

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

Coimbatore -641035

COURSE NAME : PHARMACY PRACTICE (BP703T)

VII SEM / IV YEAR

TOPIC 4 : DRUG INTERACTION

DESIGN THINKING IN DRUG INTERACTION

DESIGN THINKING OF DRUG INTERACTION



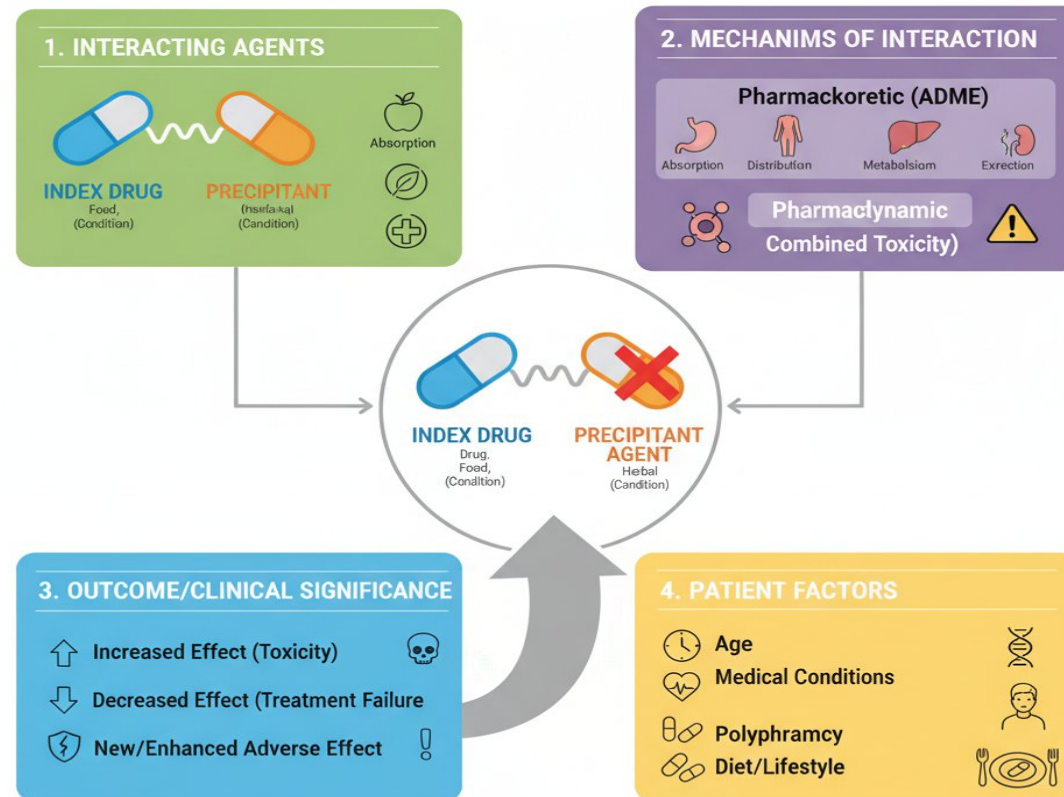
MINDMAP



Empathize

