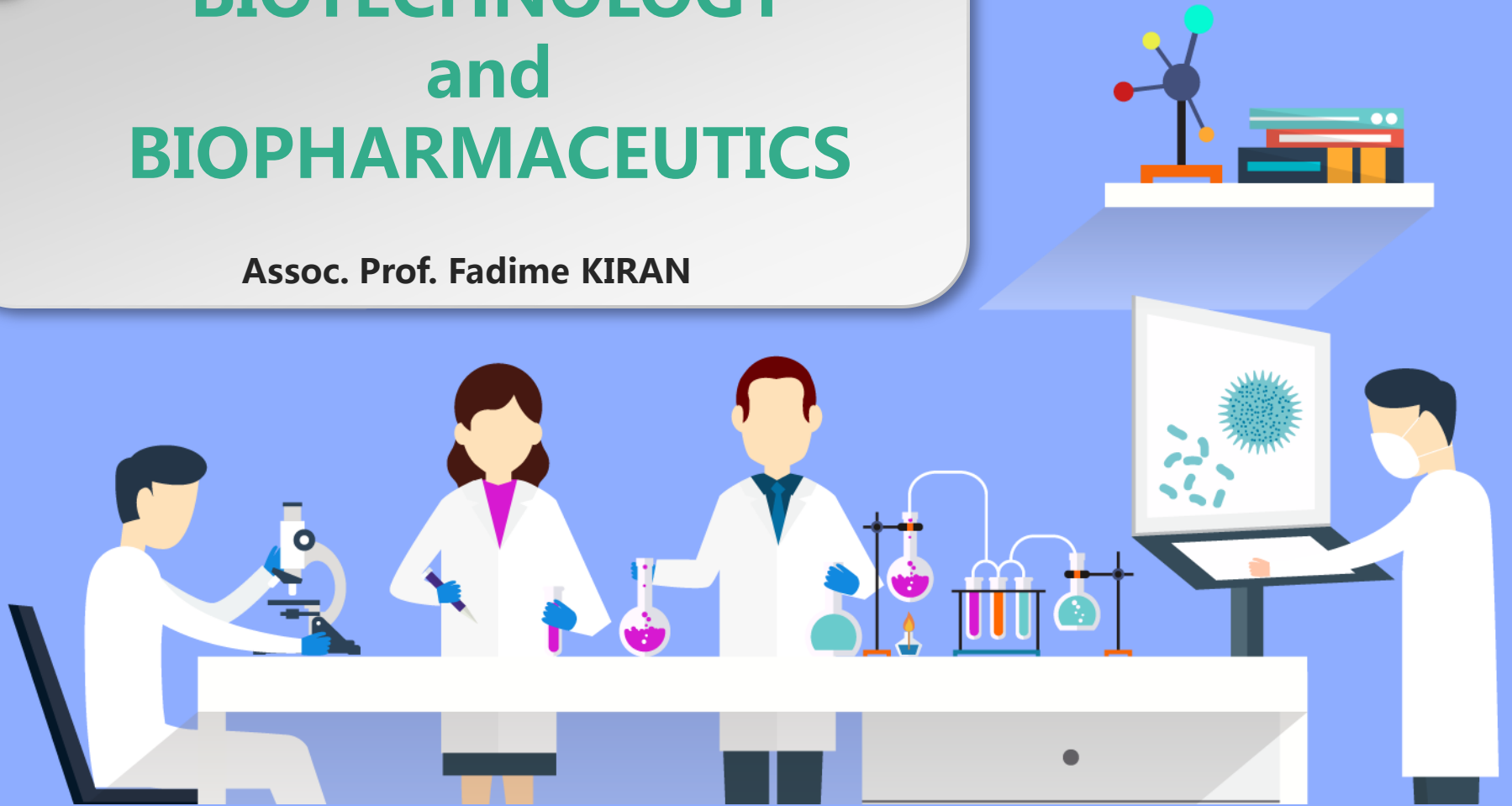


BIOTECHNOLOGY and BIOPHARMACEUTICS

Assoc. Prof. Fadime KIRAN



05

Pharmacokinetic and Pharmacodynamic

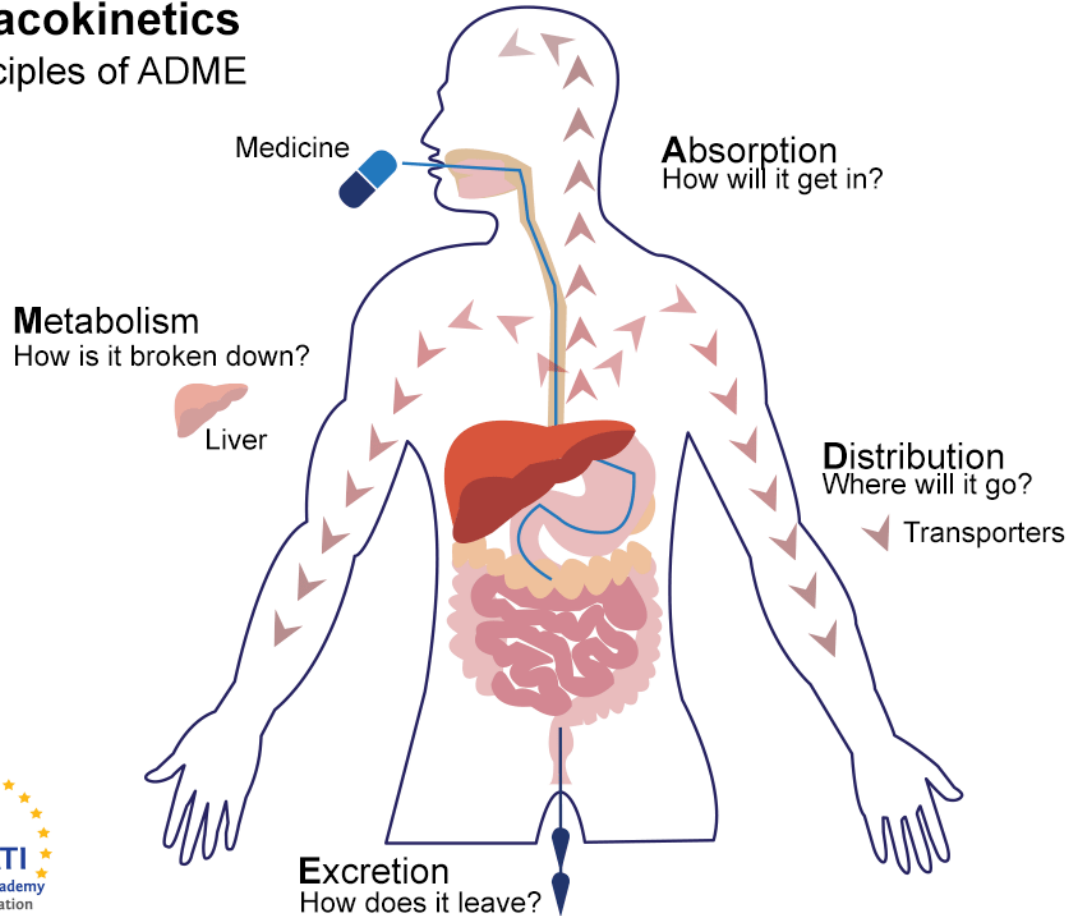




Pharmacology

Pharmacokinetics

