D.PHARM • FIRST YEAR

Human Anatomy & Physiology

CHAPTER 1

Scope of Anatomy and Physiology



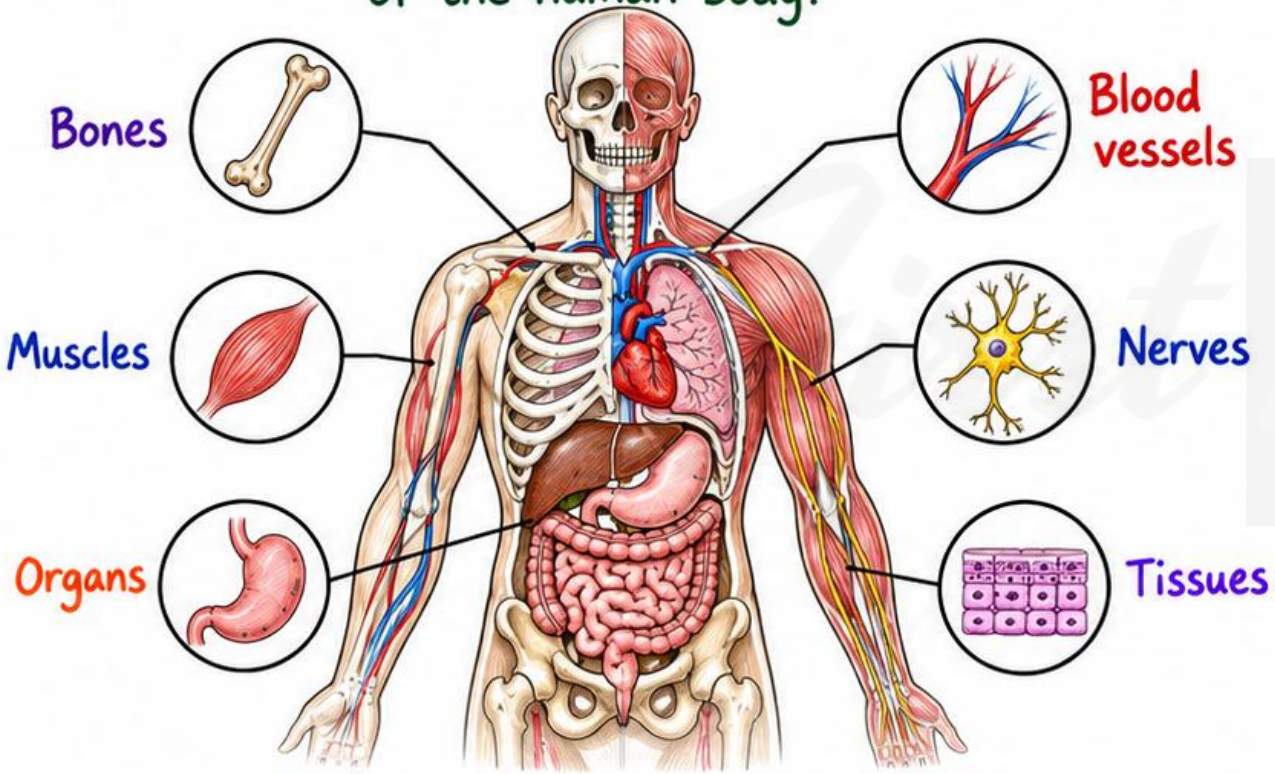
ENGLISH CHAPTER NOTES

DIPLOMA IN PHARMACY

ANATOMY AND PHYSIOLOGY

ANATOMY

Studies the structure and organization of the human body.



PHYSIOLOGY

Studies how the body works and how its systems maintain homeostasis.



