



# Medical Terminology

## Body Organization

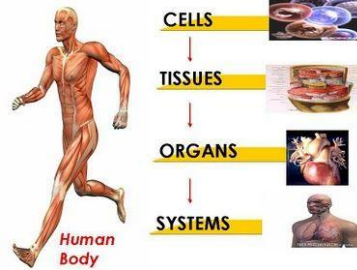
By  
**Assist. Prof. Dr Dler Gallaly**

PhD in Medical Physiology

Dept. of Physiotherapy  
College of Applied Sciences  
Tishk International University  
Erbil, Iraq.  
2023 / 2024

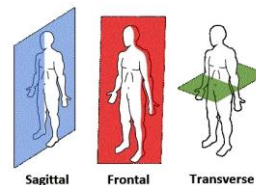
Mob.#: (+964) 750 461 87 58

Email: dler.qader@tiu.edu.iq



### Contents:

- ✓ The levels of body organization.
- ✓ The directional terms
- ✓ The body planes.
- ✓ The body cavities.
- ✓ The divisions of the abdomen and back.



## Objectives:

By the end of this lecture, you should be able to:

- ✓ Discuss the levels of body organization.
- ✓ Name the directional terms
- ✓ Name the body planes.
- ✓ Name the body cavities.
- ✓ Name the divisions of the abdomen and back.

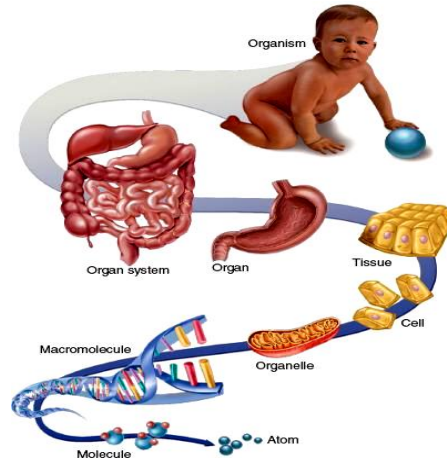
## Introduction:

- Learning about how the human body is constructed will help you retain new medical terms.
- To begin, it is also useful to know the difference between the terms **anatomy** and **physiology**.
- **Anatomy (G. word)= “what it is”**
  - ✓ Anatome= dissection= something to do with cutting
- **Physiology= “how it works”**
  - ✓ study of how the body’s parts work together.

## Levels of organization:

- The body is divided into different levels of organization:

- ✓ Cells,
- ✓ Tissues,
- ✓ Organs,
- ✓ Body systems.
- ✓ Organism.



## Navigating the body:

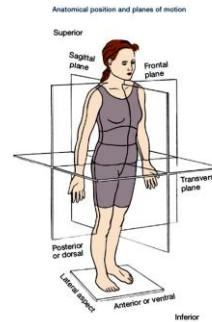
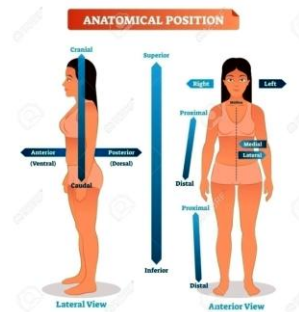
- Health care professionals need to be familiar with directional and positioning terms.
- These terms are frequently used during:

- ✓ Patient examinations,
- ✓ Diagnostic procedures, and
- ✓ Treatments.



## Anatomical Position:

- In the anatomic position, the body is erect and facing forward, and the arms are at the sides with the palms of the hands facing forward.
- Left and right are from the subject's perspective, **NOT the observer's perspective.**

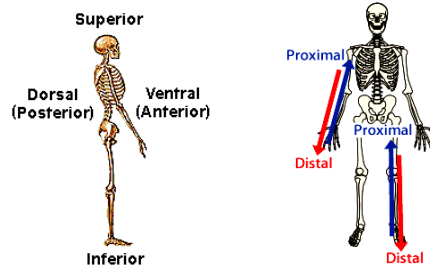


## Directional terms:

Term	Direction	Example
<b>Anterior</b> or <b>Ventral</b>	toward or at the front (belly) of the body	The eyes are on the anterior surface of the face. The nipples are on the ventral body surface.
<b>Posterior</b> or <b>Dorsal</b>	toward or at the back (dorsum) of the body	The spine is on the posterior side of the body. The vertebrae are on the dorsal surface.
<b>Cranial</b> or <b>Cephalad</b>	toward the head	The brain is in the cranial cavity. The neck is cephalic to the hips.
<b>Caudal</b>	toward the lower end of the spine	The coccyx is caudal to the sacrum.
<b>superficial</b> (external)	closer to the surface of the body	The skin is superficial to the body
<b>deep</b> (internal)	closer to the center of the body	The heart is deep to the body.