The principles of ADME



A.D.M.E
BIOTRANSFORMATION

1. ABSORPTION

The process of a drug entering the
blood circulation

Bioavailability

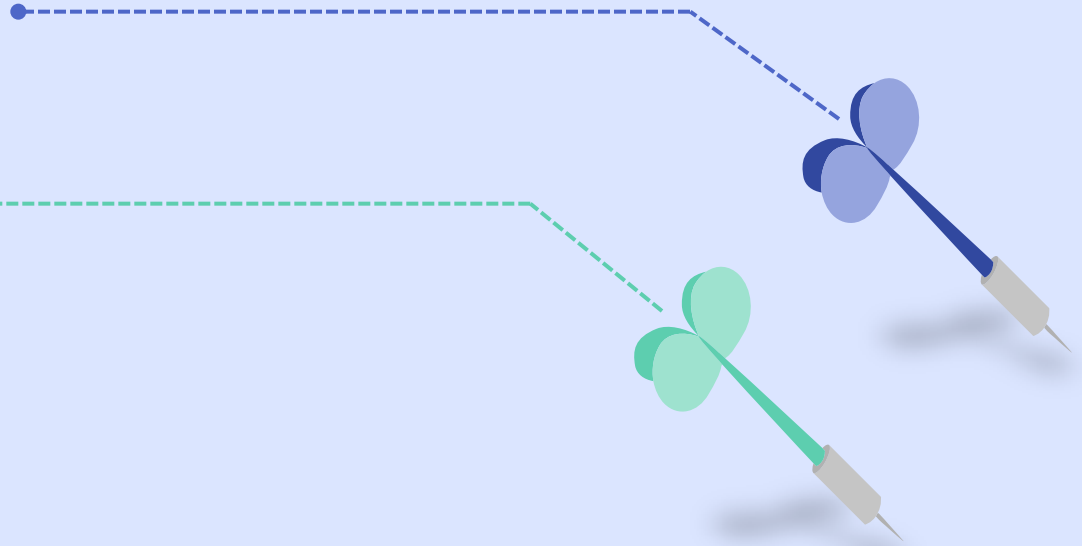
Why do we care about bioavailability?

