Theme 2; cell

pharmacology

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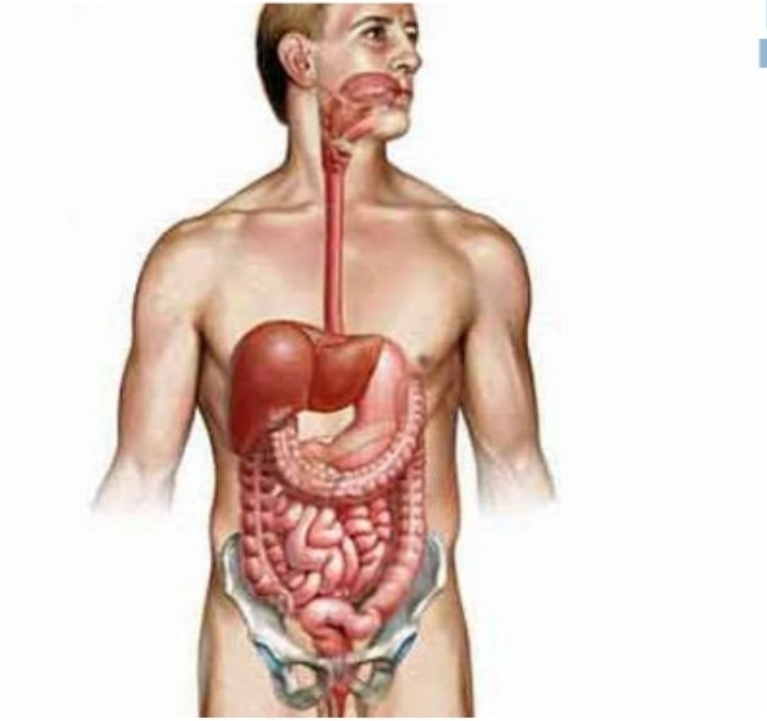
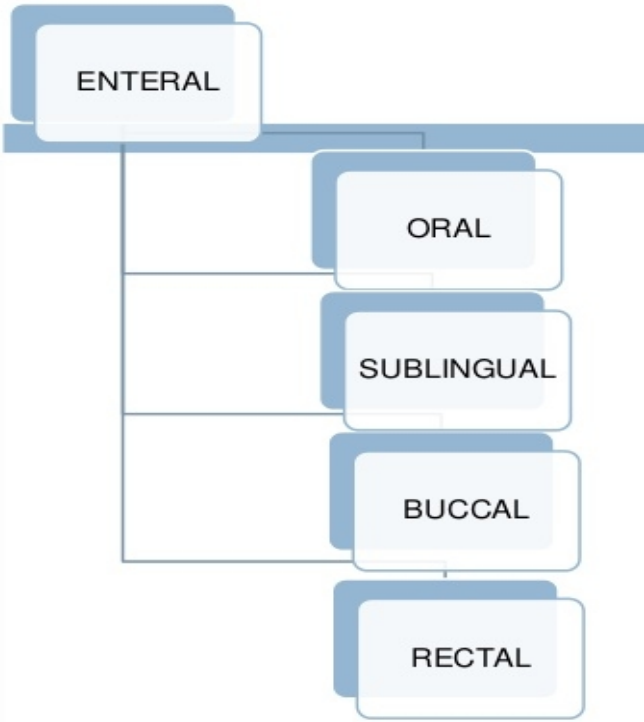
Learning Objectives

- The paths by which a drug, fluid, poison, or other substance is taken into the body.
- Different routes of drug administration.
- Trans-membrane drug transport, and factors affecting it
- Drug receptors types.