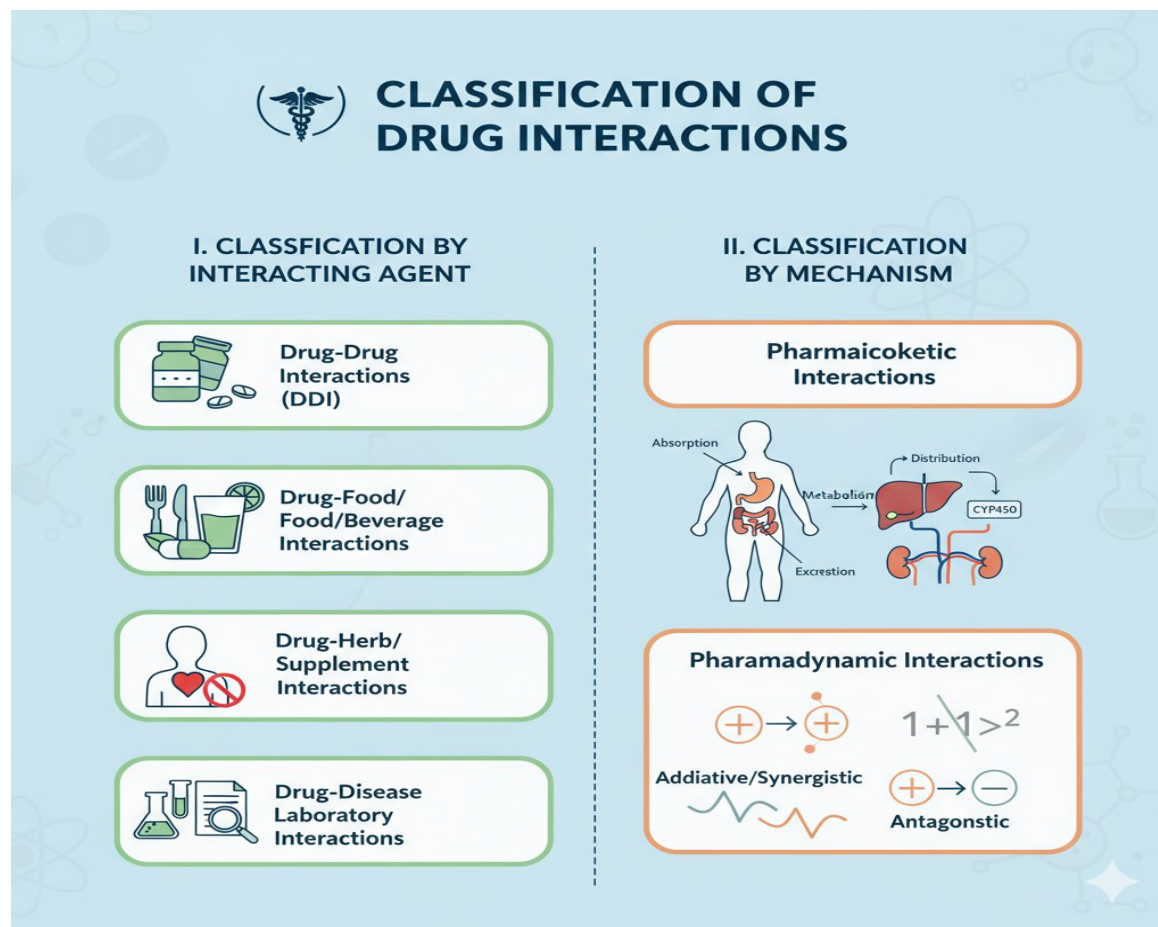
INTRODUCTION

DRUG INTERACTIONS: CORE ELEMENTS



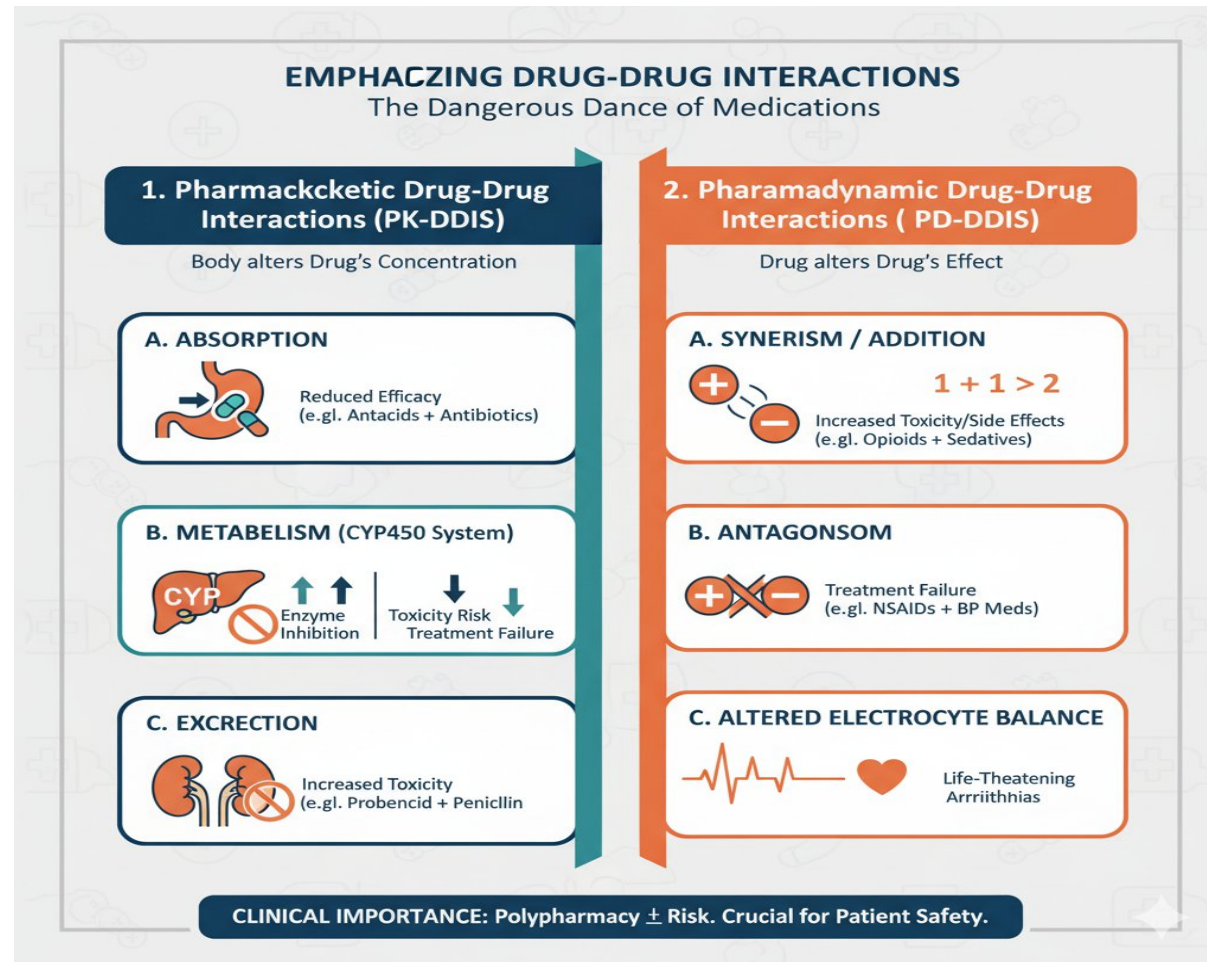
Empathize

CLASSIFICATION OF DRUG INTERACTIONS



Empathize

DRUG -DRUG INTERACTIONS



Empathize

DRUG INTERACTION

WHAT IS A DRUG INTERACTION?

When substances alter a drug's effects

DEFINITION



1. Effects altered by co-administered substance.
2. **Substances include:**
Meds, OTCs, Herbs, Herbs, Food, Disease.



CRITICAL OUTCOMES



Increased Toxicity
Dangerously high concentration/effects



Reduced Efficacy
Therapeutic benefit diminished.
Treatment failure.

