

Class Notes for

Orientation to the Human Body

Anatomy & Physiology

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2016-17

I. What is Anatomy & Physiology?

A. Anatomy – the study of the structure and shape of the body and its parts.

1. Can be observed in the dissection of dead specimens.

2. Gross Anatomy – observation of large structures

EX) Bones, muscles, etc.

3. Microscopic Anatomy – observation of small structures

EX) Cells, tissues, etc.

B. Physiology – the study of how the parts of the body function.

1. Observed in living specimens only

2. It's all about HOMEOSTASIS - the body's ways of maintaining a stable internal environment

a. Negative Feedback Loops – keep body IN homeostasis.

EXAMPLES: Body Temp, Oxygen/CO₂ levels, [Blood Sugar](#)

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b. Positive Feedback Loops – push body OUT of homeostasis.

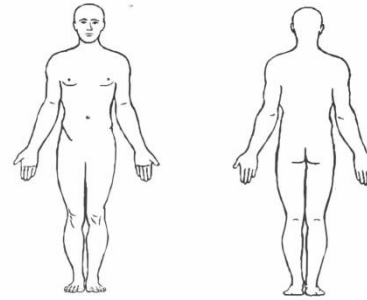
EXAMPLES: [Childbirth](#), Fever, [Diabetes \(Type I\)](#)

