Anatomy I Lab . 1

(UOMU013033)

“Anatomy Introduction”

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What is the Human Anatomy?

Human anatomy is the scientific study of the structure of the human body. It examines how body parts are organized and connected.

Anatomy can be approached in two main ways

- **regional anatomy**
- **systemic anatomy**

regional anatomy divides the body into regions (head, neck, thorax/chest, abdomen, pelvis, limbs)
, while **systemic anatomy** divides it into organ systems (skeletal, muscular, circulatory, respiratory, digestive, urinary, reproductive, endocrine, integumentary, nervous, etc.). Together, these regions and systems provide a foundational framework for understanding the body's layout

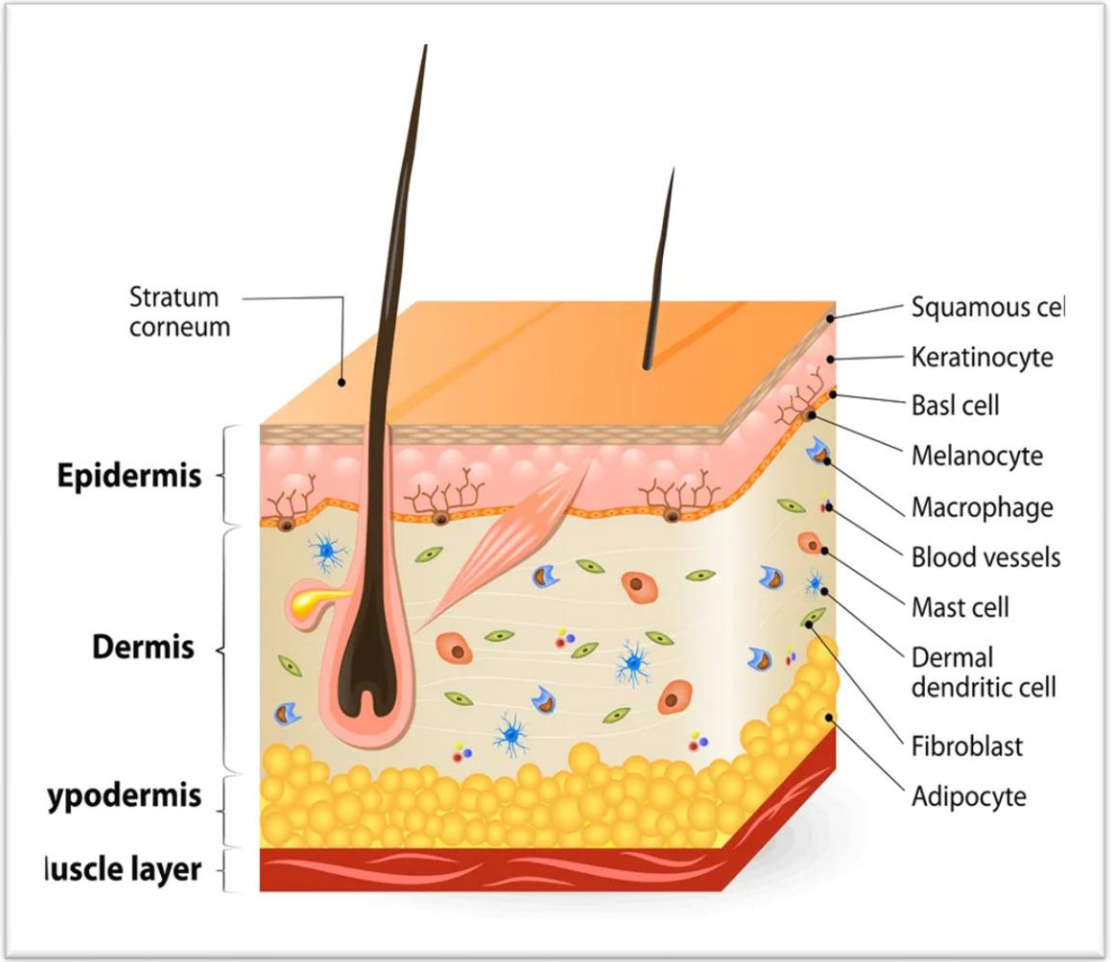
Skin Anatomy

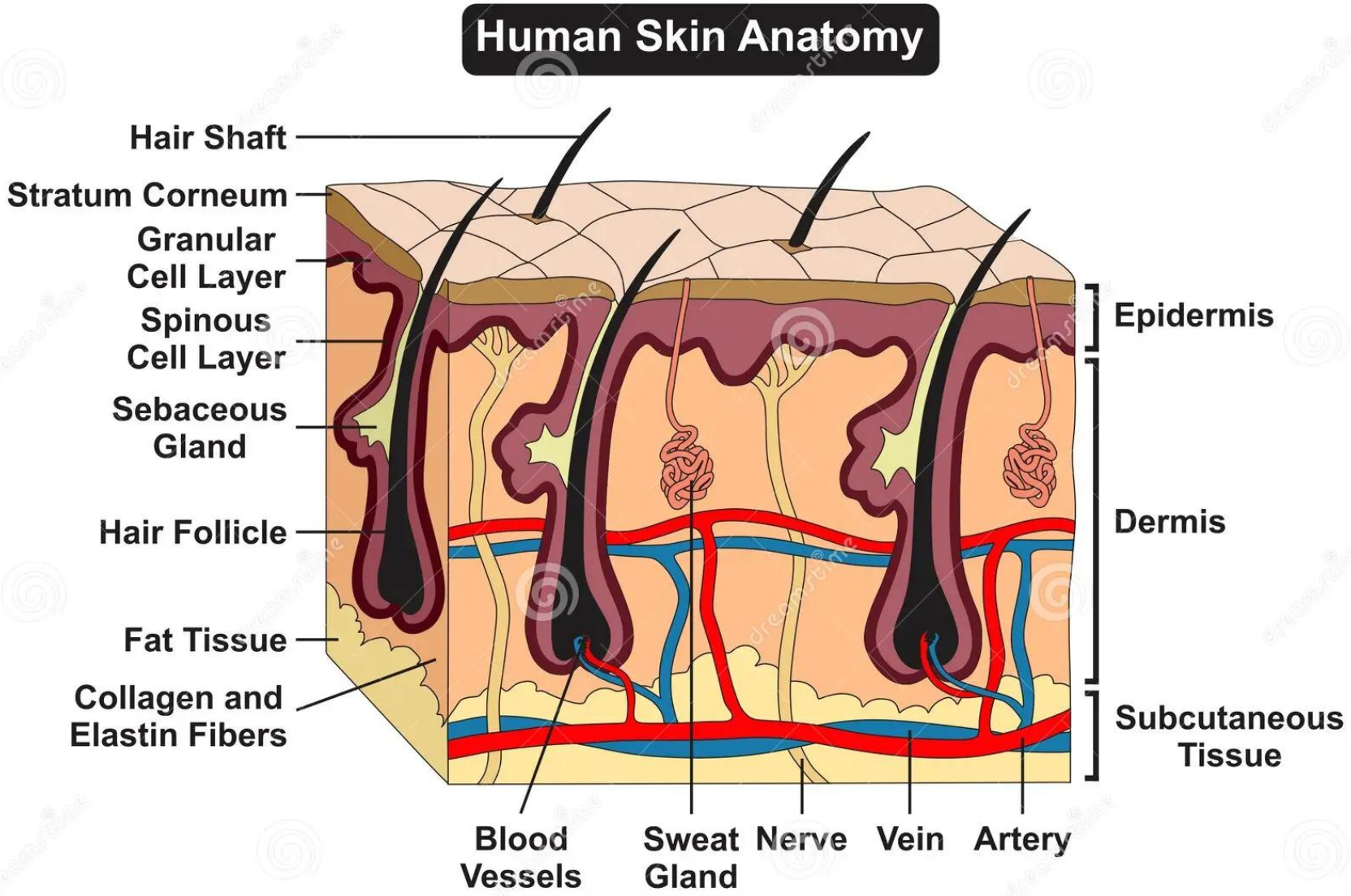
The **skin** is the largest organ of the human body, forming the body's **outer protective covering**.

It has **three main layers**

- **Epidermis (**Outer Layer)
- **dermis (**Middle Layer)
- **hypodermis** (Subcutaneous Layer)

— that work together to protect, regulate, and sense the environment.




Human Skin Anatomy
Hair Shaft
Stratum Corneum
Granular Cell Layer
Spinous Cell Layer
Sebaceous Gland
Hair Follicle
Fat Tissue
Collagen and Elastin Fibers
Epidermis
Dermis
Subcutaneous Tissue
Blood Vessels
Sweat Gland
Nerve
Vein
Artery

Types of Muscle (Tissue):

