Anatomy

Divisions of Anatomy:

- Gross Anatomy (visible structures: muscle, bones, organs)
- Microscopic Anatomy (can't see with a naked eye)
- Cytology (study of cells)
- Histology (study of tissues)

Ways to Study Anatomy:

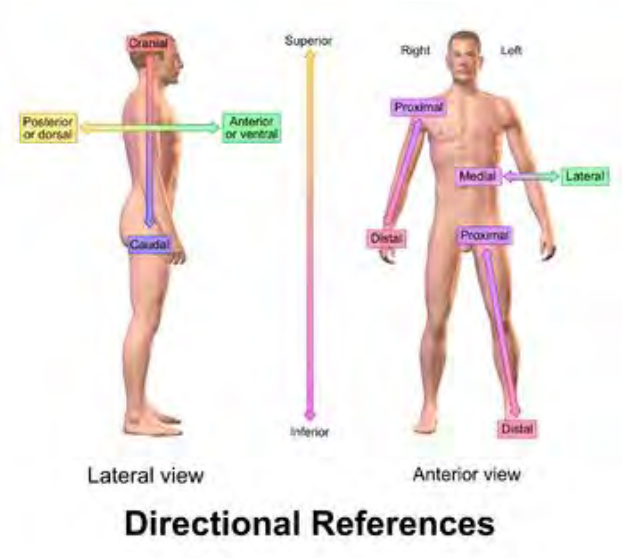
- Regional Anatomy→ study one region of the body at a time and learn everything about the region.
- Systemic Anatomy→ study one body system at a time.

Organ Systems

- Skeletal
- Circulatory
- Endocrine
- Nervous
- Lymphatic
- Urinary
- Respiratory
- Reproductive
- Digestive
- Muscular
- Integumentary (skin)

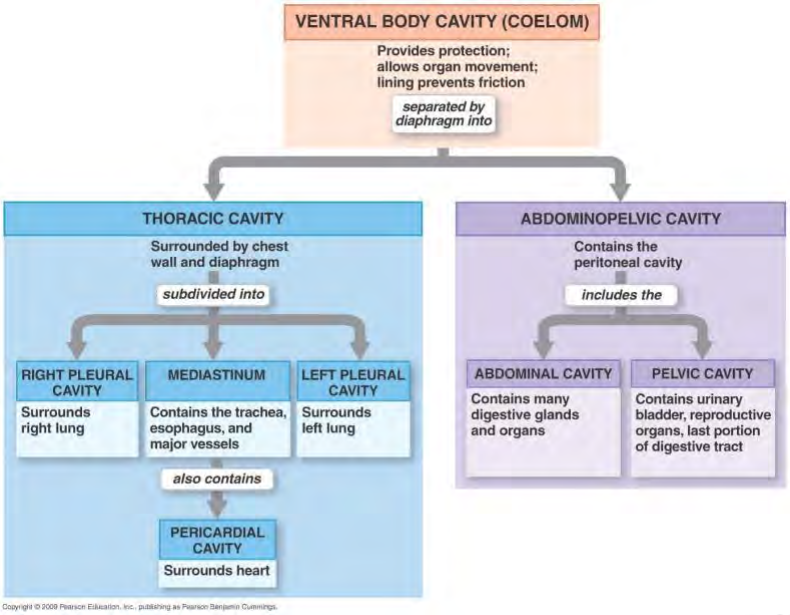
Planes and Sections:

- Sagittal Section: divides the body into right and left sides.
- Mid-Sagittal Section: straight down the center of the body.
- Frontal section: divides the body into front and back sides.
- Transverse (Cross) Section: cut straight across the body.