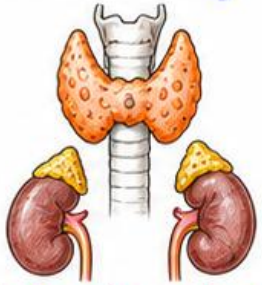
Heart
Circulates blood



Lungs
Gas exchange



Brain and nerves
Coordination and control



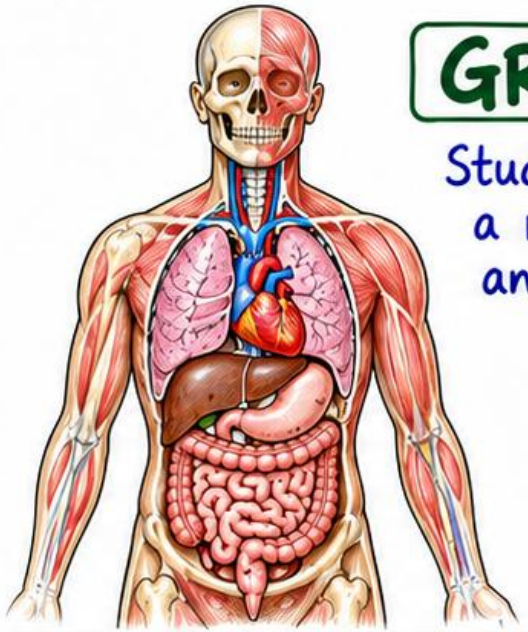
Endocrine glands
Hormonal regulation

STRUCTURE SUPPORTS FUNCTION

- The heart's muscular walls provide the force to pump blood.
- Bones support the body; muscles use them as levers for movement.

Homeostasis = maintaining stable internal conditions.

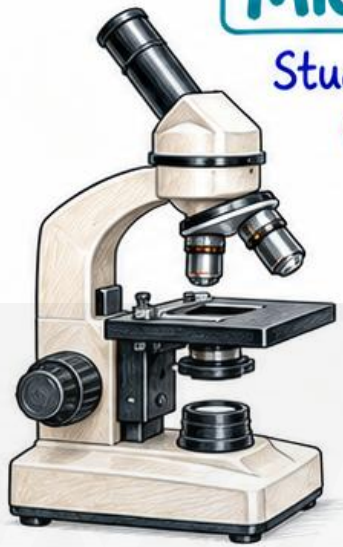
BRANCHES OF ANATOMY



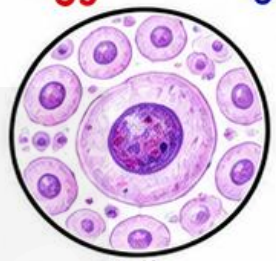
GROSS ANATOMY

Studies structures visible without a microscope, such as bones and organs.

MICROSCOPIC ANATOMY



Studies small structures using a microscope.
Cytology = study of cells.
Histology = study of tissues.



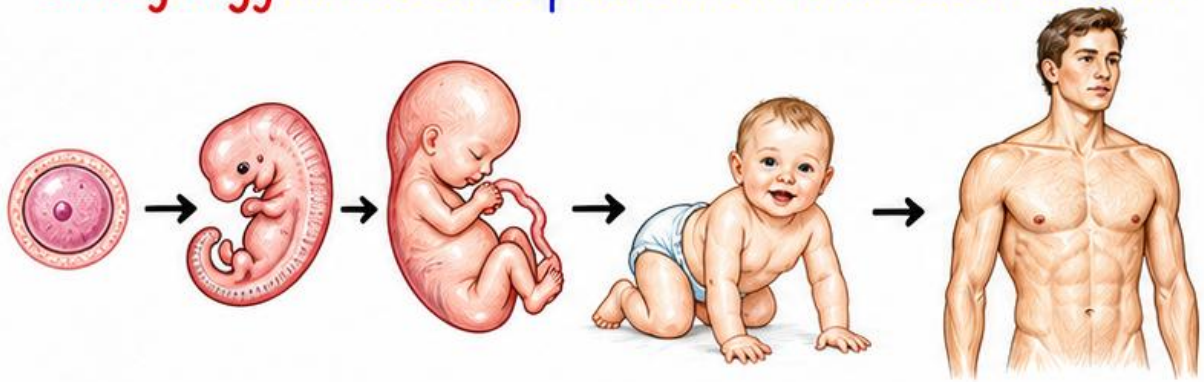
Cell (cytology)



Tissue (histology)

