

# 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:

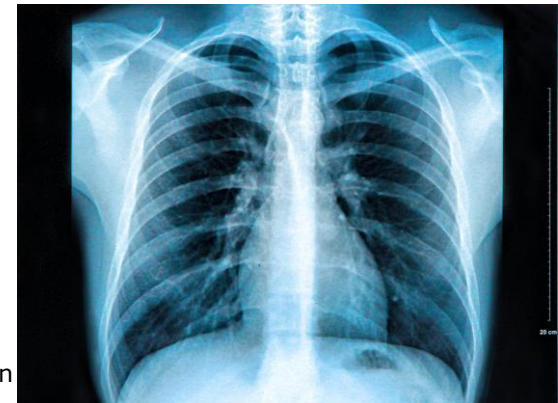
1. **Microscopic** anatomy
2. **Macroscopic** (gross) anatomy

# 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

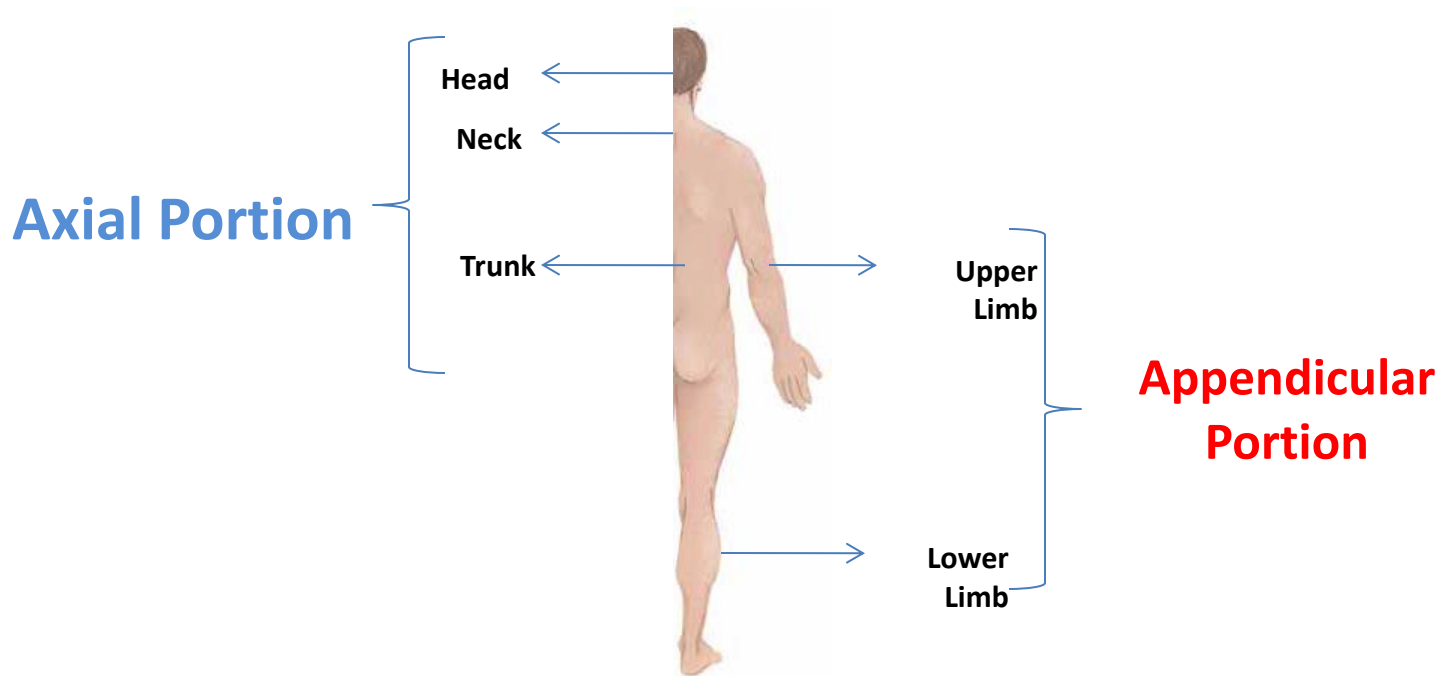
- Also called **gross anatomy**
- The study of the structures of the **body visible to the naked, or unaided, eye**
- **Examples include:**
  - The study of the skeletal system
  - Looking at an x-ray (radiology)