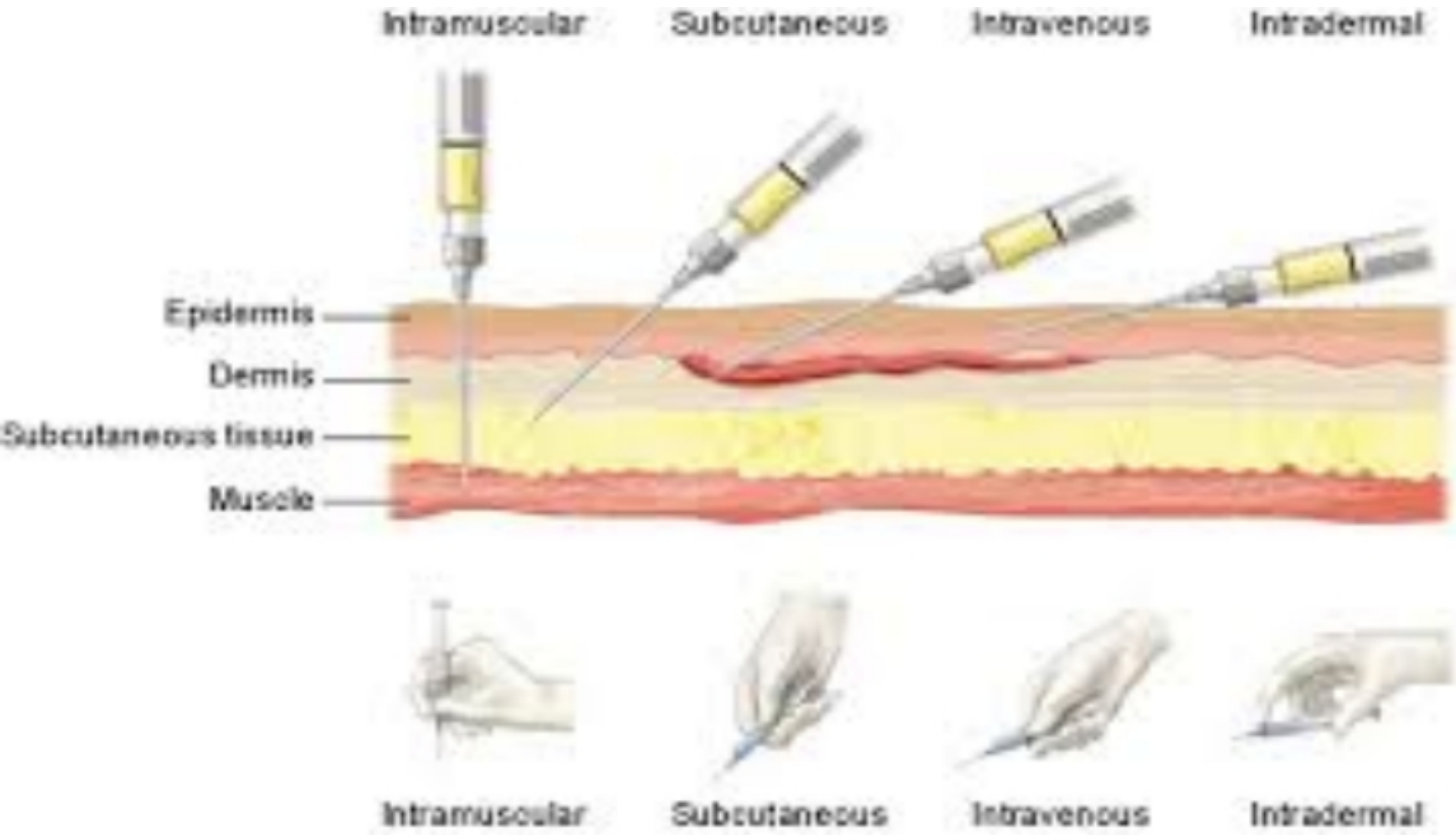
Enteral Route

- Most convenient and Costs the least
- preferred in the treatment of chronic disease