Answer: the true dose is not the drug swallowed, but is the drug available to exert its effect

Factors influencing the absorption

**FACTORS RELATED TO
DRUGS**

**FACTORS RELATED
TO THE PATIENT**



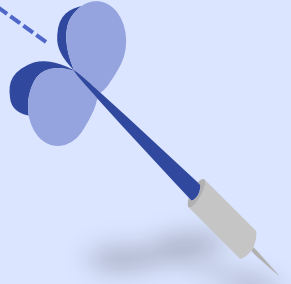
FACTORS RELATED TO DRUGS

1. PHYSICOCHEMICAL PROPERTIES

Degree of Ionization

Degree of solubility

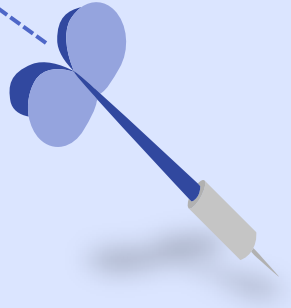
Chemical nature



FACTORS RELATED TO DRUGS

2. PHARMACEUTICAL form of DRUG

Absorption of solutions is better than suspensions or tablets



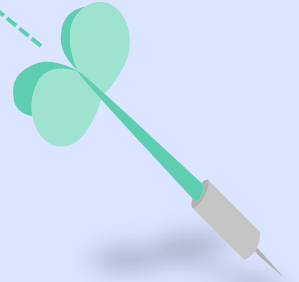
FACTORS RELATED TO THE PATIENT

1. Route of administration

2. Absorbing surface

3. Rate of general circulation

4. Presence of other drugs



1. Route of administration



Oral

Membranal

Transdermal

Injectional

2. DISTRIBUTION

**The drug's dispersion through
the body's fluids and tissues
as it travels to its site of
action**

It refers to movement of the drug from the systemic circulation to tissues

The drug needs to be distributed to the site of action in sufficient concentration to generate the therapeutic action.

