

Introduction to the human body

Lecture one

Out line

- 1. Definition of anatomy**
- 2. Terminology and General Plan of the Body**
- 3. Body Parts and Areas.**
- 4. Terms of Location and Position.**
- 5. Body Cavities and Their Membranes.**

Anatomy

- The study of the internal and external structures of the human body.
- Anatomy is a Greek word meaning **“to cut apart.”**

Types of Anatomy:

1. **Microscopic** anatomy
2. **Macroscopic** (gross) anatomy

1. Microscopic Anatomy

- The study of structures that can only be seen and studied with **magnification aids such as a microscope**
- **Examples:**
 - The study of **cellular** structures is called **cytology**.
 - The study of **tissue** samples is called **histology**.

2. Macroscopic Anatomy

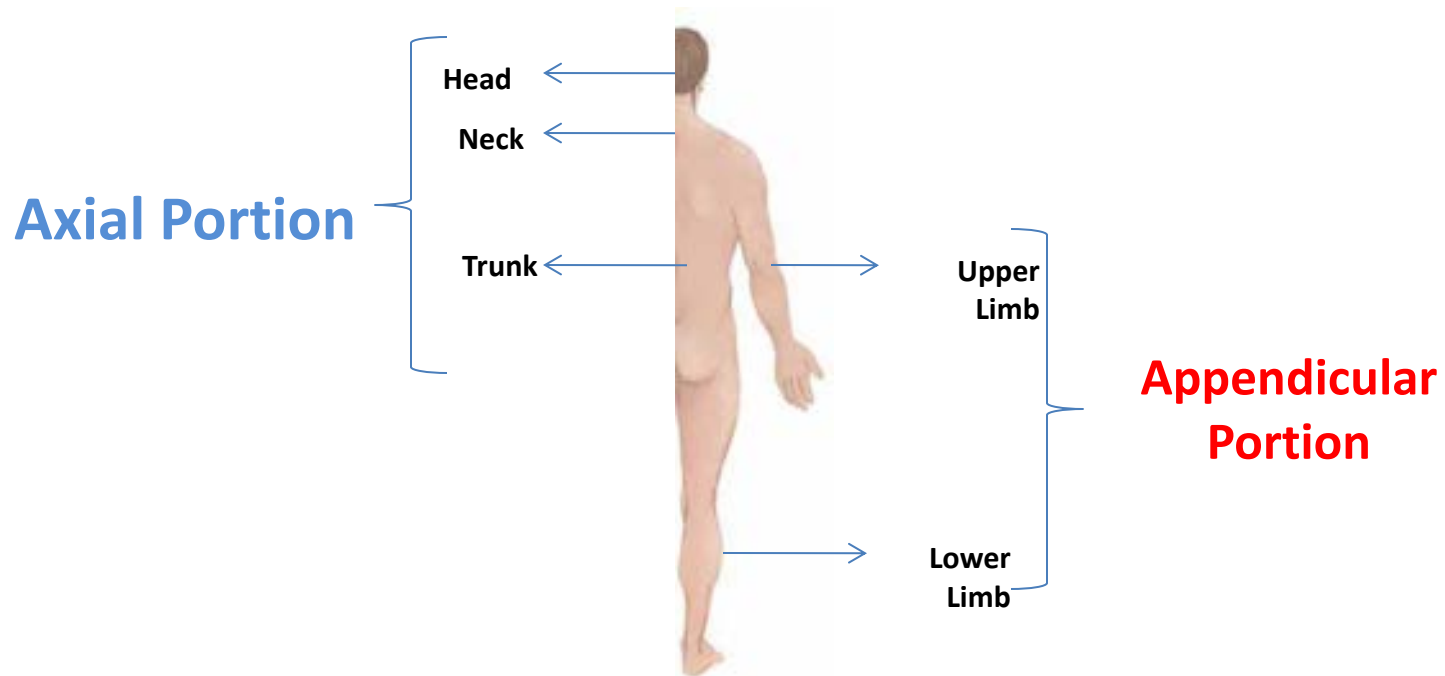
- Also called **gross anatomy**
- The study of the structures of the **body visible to the naked, or unaided, eye**
- **Examples include:**
 - The study of the skeletal system
 - Looking at an x-ray (radiology)