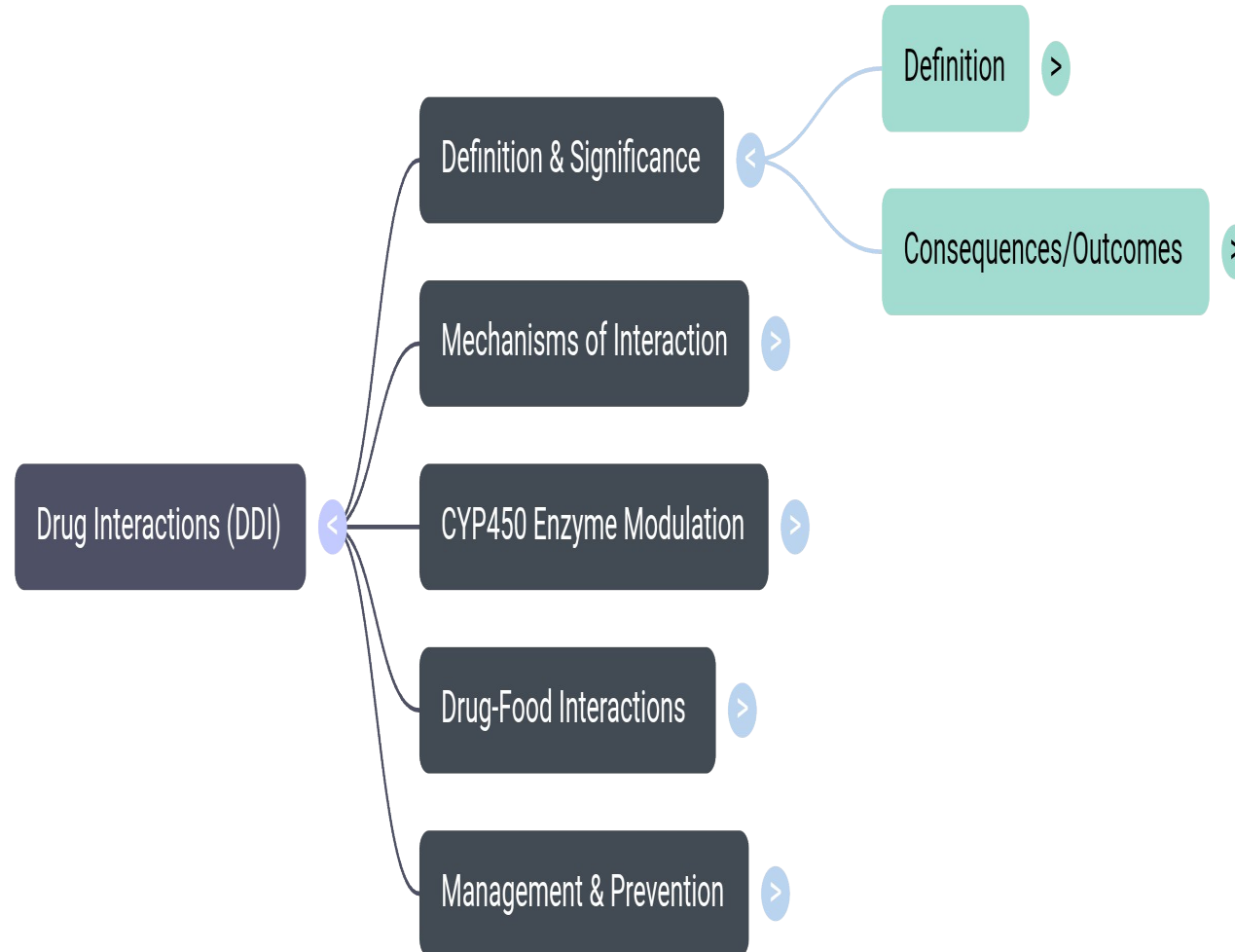


Unexpected Responses
Adverse effects not typically seen.