# Exercise 1

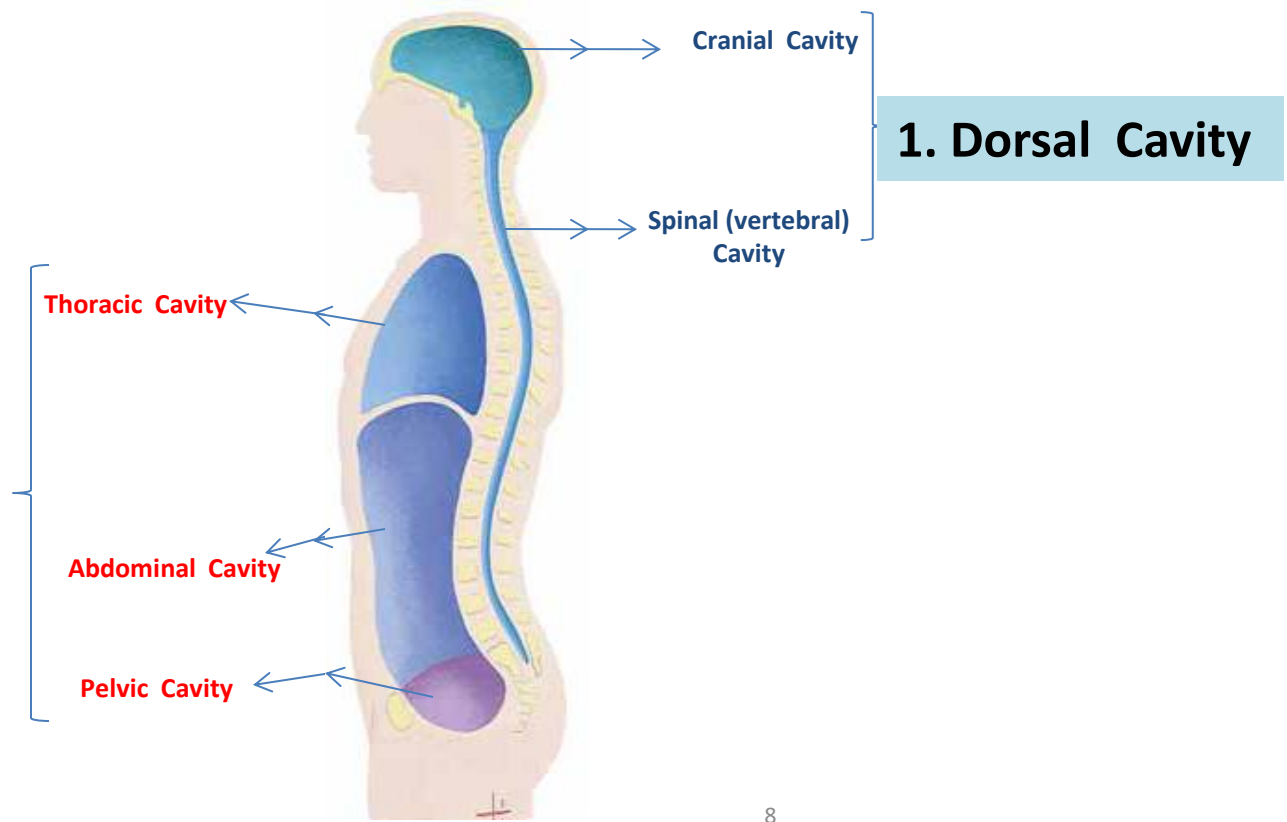
- **Which type of anatomy focuses on the study of tissues and cells using specialized microscopes?**
  - a. Gross anatomy
  - b. Microscopic anatomy
  - c. Developmental anatomy
  - d. Radiographic anatomy