Exercise 1

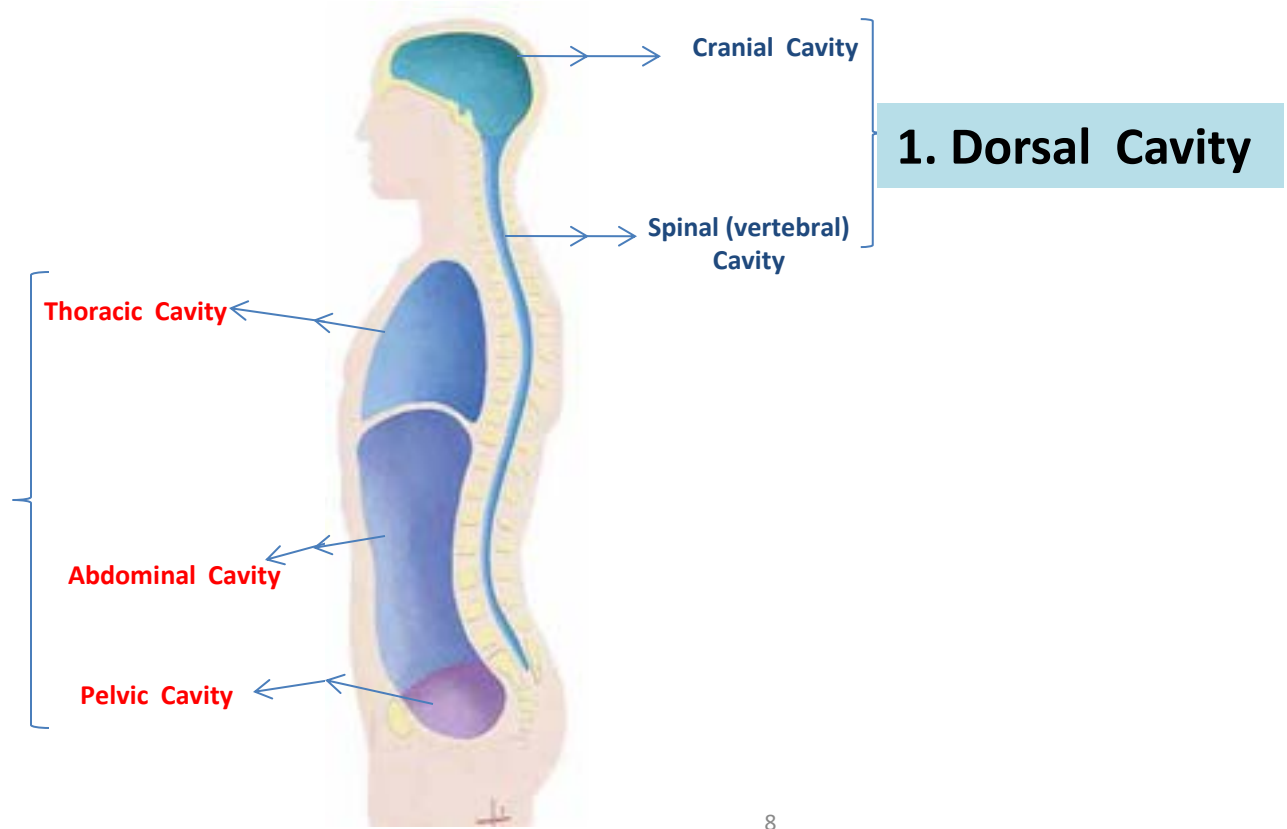
- **Which type of anatomy focuses on the study of tissues and cells using specialized microscopes?**
 - a. Gross anatomy
 - b. Microscopic anatomy
 - c. Developmental anatomy
 - d. Radiographic anatomy

Body division



BODY CAVITIES

Located only in the Axial Portion



1. Dorsal Cavity

2. Ventral Cavity

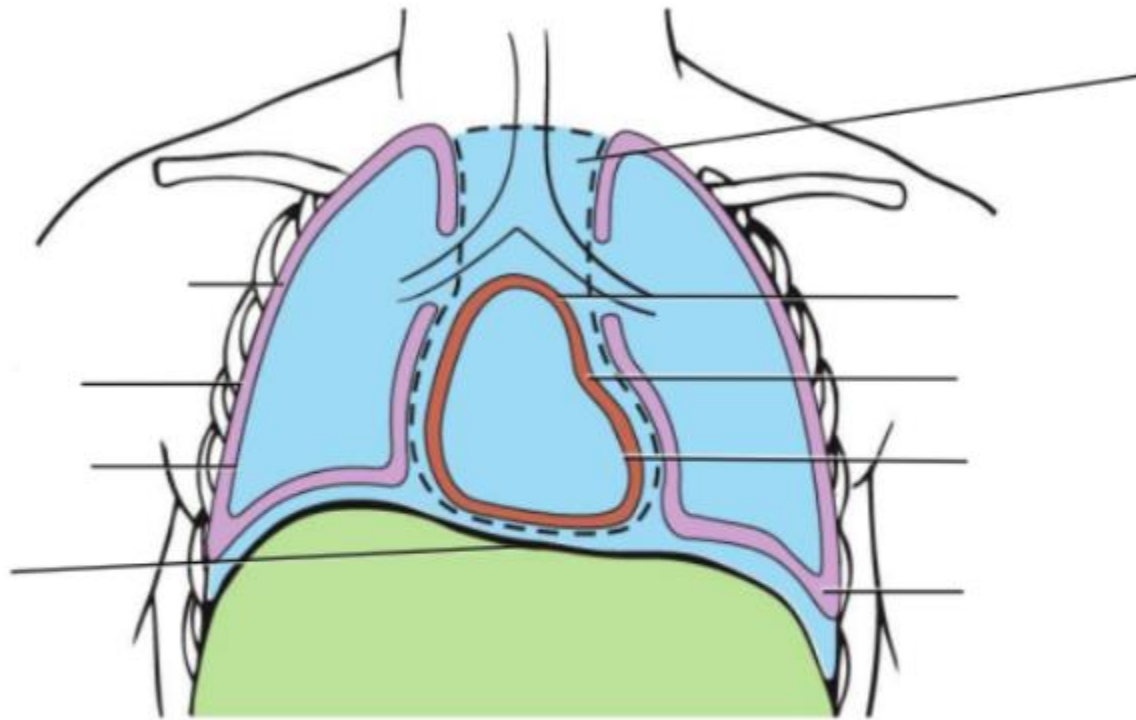
1. Dorsal Body Cavities

1. **Cranial cavity** is within the skull and encases the brain
2. **Spinal (Vertebral) cavity** runs within the vertebral column and encases the spinal cord

