



The Mark Distribution:

- Total marks = 100%
- Course work = 60%
- Final Exam = 40%

Coursework: 60%

- Midterm: Theory (20%) + Practical (10%) = 30%
- Quiz Theory = 5%
- Quiz Lab = 5%
- Lab Report = 5%
- Discussion/ HW = 5%
- Presentation = 10%

Final Exam: 40%

- Theory = 25%
- Practical = 15%



Anesthesia Department

Introduction to Human Biology & Basic tissues

Human Biology (ANE106)

Year 1/ Spring semester

Lecture 1

Lecturer: Mr. Omer Sardar Taha

E-mail: Omer.sardar@tiu.edu.iq

April 06, 2026



Why do we study human biology?

Cellular Organization

Cells



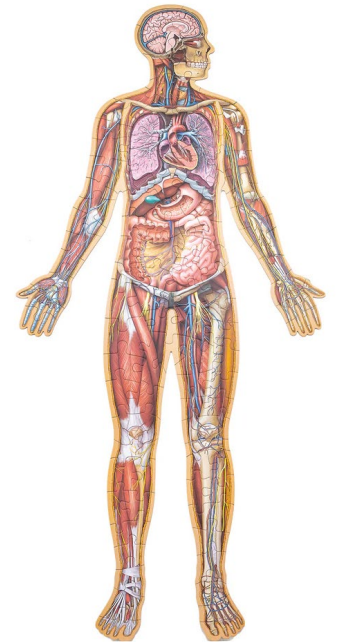
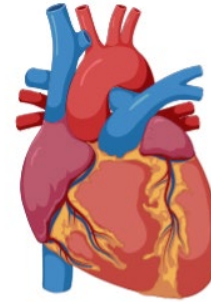
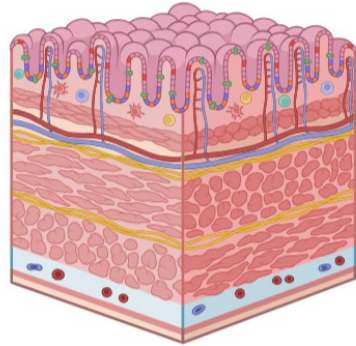
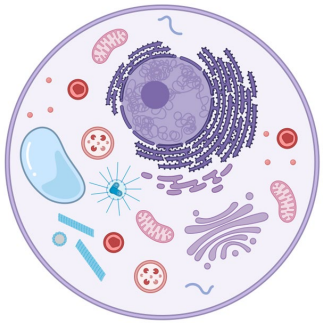
Tissues



Organs



Organ System



Introduction to Tissues

A tissue is a group of similar cells that perform a specific function

Each tissue has:

1. Specific structure
2. Specific function

Types of tissues

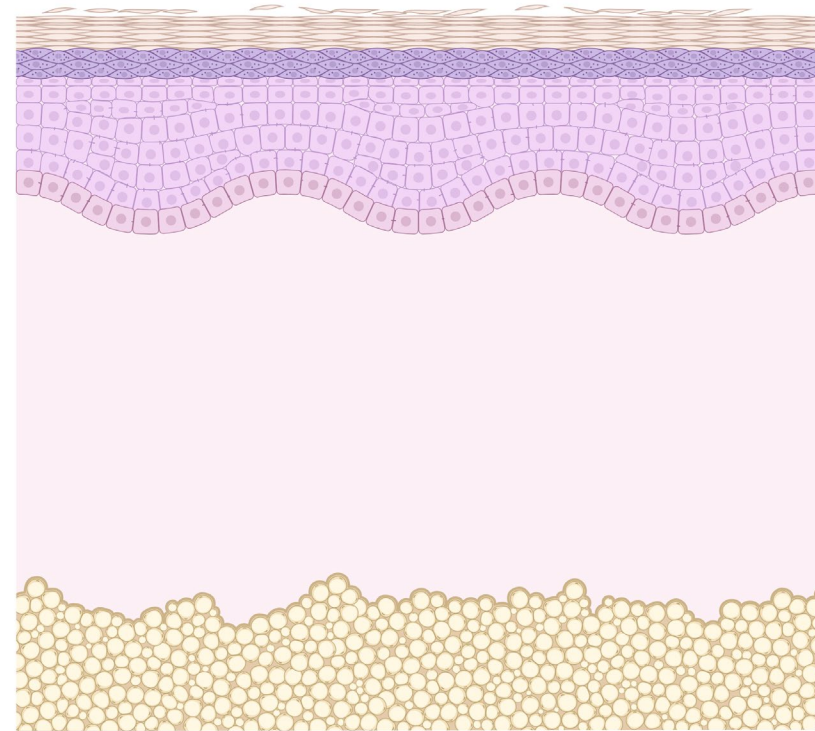
- Epithelial
- Connective
- Nervous
- Muscle

Epithelial tissue

Epithelial tissue covers the body surface and lines internal organs.

Characteristics:

- Cells tightly packed
- Little space between cells



Epithelial tissue

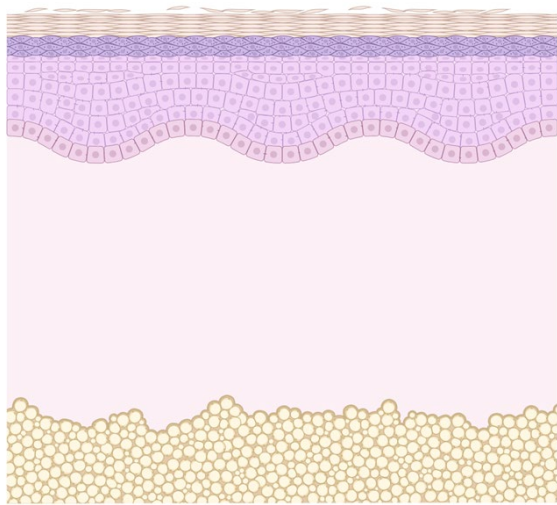
Functions:

- **Protection:** skin protects against injury
- **Absorption:** intestine absorbs nutrients
- **Secretion:** glands produce substances (e.g., mucus, hormones)

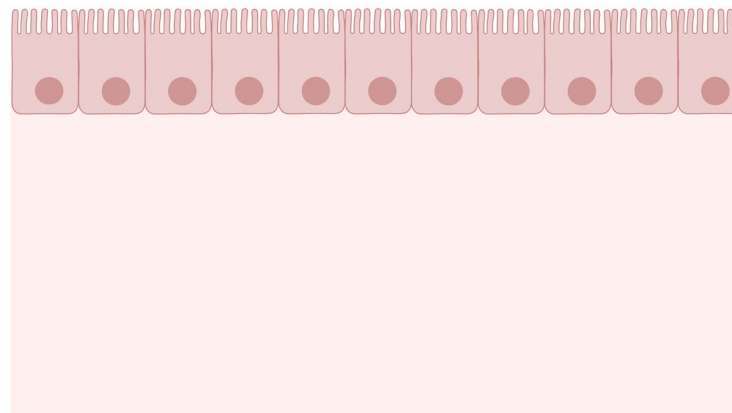
Epithelial tissue

Examples:

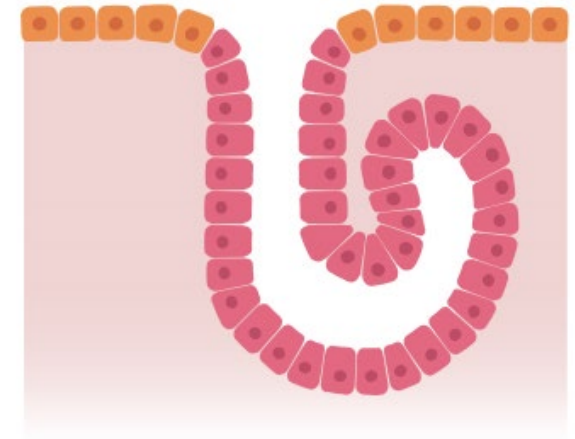
- Skin (protection)
- Intestinal lining (absorption)
- Sweat gland (Secretion)