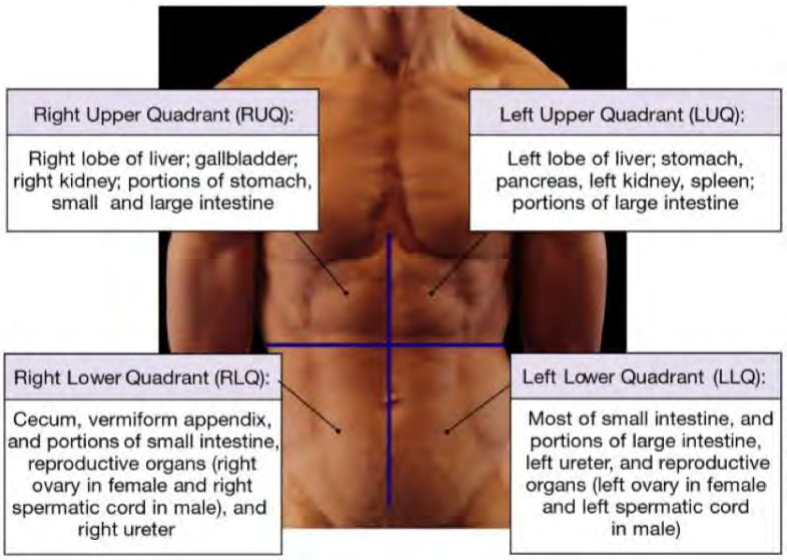
Directional References

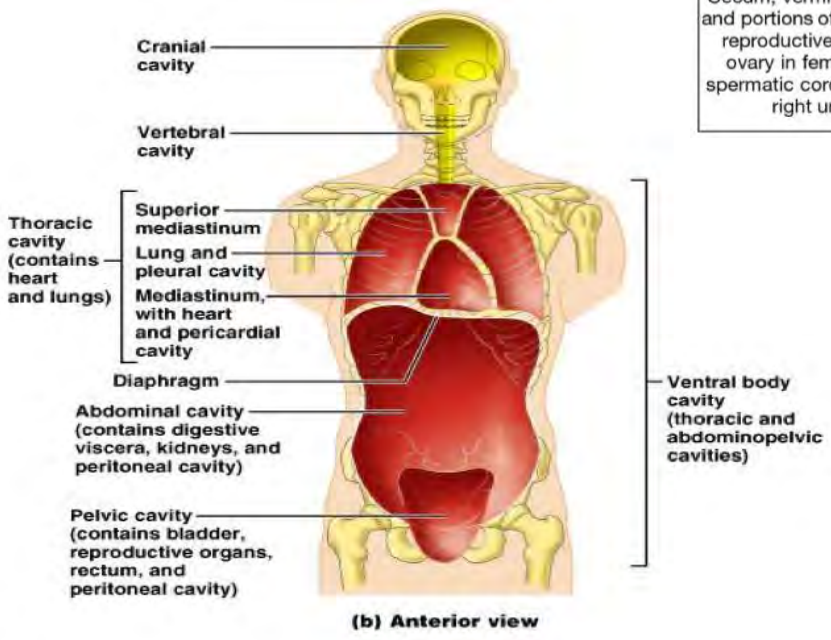
Body Cavities

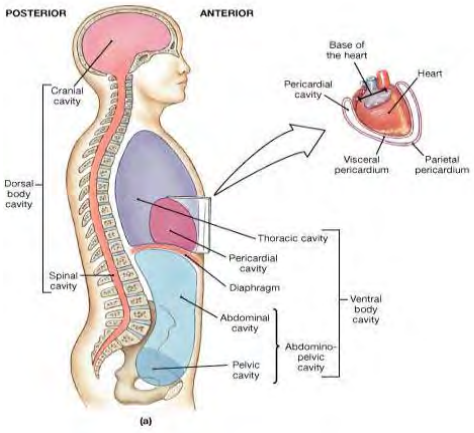


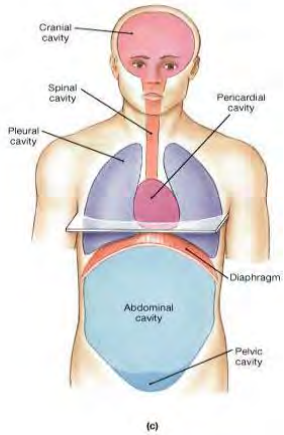
Quadrants:

- Right Upper Quadrant
- Left Upper Quadrant
- Right Lower Quadrant
- Left Lower Quadrant