# Body division



# BODY CAVITIES

Located only in the Axial Portion





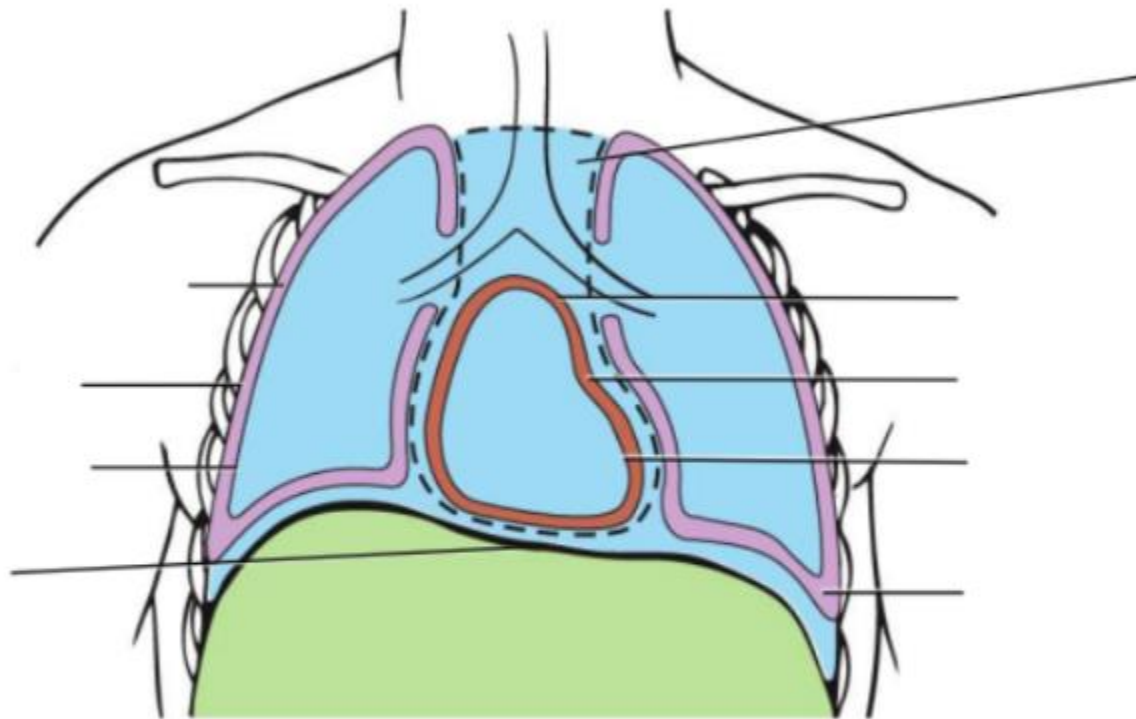
# 1. Dorsal Body Cavities

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

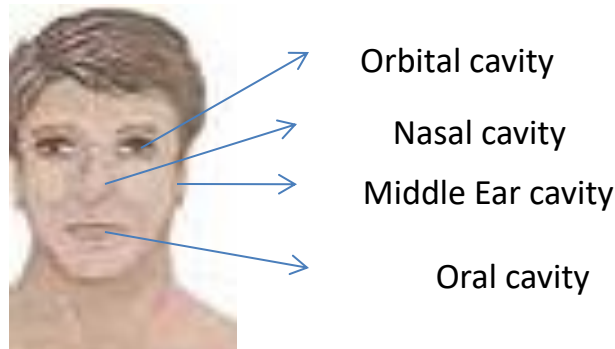
**2. Abdominal cavity** – contains the stomach, intestines, spleen, liver, kidneys, gallbladder and other organs

**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

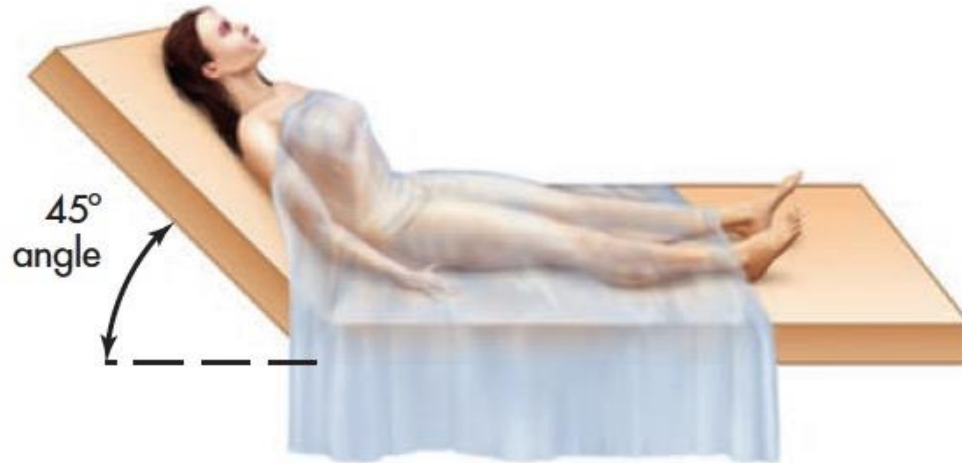
## 2. Setting position



**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

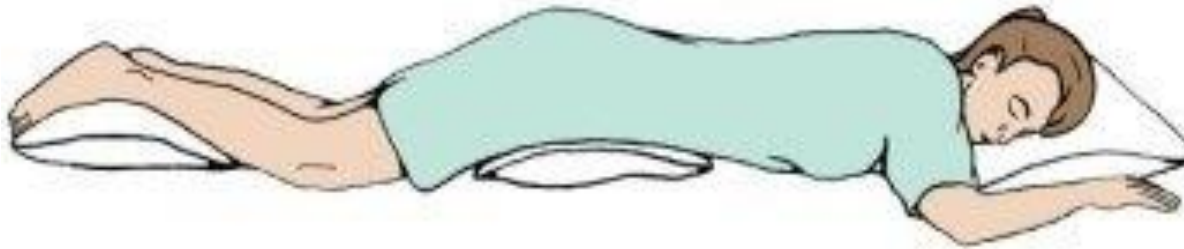
- Supine position  
Laying face upward, on your back



# 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

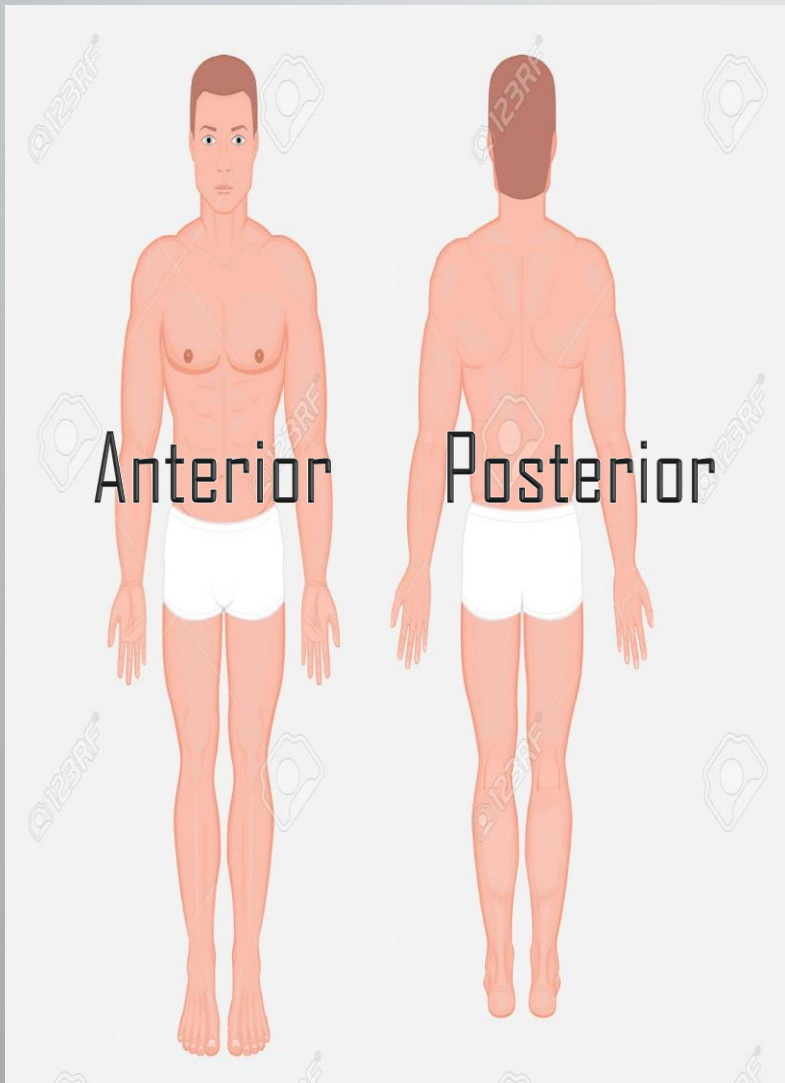
**When standing upright, the palms of the hands should be facing:**

