15 years to develop a new medicine
- Likelihood of success: 10%
- Cost \$800 million - 1.5 billion

**DRUG R&D**



**Why drugs fail**



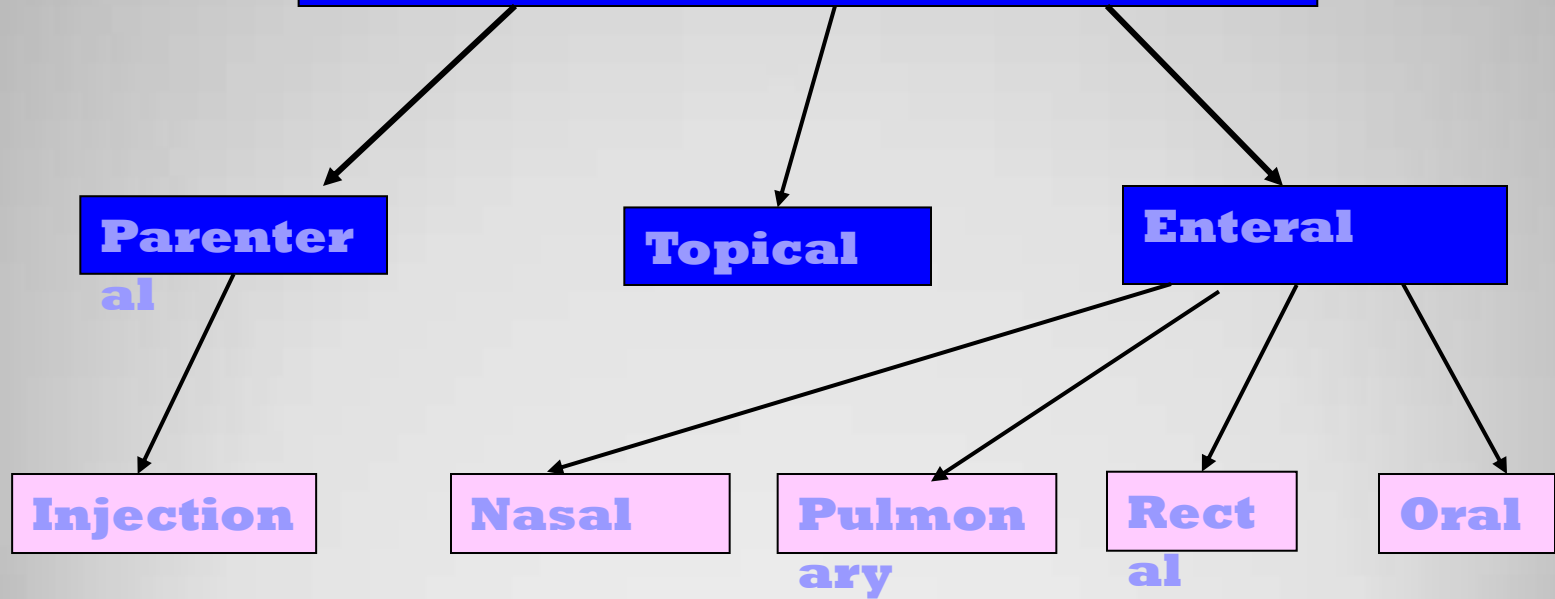
## **Patients may suffer:**

- **Toxic drugs may accumulate**
- **Useful drugs may have no benefit because doses are too small to establish therapy**
- **A drug can be rapidly metabolized.**

**Importance of PK studies**

# Routes Of Administration

## Routes Of Drug Administration



**Approved By**

**Editorial Board member:  
Mohsen A. Hedaya**

**E-signature:**

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