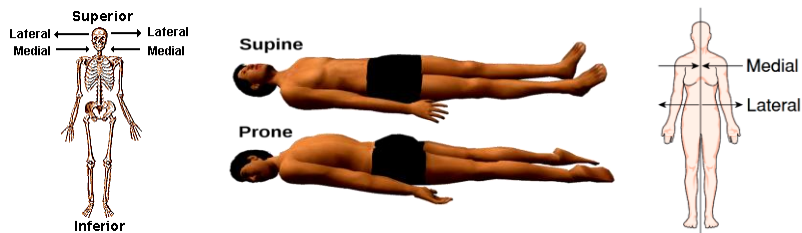
## Directional terms:

Term	Direction	Example
<b>Inferior</b>	below; toward the soles of the feet	The knee is inferior to the hip; The stomach is inferior to the chest.
<b>Superior</b>	above; toward the head	The neck is superior to the chest.
<b>Proximal</b>	near the point of attachment to the trunk	The elbow is proximal to the wrist.
<b>Distal</b>	farther from the point of attachment to the trunk	The fingers are distal to the wrist.



## Directional terms:

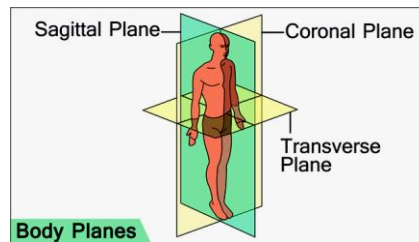
Term	Direction	Example
<b>Lateral</b>	pertaining to the side; away from the middle	The eyes are lateral to the nose.
<b>Medial</b>	toward the middle of the body	The nose is medial to the eyes.
<b>Prone</b>	lying flat and face downward	The patient was placed on the operating table in a prone position.
<b>Supine</b>	lying flat and face upward	The patient was placed on the operating table in a supine position.



## Body planes:

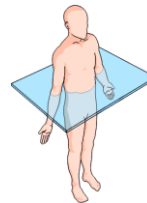
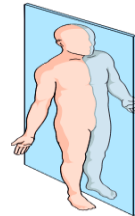
- Body planes are imaginary surfaces within the body.
- The anatomic position is always their reference point.
- Body planes divide the body **into halves** in different ways for reference purposes.
- **Three planes** are frequently used to locate structural arrangements.

- ✓ Frontal (coronal):
- ✓ Sagittal:
- ✓ Transverse (horizontal):



## Body planes:

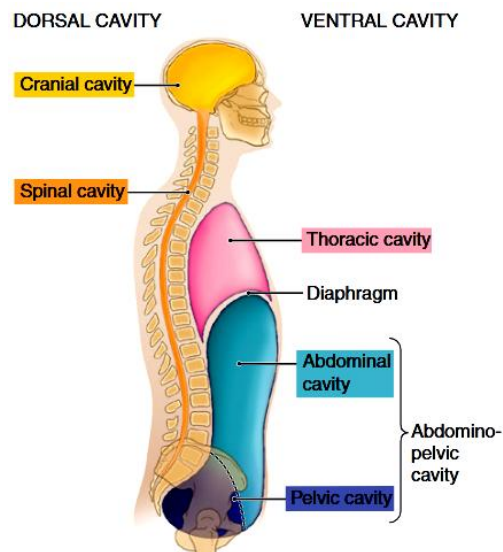
- Frontal (coronal) plane:
  - ✓ Separates the **front** (anterior) of the body from the **back** (posterior).
- Sagittal plane:
  - ✓ Divides the body or organ into **left** and **right** sides.
- Transverse (horizontal) plane:
  - ✓ Separates the body into **upper** (superior) and **lower** (inferior) planes, cutting “across” the body.



## Body Cavities:

- A body cavity is defined as a hollow space that contains body organs.
- The body has several major cavities, including the:
  - ✓ Cranial (houses the brain)
  - ✓ Spinal (the spinal cord)
  - ✓ Thoracic (contains the lungs) and
  - ✓ Abdominopelvic (contains digestive & reproductive organs)
- The abdominopelvic cavity is divided into:
  - ✓ a superior abdominal cavity and
  - ✓ an inferior pelvic cavity.