1. Skeletal Muscle

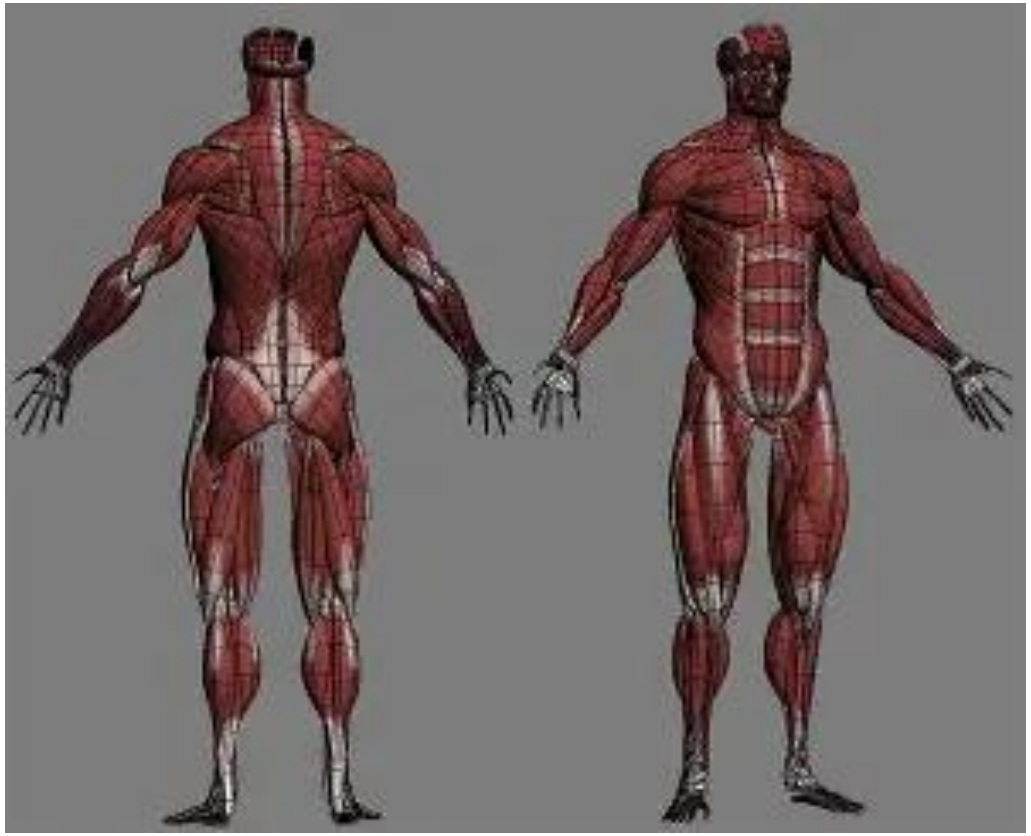
•**Location:** Attached to bones by tendons.

•**Structure:** Long, cylindrical **striated fibers** (striped appearance) with **multiple nuclei** per cell.

•**Control: Voluntary** — controlled consciously by the nervous system.