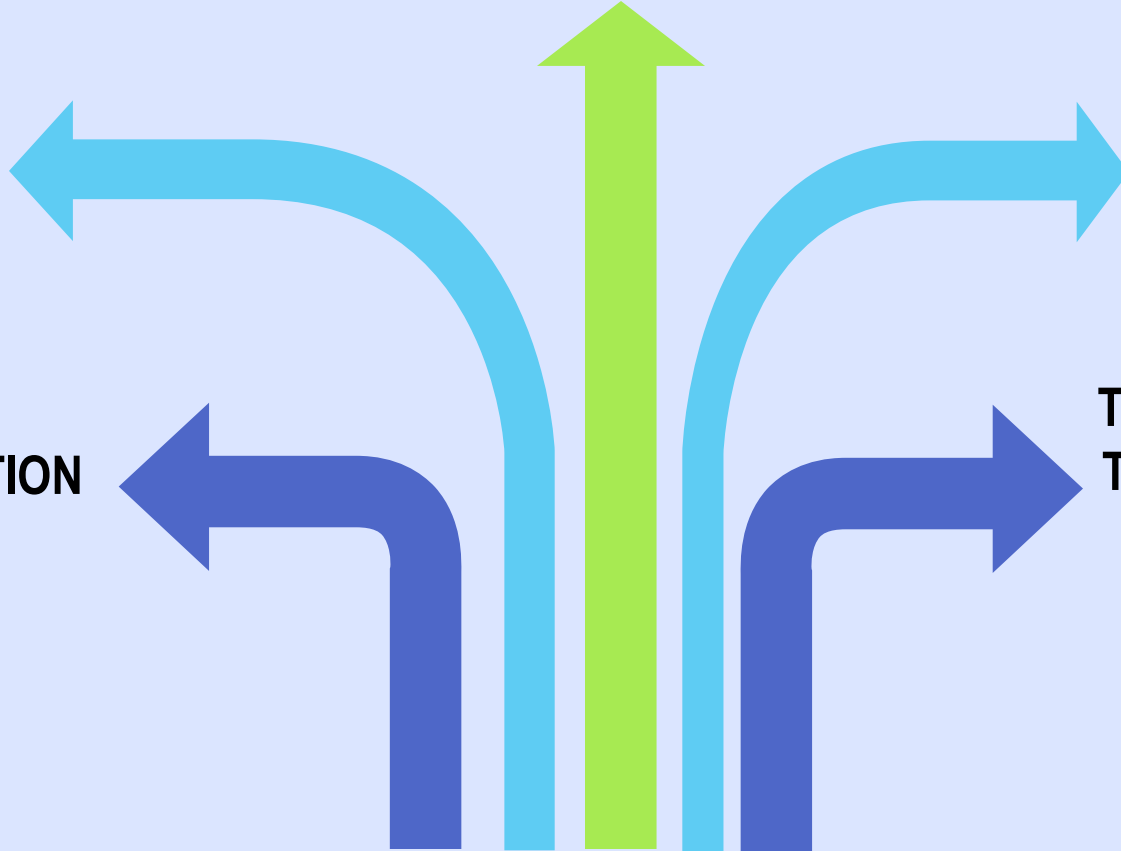
BINDING TO PLASMA PROTEINS

MOLECULAR
SIZE

BLOOD FLOW

IONIZATION

TISSUE SPECIFIC
TRANSPORTERS



3. Metabolism

NUTRITIONAL SAFE

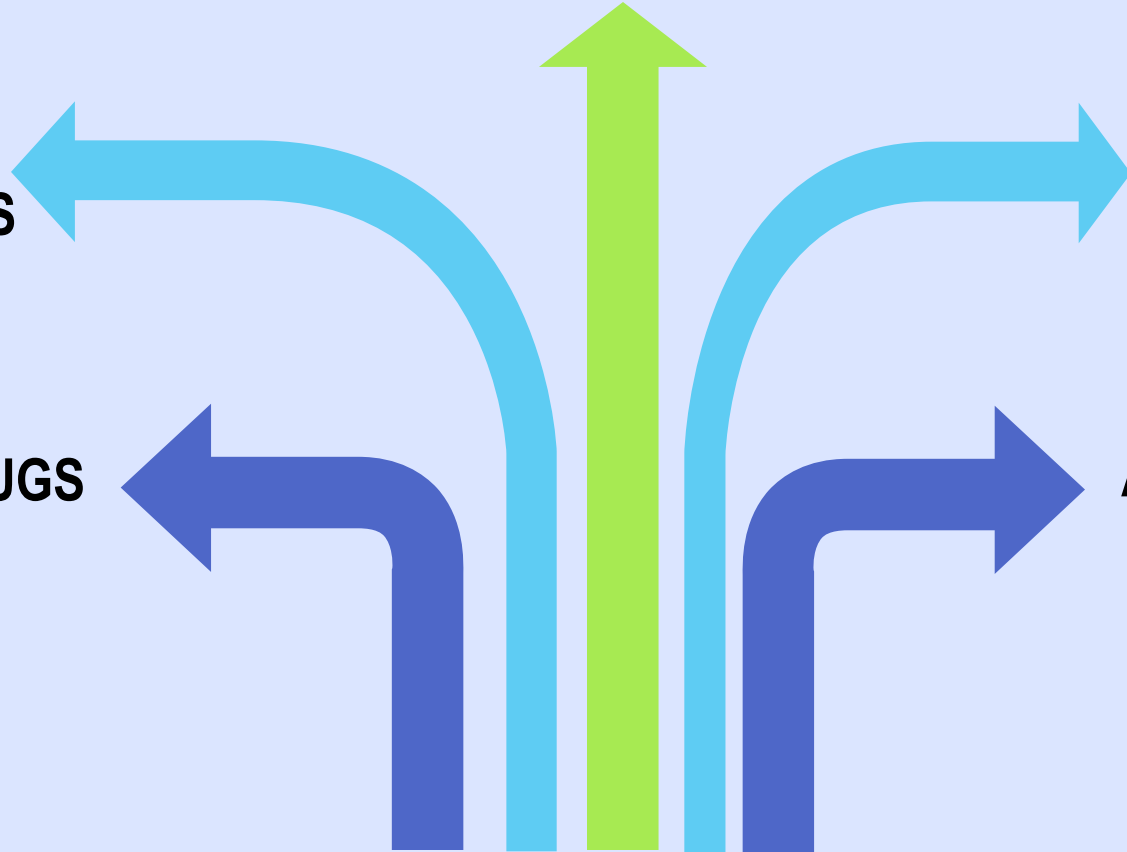
**GENETIC
VARIATIONS**

DOSAGE

DRUGS