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

# Anatomical Directions

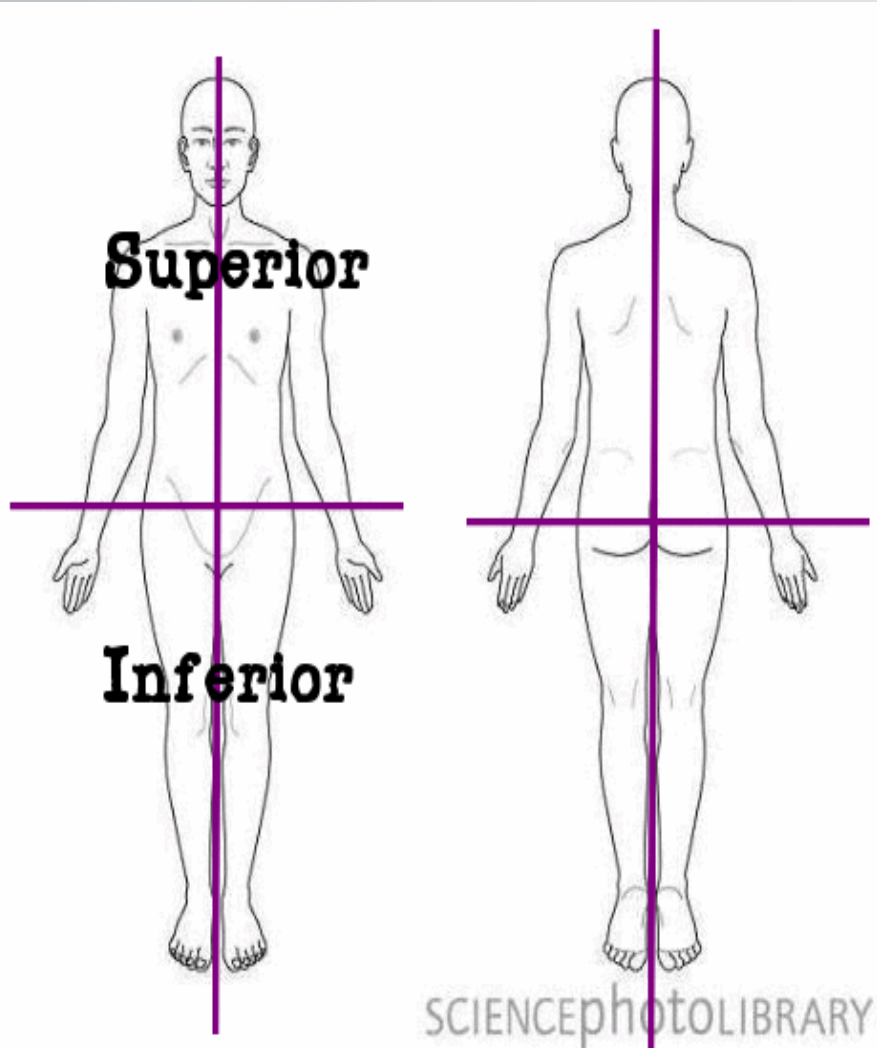
# 1. Anterior and Posterior Positions

- **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.

