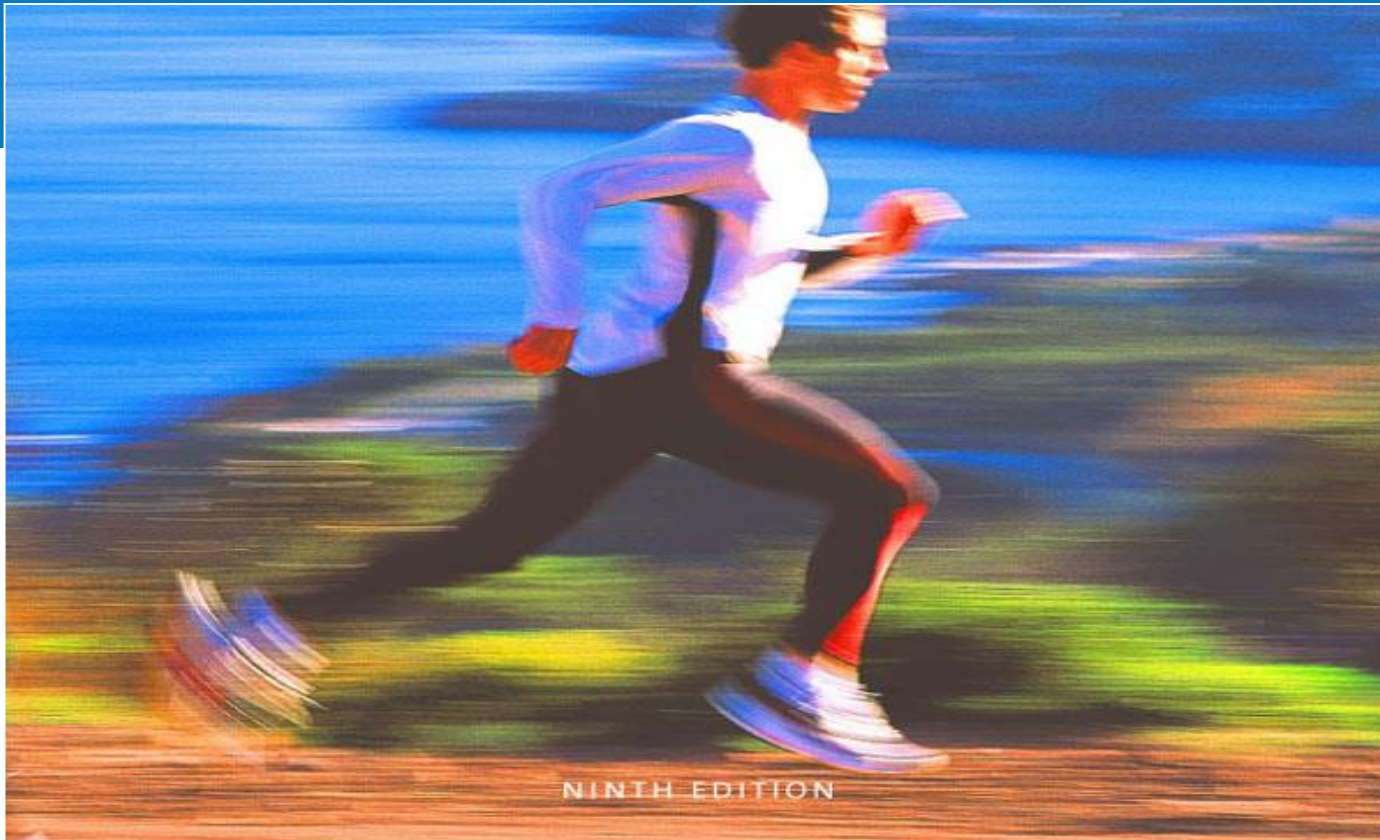


LESSON 1

- **Intro to Skeletal System**
- **Classification of Bones**



NINTH EDITION

ESSENTIALS OF
HUMAN ANATOMY
& PHYSIOLOGY

ELAINE N. MARIEB

The Skeletal System

5 PART A

The Skeletal System

- **Parts of the skeletal system**
 - **Bones (skeleton)**
 - **Joints**
 - **Cartilages**
 - **Ligaments**
- **Two subdivisions of the skeleton**
 - **Axial skeleton**
 - **Appendicular skeleton**

