SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai Approved by Pharmacy Council of India, New Delhi.
Coimbatore -641035

COURSE NAME: HUMAN ANATOMY & PHYSIOLOGY

(BP301 T)

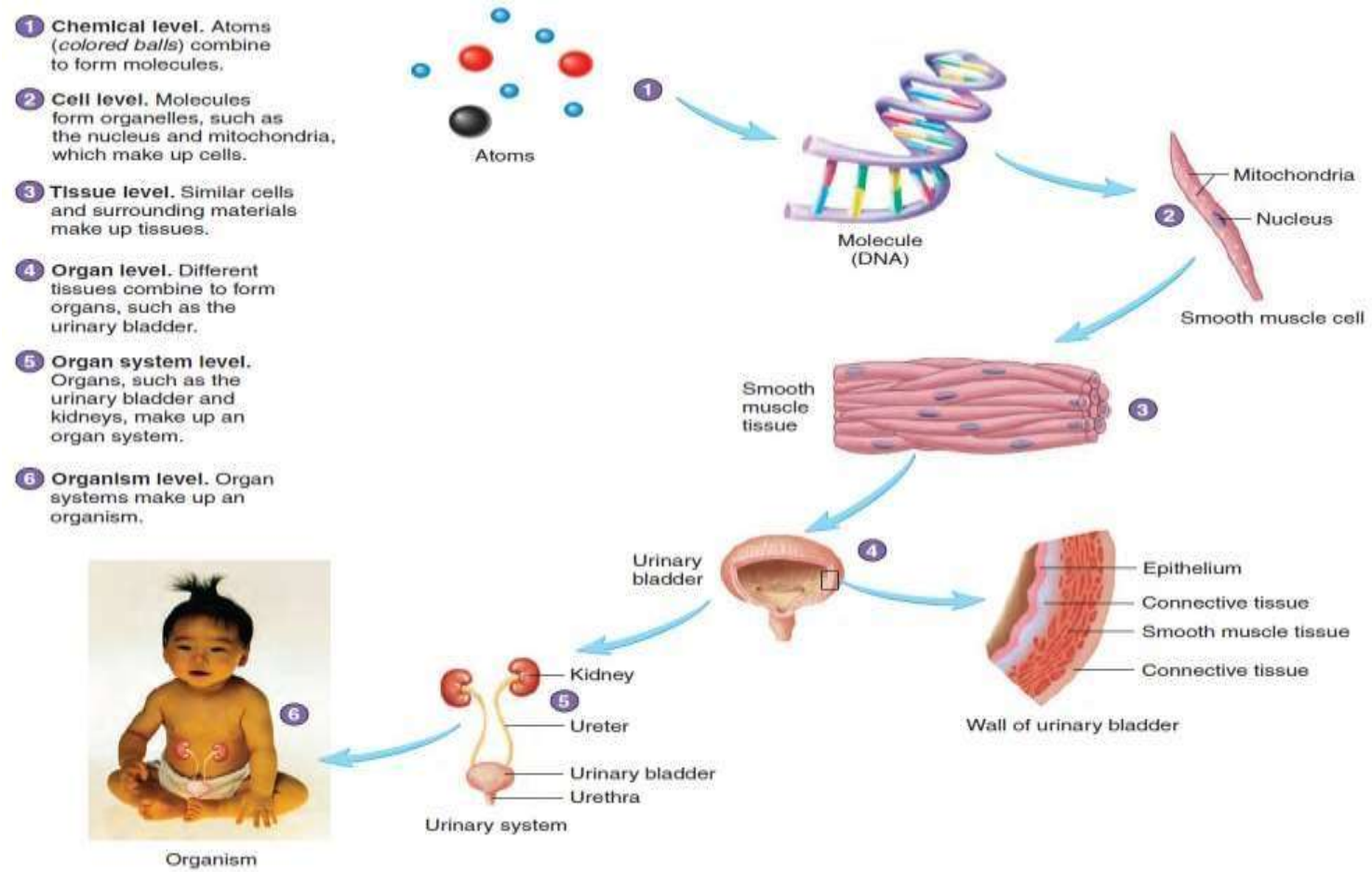
YEAR : I SEM/I YEAR

TOPIC : DEFINITION & SCOPE OF ANATOMY & PHYSIOLOGY

Design Thinking in Understanding Anatomy and Physiology

- ✓ **Empathize**: Deeply understand the learner's or patient's challenges, needs, and experiences related to the human body. This involves engaging with students, patients, and healthcare providers to uncover pain points, preferences, and unmet needs in learning or applying knowledge of body structure and function.
- ✓ **Define**: Reframe the problem based on insights from the empathize phase and establish clear context. This involves synthesizing data to pinpoint the core issue, such as defining the need for a foundational understanding of anatomy and physiology for medical education.
- ✓ **Ideate:** Brainstorm and explore a wide range of ideas and potential solutions, including innovative teaching methods or visual aids for body systems.
- ✓ **Prototype**: Simulate and build educational tools or models to enhance comprehension and application.

MIND MAP



PROCESS Figure 1.1 Levels of Organization for the Human Body

INTRODUCTION

- ✓ Anatomy and physiology form the foundation of medical sciences, providing insights into the human body's structure and functions. This knowledge is essential for understanding health, diagnosing diseases, and developing treatments.
- ✓ The basic idea is to explore how the body's parts are organized and how they work together to maintain life.
- ✓ Controlled understanding of body systems can lead to better healthcare outcomes, reduced misconceptions, and improved patient education.

ADVANTAGES OF STUDYING ANATOMY AND PHYSIOLOGY

- ✓ Enhances clinical skills for healthcare professionals.
- ✓ Provides a basis for understanding diseases and treatments.
- ✓ Improves patient education and compliance.
- ✓ Reduces risks in medical procedures through better knowledge of body structures.
- ✓ Optimizes use of diagnostic tools like imaging.

IMPORTANCE FOR HEALTHCARE

- ✓ Frequent need for body knowledge in daily medical practice.
- ✓ Wide therapeutic applications in surgery and therapy.
- ✓ Good foundation for absorbing complex medical concepts.
- ✓ Long-term benefits for career in life sciences.