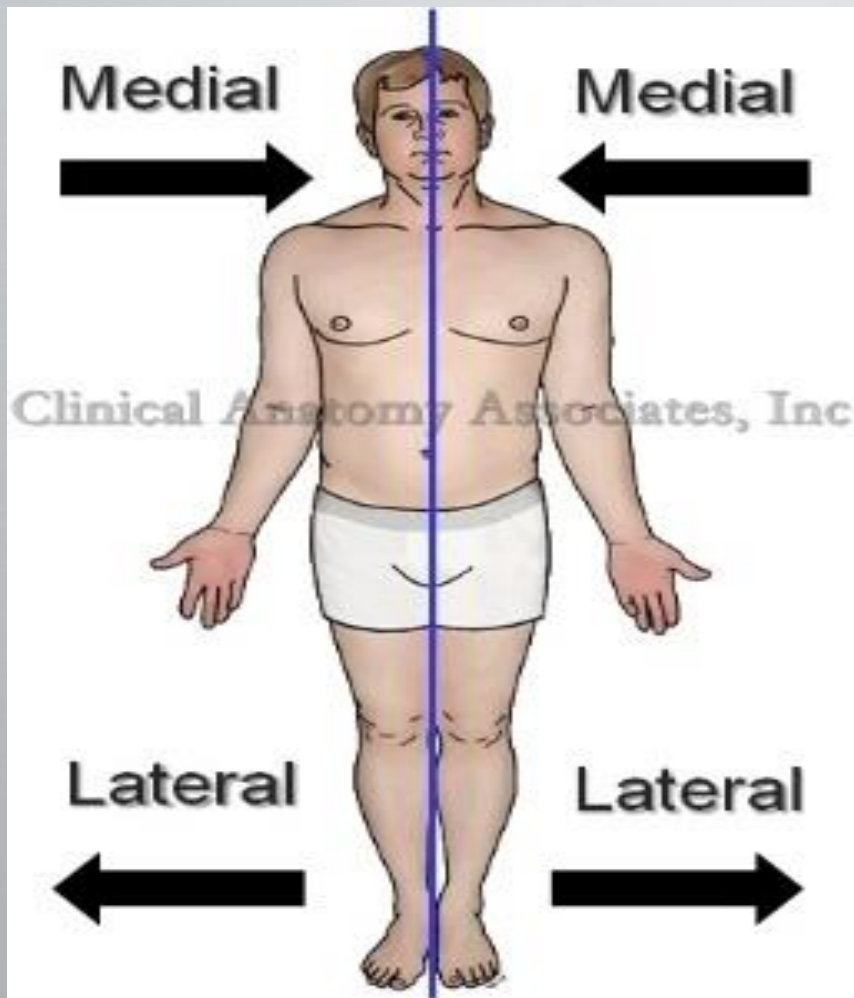


# Superior and Inferior Views

# Medial and Lateral

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

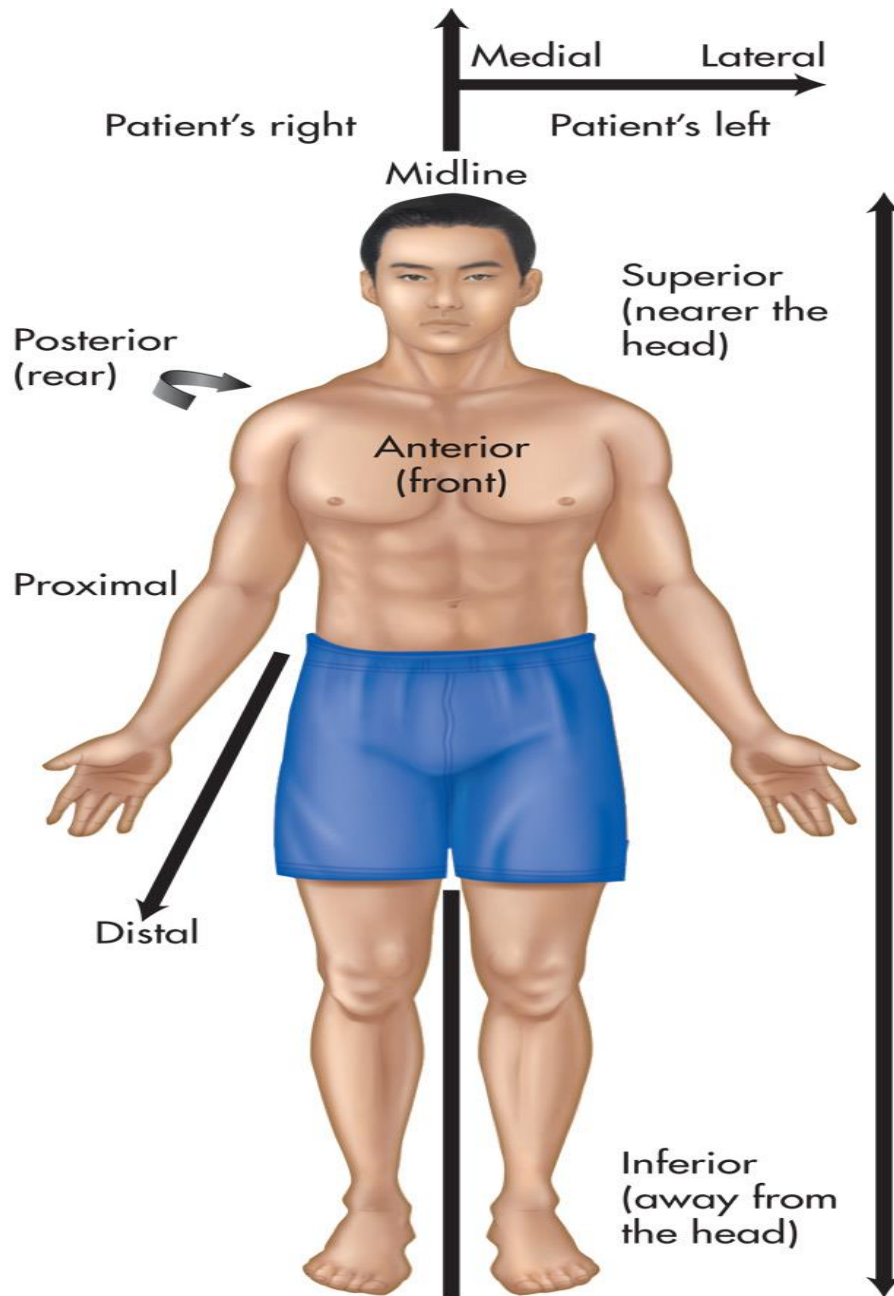




## Medial and Lateral Views

## 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.



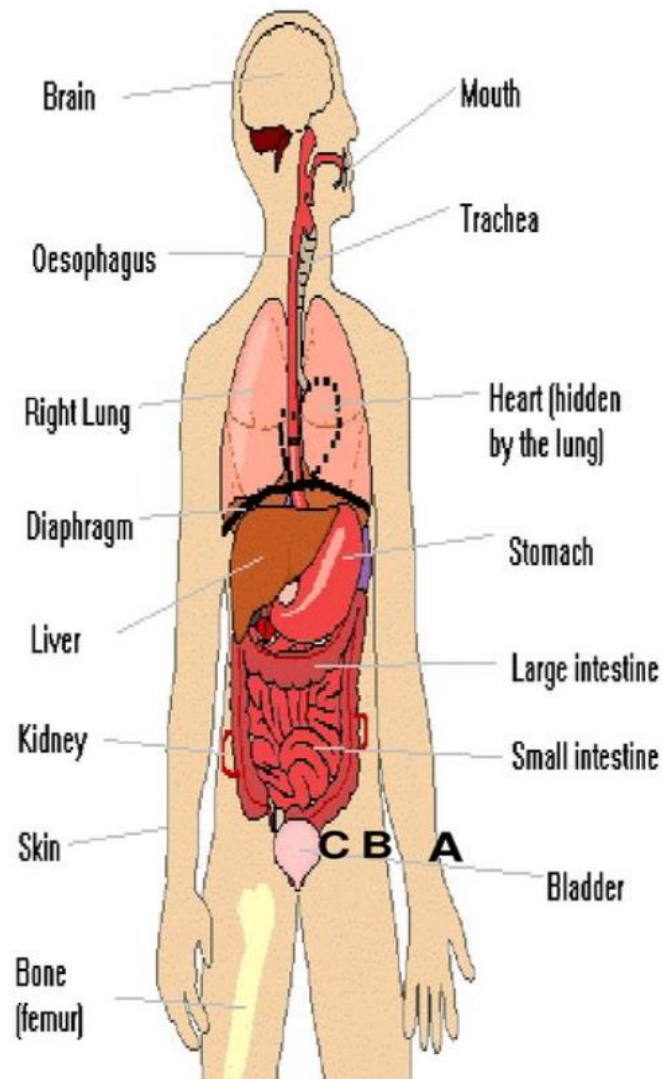
# Exercise

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