Functions of Bones

- **Support** the body
- **Protect** soft organs
- **Allow movement** due to attached skeletal muscles
- **Store minerals and fats**
- **Formation of blood cells** in bone marrow

Bones of the Human Body

- The adult skeleton has **206** bones
- Two basic types of bone tissue
 - **Compact** bone
 - Homogeneous
 - **Spongy** bone
 - Small needle-like pieces of bone
 - Many open spaces

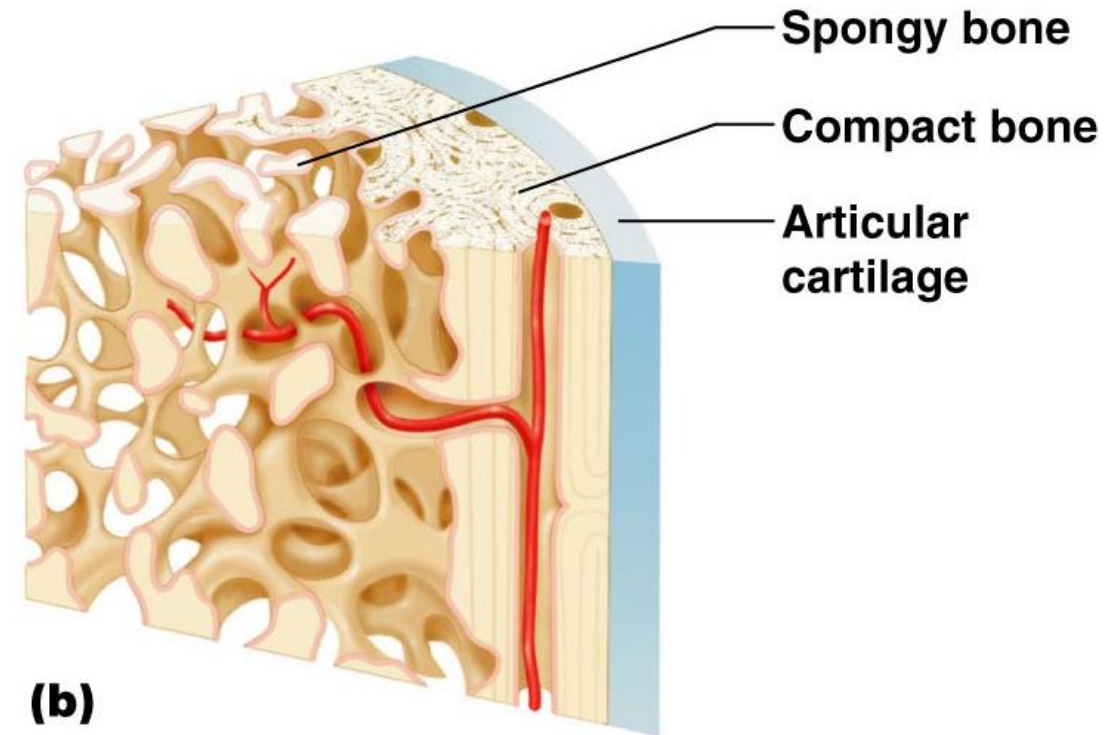
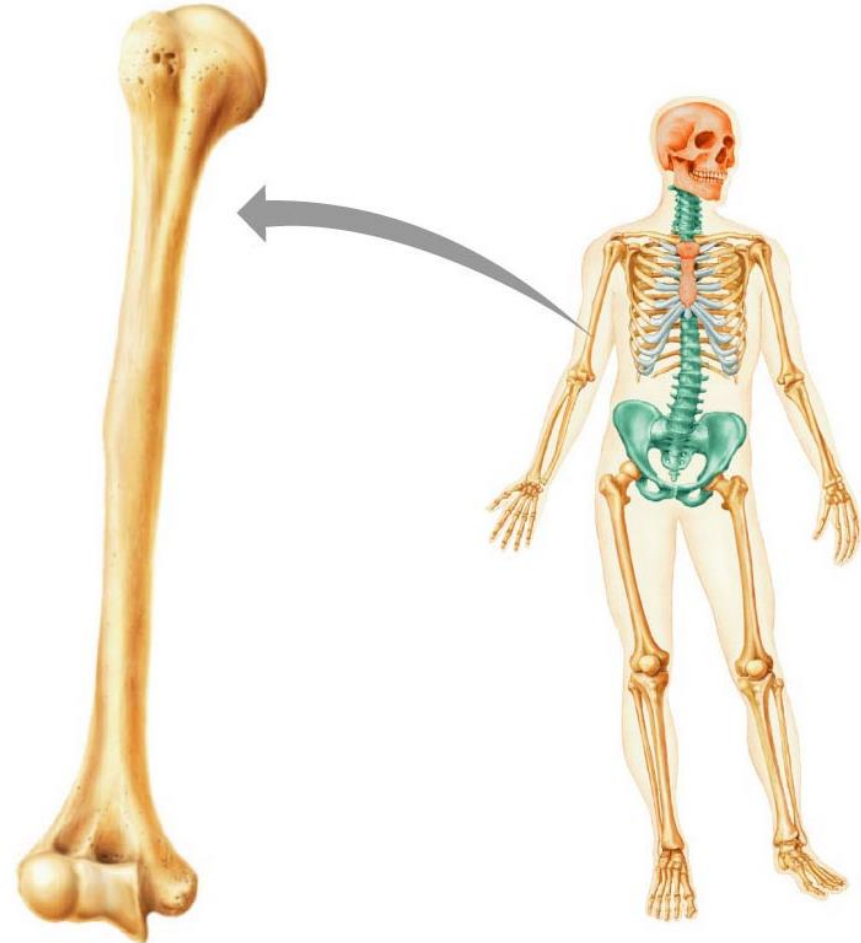