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II. Language of Anatomy

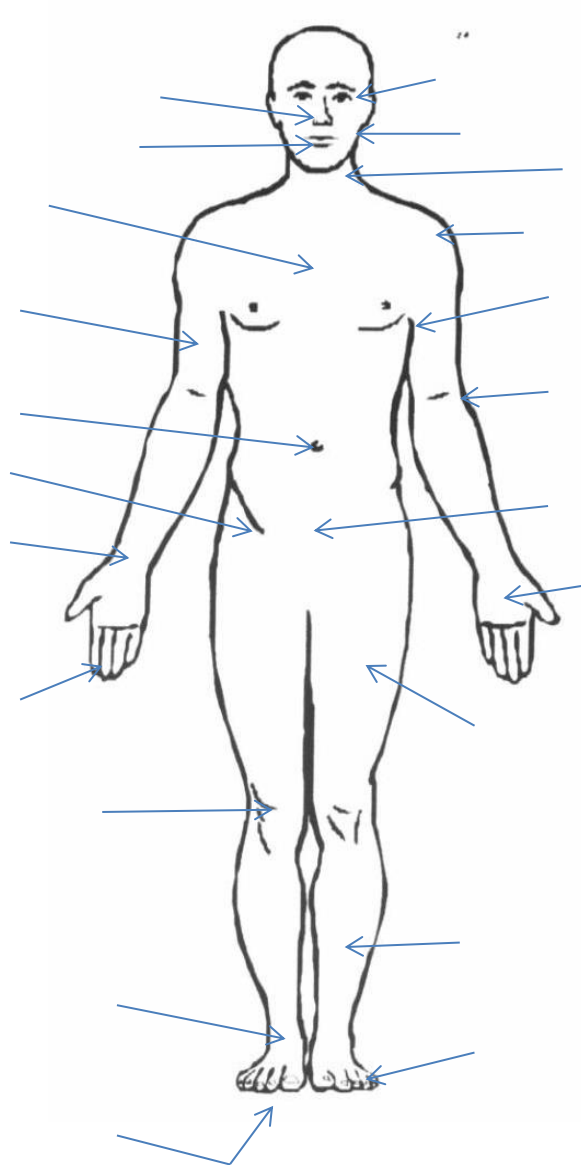
A. Anatomical Position

1. Standard body position used as a medical reference
2. Standing, feet parallel, palms forward

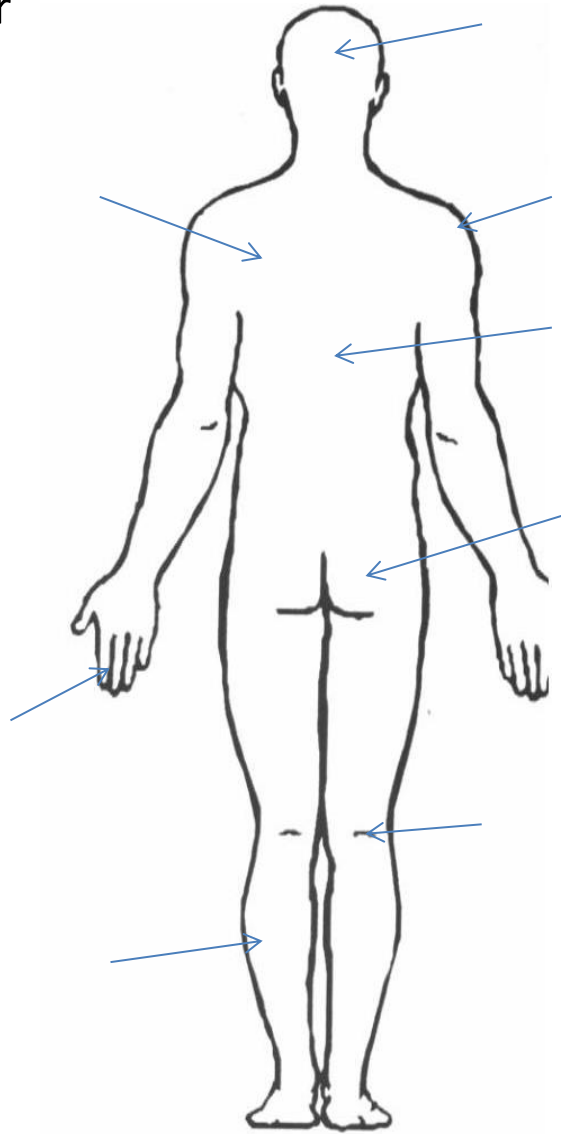


B. Regional Terms (Figure 1.5; p.13) – body “landmarks”

1. Anterior



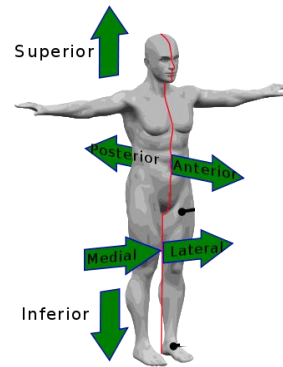
2. Posterior



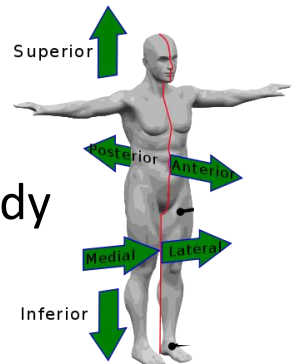
Assignment: 1) Body Landmarks & Directional Terms Worksheet
2) Body Landmarks Flashcards

C. Directional Terms (Table 1.1; p.12) – describes a body part's location in relation to another body part

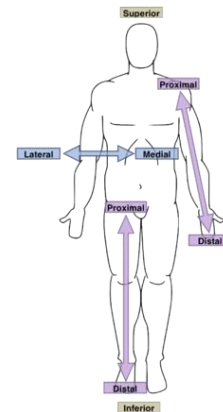
- Superior-toward the head
- Inferior-toward the feet
- Anterior-toward the front
- Posterior-toward the back



- Medial-toward the midline of the body
- Lateral-away from the midline of the body
- Intermediate-between two points



- Proximal-close to the point of attachment
- Distal-far from the point of attachment