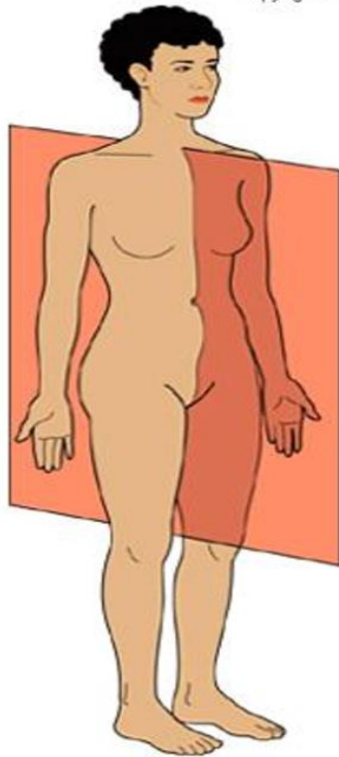
- Divides body into **right and left sections**

## 3. Frontal plane

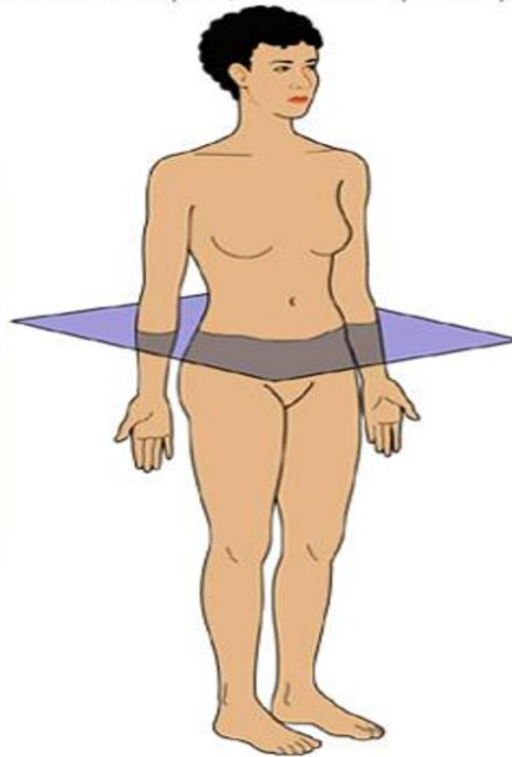
- Divides the body into **anterior and posterior sections**

# Body sections are divided by planes

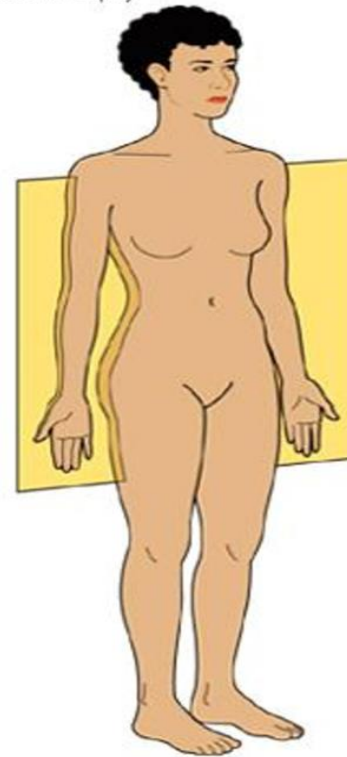
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**Sagittal plane  
(median plane)**