Figure 5.2b

Classification of Bones

- Long bones
 - Typically longer than they are wide
 - Have a **shaft** with **heads** at both ends
 - Contain mostly **compact** bone
 - **Examples:**
 - **Femur** (thigh)
 - **Humerus** (upper arm)
 - **Phalanges** (fingers)



(a) Long bone
(humerus of arm)

Figure 5.1a

Classification of Bones

- **Short bones**
 - Generally **cube**-shape
 - Contain mostly **spongy** bone
 - **Examples:**
 - **Carpals (wrist)**
 - **Tarsals (ankle)**

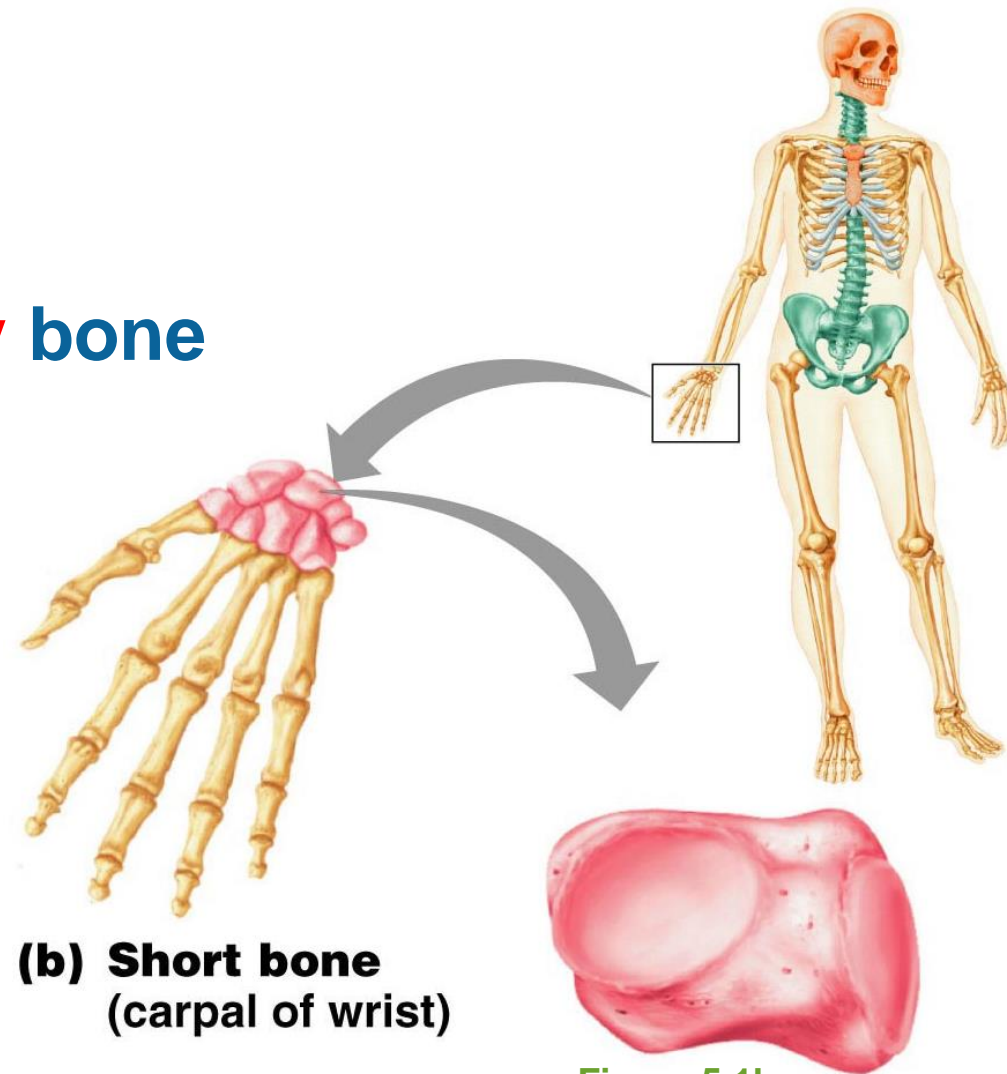


Figure 5.1b

Classification of Bones

- Flat bones
 - **Thin, flattened, and usually curved**
 - Two thin layers of **compact** bone surround a layer of **spongy** bone
 - **Example:**
 - Skull
 - Ribs
 - Sternum (breastbone)