HISTORY OF ANATOMY AND PHYSIOLOGY

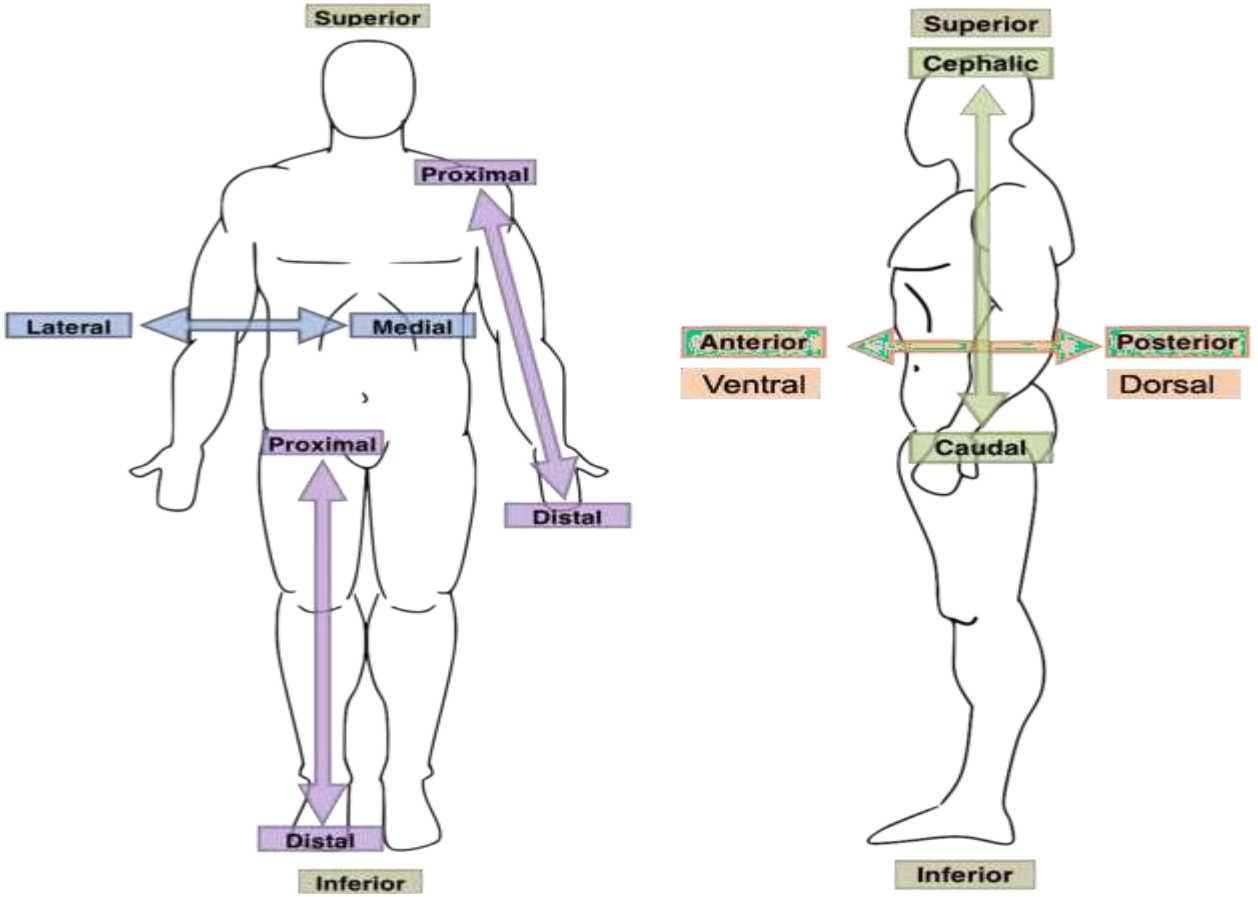
- ✓ **Ancient Times (~3000 BCE):** Egyptian and Greek contributions, e.g., Hippocrates as "Father of Medicine."
- ✓ **Early Beginnings (400-500 BCE):** Aristotle's studies on animal dissection.
- ✓ **Renaissance (1500s):** Leonardo da Vinci's anatomical drawings; Vesalius' "De Humani Corporis Fabrica."
- ✓ **Modern Era (1800s-Present):** Development of cell theory (Schleiden & Schwann), physiology advancements by Claude Bernard, and integration with technology like MRI.