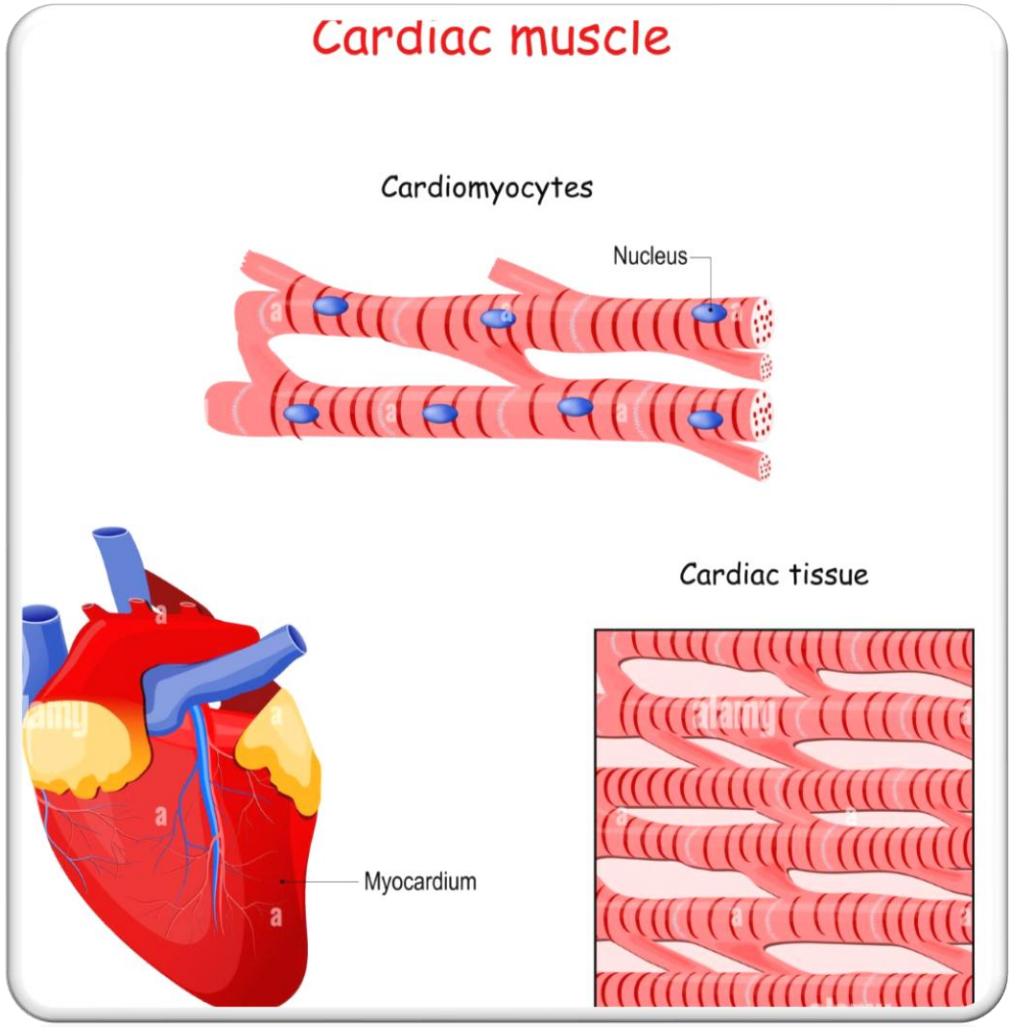
•**Function:**

- Body movement and posture.
- Heat production.
- Example: biceps, quadriceps, diaphragm.



Cardiac Muscle

- **Location:** Found only in the **heart wall (myocardium)**.
- **Structure: Striated** like skeletal muscle but with **branched fibers** and **one central nucleus**. Connected by **intercalated discs** that allow coordinated contraction.
- **Control: Involuntary** — controlled by the autonomic nervous system.
- **Function:**
    - Pumps blood continuously through the circulatory system.



. Smooth Muscle

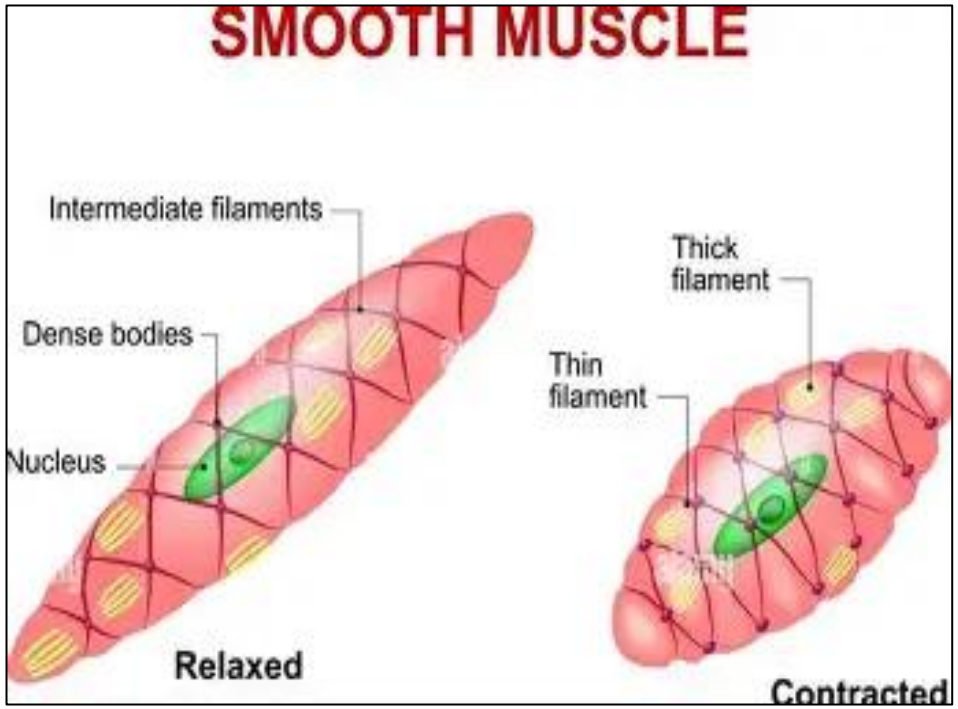
•**Location:** In walls of **hollow organs** (stomach, intestines, blood vessels, bladder, uterus, etc.).