Skin



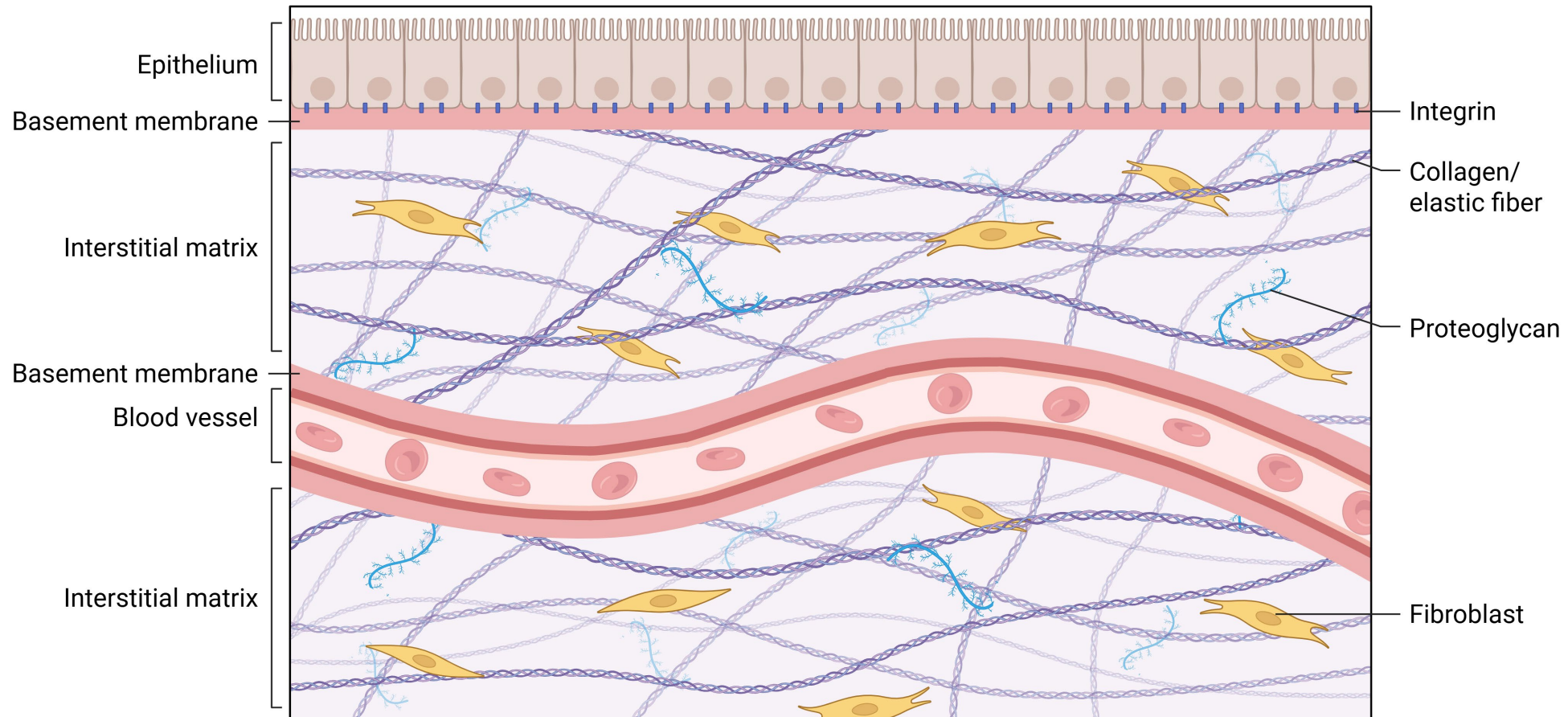
Small Intestine



Sweat gland

Connective Tissue

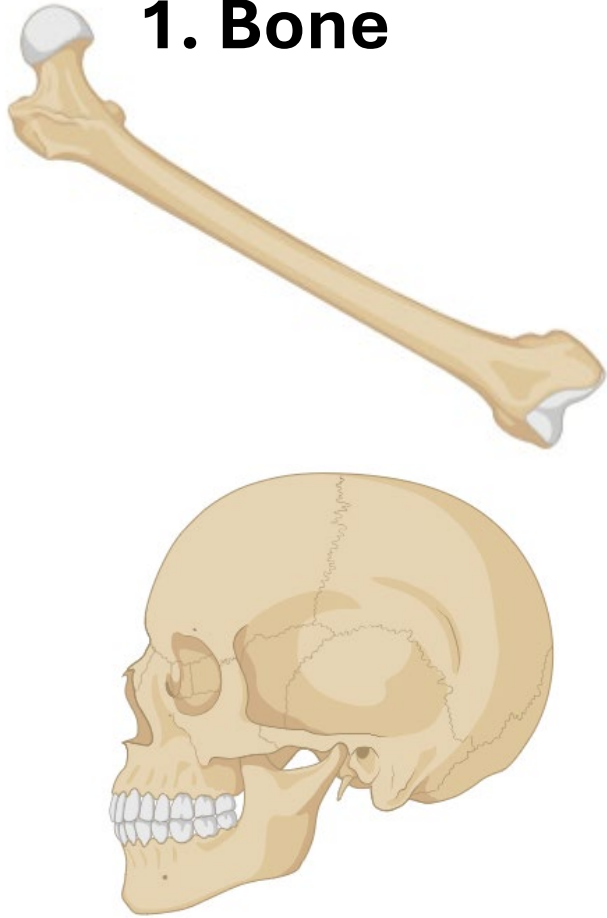
Connective tissue supports, connects, and protects body structures.



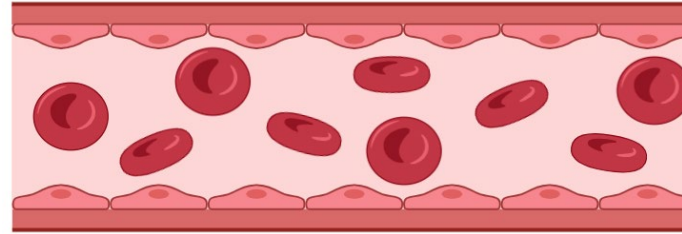
Connective Tissue

Examples:

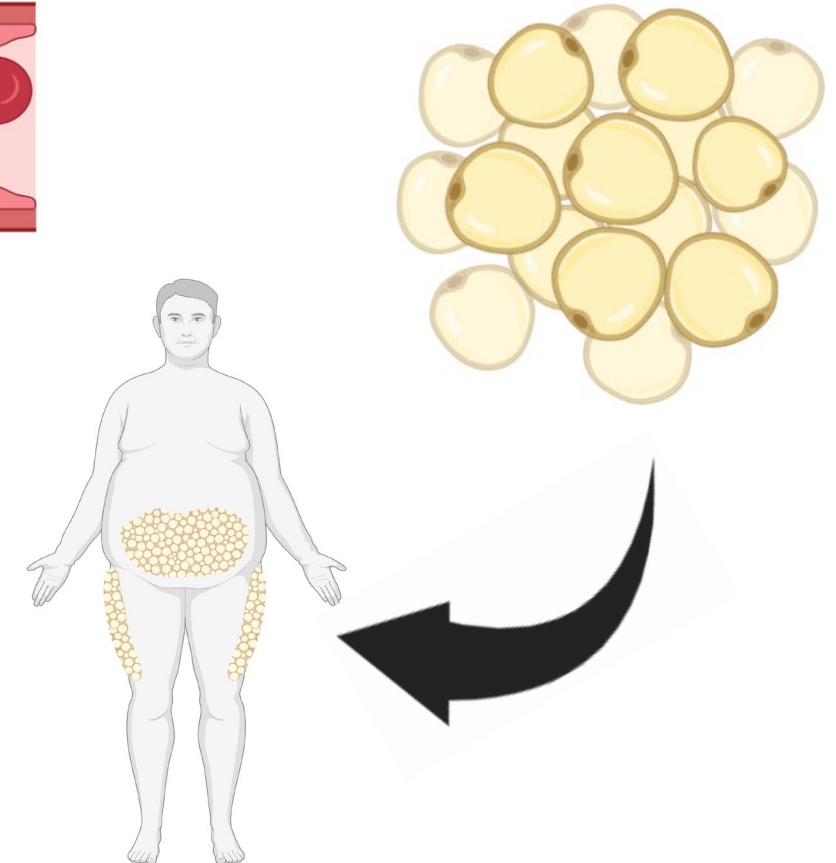
1. Bone



2. Blood



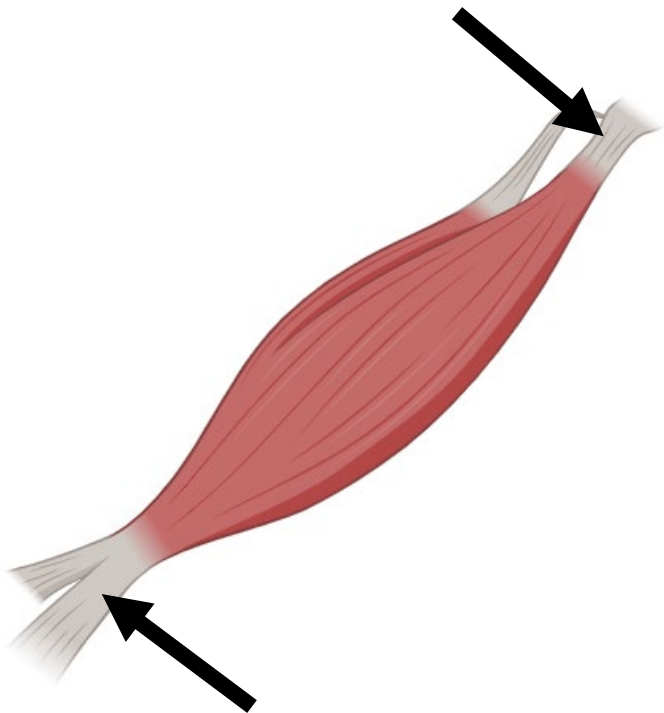
3. Adipose (fat)



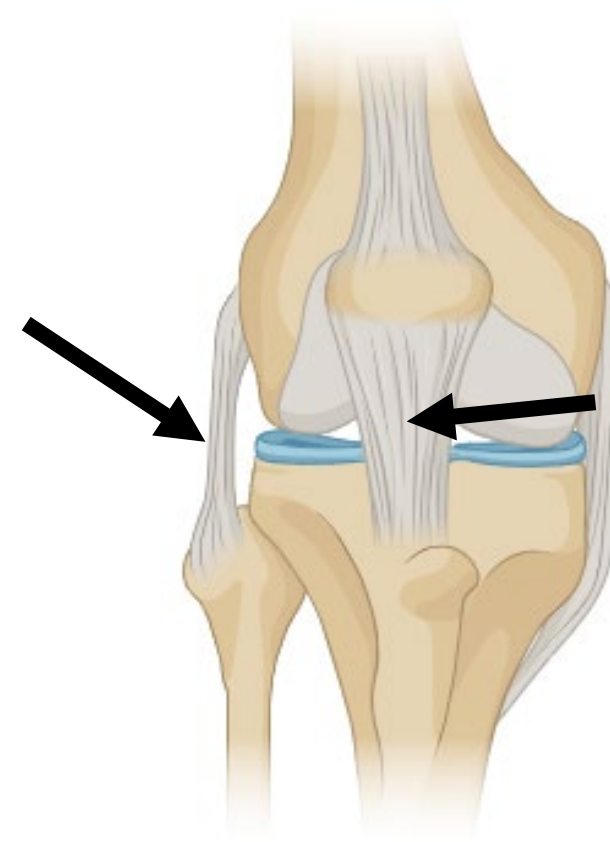
Connective Tissue

Examples:

4. Tendon



5. Ligaments



Connective Tissue

Function:

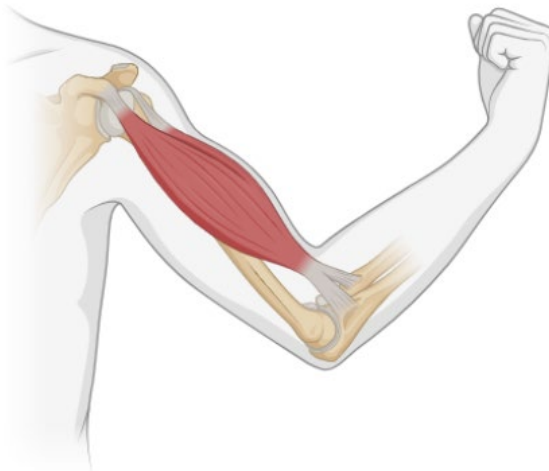
- **Bone:** support and protection
- **Blood:** transport of substances
- **Adipose (fat):** energy storage and insulation
- **immune cells in blood:** Defense
- **Tendons and ligaments:** Connection

Key idea:

Connective tissue provides structure and transport

Muscle Tissue

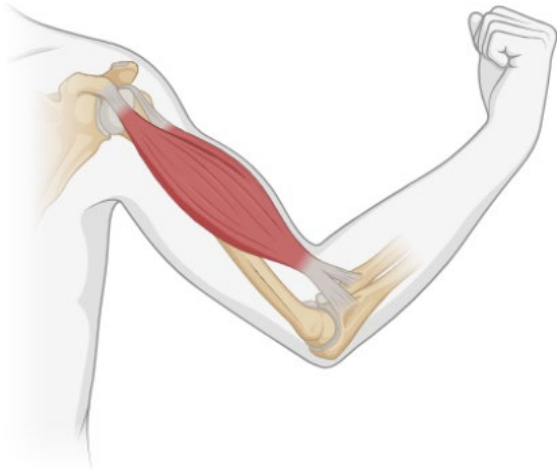
Muscle tissue is specialized for contraction and movement.



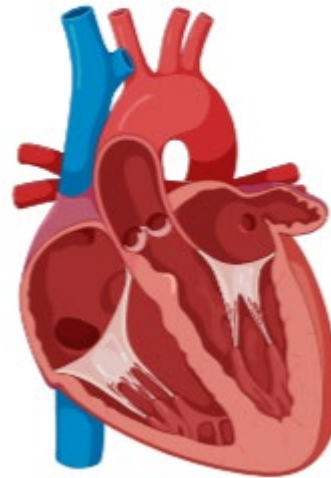
Muscle Tissue

Types:

1. Skeletal muscle



2. Cardiac muscle



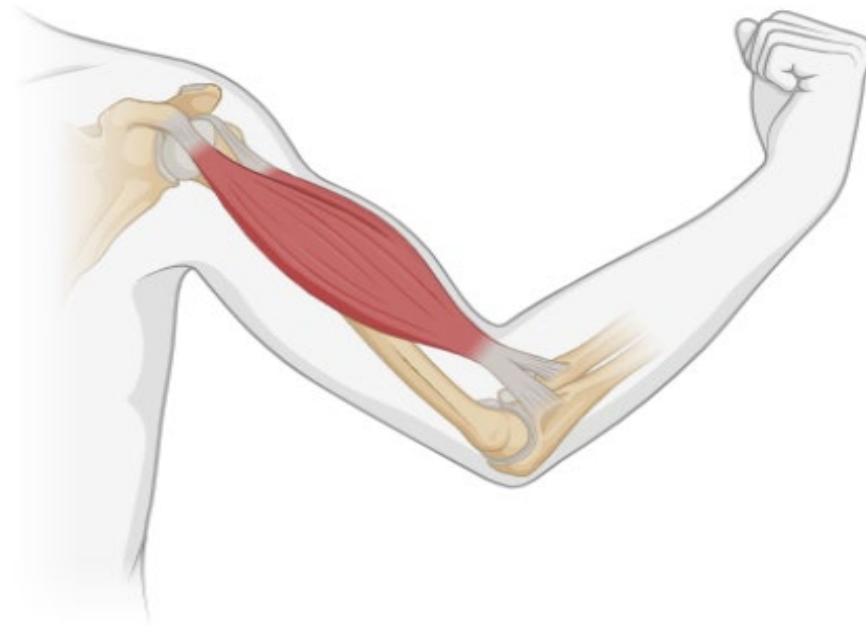
3. Smooth muscle:



Muscle Tissue

Skeletal muscle:

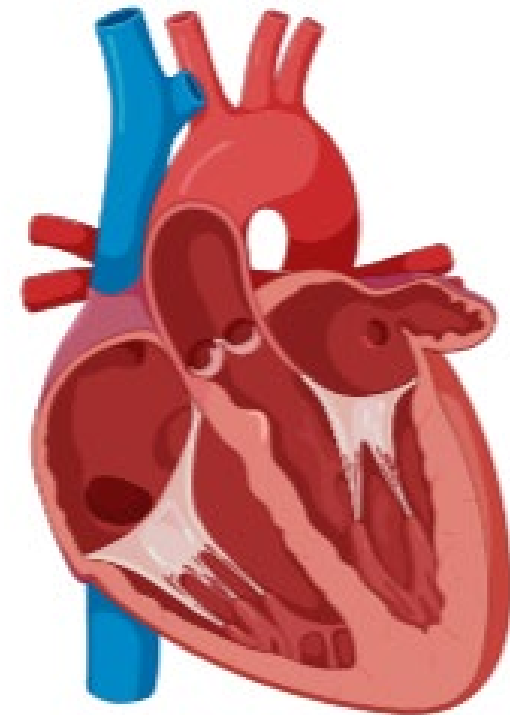
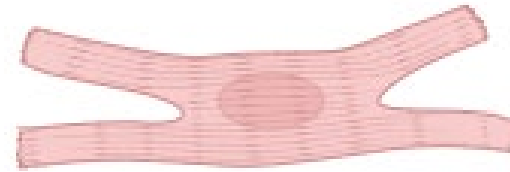
- Voluntary
- Moves bones



Muscle Tissue

Cardiac muscle:

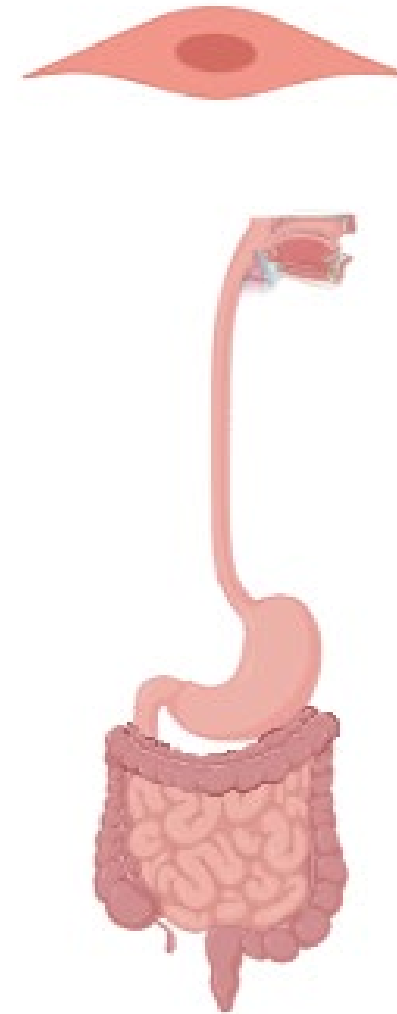
- Found in heart
- Involuntary



Muscle Tissue

Smooth muscle:

- Found in organs (intestine, vessels)
- Involuntary

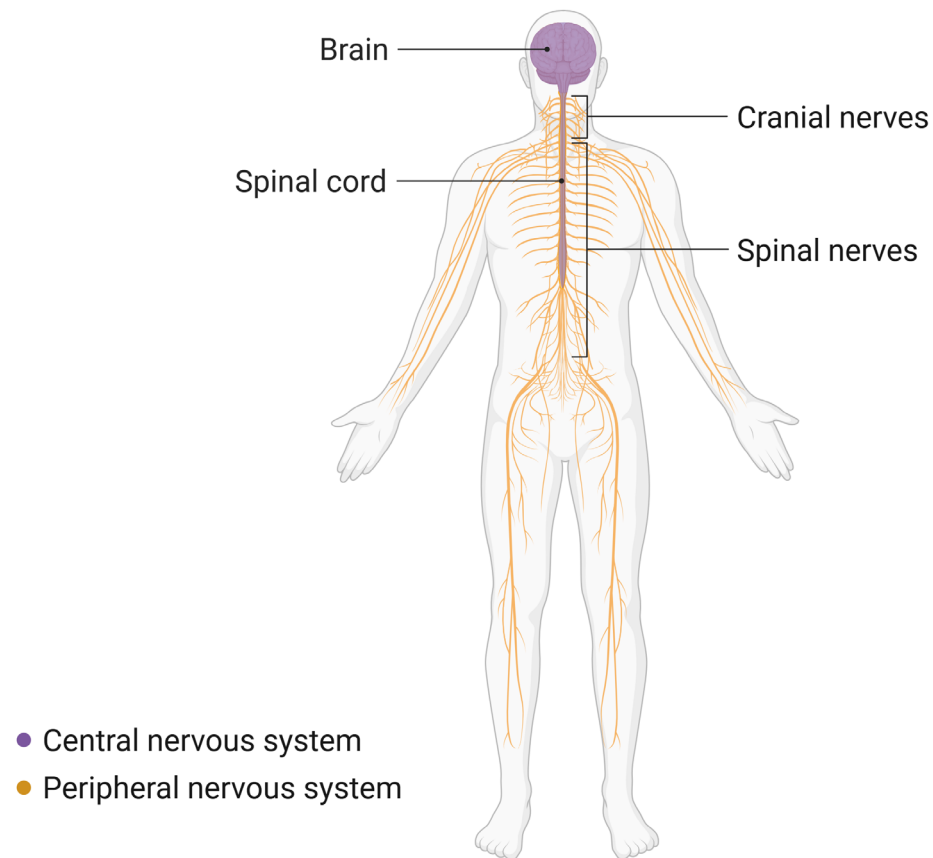


Key idea:

All movement in the body depends on muscle

Nervous Tissue

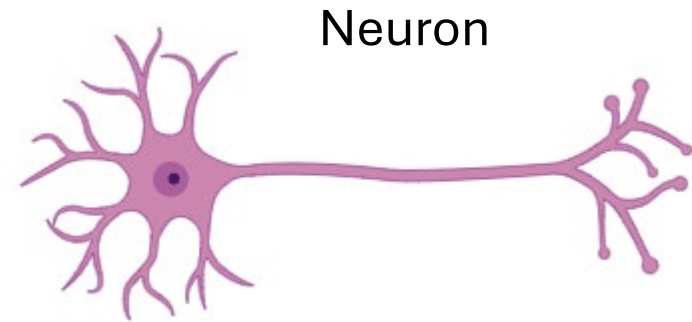
Nervous tissue is responsible for communication and control.



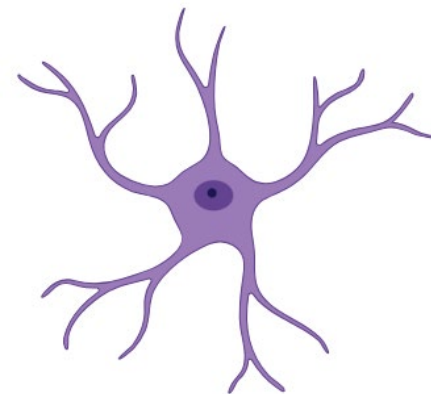
Nervous Tissue

Main cells:

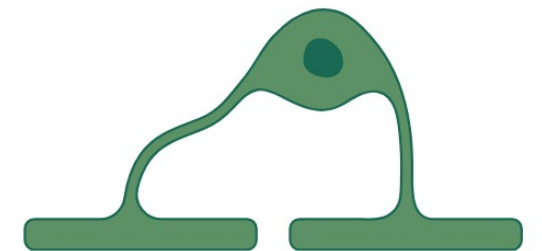
- **Neurons:** transmit signals
- **Glial cells:** support neurons
Ex/ Astrocyte, oligodendrocyte,
Schwann cell, ependymal cell