Parenteral Route



CLASSIFICATION OF DEEP PARENTRAL ROUTES

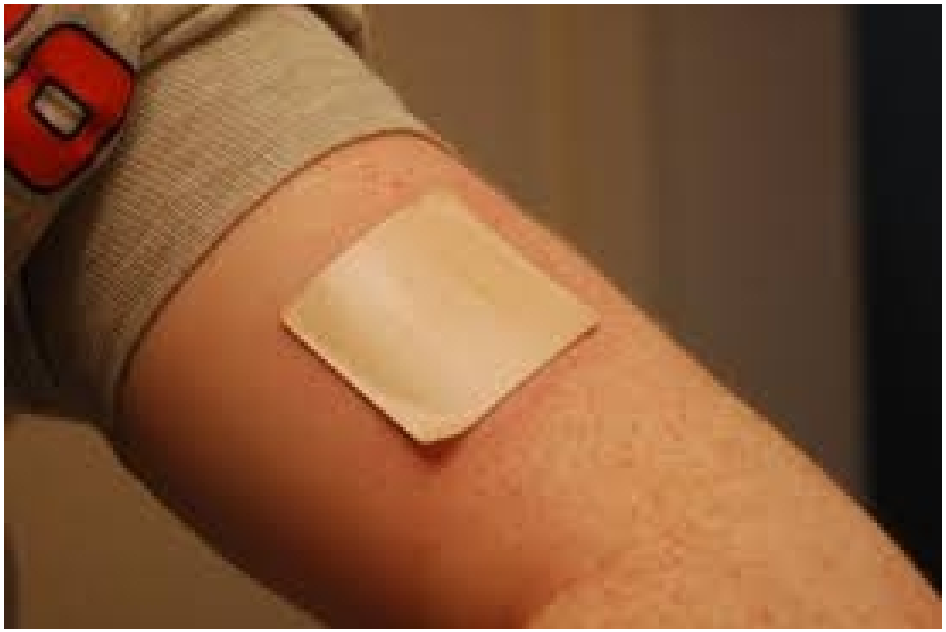
A. INTRAMUSCULAR ROUTE
B. INTRAVENOUS ROUTE
C. TRANSPLEURAL ROUTE (intrapleural)
D. INTRAPERITONEAL
E. INTRATESTICULAR
F. INTRARATICULAR
G. INTRA CARDIAC
H. IINTRA ARTERIAL
I. INTRACRANIAL
J. INTRASPINAL (intrathecal)
K. EPIDURAL
L. INTRAOSSEOUS
M. INTRANEURAL
N. INTRAHEPATIC

Topical Route

- Both the application location and the pharmacodynamics effect thereof is local

Transdermal route

- a **route** of administration wherein active ingredients are delivered across the skin for systemic distribution



Inhalational Route

- Absorbed quickly and act both locally and systemically.