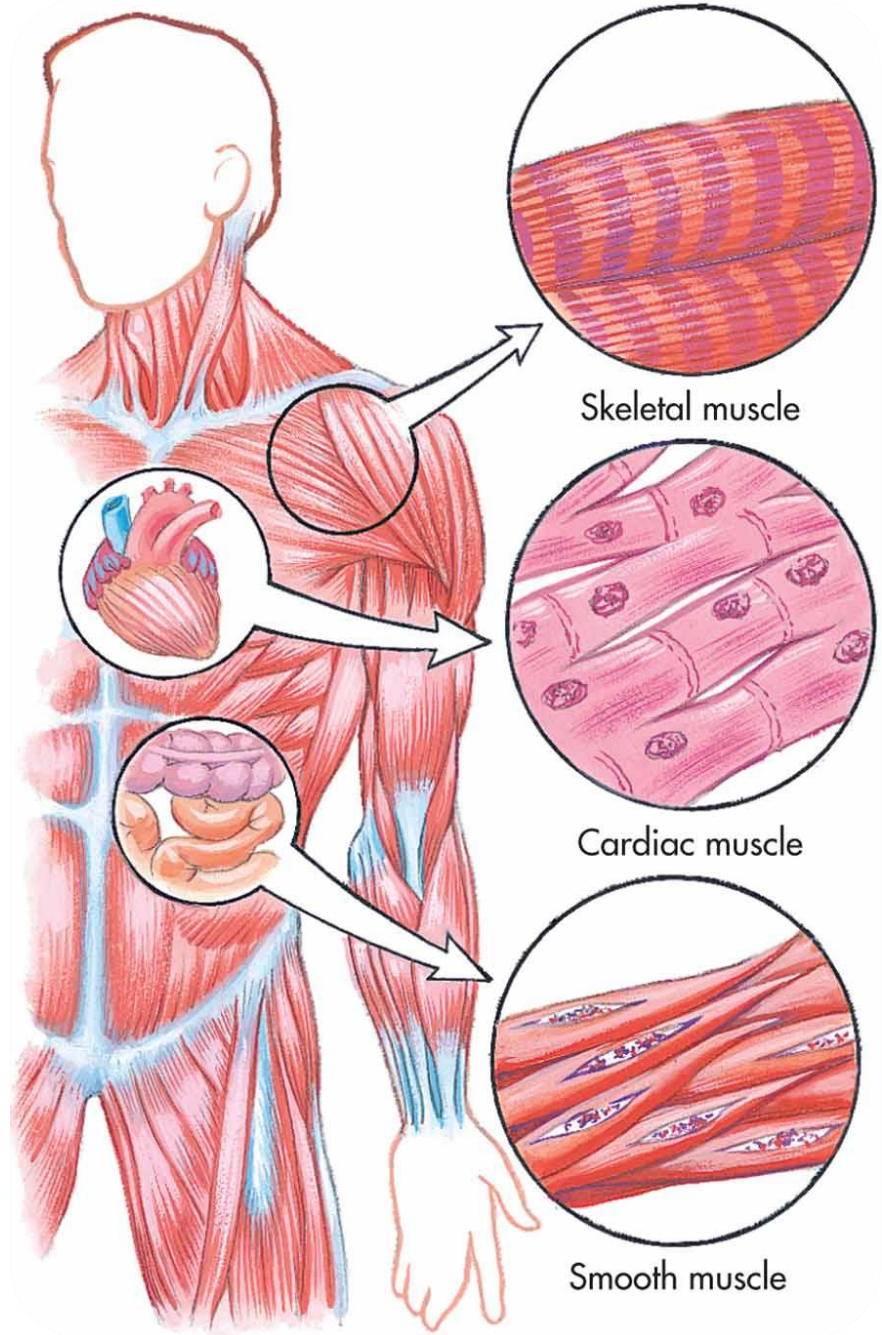
•**Structure: Non-striated**, spindle-shaped cells with a **single nucleus**.

•**Control: Involuntary** — regulated by autonomic nerves and hormones.

•**Function:**

- Moves substances through organs (e.g. food in intestines, urine in bladder).
- Controls diameter of blood vessels and airways.




Skeletal muscle
Cardiac muscle
Smooth muscle

Types of Bones in the Human Body

Bones are classified according to **shape**, which relates to their **function and location**. There are **five main types:**