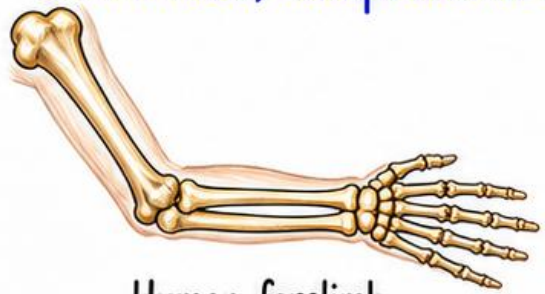
DEVELOPMENTAL ANATOMY

Studies structural changes from conception to adulthood.
Embryology covers development from fertilization to birth.



COMPARATIVE ANATOMY

Compares body structures across species to understand similarities, adaptations and evolutionary relationships.



Human forelimb (arm)

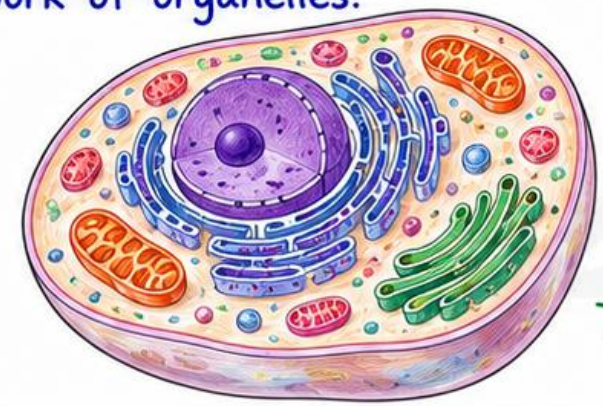


Bat forelimb (wing)

BRANCHES OF PHYSIOLOGY

CELL PHYSIOLOGY

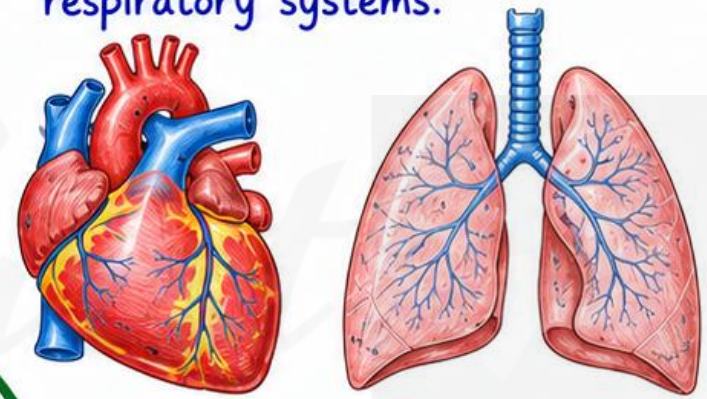
Studies cell functions, including transport, metabolism and the work of organelles.



SYSTEMS PHYSIOLOGY

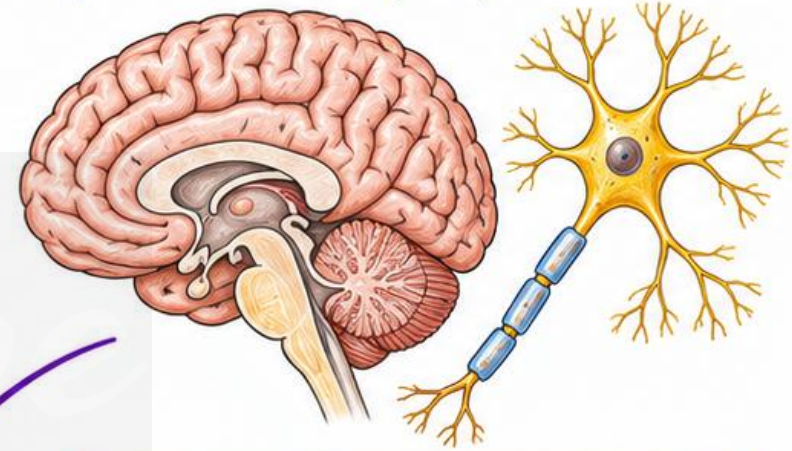
Studies how organs in a system function and interact.