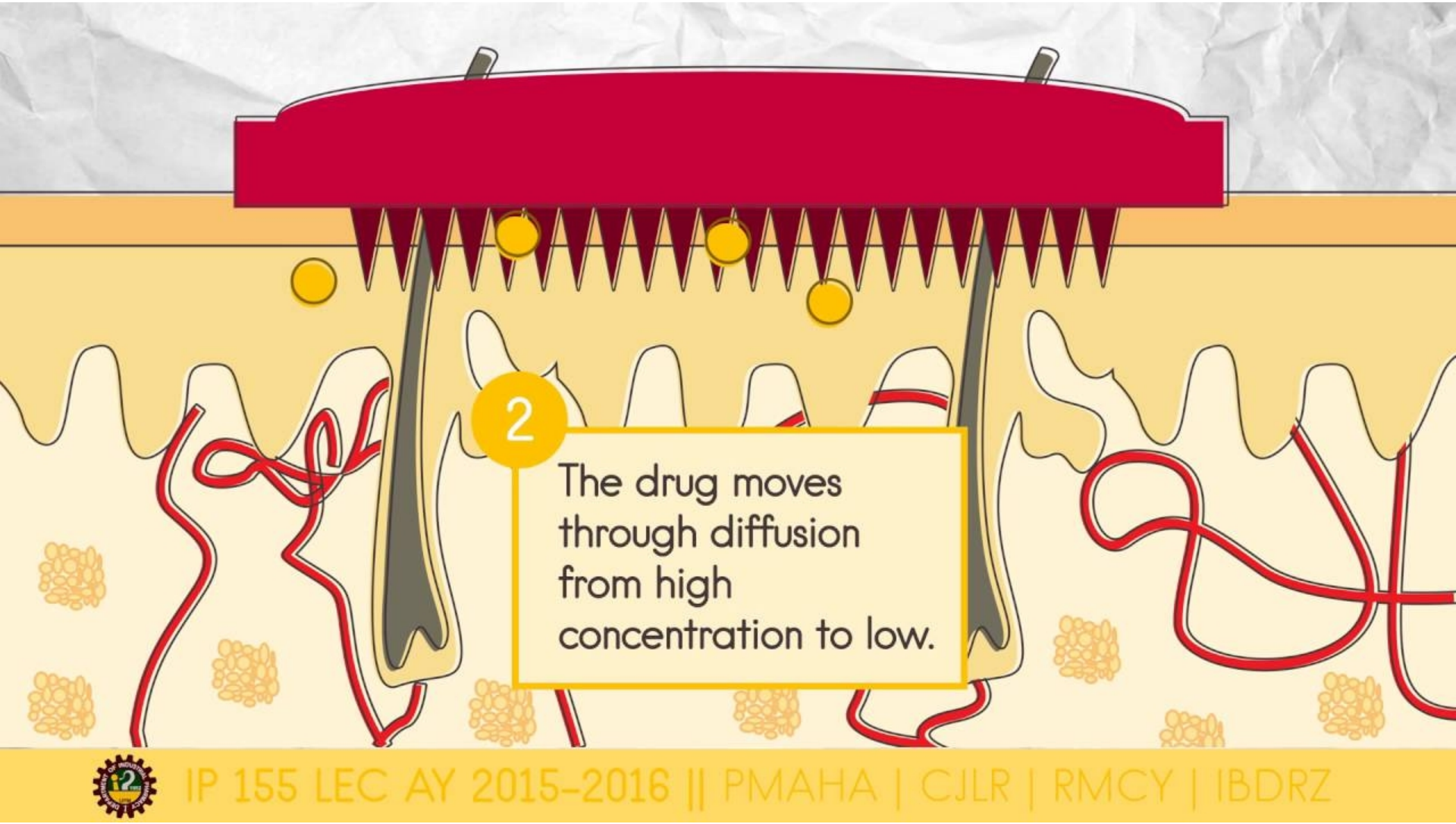
Drug absorption

- ABSORPTION: THE TRANSPORT OF A DRUG FROM ITS SITE OF ADMINISTRATION TO THE BLOOD STREAM

- DRUGS ARE EITHER WEAK ACID OR WEAK BASES.
- **They partially dissociates into ions**