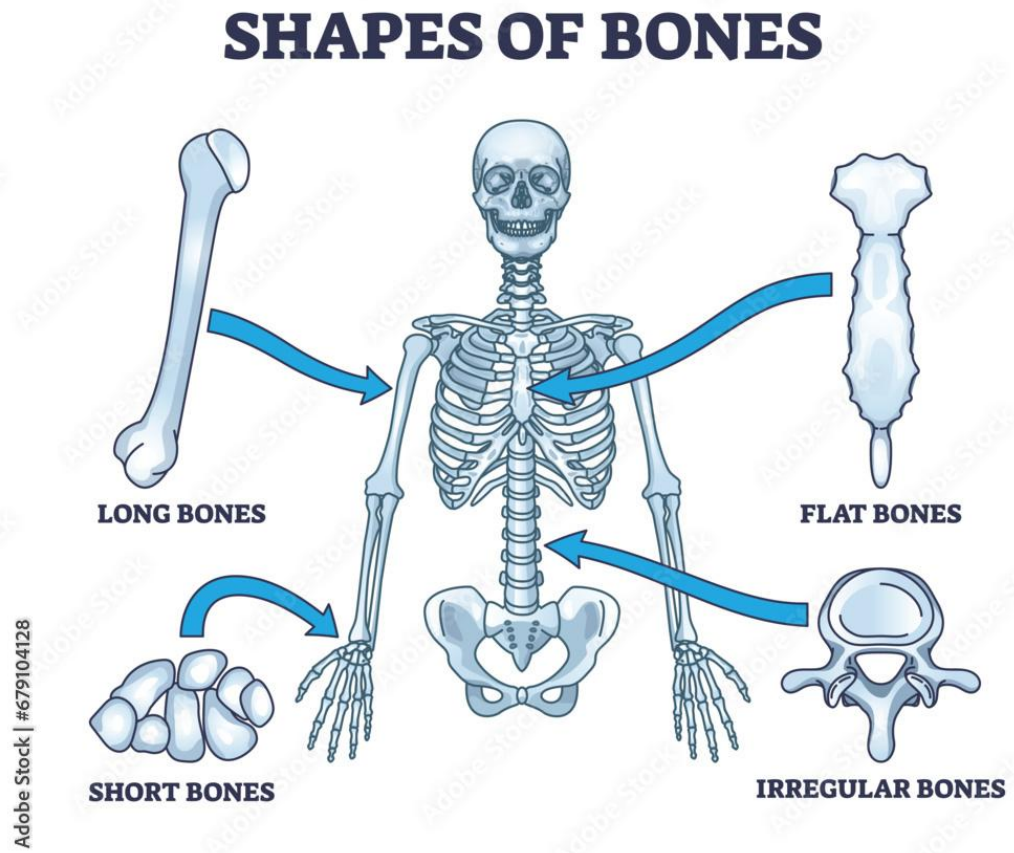
1. Long Bones

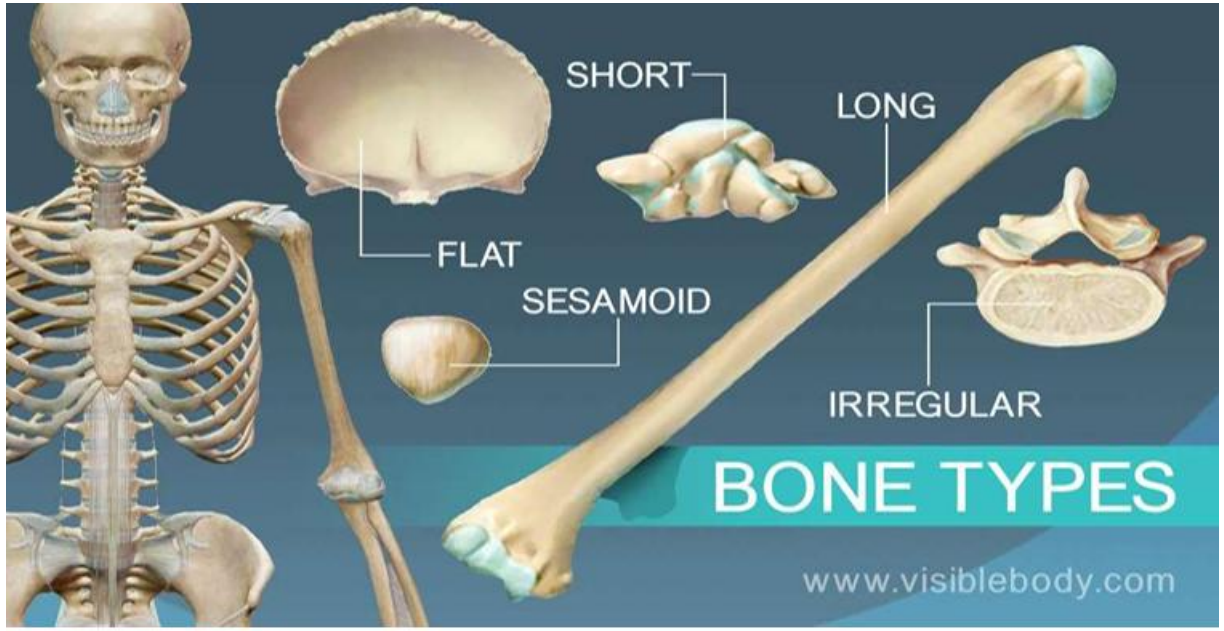
2. Short Bones

3. Flat Bones

4. Irregular Bones

5. Sesamoid Bones




SHORT
LONG
FLAT
SESAMOID
IRREGULAR
BONE TYPES
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