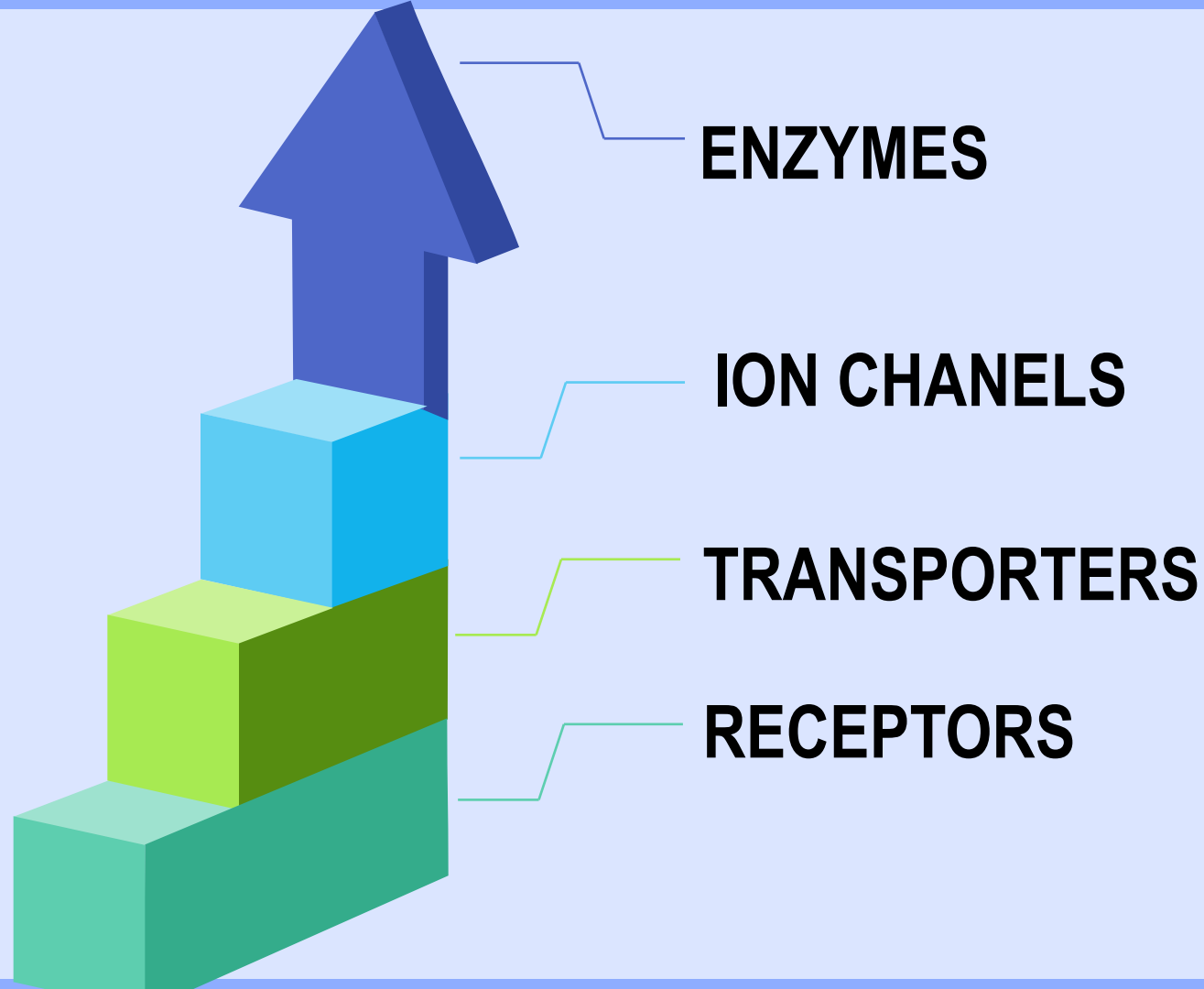
AGE

FACTORS AFFECTING THE DRUG METABOLISM



4. Elimination

**The mechanism of action represents
the interaction between
drug molecules and biological structures
of the organism.**





ANY
QUESTION?



Thank you