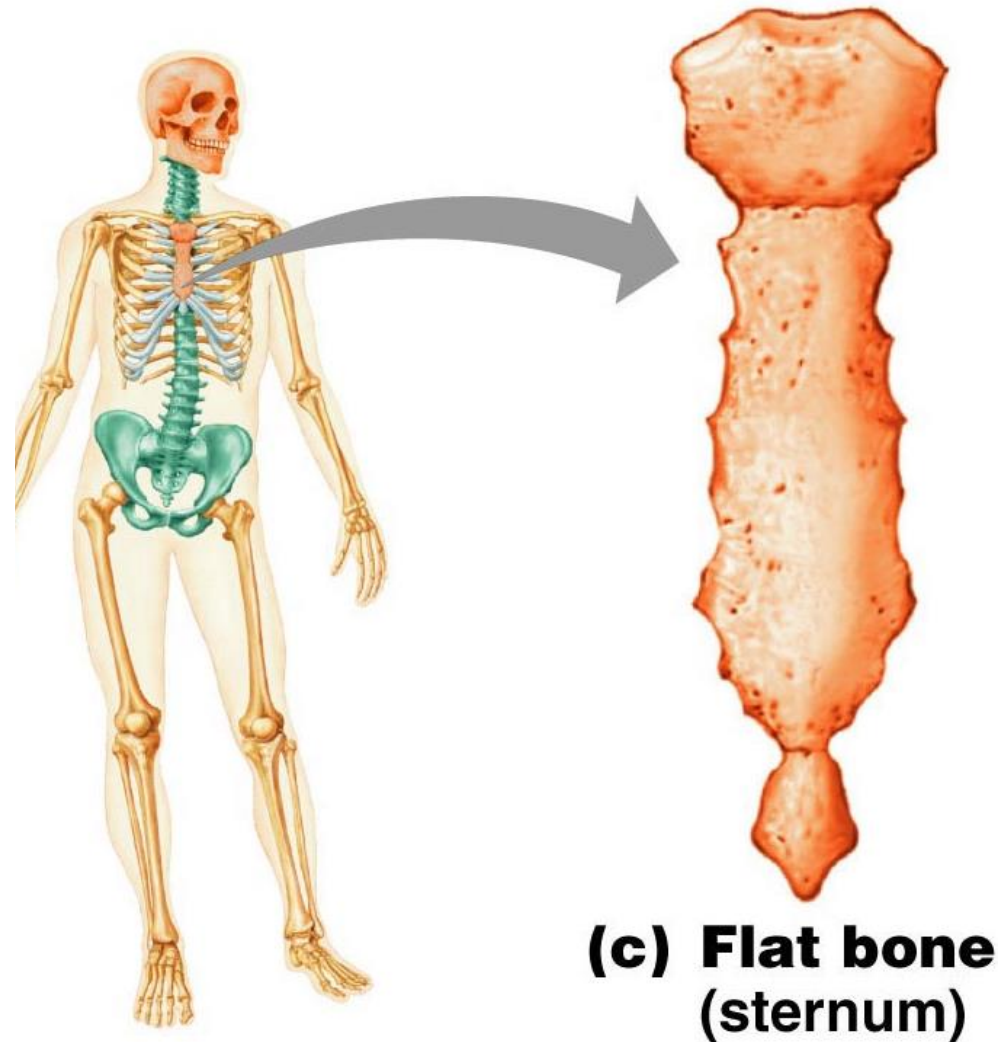