**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

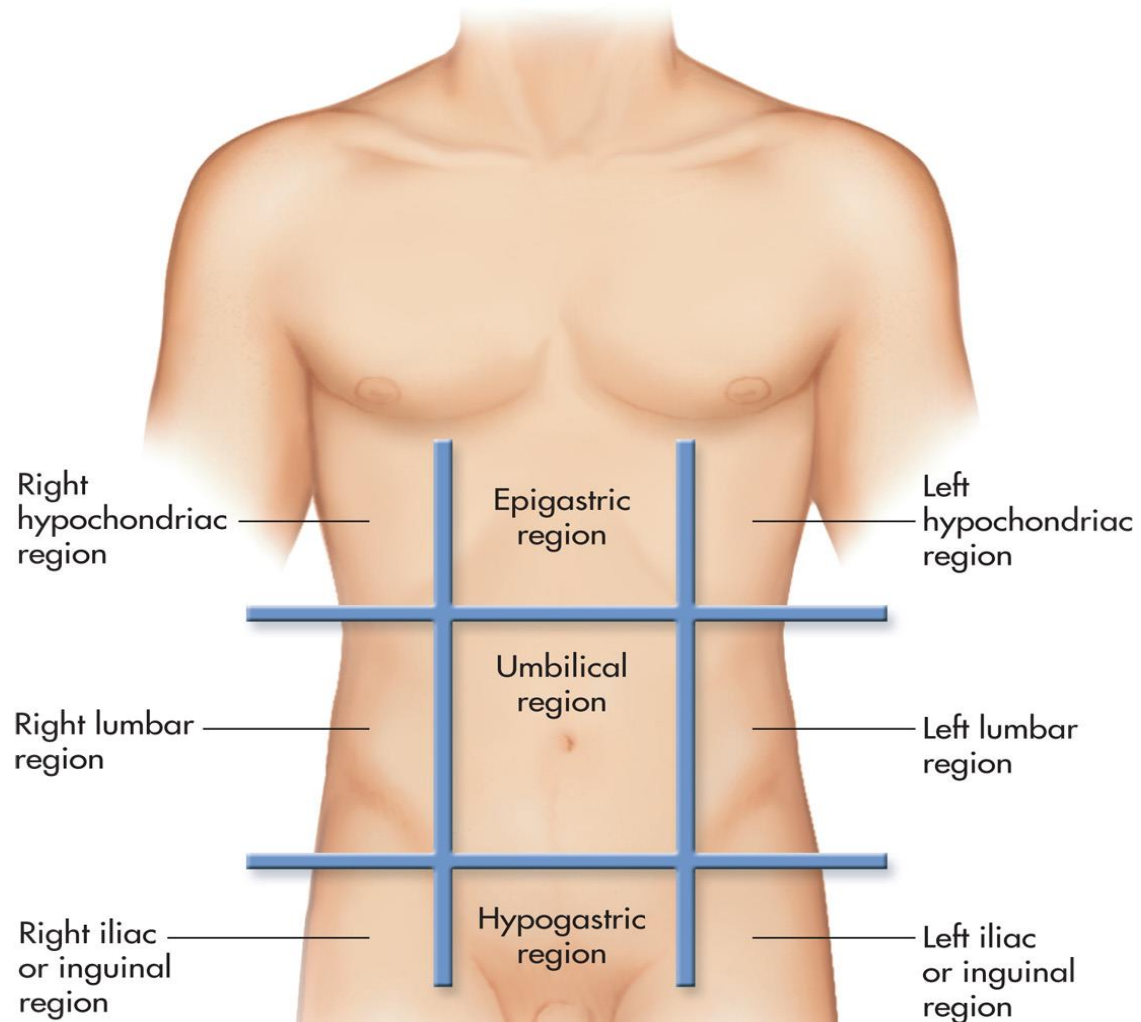


# Body Regions

## Body Regions

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

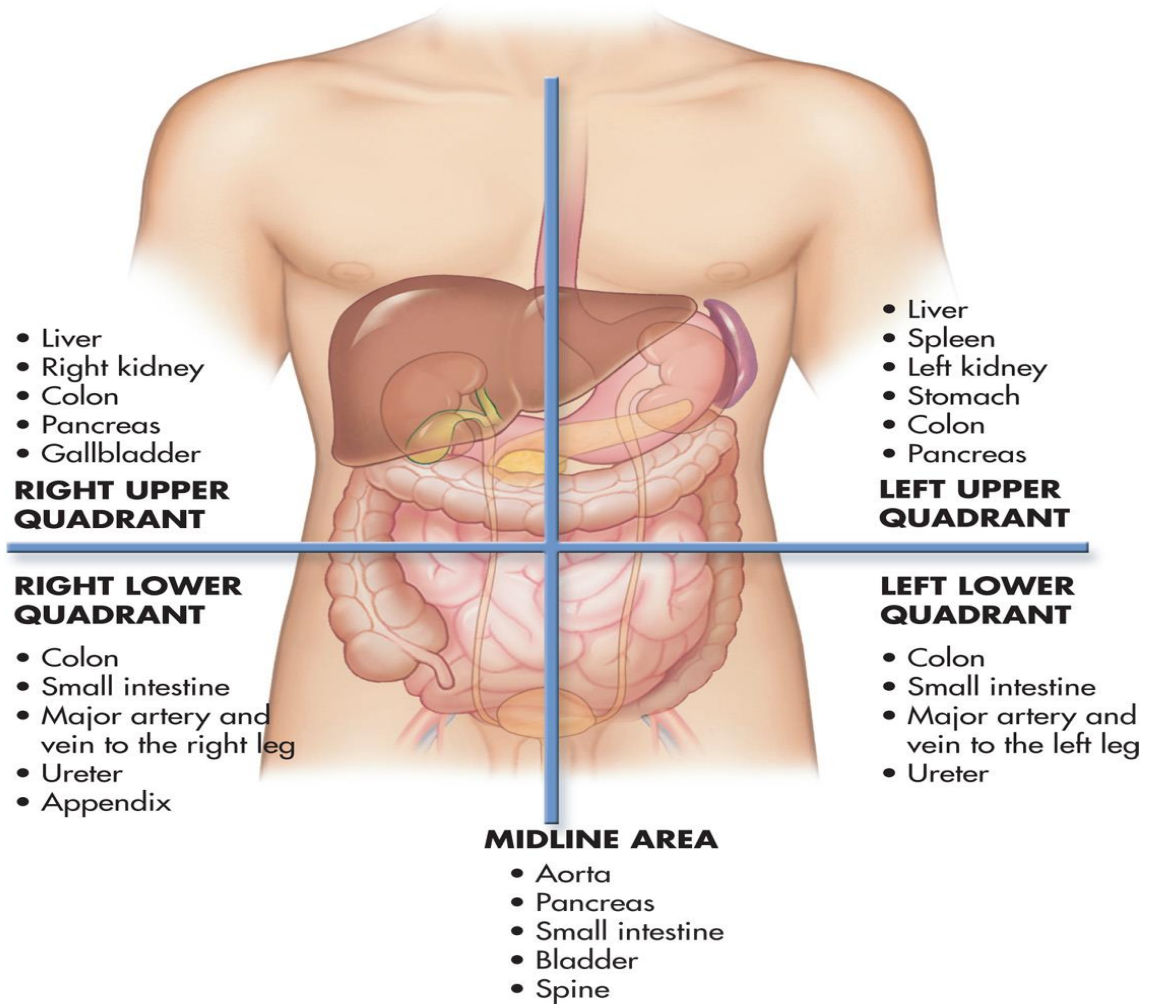
# Body Regions (Nine regions)



## 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

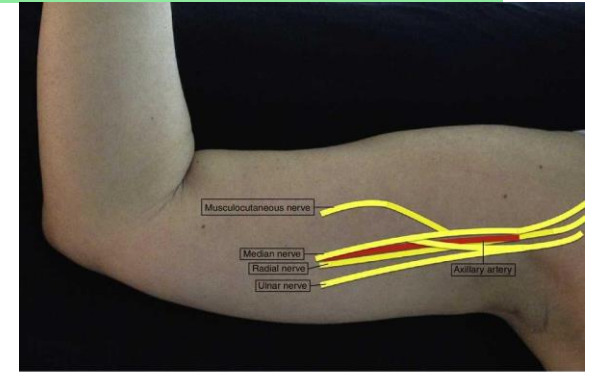
