The Human Body: An Orientation

Overview of Anatomy and Physiology

- 1) Anatomy - study of the structure
  - Sub-disciplines
    - Gross anatomy - Systemic vs. regional anatomy, dissection
    - Microscopic anatomy - Cytology, histology
    - Developmental - Embryology
- 2) Physiology - study of body function
- 3) Principle of Complementarity
  - Anatomy and physiology are inseparable
  - Function always reflects structure

Hierarchy of Structural Organization

- 1) Chemical level
- 2) Cellular level
- 3) Tissue level
- 4) Organ level
- 5) Organ system
- 6) Organism level

11 Organ Systems

Organ Systems

Organ Systems
The interrelationships among organ systems are illustrated in the diagrams. These diagrams show the anatomical components and their connections, highlighting how different organ systems interact within the body.
An Introduction to Gross Anatomy

The Language of Anatomy

Directional terminology

1) Used to locate body structure relative to another body structure
   A) refers to the body in anatomical position
2) Standardized terms of directions are paired terms
   A) Superior (cephalic)/inferior (caudal)
   B) anterior (ventral)/posterior (dorsal)
   C) medial/lateral,
   D) superficial/deep
   E) Proximal/distal
   F) Ipsilateral/contralateral

Regional terms

1) designates specific body areas
   A) Axial region
      • the main axis of the body
   B) Appendicular region
      • the limbs
**Body Planes and Sections**

1) Used to “visualize” internal structures
2) Runs vertically
   - A) Coronal (frontal) plane
   - B) Sagittal plane
     - Median (midsagittal) plane
     - Para-sagittal plane
3) Runs horizontally
   - Transverse plane
4) Runs diagonally
   - Oblique plane

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**The Human Body Plan**

1) Characteristics Common to All Vertebrates
   - Tube-within-a-tube
   - Bilateral symmetry
   - Vertebrae

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**Body Cavities**

1) Dorsal body cavity
   - A) Cranial cavity
   - B) Vertebral cavity
Body Cavities

- 1) Ventral body cavity
  - A) Thoracic cavity
  - B) Abdominopelvic cavity

Serous cavities

- 1) space lined by a serous membrane
- 2) Examples
  - Pleura
  - pericardium
  - peritoneum

Abdominal Quadrants

- 1) used in clinical discussions

Abdominal Regions

- 1) provide precise regional descriptions
Abdominal Regions and Quadrants

- Liver
- Gallbladder
- Stomach
- Spleen
- Large intestine
- Small intestine
- Appendix
- Urinary bladder