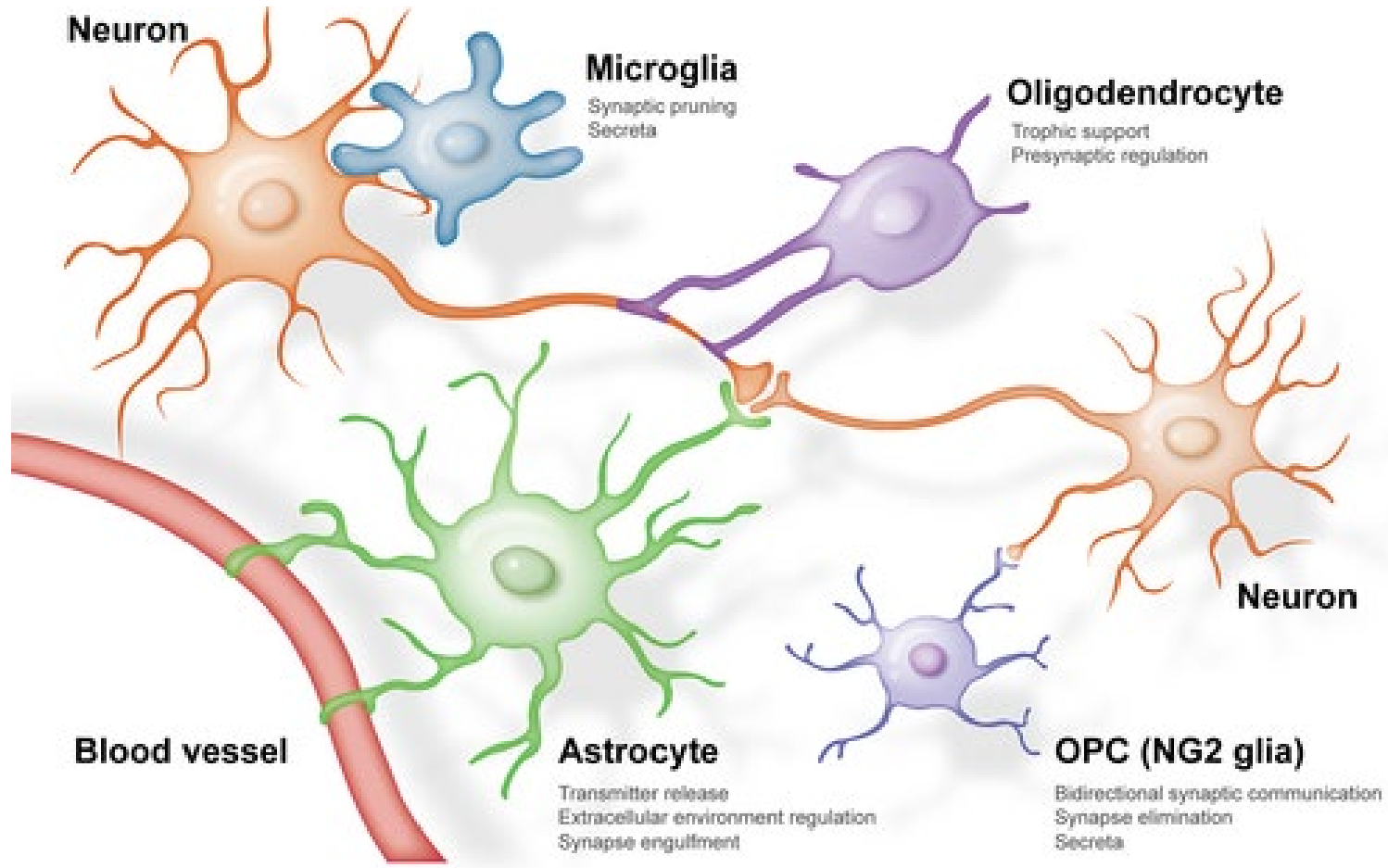


Astrocyte



Oligodendrocyte





Nervous Tissue

Function:

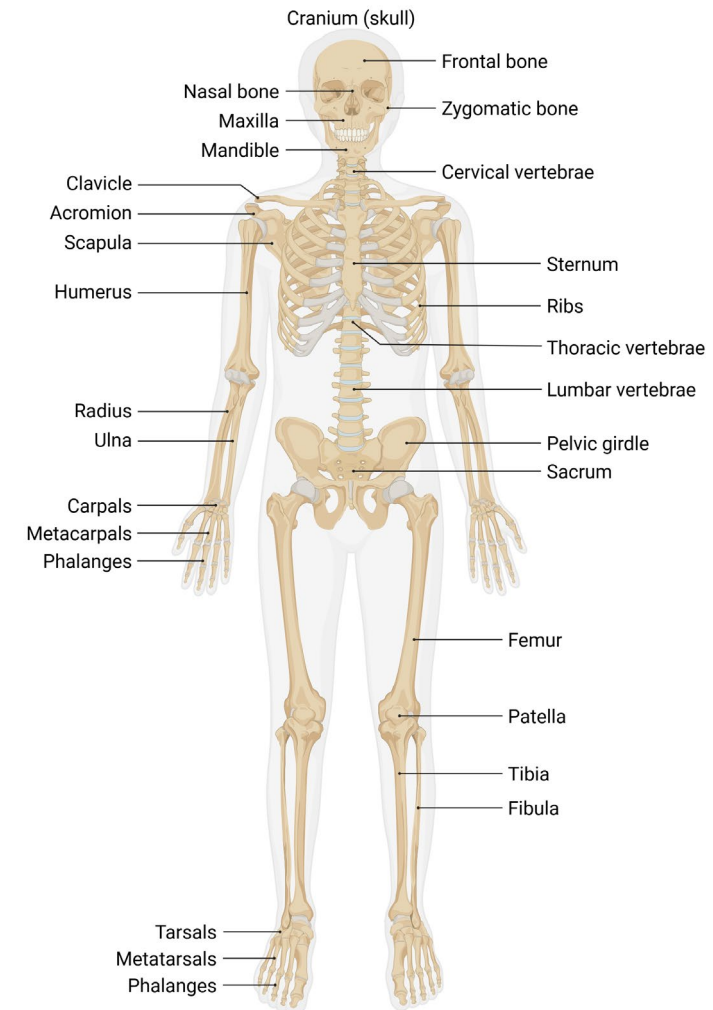
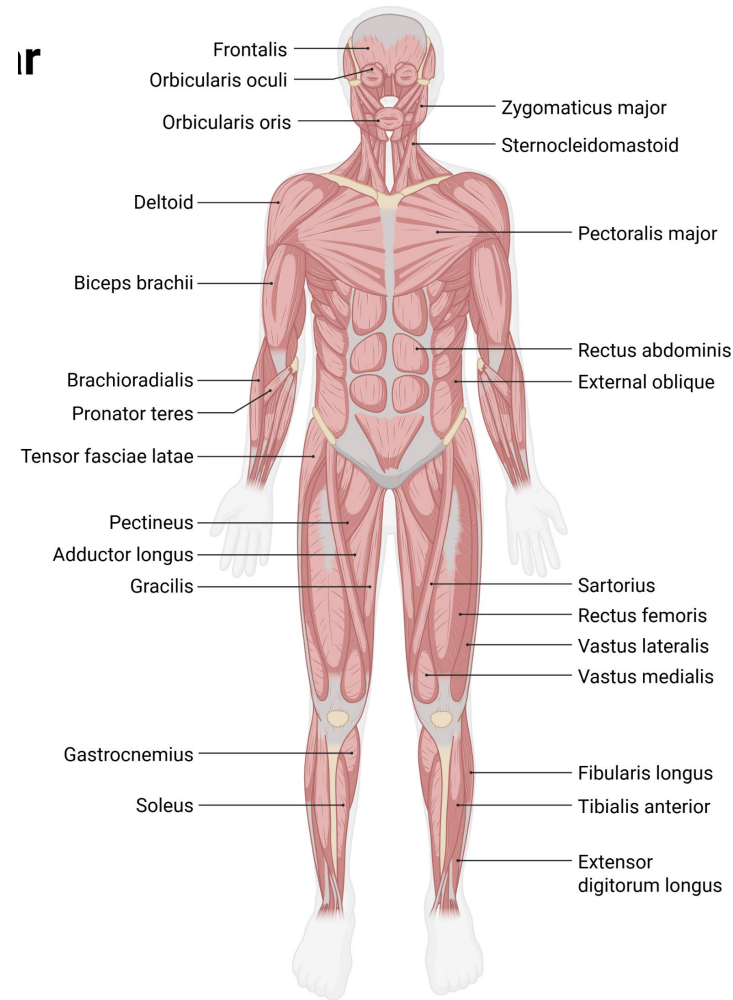
- Receive stimuli
- Send electrical signals
- Coordinate responses