2. Ventral Body Cavities

1. Thoracic cavity:

- ❖ **Pleural cavities** – each houses a lung
- ❖ **Mediastinum** – contains the pericardial cavity.
- ❖ **Pericardial cavity** – encloses the heart



(a) Anterior view of thoracic cavity

2. Ventral Body Cavities

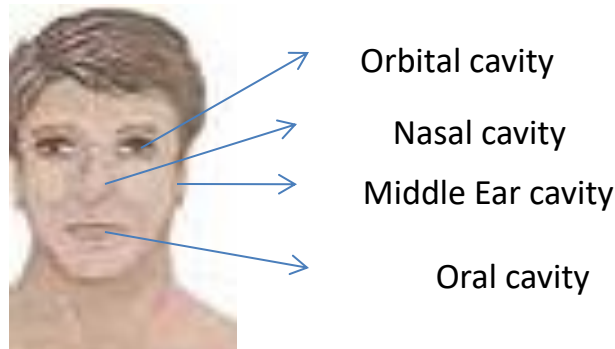
2. Abdominal cavity – contains the stomach, intestines, spleen, liver, kidneys, gallbladder and other organs

3. Pelvic cavity – lies within the pelvis enclosed by hip bones and contains the bladder, reproductive organs, and rectum

SMALL BODY CAVITIES

Located only in the Head Region

- **Orbital Cavity – for eyes**
- **Nasal Cavity – for nose**
- **Middle Ear Cavity – for ear structures**
- **Oral Cavity – for buccal (internal mouth parts)**



Exercise 2

Which body cavity contains the heart and lungs? •

- a. Abdominal cavity •
- b. Cranial cavity
- c. Thoracic cavity
- d. Pelvic cavity

Exercise 3

Which body cavity contains the stomach, liver, and intestines?

- a. Thoracic cavity •
- b. Cranial cavity
- c. Abdominal cavity
- d. Pelvic cavity

BODY POSITIONS

1. Anatomical Position

- **B**ody erect
- **F**eet slightly apart
- **P**alms facing forward
- **T**humbs point away from body



Figure 1.1.1

2. Setting position



Seated position
Position used for obtaining medical history

3. Semi- Fowler's position

- Sitting in bed with the head of the bed elevated
- Facilitates breathing and comfort of the bedridden patient



Semi-Fowler's position

Post-surgical exams; patients with breathing difficulties or lower back injuries

4. Supine position

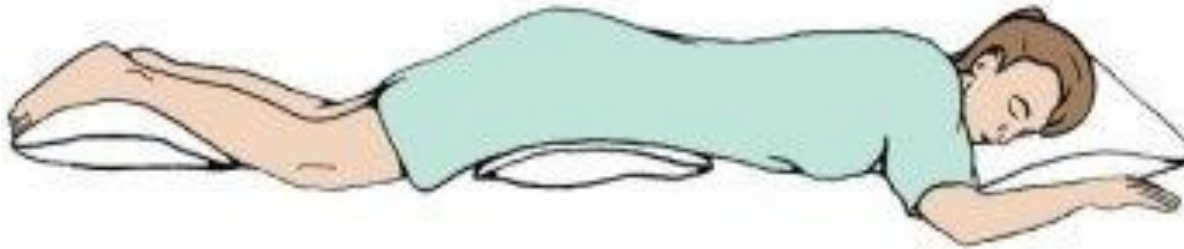
- Supine position
Laying face upward, on your back



5. Prone position

- Prone position
 - Laying face downward, on your stomach

Prone position



6. Trendelenburg position

The head of the bed is lower than the patient's feet

Not used for patients with recent eye surgery, cerebral injuries or bleeding



Trendelenburg position
Shock or low blood pressure; abdominal surgery

7. Lithotomy Position

- Lying on back with feet elevated in stirrups
- Used for examination of pelvis, lower abdomen, and surgery



8. Dorsal Recumbent Position

- Lying on back with knees flexed, feet flat
- Exam of rectum or vagina or surgery



Exercise 4

- **What does the supine position refer to?**
 - a. Lying face down
 - b. Lying face up
 - c. Standing upright
 - d. Sitting with back support