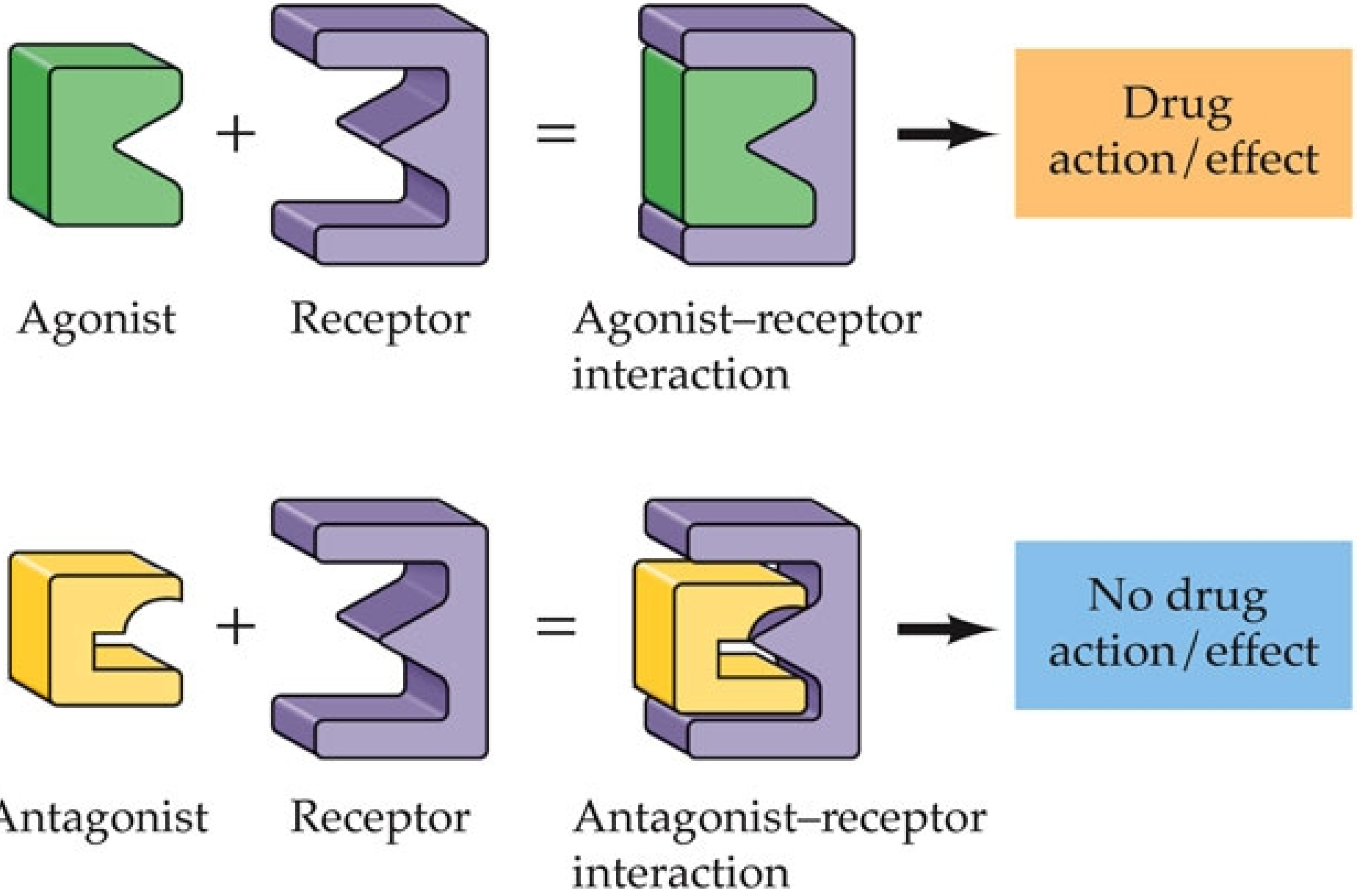
- Drug can be ionized in the aqueous solution but only the non-ionized (uncharged) species are lipid soluble and cross the membrane.
- the transport of the drug molecules follows a concentration gradient

1. PASSIVE ABSORPTION
2. ACTIVE TRANSPORT


2
The drug moves through diffusion from high concentration to low.

FACTORS MODIFYING DRUG ABSORPTION

1. **CHEMICAL NATURE OF THE DRUG**
2. **PH OF THE MEDIUM**
3. **PHYSICAL STATUS OF THE DRUG/DOSAGE FORM**
4. **ROUTE OF ADMINISTRATION**
5. **SURFACE AREA**
6. **BLOOD FLOW / SUPPLY**
7. **FOOD CONTENT IN THE STOMACH**
8. **WATER/MILK TAKEN WITH DRUG**
9. **GIT MOTILITY**
10. **CONCENTRATION OF THE DRUGS**
11. **PRESENCE OF THE OTHER DRUGS/AGENTS IN THE STOMACH**
12. **DRUG FORMULATION**

