

Introduction to Physiology

Human physiology: basic sciences dealing with normal life phenomena of the human body to know how and why

Goal of physiology

Explain the physical and chemical factors that are responsible for the origin, development and life progression of life .

The fact that we remain alive is the result of complex control systems.

Hunger makes us seek **فبحث** food

vascular system

(open vascular system)

The cells that make up the bodies of the simplest multicellular animals, exist in extracellular fluid (ECF).

From this fluid, the cells take up O₂ and nutrients; into it, they discharge metabolic waste products.

In animals with a closed vascular system, the ECF is divided into two components: the interstitial fluid (ISF) and the circulating blood plasma.

The plasma and the cellular elements of the blood, principally red blood cells, fill the vascular system, and together they constitute the total blood volume.

The interstitial fluid (ISF) is that part of the ECF that is outside the vascular system, bathing the cells.

About one third of the total body water total body water (TBW) is extracellular; the remaining two thirds is intracellular (ICF fluid).

Body Composition

In the average young adult male (70 Kg),
18% of the body weight is protein and related substances,
7% is mineral,
15% is fat.

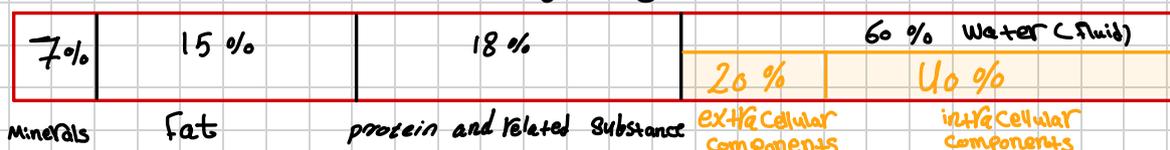


60% The remaining is water.

-The intracellular component of the body fluids accounts for about 40% of body weight and the extracellular component for about 20%.

-Approximately 25% of the extracellular component is in the vascular system (plasma = 5% of body weight) and 75% outside the blood vessels (interstitial fluid = 15% of body weight).

The total blood volume is about 8% of body weight.



CELLS ARE THE LIVING UNITS OF THE BODY

- The basic living unit of the body is the cell. Each organ is an aggregate of many different cells held together by intercellular supporting structures.
- Each type of cell is specially adapted to perform one or more functions.
- For instance, the Red blood cells (RBCs), numbering about 25 trillion in each human being, transport oxygen from the lungs to the tissues. Although the RBCs are the most abundant of any single type of cell in the body, about 75 trillion additional cells of other types perform functions different from those of RBCs.