Examples: cardiovascular and respiratory systems.



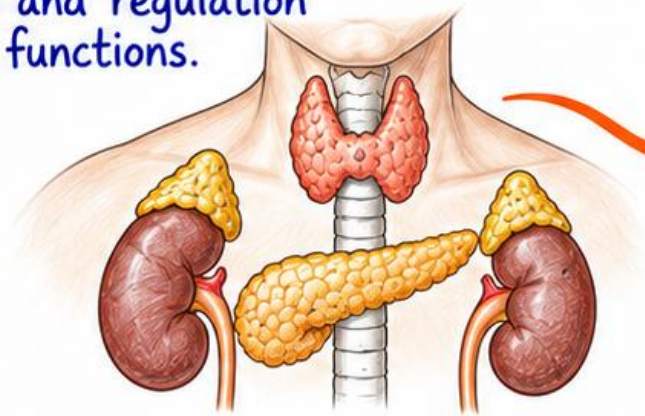
NEUROPHYSIOLOGY

Studies the functions of the brain, spinal cord and peripheral nerves.



ENDOCRINOLOGY

Studies hormone production, secretion and regulation of body functions.



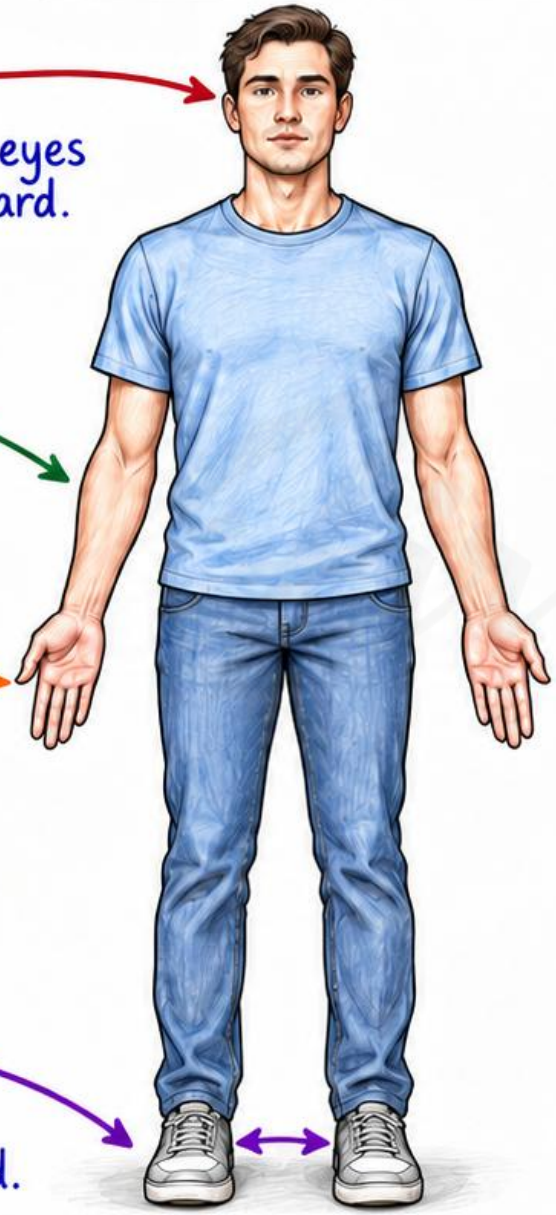
These functions cooperate to maintain homeostasis.

EXERCISE PHYSIOLOGY

Studies responses and adaptations to physical activity.



ANATOMICAL POSITION



STANDARD REFERENCE POSITION

1. The person stands upright.
2. Head and eyes face forward.
3. Arms lie at the sides.
4. Palms face forward.
5. Feet are parallel and point forward.

WHY IT MATTERS

Anatomical descriptions use this position as a fixed reference, even when a person is lying down or moving.

RIGHT AND LEFT

Always use the subject's right and left, not the observer's.

Example: the liver lies mainly on the subject's right side.





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