

Introduction to Physiology and Levels of Organization

Red: very important.

Green: only found in males' slides.

Purple: only found in females' slides.

Gray: notes.

Physiology Team 436 – Foundation block lecture 1

Objectives

- Define Physiology.
- Understand Physiology's types
- Describe the levels of organization of an organism

Definition

Physio + logy

- **Physio** : nature
- **Logy** : science or study of

Physiology : The science dealing with the way a **normal** organism and their body parts **function** , and how these functions are maintained in a changing environment.

(**Considered as one of the cornerstones of medicine**)

Types of Physiology

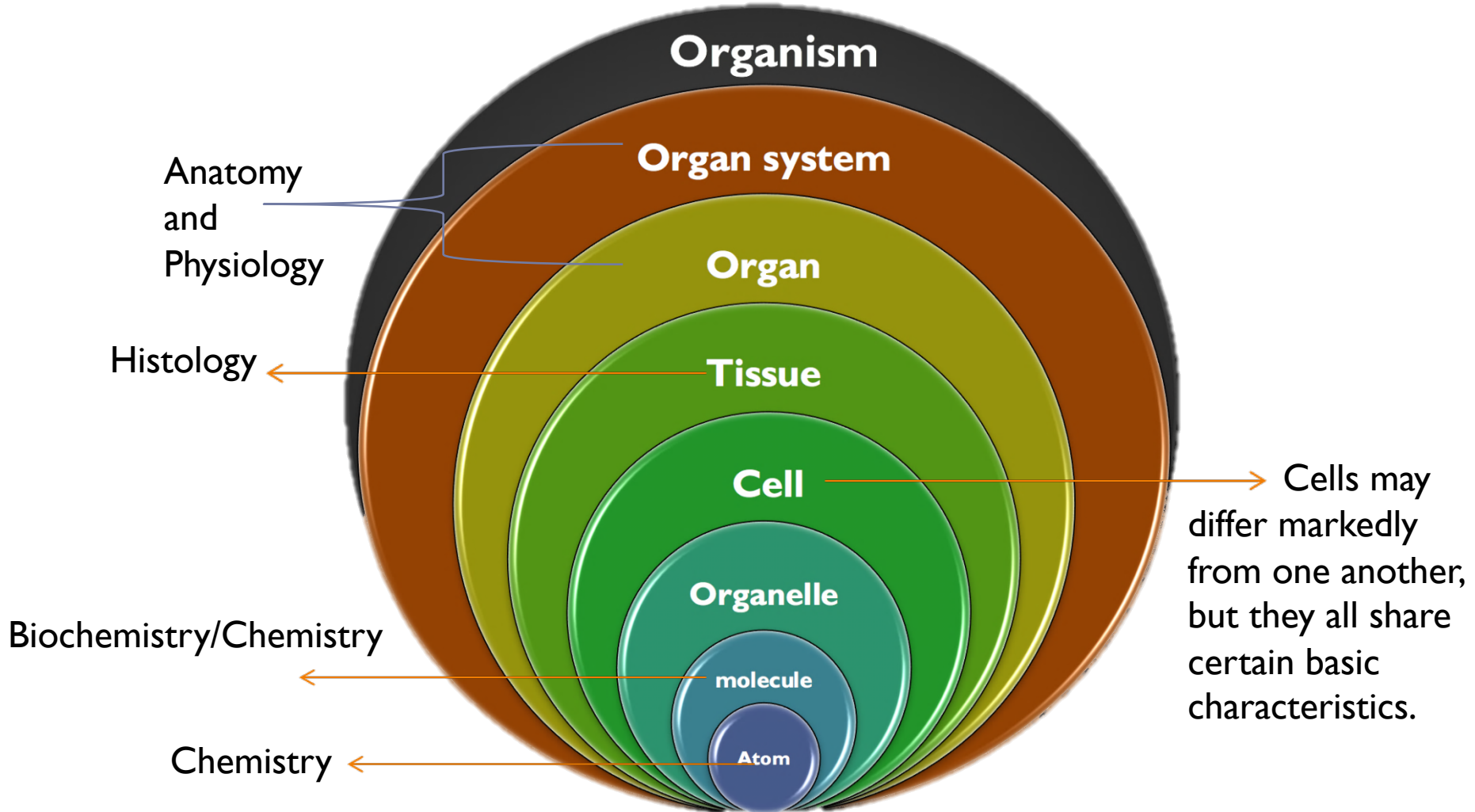
Cellular physiology

- ▶ is the study of the **cellular components** that primarily determines **organ function**.

Systems physiology

- ▶ is the study of the coordinated and **networked processes** that determine whole **body function and adaption to change**.

Definition



The Internal Environment

“Milieu Intérieur” (ECF)

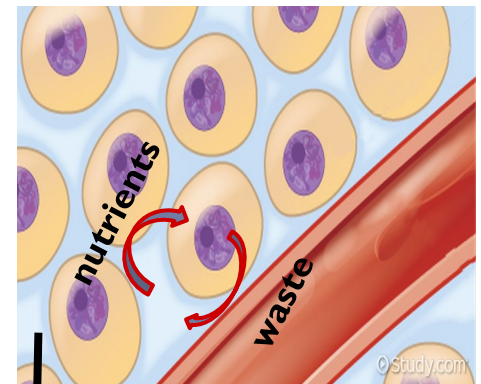
- ▶ All the cells in the body are continuously bathing in fluid.
- ▶ Because this fluid is **outside** the cell, it is called **extracellular fluid (ECF)**.
- ▶ It is from the ECF that cells get the ions and nutrients needed to maintain life.
- ▶ **All cells in the body live in the same environment i.e. ECF.**

Extracellular Fluid

Cells receive ions, nutrients and oxygen needed to maintain life **from ECF.**

1. All body cells live in the same environment i.e. ECF.
2. The composition of ECF is almost similar between the different species.

→ it was called **the internal environment** (***milieu interieur***) by the French physiologist Claude Bernard.



↓ Because this fluid is **outside** the cells it is called “**extracellular fluid (ECF)**”

Important info.

- ▶ Fluid body compartments are divided into:
 - ▶ – Intracellular
 - ▶ – Extracellular
- ▶ The amount of solutes in the two compartments differ. (3rd Lecture)
- ▶ How is this achieved and maintained? → “**Selective permeability**” (2nd Lecture)

Thank you!

اعمل لترسم بسمة، اعمل لتمسح دمة، اعمل و أنت تعلم أن الله لا يضيع أجر من أحسن عملا.

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