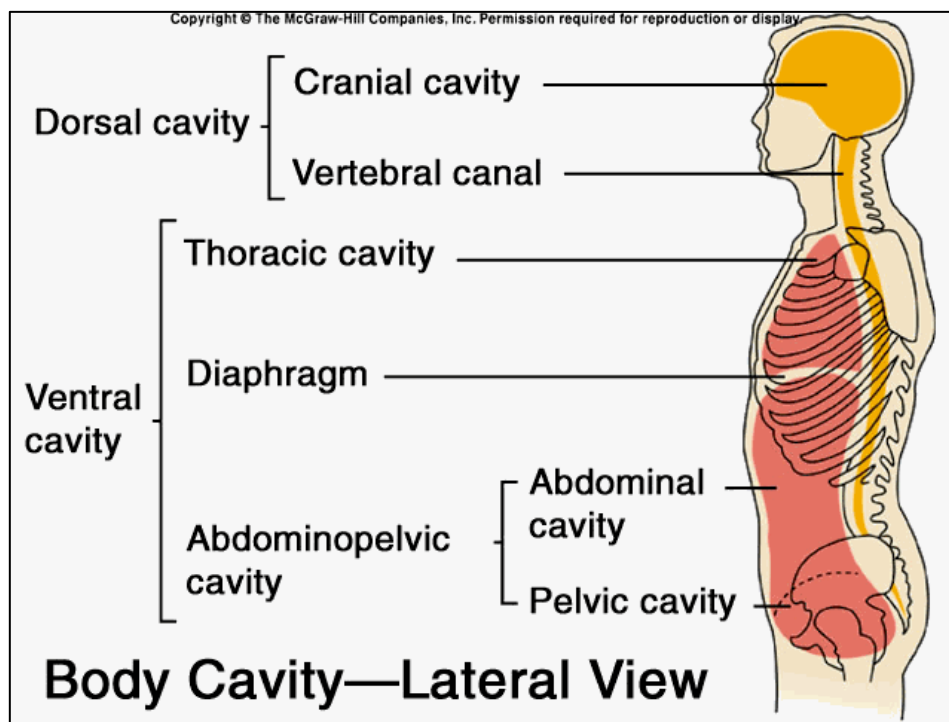
- Superficial-internal, but closer to surface
- Deep-internal, but far from surface



D.Body Cavities (Figure 1.7; p.15)

1. Dorsal Cavities

- From collar bone up
- Two subdivisions:
 - a. Cranial Cavity-skull
 - b. Spinal cavity-spinal cord



2. Ventral Cavities

- From collar bone to groin
- Two major subdivisions:
 - a. Thoracic-cardiovascular (heart & lungs)
 - b. Abdominopelvic-digestive, reproductive

E. Body Planes & Sections (Figure 1.6; p.14)

1. Sagittal

- Left/right halves
- Exact middle = midsagittal or median

2. Frontal

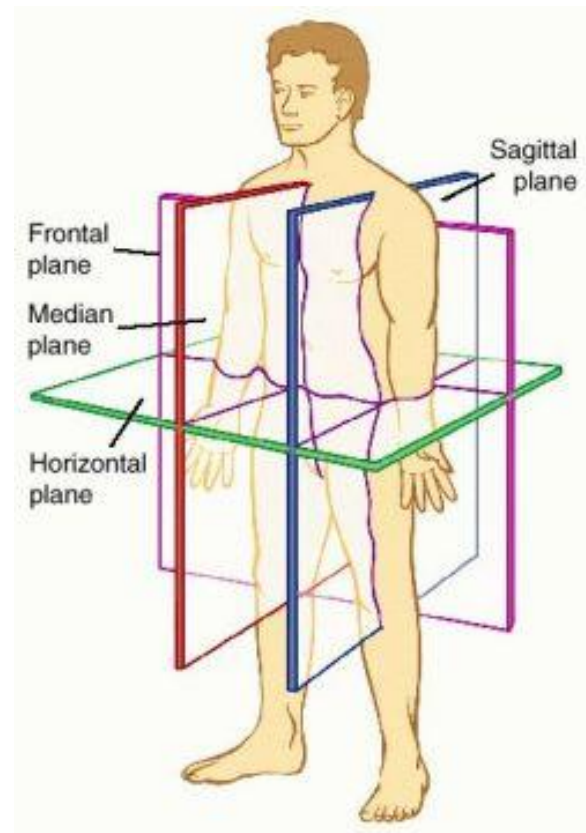
- Anterior/posterior halves
- aka: coronal section

3. Transverse

- Top/bottom halves
- aka: cross section

4. Oblique *(yeah, kinda forgot this one)*

- Diagonal cut



III. Levels of Structural Organization

A. Simple → Complex

1. Atoms

- Building blocks of matter
- Combine to form molecules
 - *Water, proteins, sugars, etc.

2. Cells

- Made of many molecules
- Smallest unit of life
- 220 highly specialized types

3. Tissues

- Groups of similar cells that perform same function
- 4 basic types: epithelial, connective, nervous, muscle

4. Organs

- Structures made of ≥ 2 tissue types
- Specific complex function

5. Organ Systems

- Group of organs working together to perform a common function
- 11 systems total

6. Organism

- Living body made of many organ systems

~~Assn: Packet: 11,12,13,16,18~~