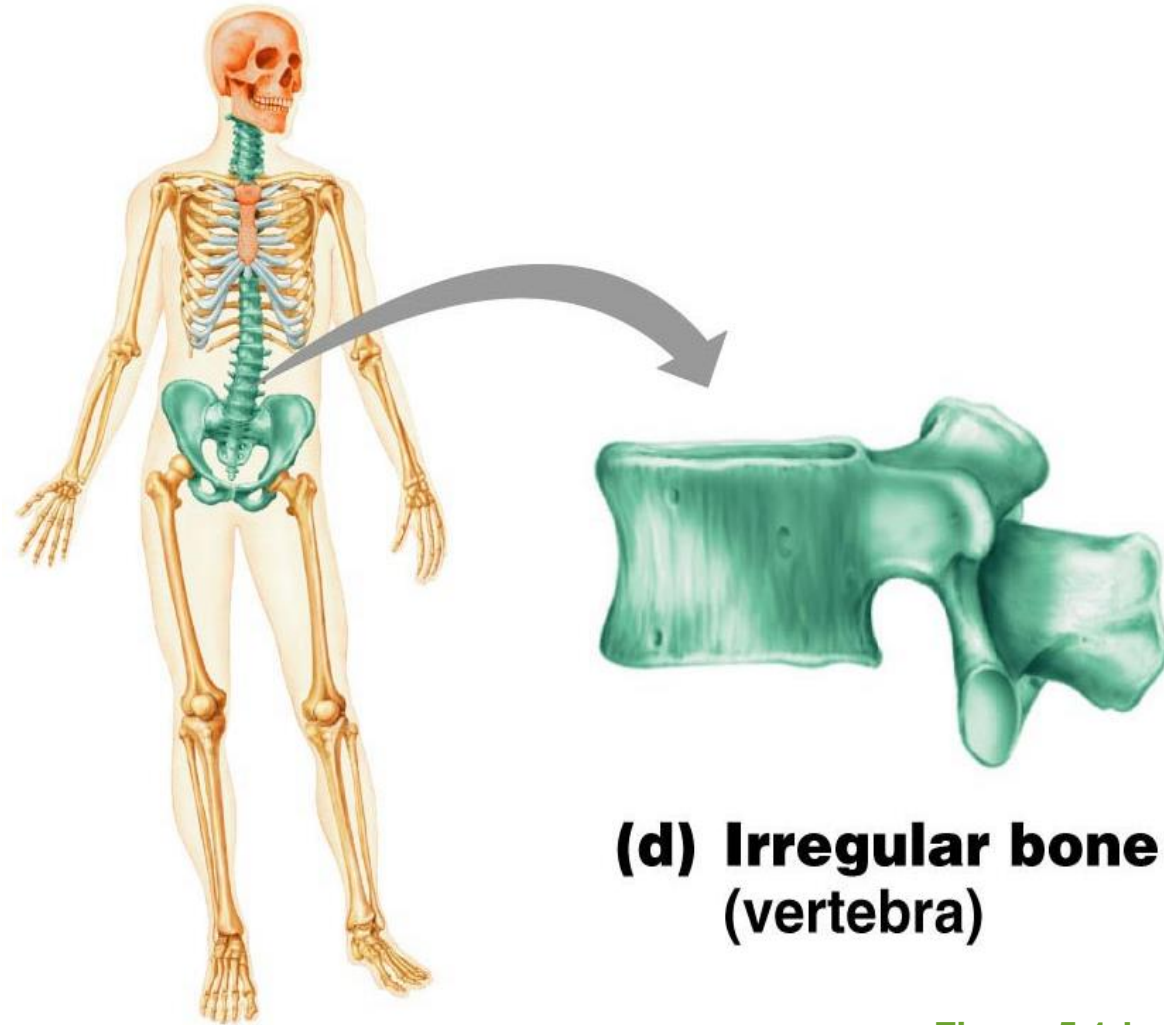