Exercise 5

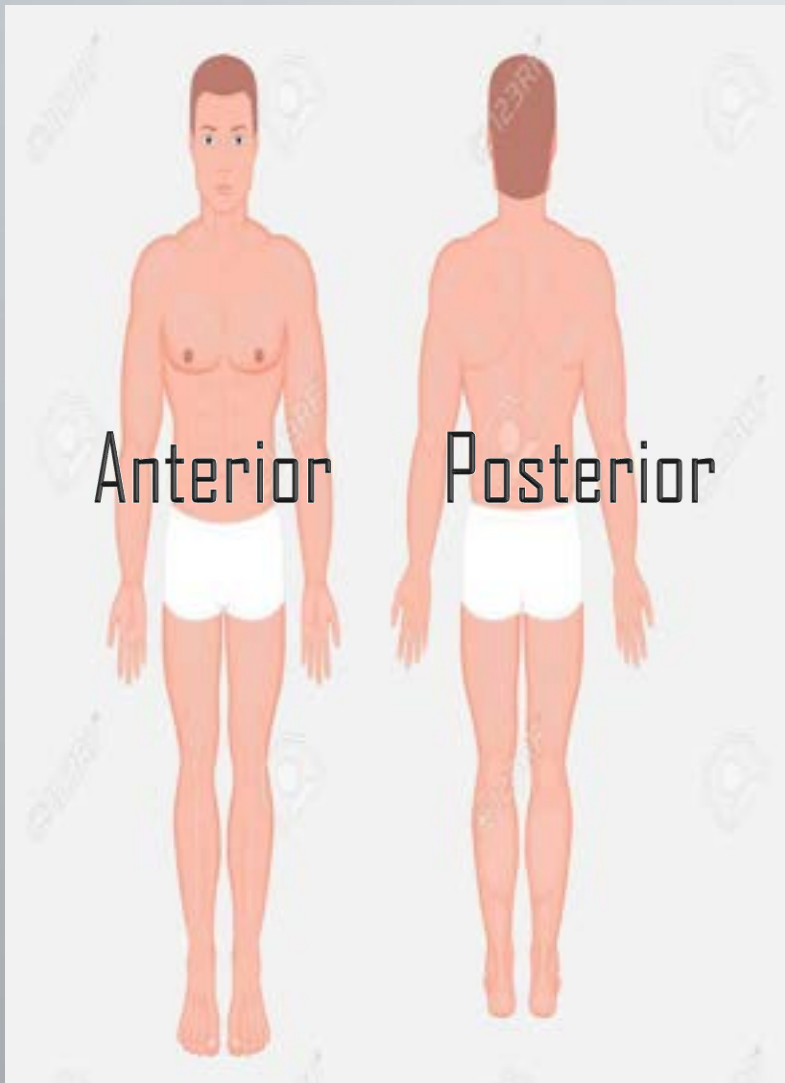
When standing upright, the palms of the hands should be facing:

- a. backwards
- b. Inwards
- c. forwards
- d. Downwards

Anatomical Directions

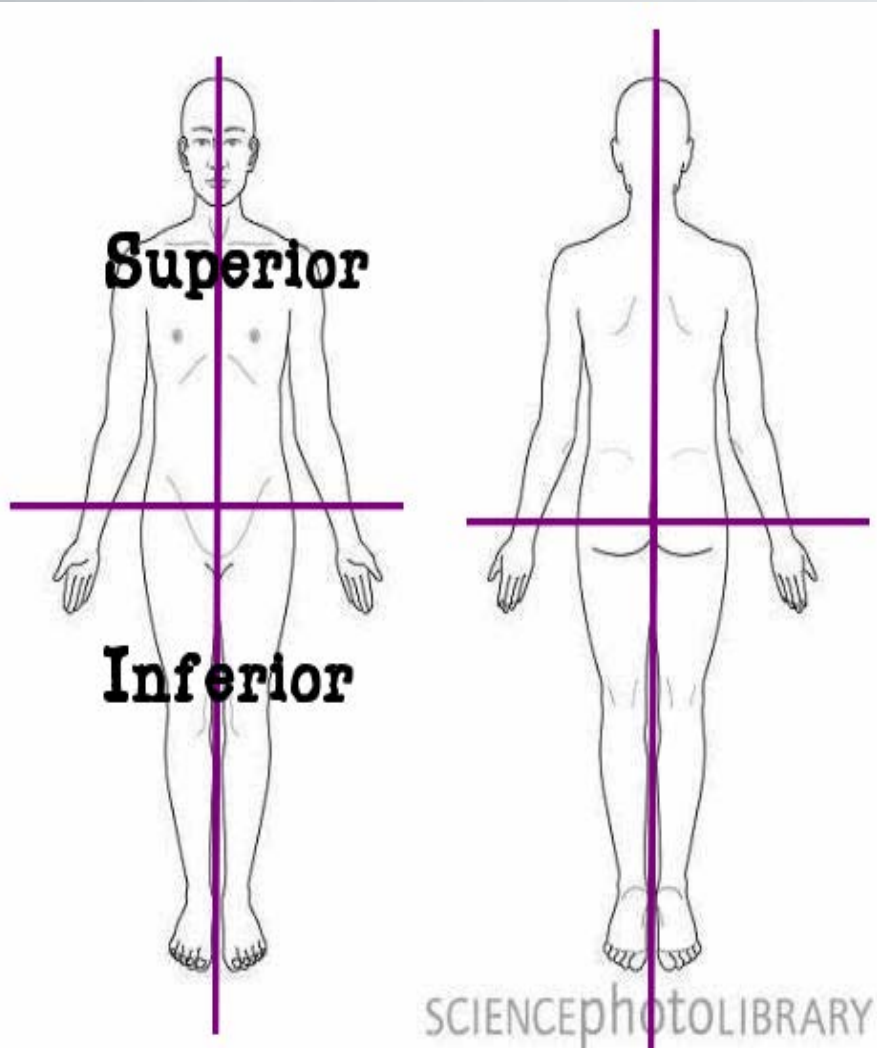
1. Anterior and Posterior Positions

- **Anterior** –
 - means towards the front
- **Posterior** –
 - means toward the back