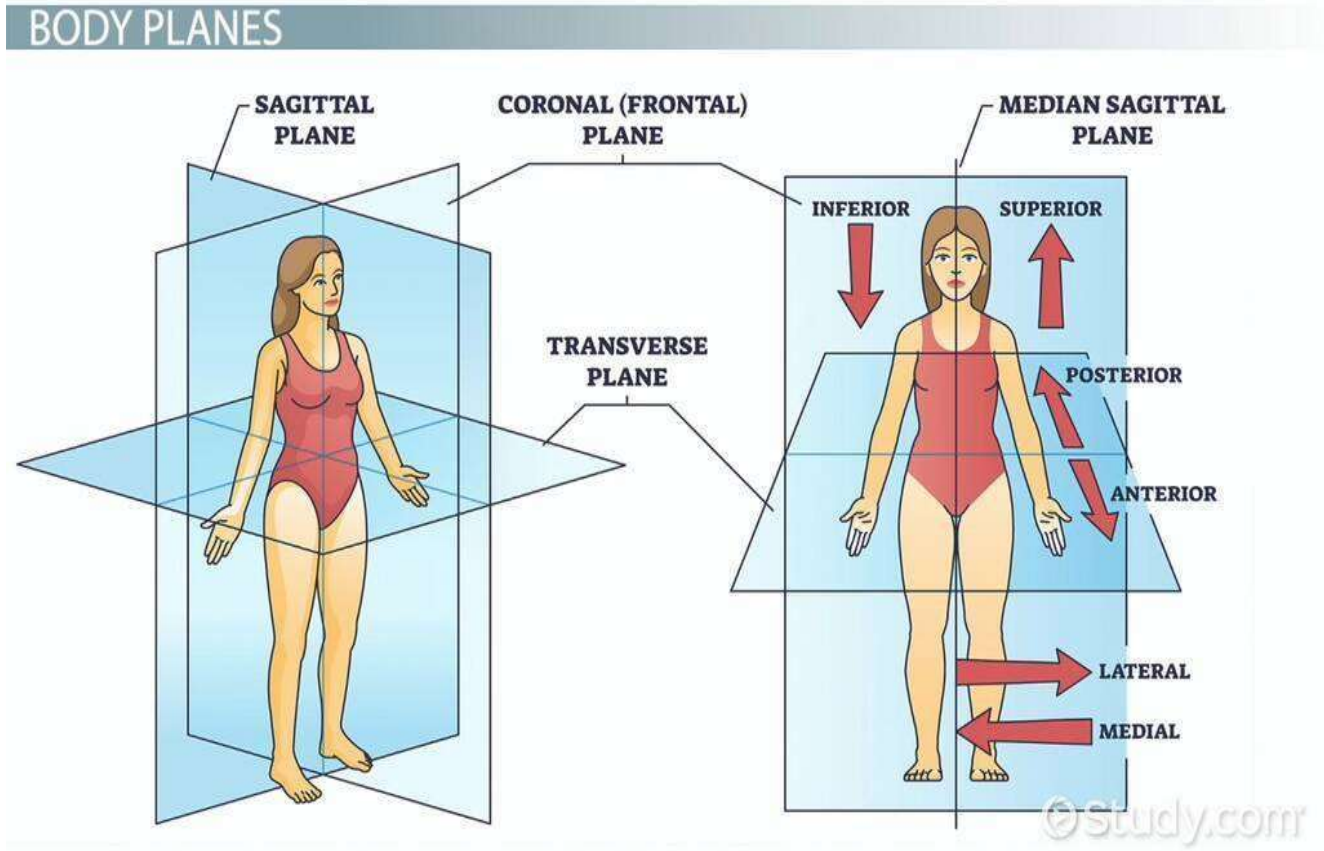
TERMINOLOGY USED IN ANATOMY AND PHYSIOLOGY

Descriptive and Directional Terms

Term	*Definition*
Superior (cranial)	Toward the head
Inferior (caudal)	Toward the bottom (tail)
Anterior (ventral)	Toward the front
Posterior (dorsal)	Toward the back
Medial	Toward the midline of the body
Lateral	Toward the side of the body
Internal (deep)	Away from the surface of the body
External (superficial)	Toward the surface of the body
Proximal	Toward the main mass of the body
Distal	Away from the main mass of the body
Visceral	Related to internal organs
Parietal	Related to the body walls

TERMINOLOGY




BODY PLANES
SAGITTAL PLANE
CORONAL (FRONTAL) PLANE
MEDIAN SAGITTAL PLANE
TRANSVERSE PLANE
INFERIOR
SUPERIOR
POSTERIOR
ANTERIOR
LATERAL
MEDIAL
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DEFINITION OF ANATOMY

- ✓ It is the study of the structure of the human body, including the form, size, location, and relationships of its parts.
- ✓ Theories of Anatomy:
  - ➡ Regional: Study by body regions.
  - ➡ Systemic: Study by organ systems.