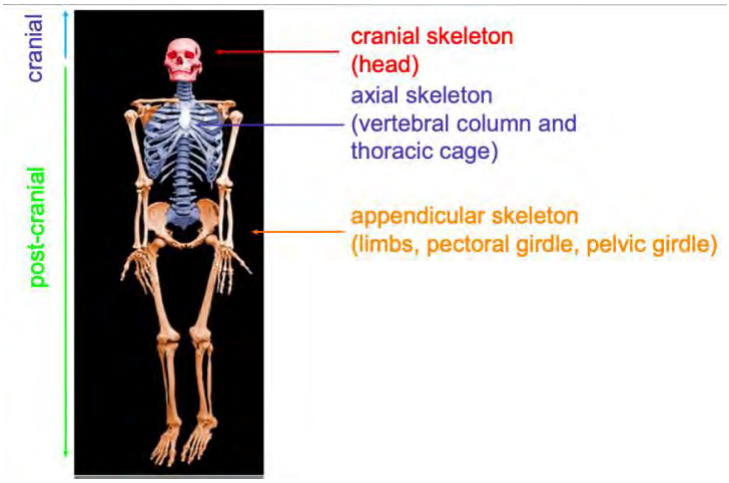






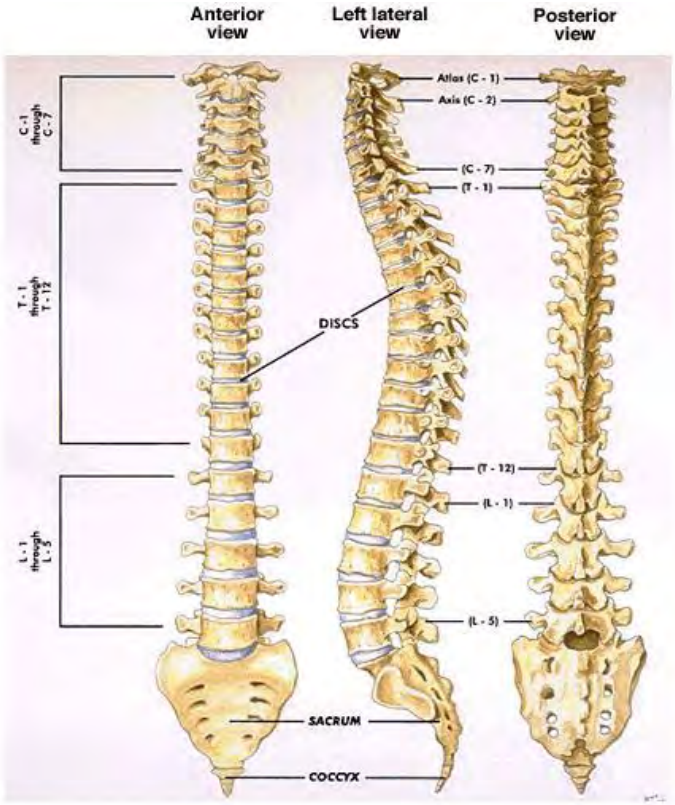


Anatomical Regions of the Skeleton:



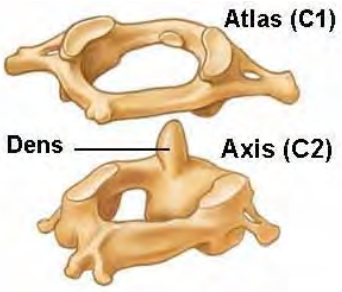
The Axial Skeleton:

1) Vertebral Column:
× Protects the spinal cord.
× Transmits weight from the skull to the pelvis.
× Provides attachment point for ribs and muscles of back and neck.



- Cervical Vertebrae (C_1-C_7)→ concave
- Thoracic Vertebrae (T_1-$T12_2$)→ convex
- Lumbar Vertebrae (L_1-L_5)→ concave
- Sacrum (five fused vertebrae)→ convex
- Coccyx (four fused vertebrae

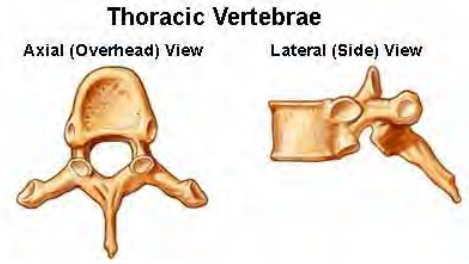
a. Cervical Vertebrae
- C_1 (Atlas)→ lacks body and spinous processes. Superior articular facets house the occipital condyles of skull. Allows nodding, movement of the head.



. C_2 (Axis)→Odontoid process (dens) is the missing body of the atlas; fuses with axis during development. Allows head to rotate laterally.

× C_3-C_7 are typical cervical vertebrae. Oval body.
× Spinous process is short (except C_7) and bifid.
× Each transverse process has a transverse foramen to allow passage of vertebral arteries to brain.
× The non-bifid spinous process of C_7 is also known as the vertebra prominens.

b. Thoracic Vertebrae
× Gradual transition from C_7 to L_1.
× Heart-shaped body with two demi facets on each side (superior and inferior costal facets); these articulate with heads of ribs.
× Circular vertebral foramen is the long, downward pointing spinous process.
× Transverse costal facets on transverse process to articulate with tubercles of ribs (except T_{11} and T_{12})



c. Lumbar Vertebrae
× Bear greatest load; reflected in more robust size/shape.
× Large, kidney-shaped bodies.
× Short, flat spinous processes.
× Triangular vertebral foramen.

d. Sacrum
× Formed by fusion of S_1-S_5.
× Articulates with L_5, coccyx and iliac bones of pelvis.
× Median sacral crest marks site of fusion of spinous processes.
× Body's center of gravity lies about 1cm posterior to sacral promontory.