2. Superior and Inferior Views

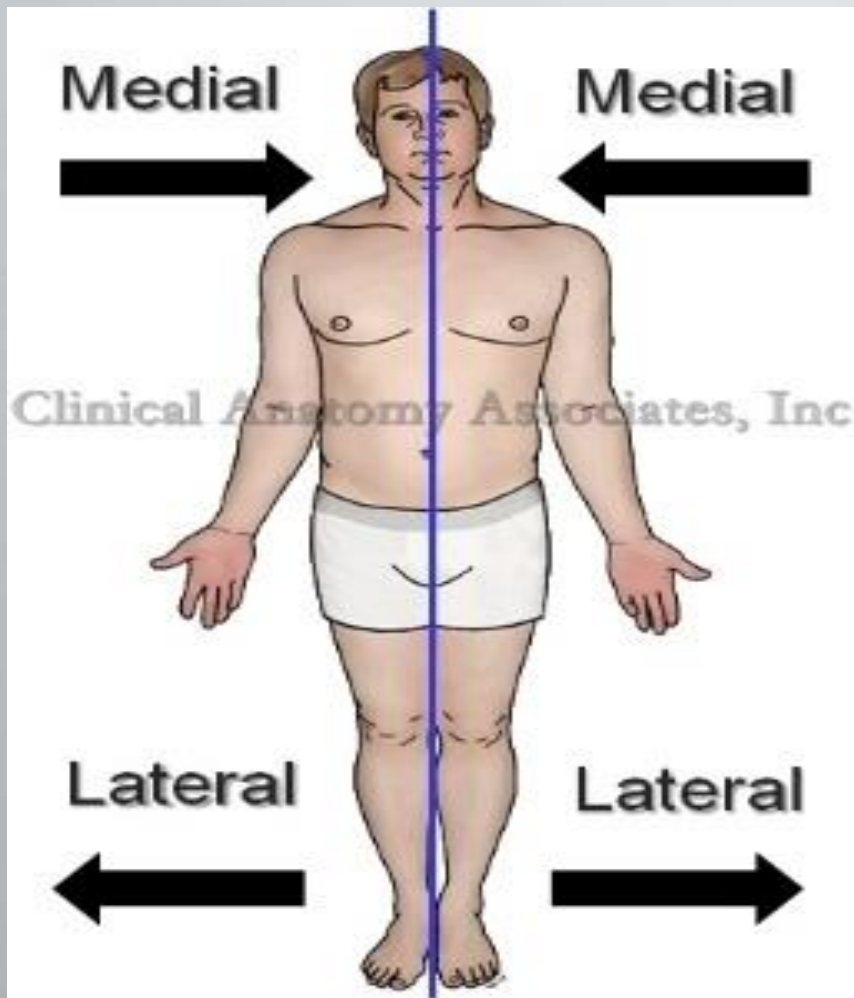
- **Superior (cranial or cephalic)** means toward the head or upper body.
- **Inferior (caudal)** means away from the head or toward the lower part of the body.



Superior and Inferior Views

Medial and Lateral

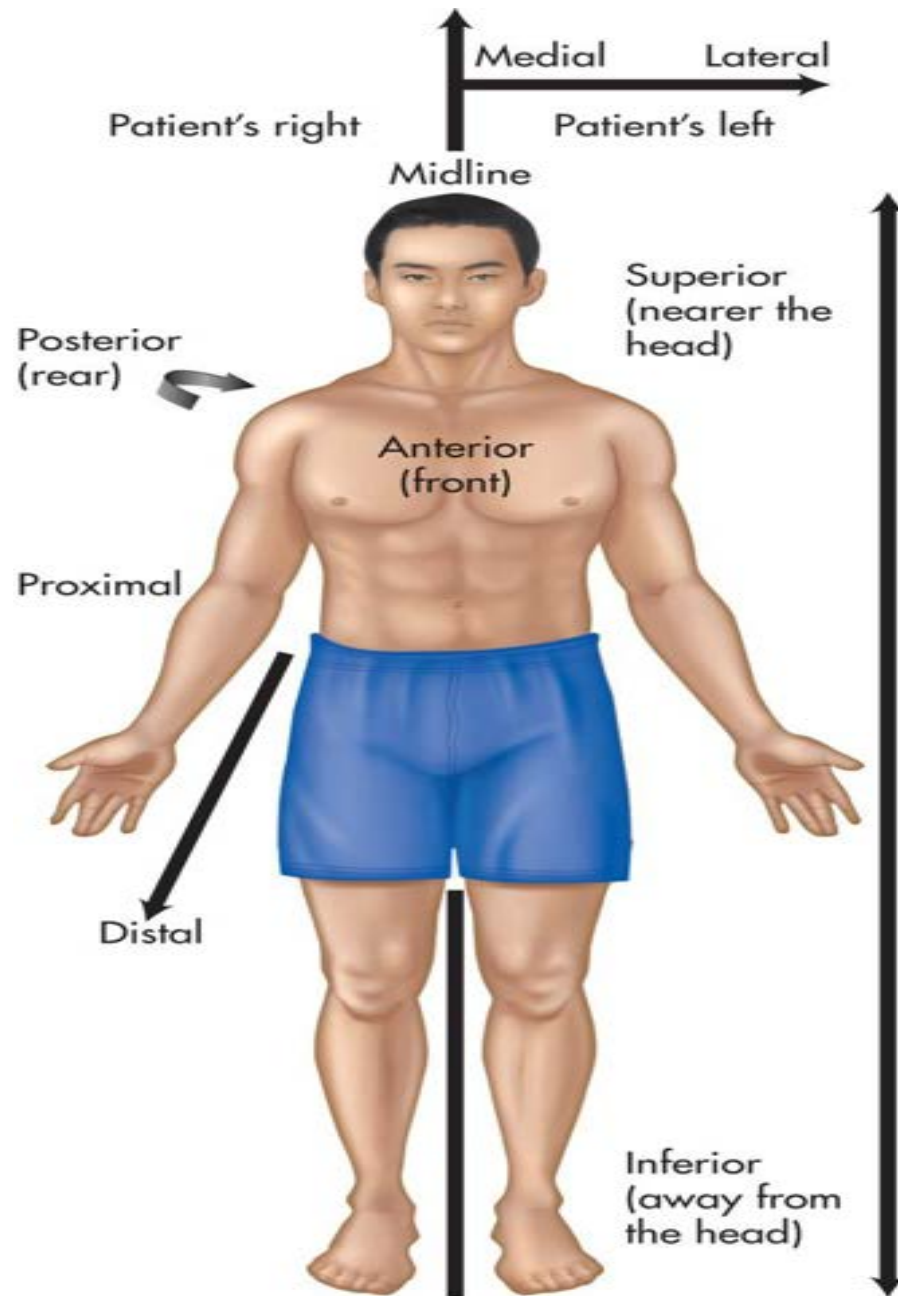
- **Medial:** near the midline of the body.
- **Lateral:** away from midline or on the side.