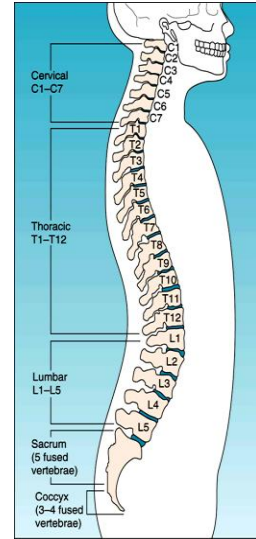
## Body Cavities:



## Regions of the Spinal Column:

- The spinal column is a series of vertebrae that extend from the **head** to the **coccyx**.
- The five regions include the:

Region	Location
Cervical	Neck
Thoracic	Chest
Lumbar	Lower back below waist
Sacral	Lower back
Coccyx	Tailbone



## Abdominal Regions:

- The abdomen can be divided by imaginary lines into nine regions:
  - ✓ Three medial regions and
  - ✓ Six lateral regions



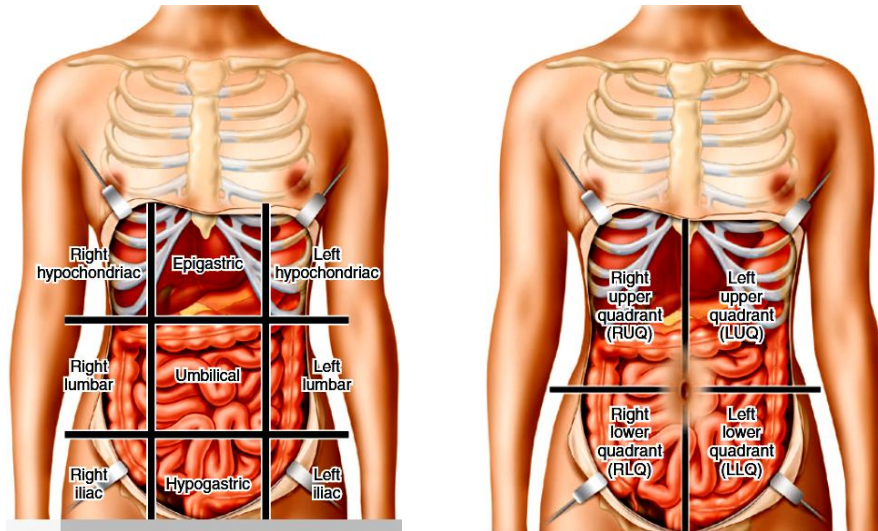
## Abdominal Regions:

- The sections down the midline are the:
  - ✓ Epigastric region, located above the stomach
  - ✓ Umbilical region, named for the umbilicus, or navel
  - ✓ Hypogastric region: located below the stomach.
  
- The lateral regions have the same name on the left and right sides, they are the:
  - ✓ Hypochondriac regions (Rt. and Lt.)
  - ✓ Lumbar regions (Rt. and Lt.)
  - ✓ Iliac (or inguinal) regions (Rt. and Lt.)

## Abdominal Quadrants:

- The abdomen can be divided into four sections by a single vertical line and a single horizontal line that intersect at the umbilicus (navel).
- **The sections are:**
  - ✓ The right upper quadrant (RUQ)
  - ✓ The left upper quadrant (LUQ)
  - ✓ The right lower quadrant (RLQ)
  - ✓ The left lower quadrant (LLQ)

## Abdominal Regions and Quadrants:



## Questions and Comments:



# Exercises



## Exercise #1:

- Give a term that has an **opposite meaning** to the term given.

<b>1. Distal</b>	<b>Proximal</b>
<b>2. Inferior</b>	<b>Superior</b>
<b>3. Anterior</b>	<b>Posterior</b>
<b>4. Dorsal</b>	<b>Ventral</b>

## Exercise #2: Directional Terms

### ▪ Matching:

<b>e</b>	superior	a. lying flat and face up
<b>g</b>	lateral	b. toward the front; away from the back of the body
<b>h</b>	posterior	c. near the point of attachment to the trunk
<b>i</b>	medial	d. below; toward the soles of the feet
<b>j</b>	distal	e. above; toward the head
<b>f</b>	prone	f. lying flat and face down
<b>a</b>	supine	g. toward the side; away from the middle
<b>d</b>	inferior	h. near the back; toward the back of the body
<b>b</b>	anterior	i. toward the middle of the body
<b>c</b>	proximal	j. farther from the point of attachment to the trunk

e g h i j f a d b c

## Exercise #3: Planes of the body

### ▪ Matching:

<b>B</b>	Sagittal plane	<b>A.</b> divides the body into upper and lower
<b>C</b>	Frontal plane	<b>B.</b> divides the body into left and right
<b>A</b>	Transverse plane	<b>C.</b> divides the body into anterior and posterior

**Exercise #4:**

Select the correct word from the list to correctly complete the sentence.

**anterior, distal, dorsal, inferior, lateral, medial, posterior, proximal, superior, ventral.**

1. The wrist is distal to the elbow.
2. The shoulder is proximal to the wrist.
3. The lungs are anterior, ventral to the spinal cord.
4. The nose is medial to the eyes.
5. The head is superior to the neck.
6. The ears are lateral to the nose.
7. The shoulder blades are on the posterior, dorsal side of the body.
8. The chin is inferior to the forehead.