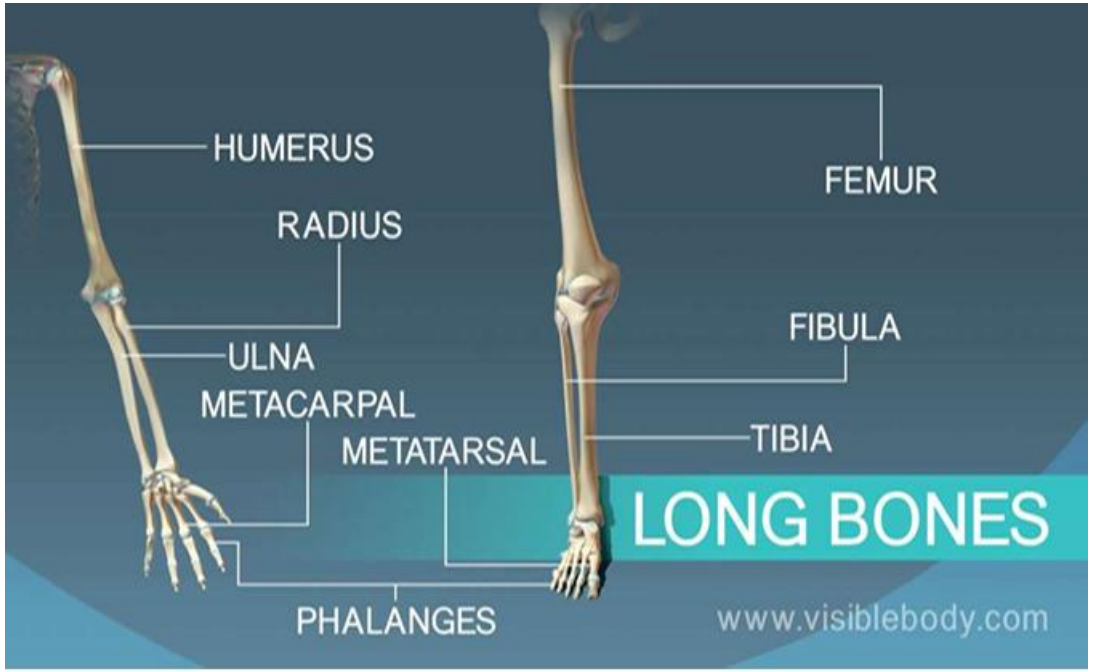
HUMERUS
FEMUR
RADIUS
FIBULA
ULNA
METACARPAL
TIBIA
METATARSAL
LONG BONES
PHALANGES
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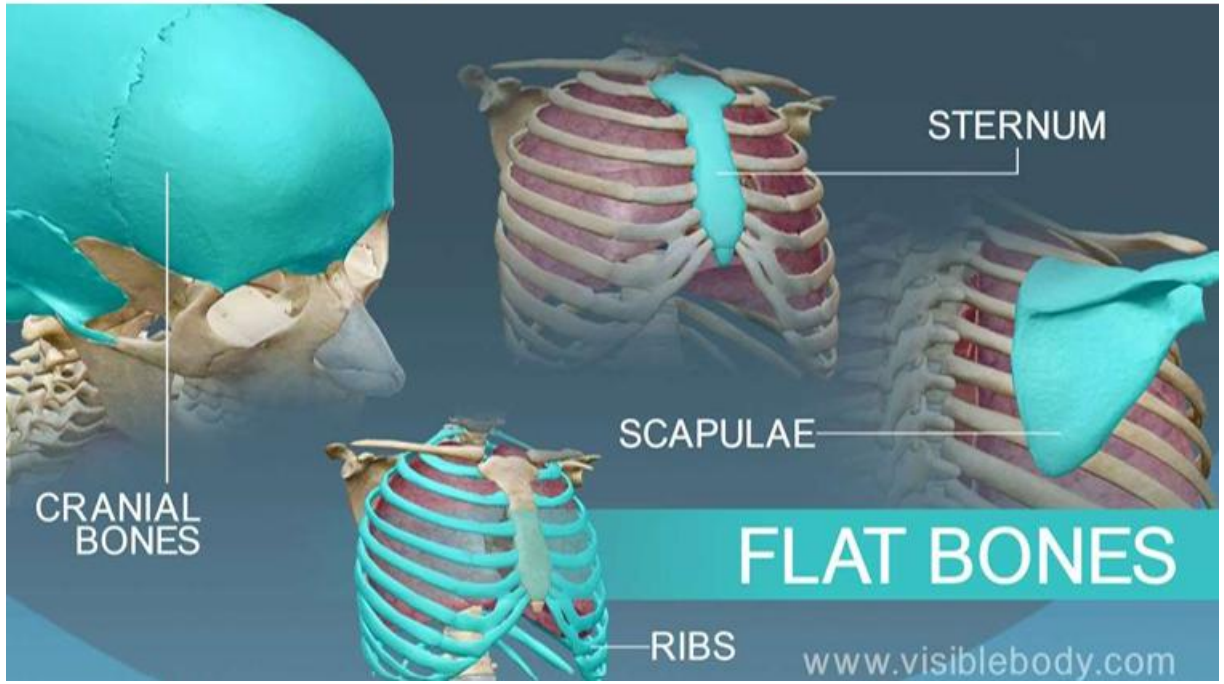
STERNUM
SCAPULAE
CRANIAL
BONES
FLAT BONES
RIBS