ESSENTIAL FOR SAFE & EFFECTIVE PATIENT CARE

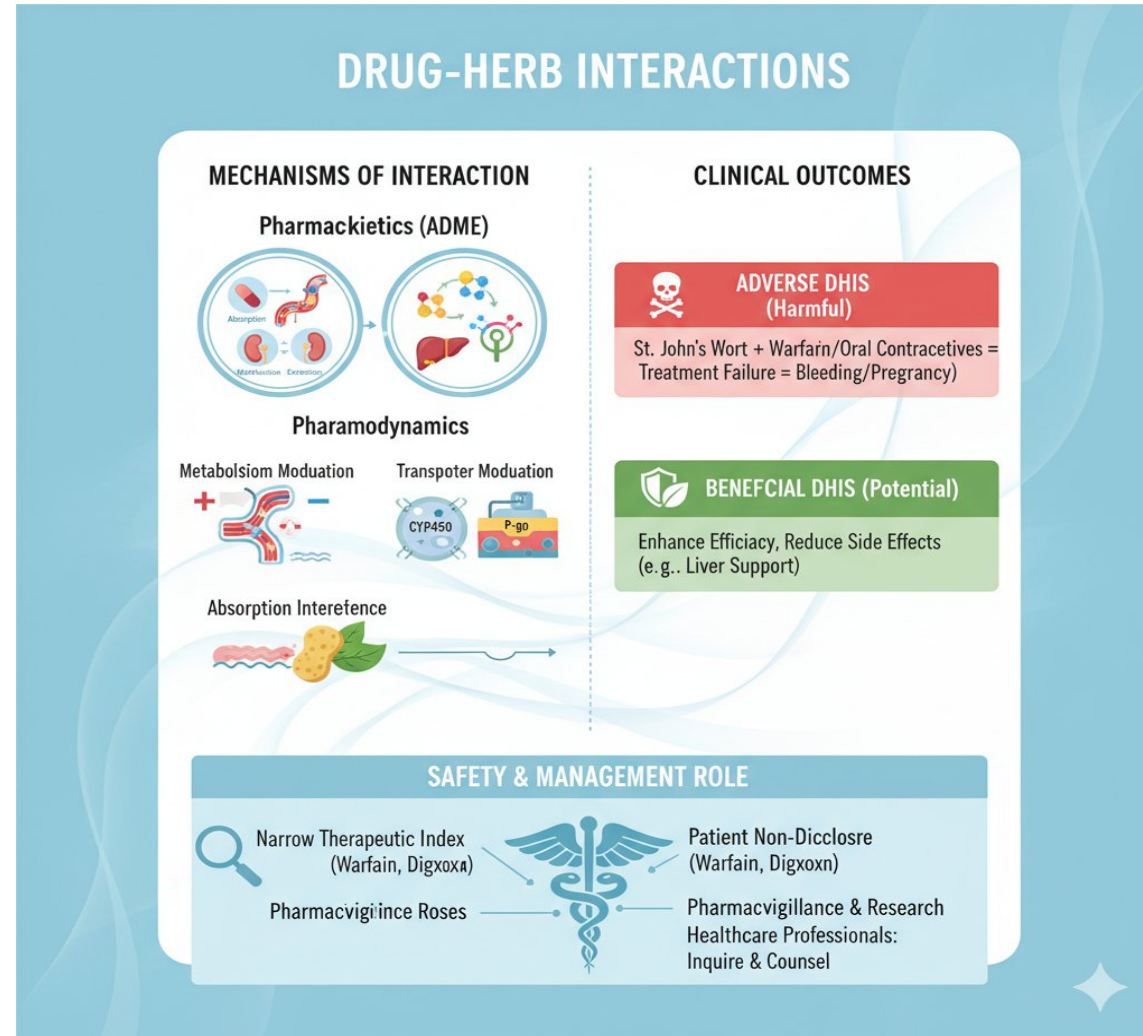
DRUG -FOOD INTERACTIONS

Define



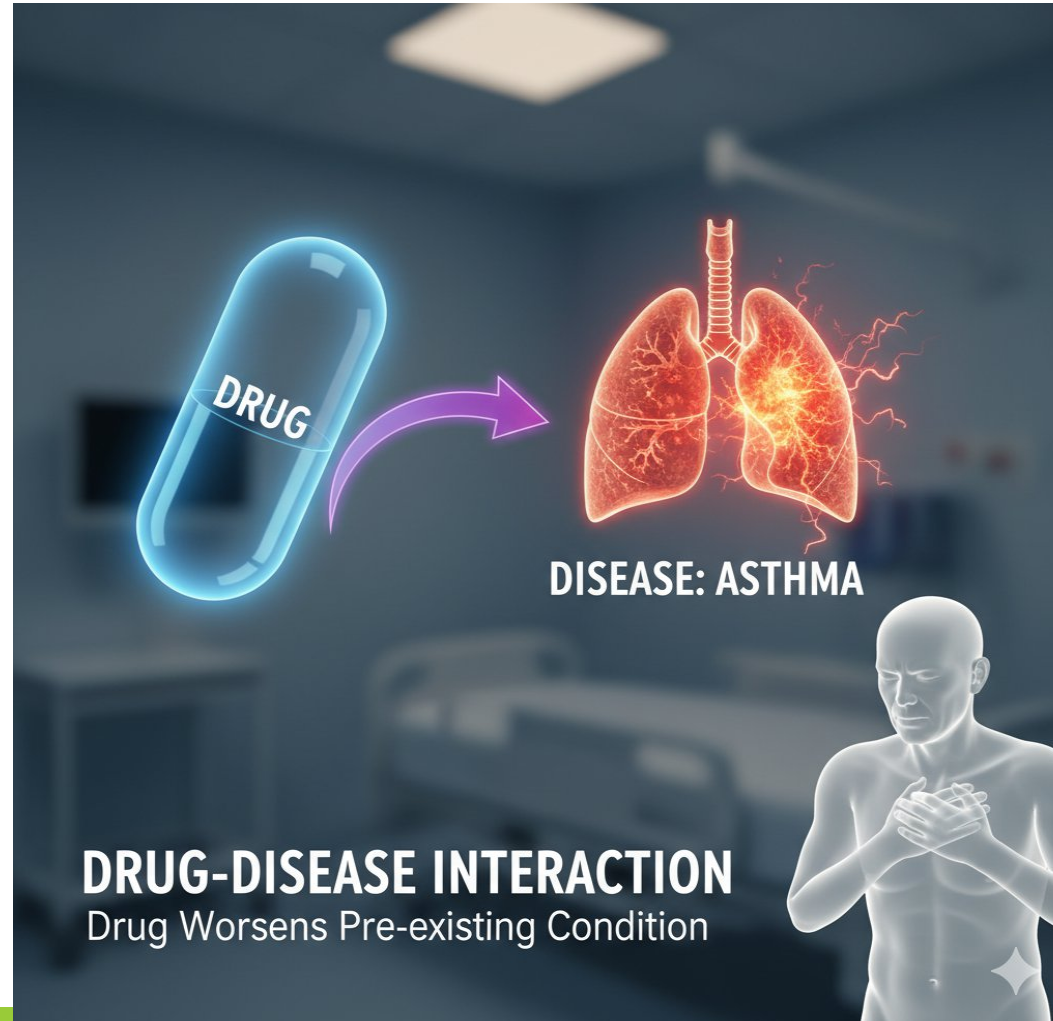
Define

DRUG-HERB INTERACTIONS



Ideate

DRUG -DISEASE INTERACTIONS

