

Physiology

Chapter

One,two

Physiology \ this science studies how each organ of body perform its function its function

The cell \ it is the unit of life for the bodies of all living organisms

Functional Structure : of the cell

- Cell membranes
- Endoplasmic Reticulum
- lysosomes
- golgi Apparatus (body)
- mitochondria
- Nucleus

Types of Endoplasmic Reticulum (ER)

- Rough ER (Granular)  Contains acid (RNA) and responsible for protein synthesis the cell
- Smooth ER (Agranular)  Does not contain this acid and responsible for lipid formation

Function of Golgi Apparatus (body)

- Storage of substances temporarily in the endoplasmic reticulum
- Formation of carbohydrates
- Formation of lysosomes

What are Lysosomes and what is their function ?

Lysosomes are small bodies surrounded by a membrane form the digestive system of the cell and contain enzymes break down germs and waste.

What is the function of mitochondria ?

Mitochondria are organelles where nutrients are broken down to release energy needed for the cell and contain enzymes break down germs and waste.

Nucleus It is the control center the cell both for chemical reactions and for cell reproduction.

Is due to nucleus containing deoxyribonucleic acid (DNA)

Muscles constitute about 40% of body weight.

Types of muscles

- Voluntary
- Involuntary
- Cardiac muscle

Muscle

What do detailed chemical muscle studies of actomyosin show?

That actomyosin molecules exist in two forms :

- 1- Relaxed forms
- 2- Contracted forms

What are the thermal changes in muscle contraction ?

Heat is released during both muscle contraction and relaxation due to chemical reaction, and the amounts are nearly equal

Mechanical changes

- The degree of stretch of the muscle fibers
- The rate of muscle contraction
- Muscle fatigue

Comparison between the voluntary muscles and Involuntary muscles

Voluntary muscle

- 1- Attached to bones
- 2- 40% of body weight
- 3- Cells are striated L and W
- 4- Supplied by voluntary nerves
- 5- Nerve severance leads to Complete paralysis

Involuntary muscle

found in viscera
10% of body weight
cells are non striated
supplied by involuntary nerves
Nerve severance doesn't paralyze the muscle



Nerve severance paralyze the heart muscles (x)

Cardiac muscle