Figure 5.1c

Classification of Bones

- Irregular bones
 - Irregular shape
 - Do not fit into other bone classification categories
 - **Example:**
 - **Vertebrae**
 - **Sacrum**



**(d) Irregular bone
(vertebra)**

Figure 5.1d

Classification of Bones on the Basis of Shape

[Video: Types of Bone](#)

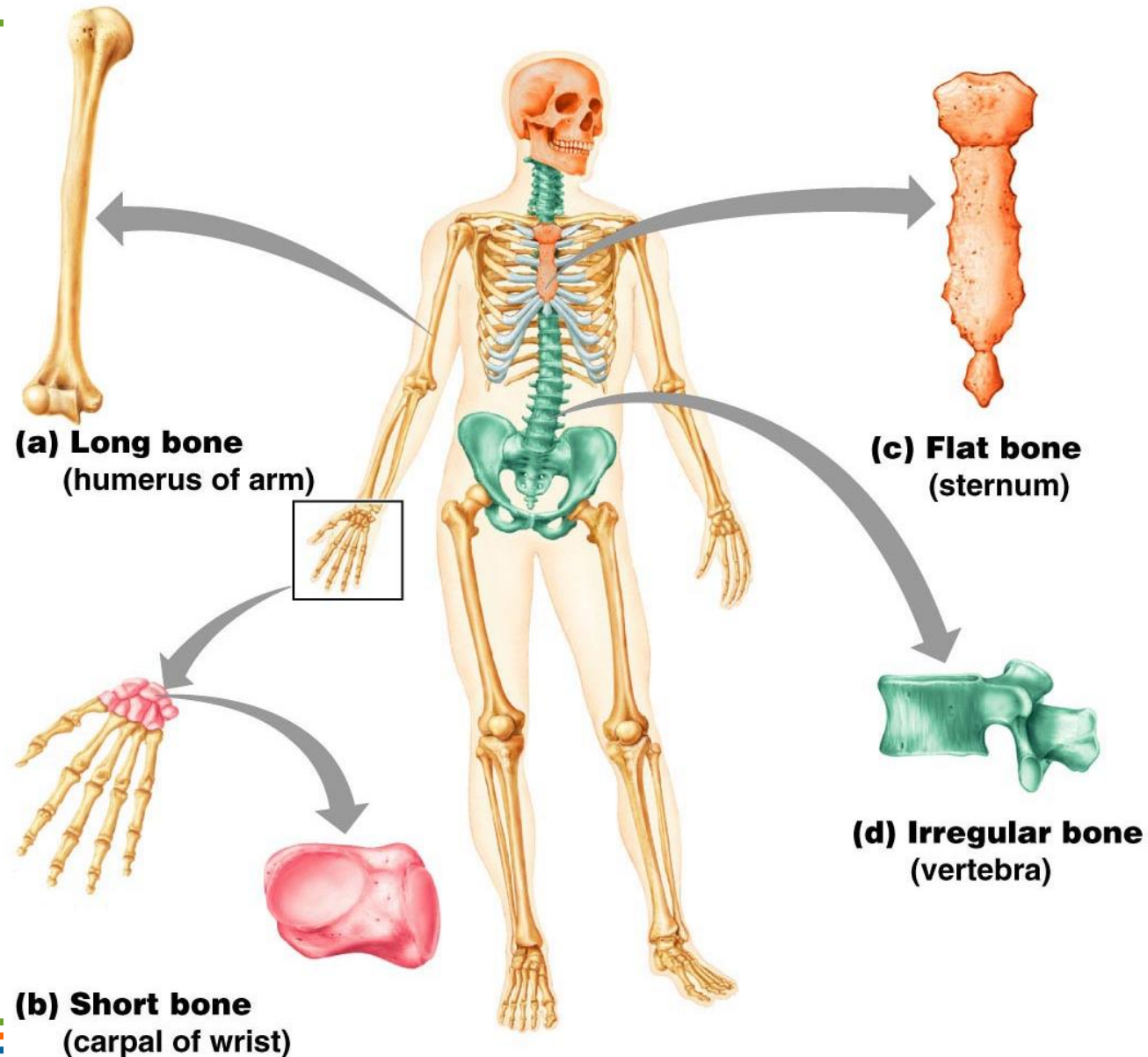


Figure 5.1