**Exercise #5:**

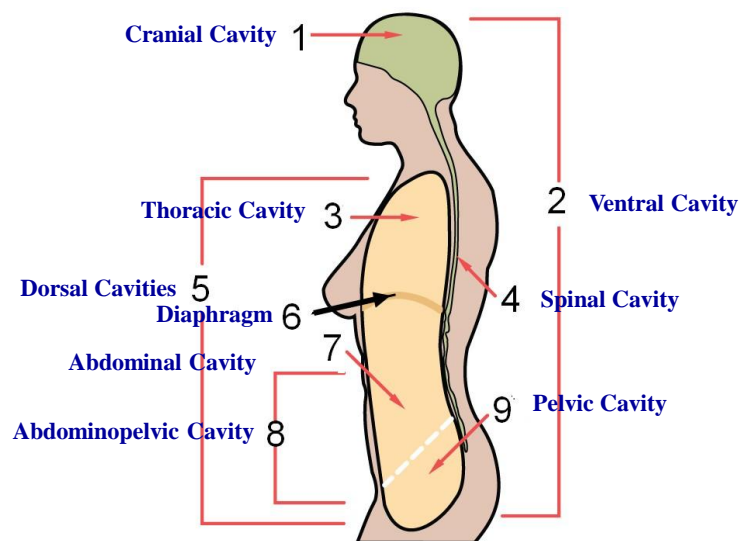
**Write the answers to the following questions.**

1. What word describes the position of the ear in relation to the nose? lateral
2. What does posterior mean? toward the back
3. What word describes the position of the elbow in relation to the wrist? proximal
4. When the body is in the anatomic position, which direction are the palms of the hands facing? anterior or forward
5. What is a synonym for anterior? Ventral

### Exercise #6: True or False?

✗	1. Prone is lying face up.
✓	2. The eyes are on the anterior surface of the face.
✗	3. The opposite of proximal is lateral.
✓	4. The nose is superior to the mouth.
✓	5. The ribs are anterior to the vertebrae.
✗	6. The atria are inferior to the ventricles.
✓	7. The sagittal plane divides the body into right and left portions.
✗	8. In the anatomic position, the body is horizontal.
✓	9. The big toe is medial to the little toe.
✓	10. The terms ventral and anterior both mean front.

### Exercise #7: Label the body cavities below:



## Some Medical Terminology Video's links:

Medical Terminology - The Basics - Lesson 1	<a href="http://youtube.com/watch?v=04Wh2E9oNug">http://youtube.com/watch?v=04Wh2E9oNug</a>
Physical Therapy Abbreviations and Documentation Tips	<a href="https://www.youtube.com/watch?v=1kzMmurC_aA">https://www.youtube.com/watch?v=1kzMmurC_aA</a>
Using Medical Terminology in Physical Therapy	<a href="http://youtube.com/watch?v=LgTROnDObdo">http://youtube.com/watch?v=LgTROnDObdo</a>
Understanding Medical Terminology	
What is physiotherapy and why is it important? - Robin Higginson - Nuffield Health	<a href="http://youtube.com/watch?v=2Bn5XNe0XUQ">http://youtube.com/watch?v=2Bn5XNe0XUQ</a>
Life as a Physiotherapy Degree Student   Health Sciences   University of Southampton	<a href="https://www.youtube.com/watch?v=lccSa-Ojrls">https://www.youtube.com/watch?v=lccSa-Ojrls</a>
Physiotherapy Treatment - Types, Importance and Uses	<a href="http://youtube.com/watch?v=FF4BNIfBsYo">http://youtube.com/watch?v=FF4BNIfBsYo</a>
Physiotherapy EDUCATION	<a href="http://youtube.com/watch?v=JFMhJBCfHbE">http://youtube.com/watch?v=JFMhJBCfHbE</a>
Medical Terminology Quiz 1- Prefixes/Suffixes	<a href="https://www.youtube.com/watch?v=Cjllax_hOj8">https://www.youtube.com/watch?v=Cjllax_hOj8</a>
Medical Terminology - The Basics - Lesson 1   Practice and Example Problems	<a href="http://youtube.com/watch?v=2C1YXWSYNzw">http://youtube.com/watch?v=2C1YXWSYNzw</a>
Medical Terminology - The Basics - Lesson 2	<a href="http://youtube.com/watch?v=ALWrviACb">http://youtube.com/watch?v=ALWrviACb</a>
Medical Terminology - The Basics - Lesson 4	<a href="http://youtube.com/watch?v=TGPPBiOkN8Y">http://youtube.com/watch?v=TGPPBiOkN8Y</a>