Medial and Lateral Views

Directional Terms

- **Proximal** refers to body parts close to a point of reference of the body.
- **Distal** refers to body parts away from a point of reference.
- **External** means toward the outside.
- **Internal** means on the inside.



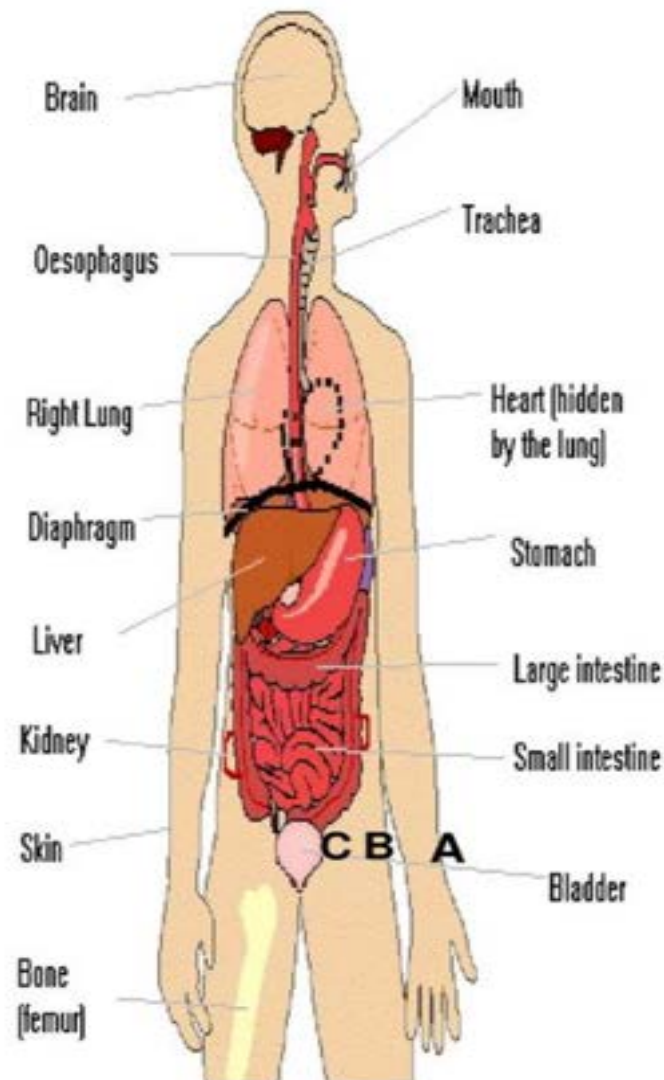
Exercise

1- The stomach is
.....
...to intestine

2- The liver is
.....to
diaphragm

3- The point A is
..... to
point B

4- The point C is
..... to
point B



Body Planes

- A plane is an imaginary line drawn through the body or organ to separate it into specific sections.

1. Transverse (horizontal) plane

- Divides body into superior (**top**) and inferior (**bottom**) sections; also referred to as:

cross-sectioning the body

Body Planes

2. Sagittal plane

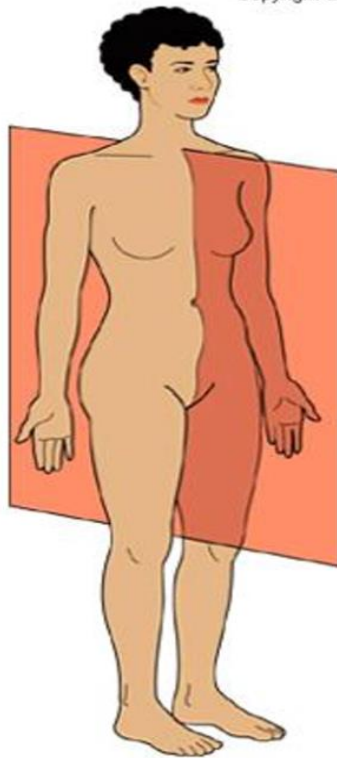
- Divides body into **right and left sections**