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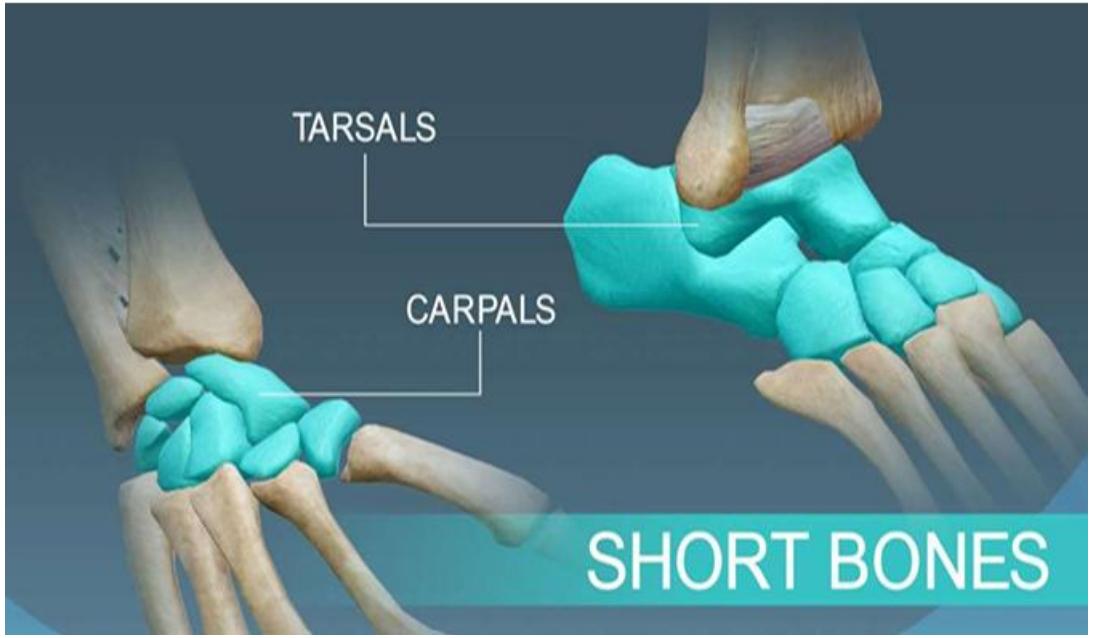
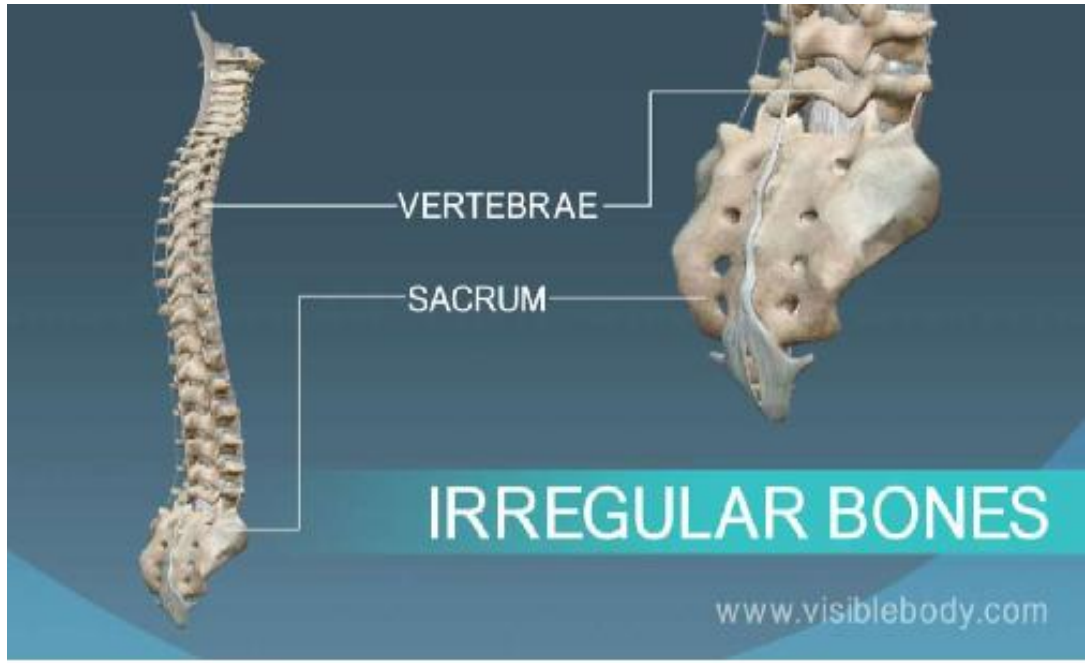

TARSALS
CARPALS
SHORT BONES


VERTEBRAE
SACRUM
IRREGULAR BONES
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PATELLA
SESAMOID BONES