Overview of Body Systems

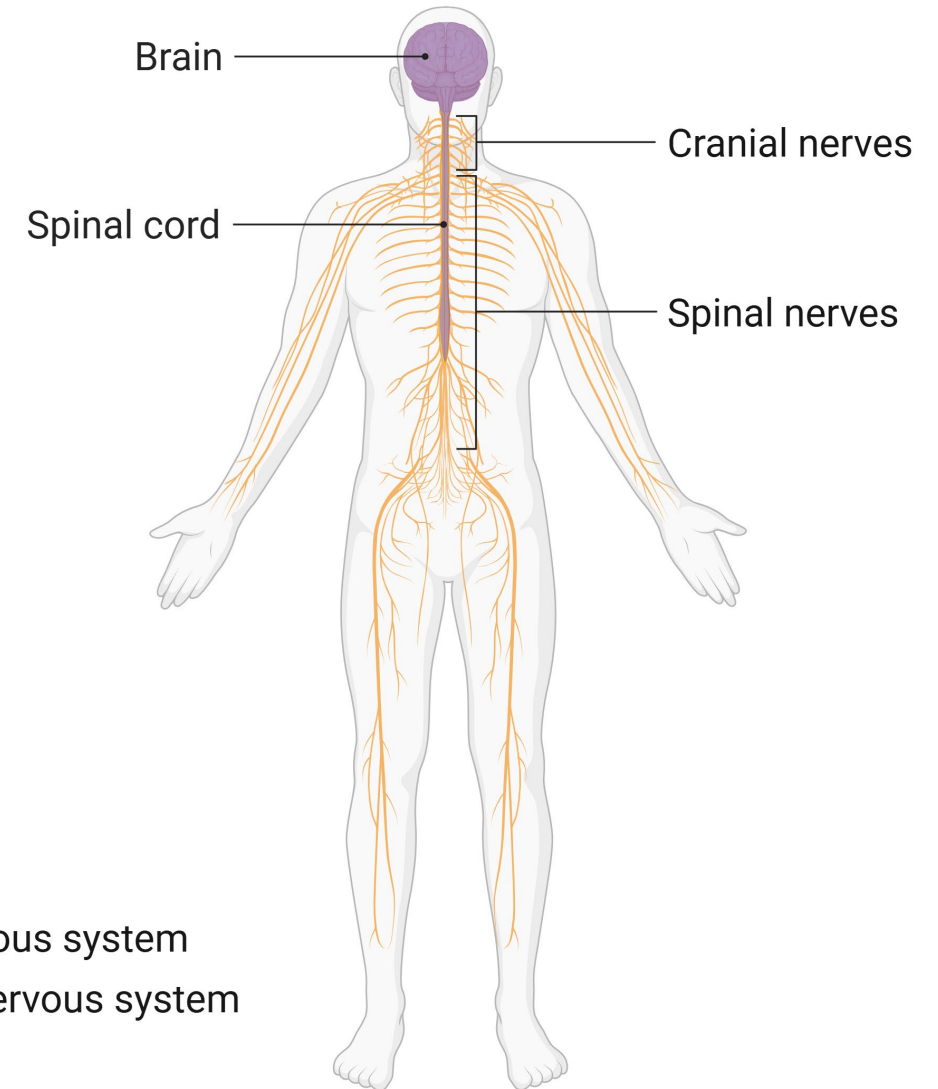
Overview of Body Systems

Musculoskeletal system: supports the body and allows movement



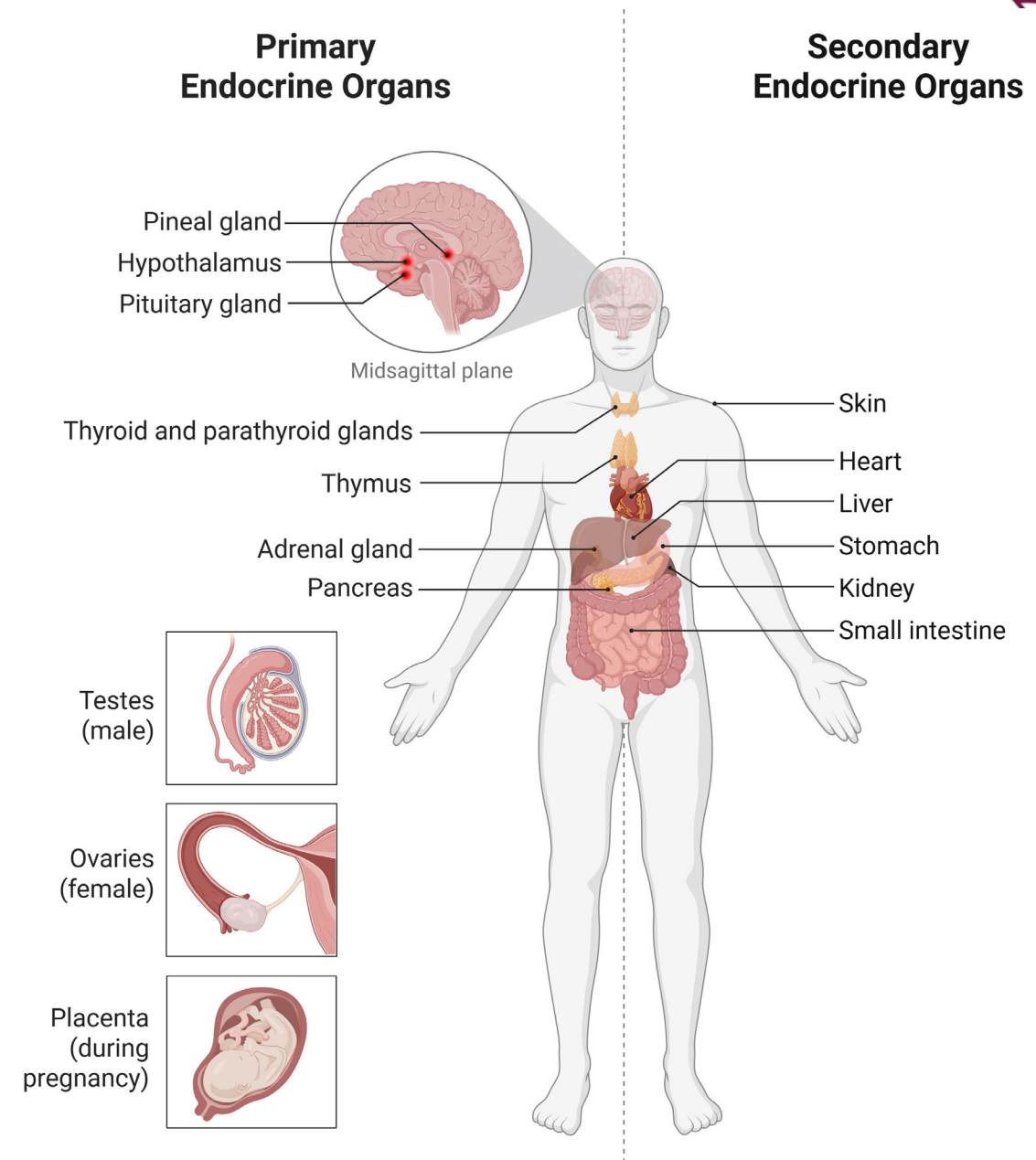
Overview of Body Systems

Nervous system: controls and coordinates body activities using electrical signals



