

# CHAPTER 6 - SKELETAL SYSTEM

## COMPONENTS:

- *Bones*
- *Joints & Associated Cartilages*

## SKELETAL

- Derived from Greek word meaning "*dried*"
- Consist of dynamic, living tissues that are able to grow, detect pain stimuli, adapt to stress & undergo repair after injury.
- FRAMEWORK to support the soft tissues of the body.

## MAJOR FUNCTIONS:

### 1.) SUPPORT

- Major supporting tissues of the body
- **Cartilages** – provides firm yet flexible support (ex. Nose, external ear, thoracic cage & trachea)
- **Ligaments** – strong bands of fibrous connective tissue that attach to bones & hold them together.

### 2.) PROTECTION

- Protects the organ it surrounds  
(Ex. Skull encloses and protects the brain)

### 3.) MOVEMENT

- **Tendons** – skeletal muscles attach to bones
- **Smooth Cartilages** – covers the ends of bones within some joints ; allowing the bones to move freely
- **Ligaments** – allow some movements between bones but prevent excessive movements

### 4.) STORAGE

- **Calcium & Phosphorus** – taken into bones and stored
- \* **Adipose tissue** – stored w/in bone cavities (fats)
- **Lipids** – Released into the blood and used by other tissues as a *source of energy*

### 5.) BLOOD CELL PRODUCTION

- Cavities filled with red bone marrow
  - produces blood cells & platelets

## EXTRACELLULAR MATRIX

- *Collagen (Tough rope-like proteins)*
- *Proteoglycans (Polysaccharides)*
- *Tendons (Collagen Fibers)*
- *Ligaments (Collagen Fibers)*
- *Cartilage (Collagen & Proteoglycans)*
- *Hydroxyapatite (Calcium Phosphate Crystals)*

## GENERAL FEATURES OF BONE

### 1. LONG BONES

- Longer than they are wide

### 2. SHORT BONES

- Broad as they are long

### 3. FLAT BONES

- Relatively thin, flattened shape

### 4. IRREGULAR BONES

- Vertebrae & Facial Bones

## STRUCTURE OF A LONG BONE



### • DIAPHYSIS

- Central Shaft

### • EPIPHYSIS

- Two ends

### • ARTICULAR CARTILAGE

- covers the ends of the epiphyses where the bone articulates with other bones.

### • EPIPHYSEAL PLATE

- Growth plate, where the bone grows in length.
- Composed of cartilage, between each epiphysis and the diaphysis

### • EPIPHYSEAL LINE

- When the bone growth stops, this replaces the epiphyseal plate.

### • MEDULLARY CAVITY

- Large cavity in the diaphysis

### • MARROW

- A soft tissue that fills the spaces
- **Yellow Marrow** – consist of mostly adipose tissues; **Red Marrow** – consist of blood-forming cell and is the only site of blood formation in adults.

### • PERIOSTEUM

- Covers most of the outer surface of the bones
- Encloses the diaphysis
- Contains blood vessels and nerves

### • ENDOSTEUM

- Thinner connective tissue membrane that lines the surface of the medullary cavity

# Quizlet Anatomy And Physiology Chapter 6

**Marco Cascella**



## Quizlet Anatomy And Physiology Chapter 6:

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**Güncel Fizyoloji-Histoloji-Embriyoloji Çalışmaları III** Mümin Alper ERDOĞAN,Sait POLAT,Ceylan AYADA,2022-03-30

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