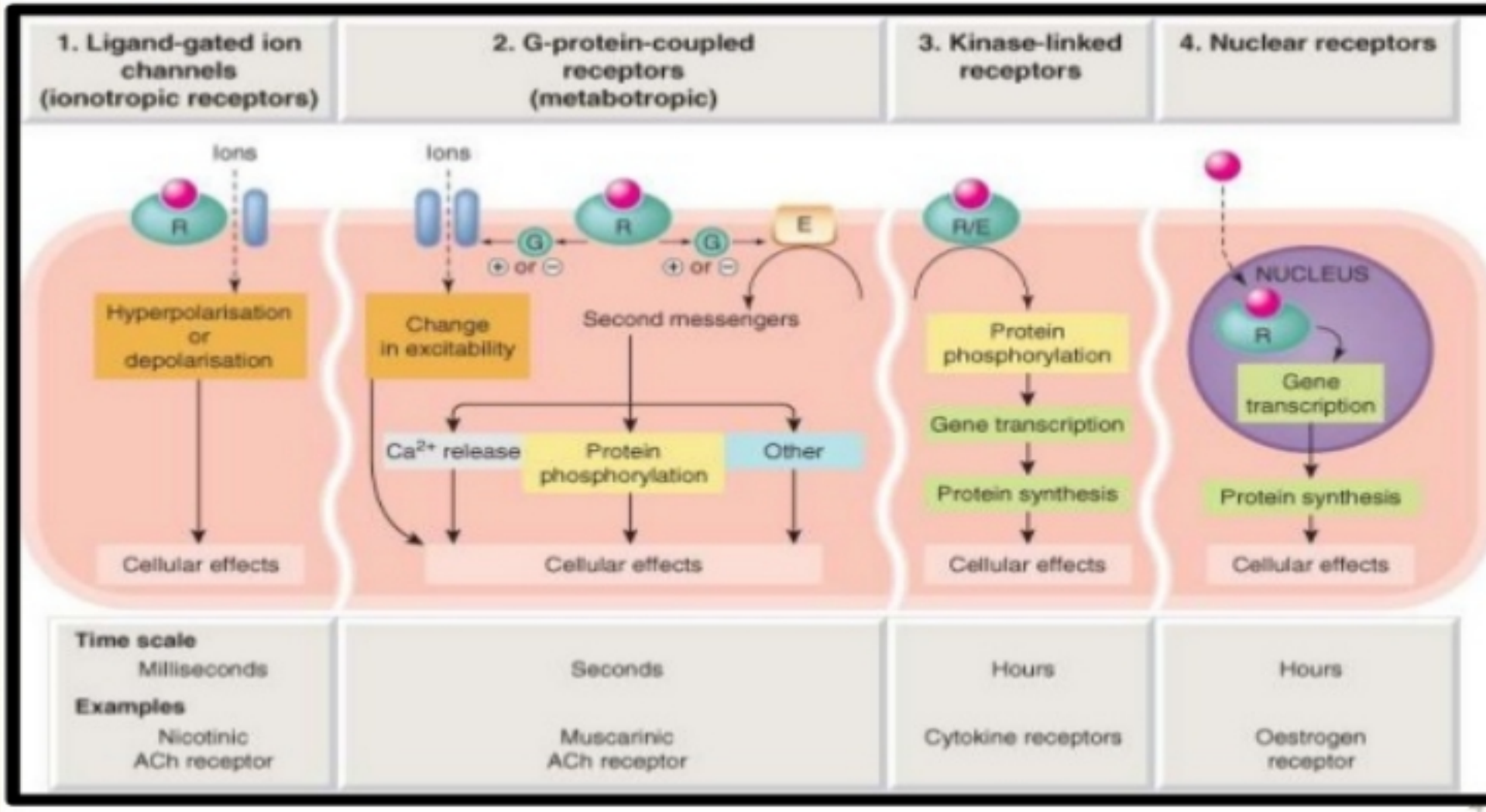


PSYCHOPHARMACOLOGY, Figure 1.11

Receptors types

1. Ligand-gated ion channels (ionotropic)
2. G-protein coupled receptors (metabotropic)
3. Kinase-linked receptors
4. Nuclear receptors

Types of receptors




JazaakAllah
Khair!
THANK YOU...