Overview of Body Systems

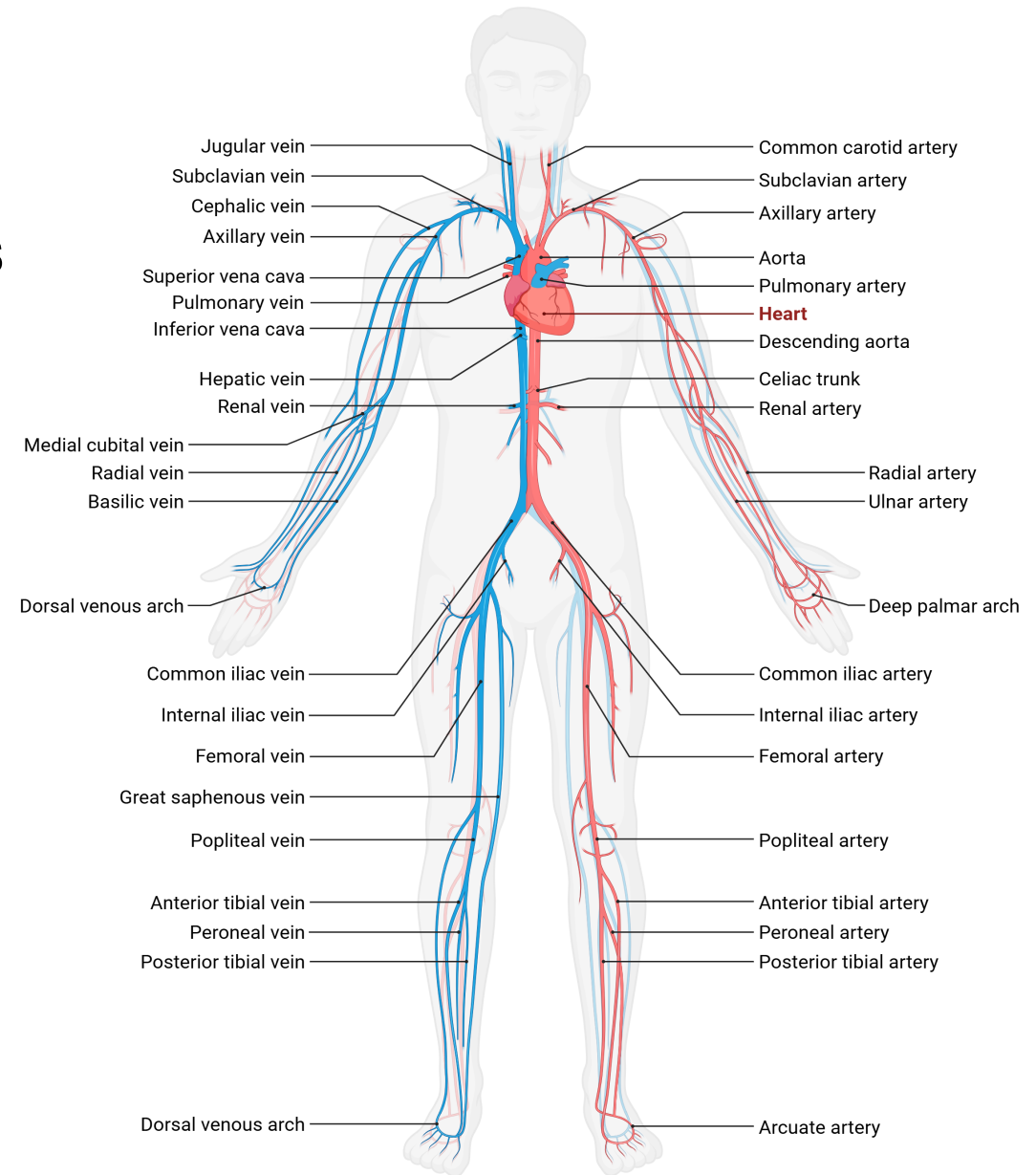
Endocrine system: regulates body functions using hormones (slower but long-lasting)



Overview of Body Systems



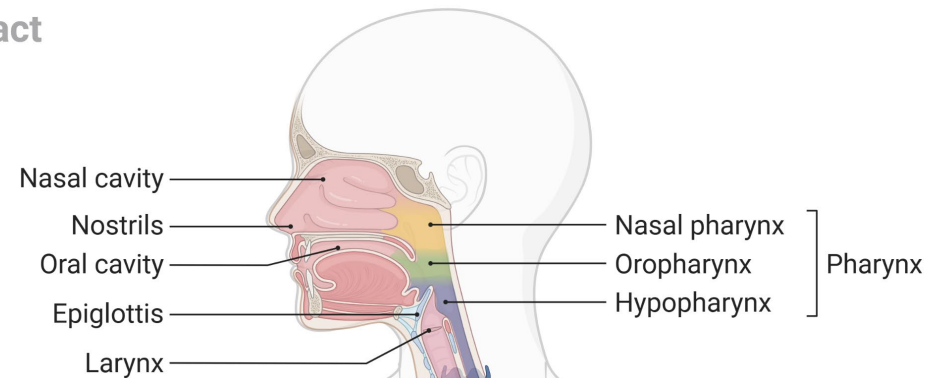
Cardiovascular system: transports oxygen, nutrients, and wastes via blood