3. Frontal plane

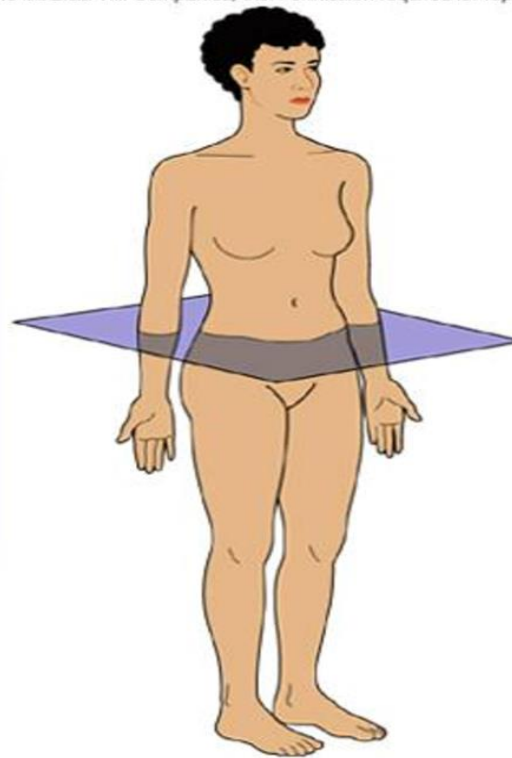
- Divides the body into **anterior and posterior sections**

Body sections are divided by planes

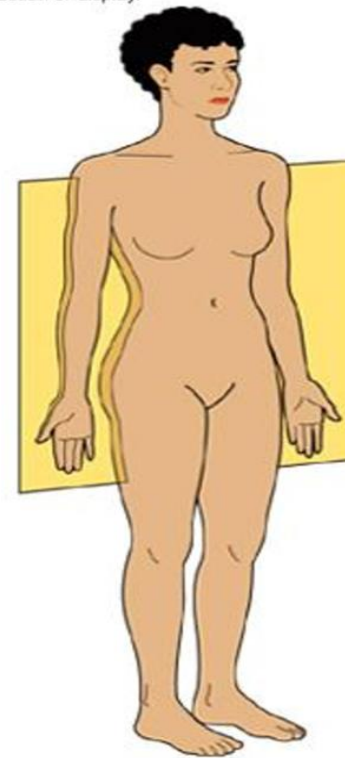
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**Sagittal plane
(median plane)**



**Transverse plane
(horizontal plane)**



**Coronal plane
(frontal plane)**

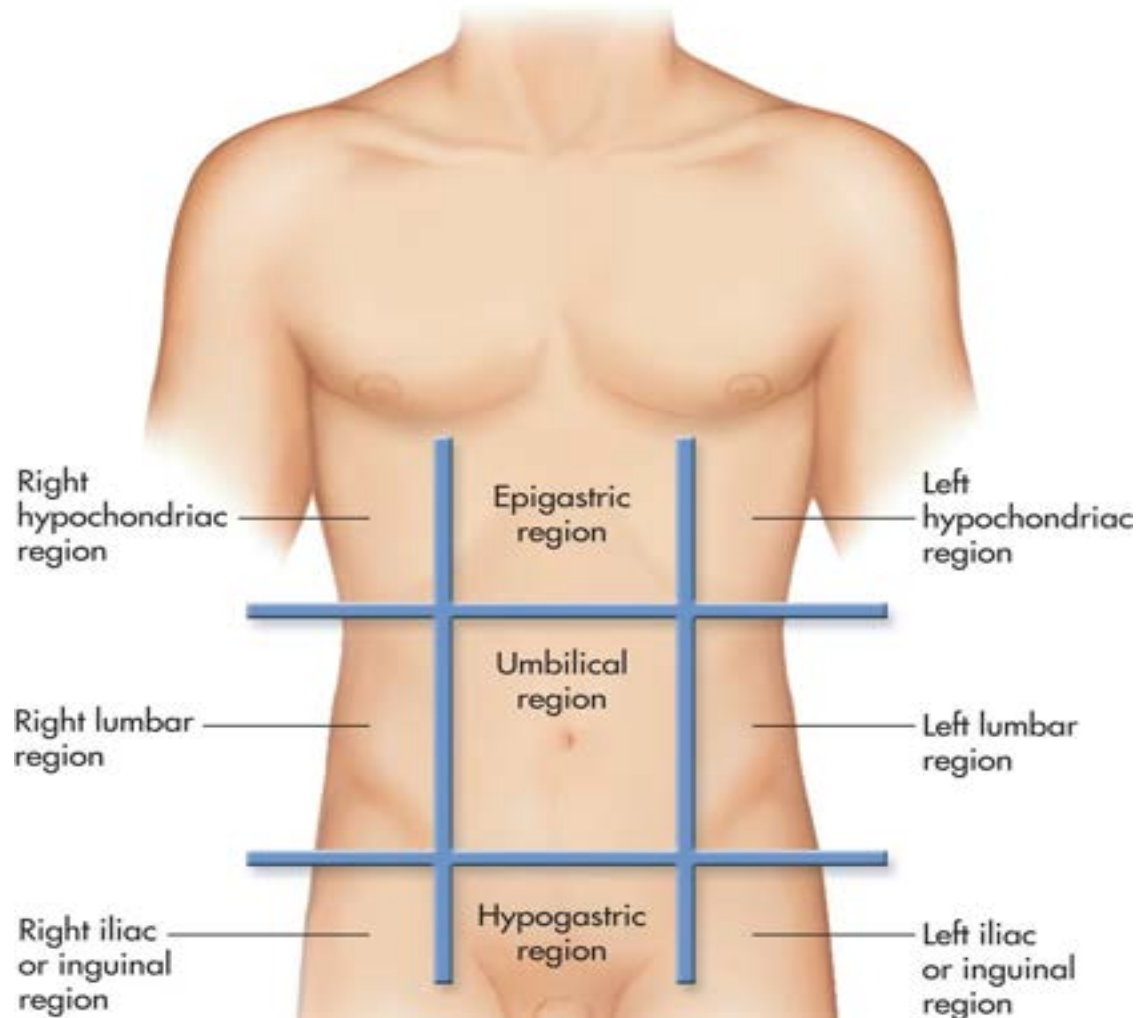
- **What are the three primary body planes?**
 - a. Transverse, sagittal, frontal
 - b. Medial, lateral, proximal
 - c. Superior, inferior, anterior
 - d. Dorsal, ventral, lateral