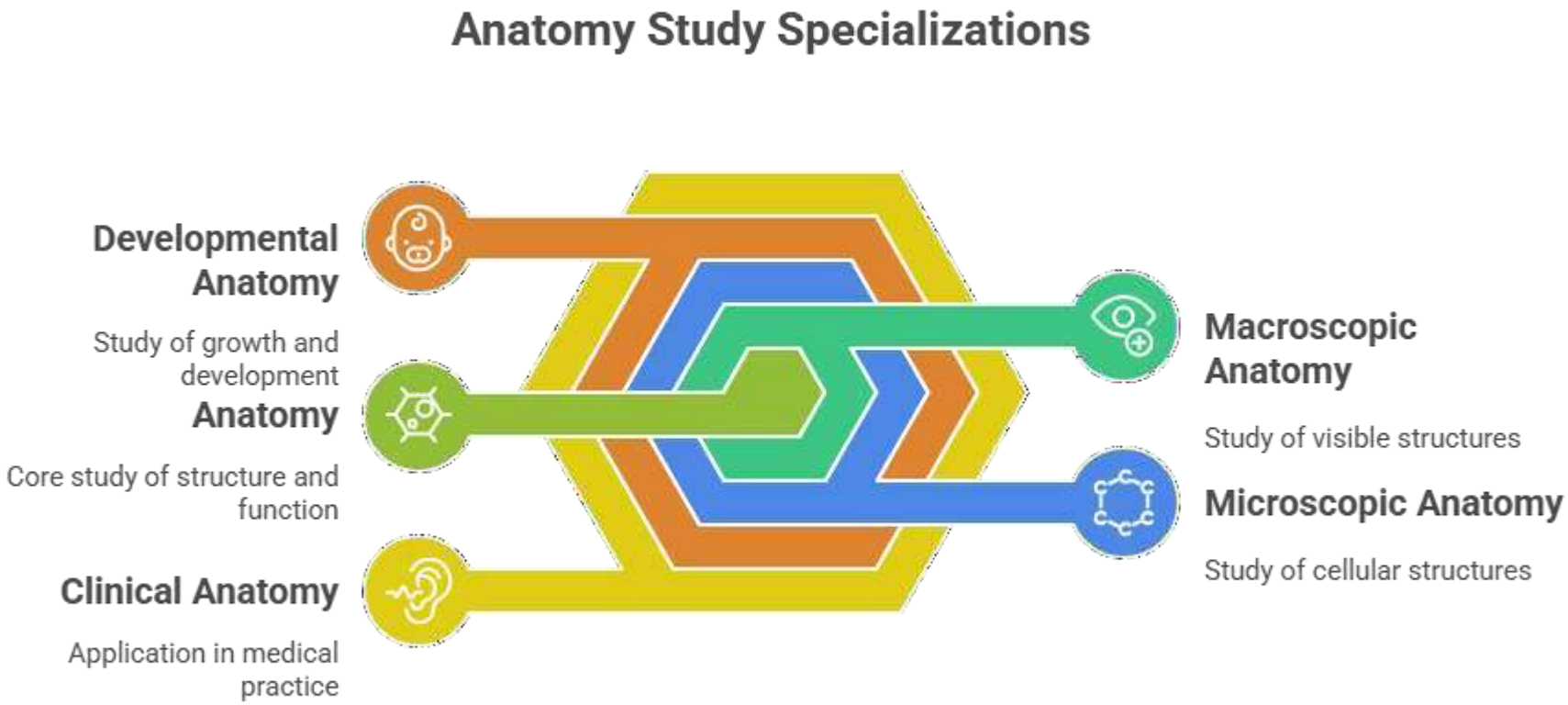
BRANCHES OF ANATOMY

- ✓ Refers to divisions where anatomy is explored through different lenses, such as gross or microscopic.
- ✓ The branches allow gradual understanding of body structures over educational progression.