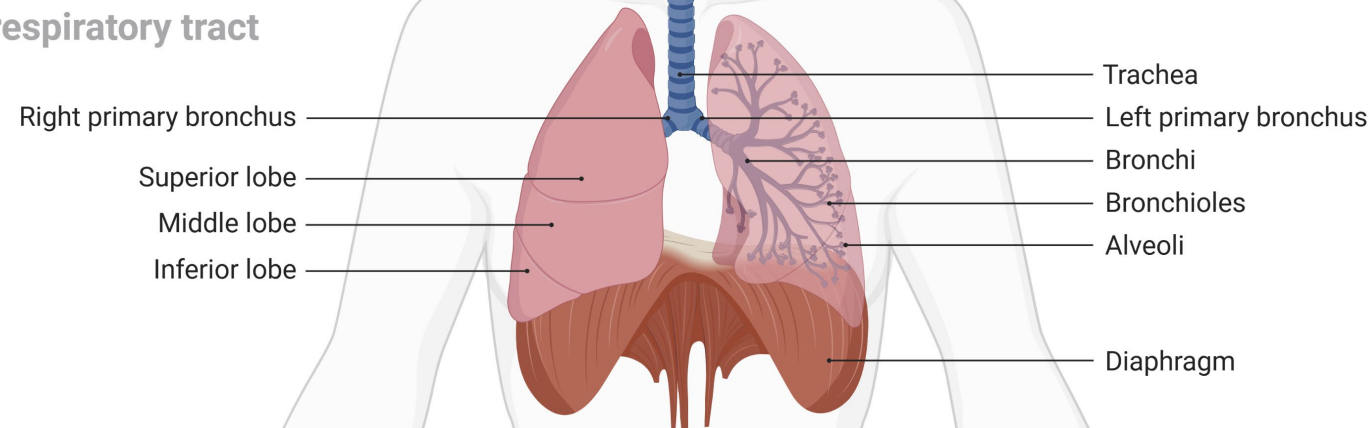
Overview of Body Systems

Respiratory system: exchanges oxygen and carbon dioxide

Upper respiratory tract

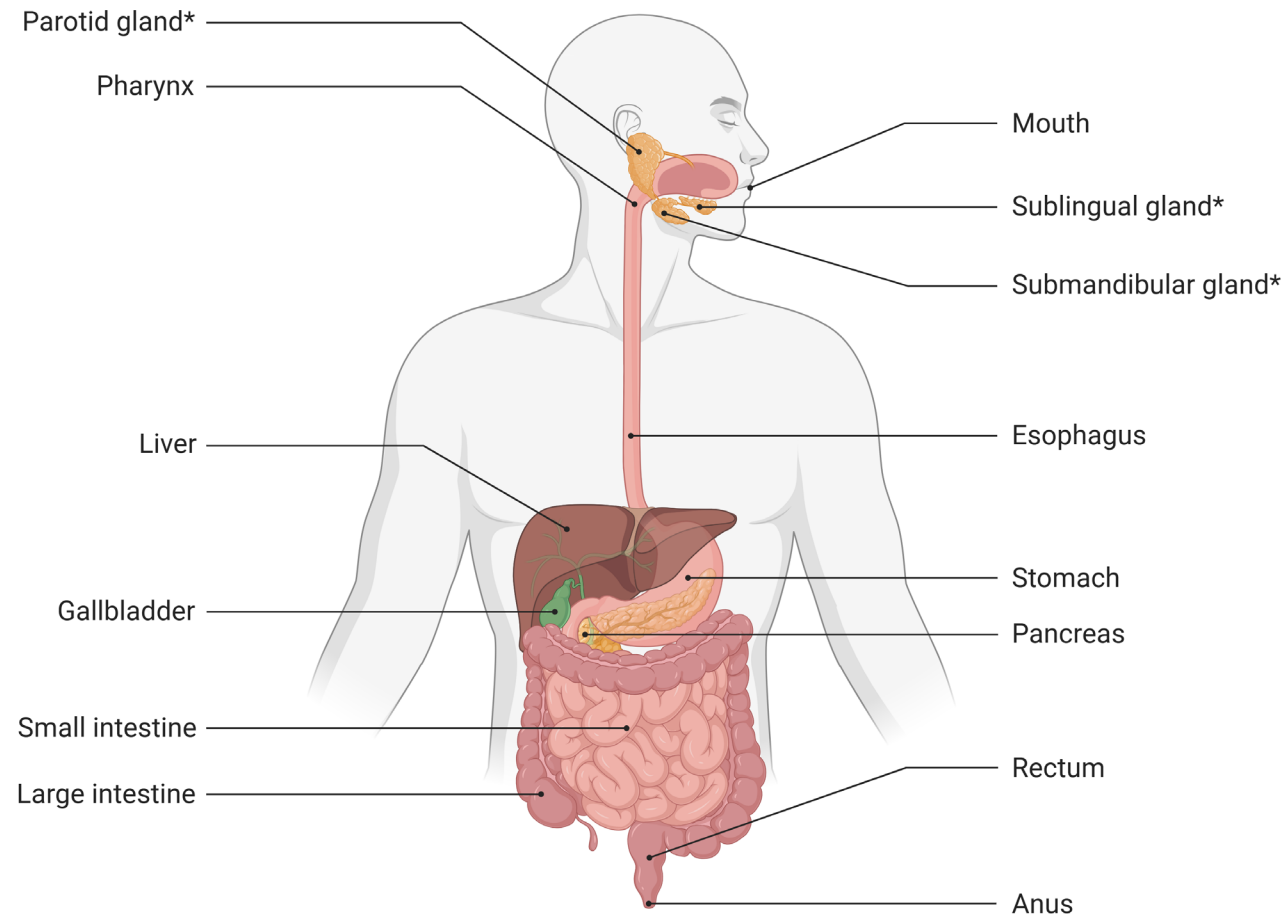


Lower respiratory tract



Overview of Body Systems

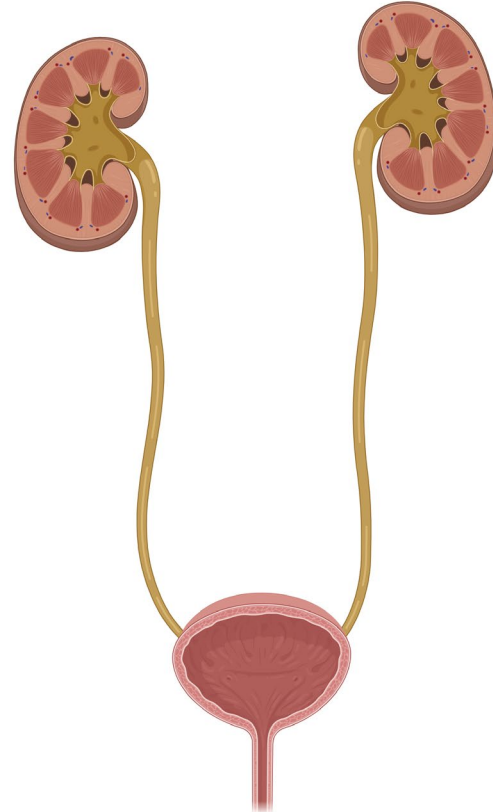
Digestive system: breaks down food and absorbs nutrients



*Salivary glands

Overview of Body Systems

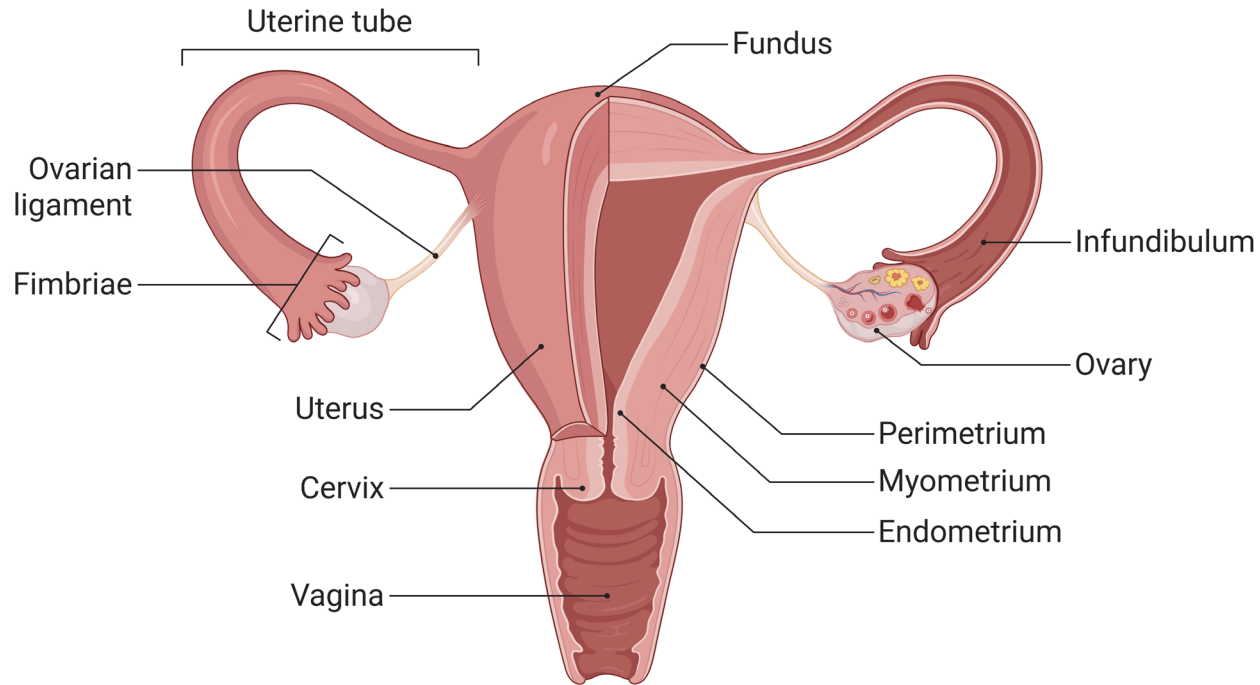
Urinary system: removes waste and regulates water and salts



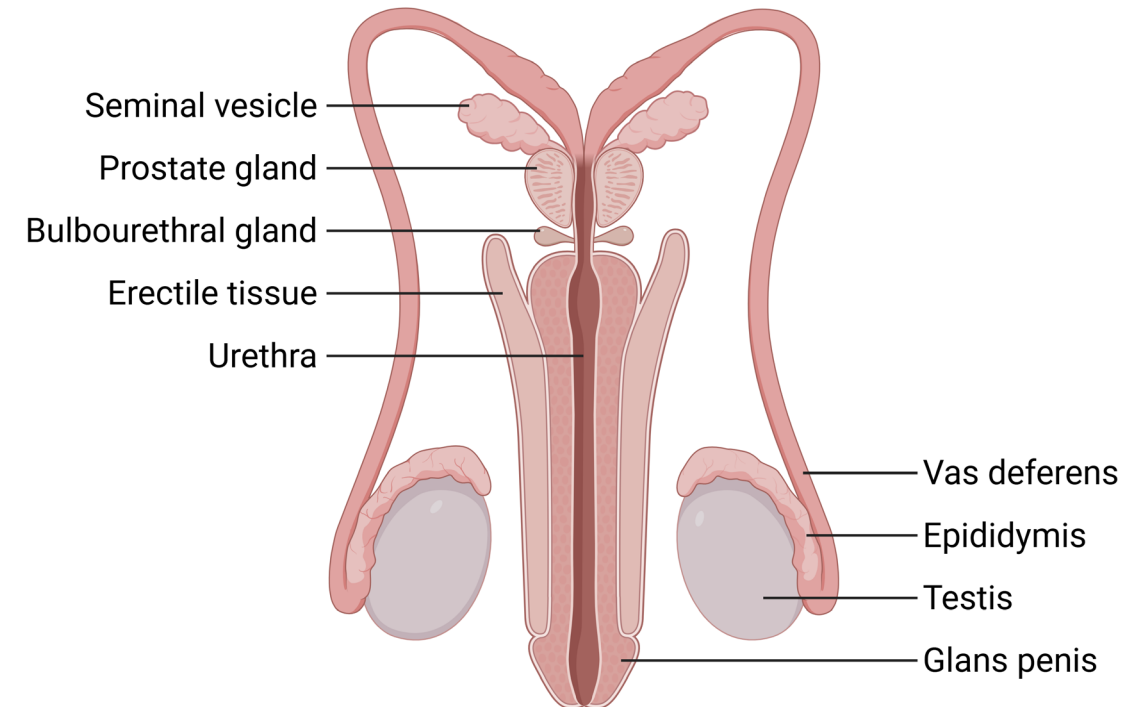
Overview of Body Systems

Reproductive system: responsible for reproduction

Female Reproductive System Anatomy



Male Reproductive System Anatomy





No system works alone; there is constant interaction