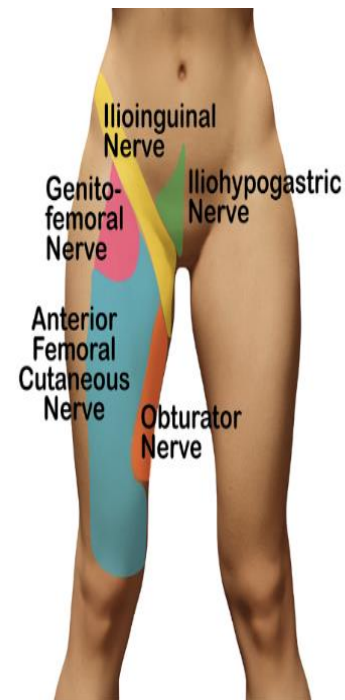
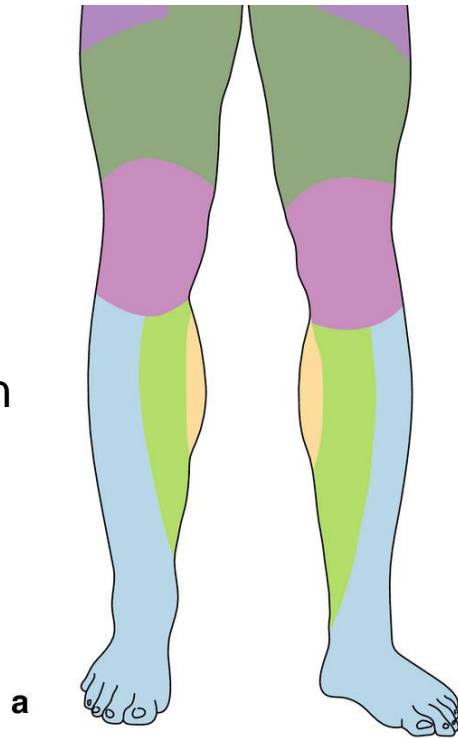
# Figure 2–12



# Additional Body Regions

- Additional body regions ,Examples include:

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



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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**