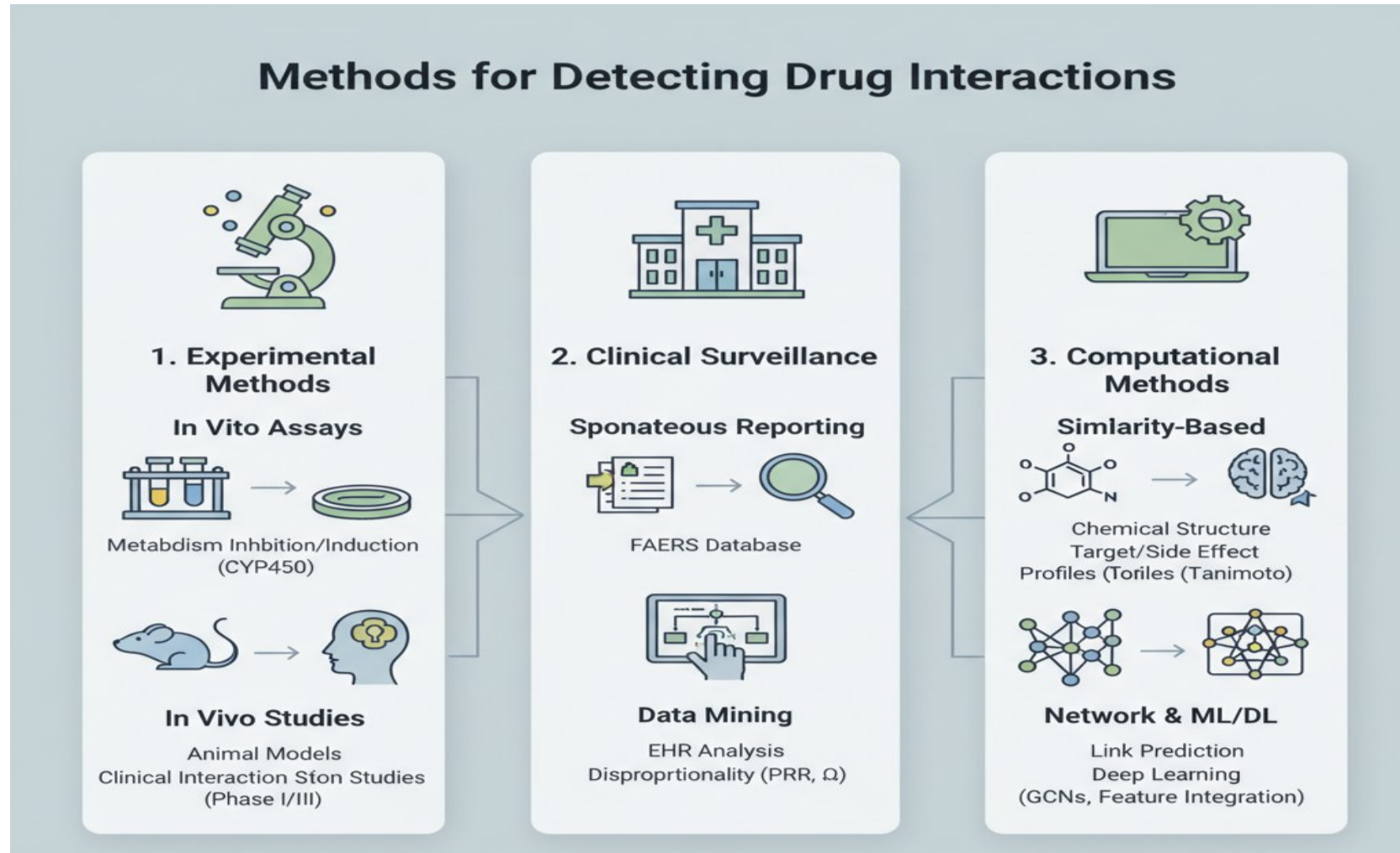


Prototype

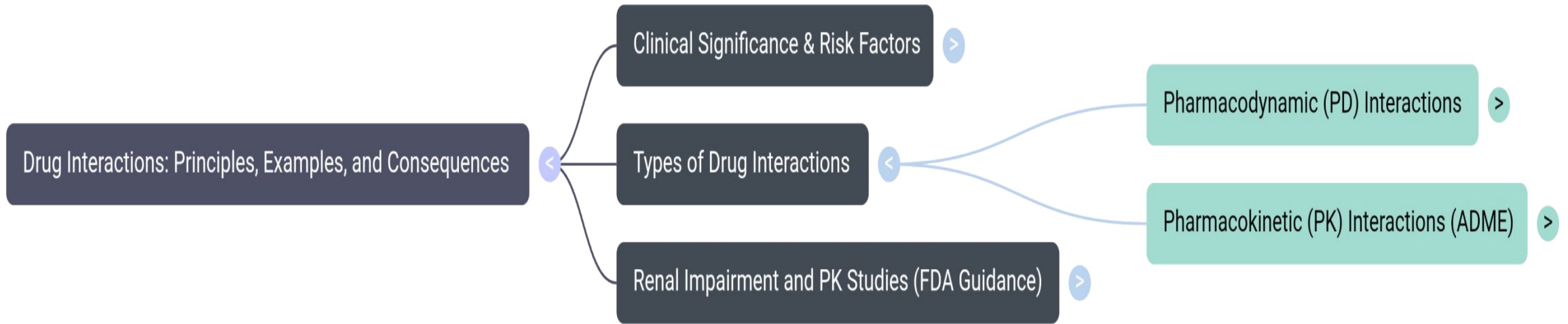
DRUG-LABORATORY INTERACTIONS



METHODS FOR DETECTING DRUG INTERACTIONS



PHARMACOKINETIC DRUG INTERACTIONS



DRUG INTERACTIONS:

An Elaborate Visual Guide

DEFINITION: A drug interaction occurs when a substance alters the effectiveness, modifies the activity, drug's effects, a medication or effects, therapeutic affects a delayed action or increasing the increasing side effects.