Examples:

- ➡ Gross Anatomy: Visible structures without microscope.
- ➡ Histology: Tissue study under microscope.
- ➡ Embryology: Development from conception.

APPROACHES TO STUDY ANATOMY



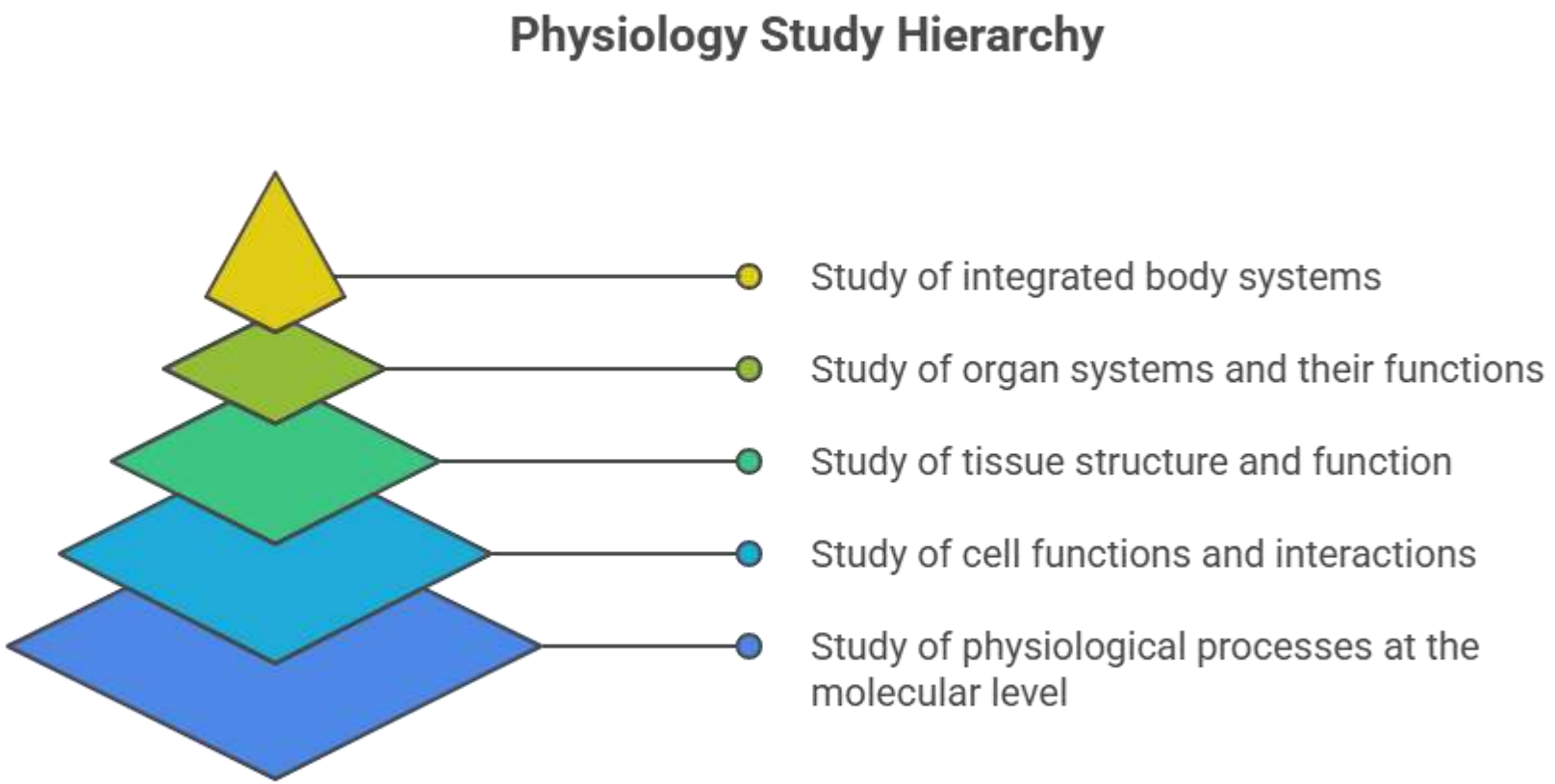
DEFINITION OF PHYSIOLOGY

- ✓ The study is embedded within the functions of body parts that word dynamically.
- ✓ This approach is often used for understanding how systems maintain homeostasis.

