THE FINAL WORD

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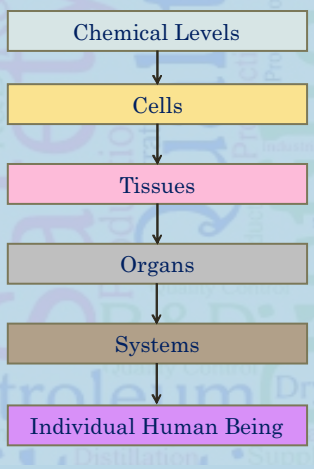
JULY 2018

HUMAN PHYSIOLOGY

Human Physiology

"Branch of biology that deals with the functions and activities of life or of living matter (such as organs, tissues, or cells) and of the physical and chemical phenomena involved."

Organization of Human Being



Chemical level– is the simplest level within the structural hierarchy. The chemical level includes the tiniest building blocks of matter, atoms, which combine to form molecules, like water. In turn, molecules combine to form organelles, the internal organs of a cell.

Cells:

- Cells are the basic building blocks of all living things. The human body is composed of trillions of cells.
- They provide structure for the body, take in nutrients from food, convert those nutrients into energy, and carry out specialized functions.

Tissues:

- A tissue is a group of cells that have a similar shape and function.
- Different types of tissues can be found in different organs. In humans

There are four basic types of

1 Epithelial tissue
2 Connective tissue
3 Nervous tissue
4 Muscle tissue.

Organs- structured collections of cells with a specific function, sit within the body.

Systems-

There are 11 types systems in human body

1 *Circulatory system:*

- Moves materials between body systems, including oxygen, nutrients, Hormones and waste products.
- It includes the heart, arteries and veins

2 *Digestive system:*

- Ingests food and breaks it down into usable nutrients. Excretes solid waste products.
- It includes Mouth, Esophagus, Stomach and Intestine.

3 *Endocrine system:*

- Glands from the endocrine system secrete hormones that regulate many processes like growth, metabolism and reproduction
- It includes pineal gland, pituitary gland, thyroid gland, thymus, pancreas.

4 *Integumentary system/Exocrine system:*

- Covers the body and regulates its exchange with the outside world.
- It includes skin, hair, nails, sweat and other glands which secrete substances on to the skin.

5 *Lymphatic system/Immune system:*

- Defends the body against pathogenic viruses that may endanger the body.
- The system contains lymphatic vessels that carry a clear fluid called lymph.

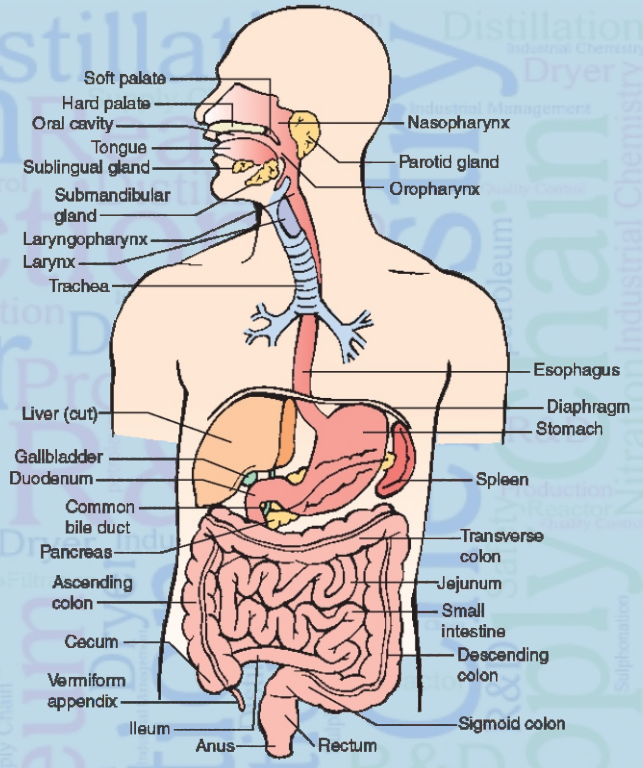
6 *Muscular system:*
- Allows the body to move on command.

7 *Nervous system:*
- Control system of body, responds to internal and external changes, activates muscles and glands.
- It includes brain m spinal cord, nerves.

8 *Renal system/Urinary system:*
- Cleans dissolved waste products from the blood and excretes them
- It includes kidneys and bladder.

9 *Reproductive system:*
- Allows the production of offspring.
- Includes ovaries, uterus, mammary glands, testes.

10 *Respiratory system:*
- It works on gas exchange between cells and the enviroment.
- It includes nasal cavity, bronchus, lung, pharynx



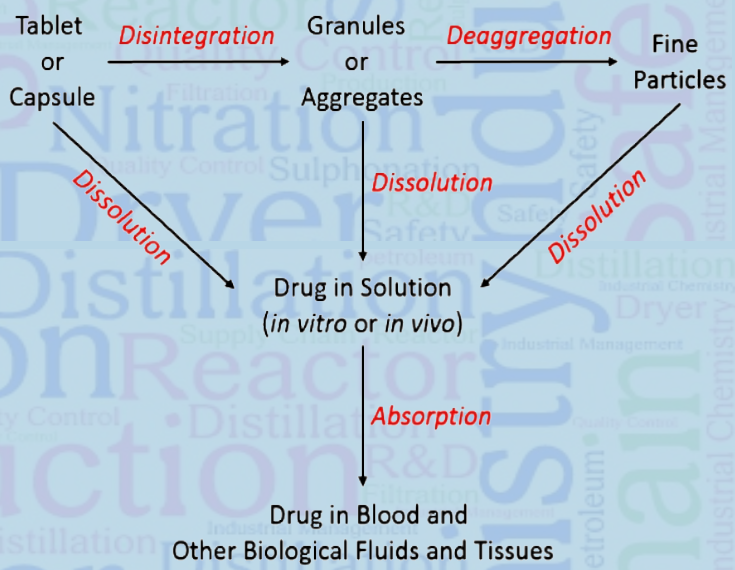
11 Skeletal system:
Supports and protects the body's organs. Provide a framework muscles use(bones, joints)

DRUG DISSOLUTION

The effectiveness of such dosage forms relies on the drug dissolving in the fluids of the gastrointestinal tract prior to absorption into the systemic circulation.

Mechanism of Drug Dissolution

Dissolution test determines the cumulative amount of drug that goes into solution as a function of time



Step Involved

» liberation of the solute or drug from the formulation matrix (disintegration)
» dissolution of the drug (solubilization of the drug particles) in the liquid medium
» The overall rate of dissolution depends on the slower of these two steps.

First Step

» Cohesive properties of the formulated solid dosage form drug play a key role disintegration and erosion
» Semi- solid or liquid formulations, the dispersion of lipids or partitioning of the drug from the lipid phase is the key factor.
» If the first step of dissolution is rate-limiting, then the rate of dissolution is considered to be disintegration controlled.

Second Step

Solubilization of the drug particles depends on the physicochemical properties of the drug such as its chemical form (e.g., salt, free acid, free base) and physical attributes

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IC(2017-2019)

FRESHER'S WELCOME ORIENTATION & SARSWATI POOJA

PARTICIPATION IN YOUTH PARLAMENT

ADMISSION 2018-19

INTAKE	NO. OF APPLICATION	ADMITTED
70	179	70