I. TYPES OF INTERACTIONS

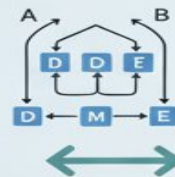
Drug-Drug:
Meds alter affect other.
Ex: Opioid + Benzo = Depression
Grapefruit Juice = Statins

Drug-Food/Beverage:
Ex: One alter disty
Ex: Grapefruit Juice = Severe
Respiratory Depression

Drug-Food/Beverage:
Drugs affect drug
Ex: Health Condition + Heart Failure
Ex: NSAIDs + Heart Toxicity

Drug-Disease
Ex: Another Condition makes
Ex: NSAIDs + Heart Failure =
worsened Fluid Retention

MECHANISMS OF INTERACTION



Absorption
Avoid + Antibiotic = Less
Binding sites

Competition
for binding sites
Ex: Alcohol + BP binding sites

A. Pharmacokinetic (Body on Drug)

1. Absorption
for binding
effects

Therapeutic/Synergistic
Sleeping Pills

Harmful
Synergistic =
Toxic Drug Levels

Antagonistic
Sleeping Pills

Slow Slows
Slow metabolism

Therapeutic class =
Ex: NSAID,
More side effects

II. CLINICAL MANAGEMENT

Contraindicated
Use Alternative

Contraindicated:
NEVER COMBINE

Serious:
Dose Adjust

Monitor Closely:
Watch for side effects/Effects

Timing Separation
apart (≥ 4 hrs)

Therapeutic Drug
Monitoring

Therapeutic Review
cause issue)



CLASS ASSESSMENTS

1. Which route of administration commonly shows fewer drug interactions?





CLASS ASSESSMENTS

A

Identify New Safety Signals

Detecting rare or unknown adverse effects early.



B

Quantify Risk & Incidence

Estimate how often ADRs occur or market populations.



C

Quantify Risk & Incidence

Estimate how often ADRs adjustments, or in populations.



D

Eliminate All Drug Side Effects

Ensuring to label drugs have zero unintended effects.



Choose the correct option



CLASS ASSESSMENTS

2. Pharmacokinetic interaction at absorption level:





A **Patients & Consumers**
 Direct reports of experiences, often via online portals or patient support programs.

B **Healthcare Professionals (HCPs)**
 Physicians, pharmacists, nurses reporting observations from clinical practice

C **Clinical Trials & Studies**
 Systematic data collection from organized research studies

D **Social Media Trends**
 General publications & influencers, not systematically monitored for pharmacovigilance

 Choose the correct option



CLASS ASSESSMENTS



3. Which food interaction reduces absorption of tetracycline?





CLASS ASSESSMENTS

A Patient Demographics	B Suspected Drug Details
Patient Initials, Age, Gender, Ethenity 	Drug Name, Dosage, Route, Start/Stop Dates, Indication 
C Reaction Details	D Patient's Social Security Number
Description, Onset/Duration, Severity, Outcome, Reporter's Causality Assessment 	Collected for identification purposes, but not stored due privacy concerns. 

✓ Choose the correct option

REFERENCES

1. Merchant S.H. and Dr. J.S.Quadry. A textbook of hospital pharmacy, 4th ed. Ahmadabad: B.S. Shah Prakakshan; 2001.
2. Parthasarathi G, Karin Nyfort-Hansen, Milap C Nahata. A textbook of Clinical Pharmacy Practice-essential concepts and skills, 1st ed. Chennai: Orient Longman Private Limited; 2004.
3. William E. Hassan. Hospital pharmacy, 5th ed. Philadelphia: Lea & Febiger; 1986.
4. Tipnis Bajaj. Hospital Pharmacy, 1st ed. Maharashtra: Career Publications; 2008.
5. Scott LT. Basic skills in interpreting laboratory data, 4thed. American Society of Health System Pharmacists Inc; 2009.

Thank
you!