Key Aspects:

- ➡ Cellular Level: Functions within cells.
- ➡ Organ Level: How organs operate.
- ➡ Systemic: Integration of systems.

APPROACHES TO STUDY PHYSIOLOGY



SCOPE OF ANATOMY AND PHYSIOLOGY

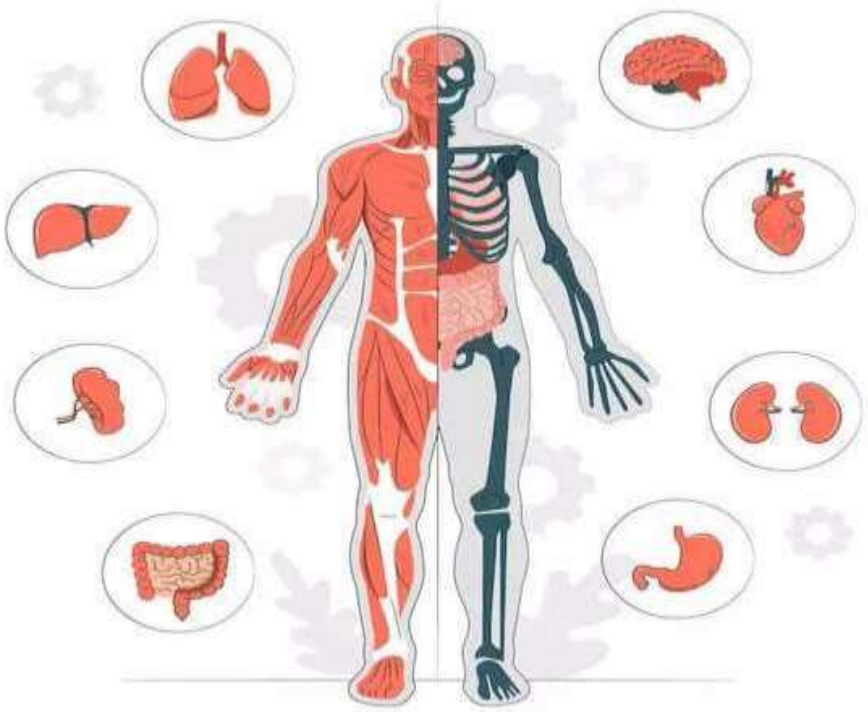
- ✓ This involves the broad application from basic education to advanced medical fields.
- ✓ The scope depends on factors like disease understanding, treatment development, and research.

Examples:

- ➡ In Medicine: Diagnosis and surgery.
- ➡ In Pharmacy: Drug interactions with body functions.
- ➡ In Research: Biotechnology and genetics.

CLASS ASSESSMENTS

- ✓ What is the difference between anatomy and physiology



SUMMARY

- ✓ Anatomy focuses on structure, physiology on function. Together, they provide a comprehensive scope for understanding the human body, essential for health sciences.
- ✓ Key branches include gross, microscopic, and systemic approaches.

REFERENCE

- ✓ Essentials of Medical Physiology, K. Sembulingam & P. Sembulingam (Jaypee Brothers Medical Publishers)
- ✓ A Textbook of Human Anatomy and Physiology-I, SIA Publishers
- ✓ Human Anatomy & PhysiologyGerard J. Tortora & Bryan H. Derrickson (Wiley)
- ✓ Ross and wilson anatomy and physiology in health and illness, Anne Waugh &Allison Grant.


Thank You