Body Regions

Body Regions

- Anatomical quadrants are simpler way to compartmentalize the abdominal region.
- This is very helpful in describing the **location of abdominal pain.**

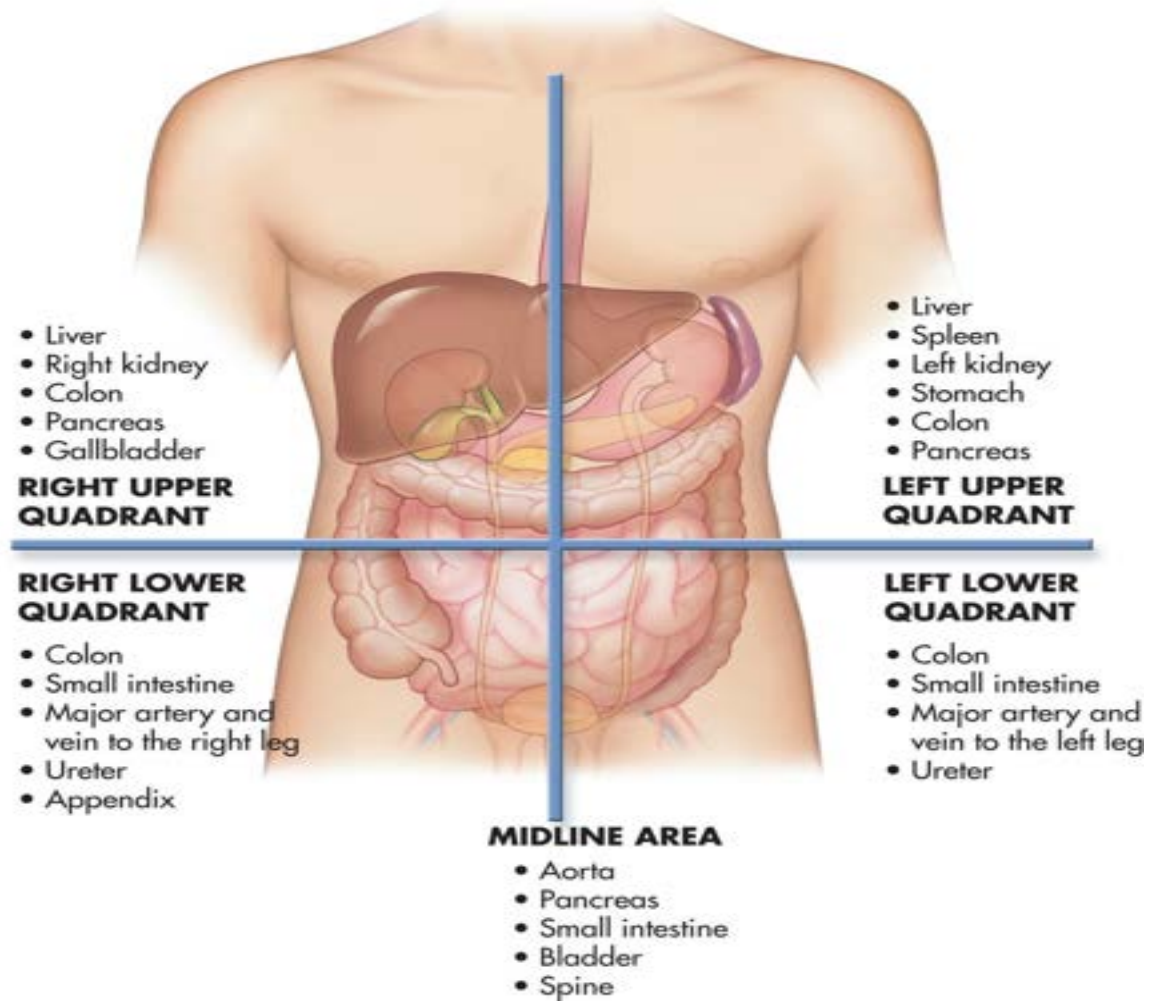
Body Regions (Nine regions)



Body Regions

- Knowing the organs located in the quadrant where the pain is arising can give you a clue as to what type of problem the patient has.
 - RLQ (right lower quadrant) pain – **appendicitis**
 - RUQ (right upper quadrant) pain – **liver or gallbladder** problems

Figure 2–12



Additional Body Regions

- Additional body regions ,Examples include:

- Axillary region
- Brachial region
- Femoral region
- Pubic region
- Patellar region
- Umbilical region



Figure 5.3*:

The regions of skin served by the nerves of the anterior hip (front) and groin regions

Exercise 6

The region that includes the thighs is known as the:

- a. Metatarsal region
- b. Femoral region
- c. Occipital region
- d. Frontal region

Exercise 7

In which quadrant would you find the appendix?

- a. Right Upper Quadrant
- b. Left Upper Quadrant
- c. Right Lower Quadrant
- d. Left Lower Quadrant

The end