



## ***Medical terminology Lecture 3***

*Dr. Kareem Obayes Handool*

## ***Structure of the Human Body***

*Dr. Kareem Obayes Handool*

*Third Stage*

*Department of Medical Physics*

*Al-Mustaqbal University*

**2024-2025**

## ***Structure of the Human Body***

### **Body Orientation:**

Descriptive terms are used to describe the structural organization of the body. Terms that specify *direction, position, and location* of various organs in relationship to each other are included. Knowledge of these descriptive terms is an essential part of medical terminology and provides a basic foundation for a better understanding of the body system.

### **Levels of Organization**

The human body consists of several structural and functional levels of organization. Each higher level increases in complexity because it incorporates the structures and functions of the previous levels.

- **Cellular level**, molecules combine to form cells, the basic structural and functional units of the body.
- **Tissue level**, groups of cells that work together to perform a specialized function.
- **Organ level**, structures that are composed of two or more different types of tissue; they have specific functions and usually have recognizable shapes.
- **System level**, related organs with a common function; also called organ-system level
- **Organism level**, collection of body systems that makes up the most complex level: a living human being. All parts of the human body functioning together constitute the total organism.

## Anatomical Position:

Term	Definition	Example
Adduction	Movement toward the midline of the body	The arm moves from shoulder height to the side of the body.
Abduction	Movement away from the midline of the body	The arm moves from the side of the body to shoulder height.
Superior (cephalic, cranial)	Above or higher; toward the head	The chest is superior to the abdomen. The heart is superior to the stomach.
Inferior (caudal)	Below or lower; toward the tail	The intestines are inferior to the stomach. The legs are inferior to the trunk.
Anterior (ventral)	Front of the body; toward the front	The navel is on the anterior side of the body. The toes are anterior to the ankle.
Posterior (dorsal)	Back of the body; toward the back	The spinal column is on the posterior side of the body. The heel is posterior to the toes.
Medial	Pertaining to the middle; toward the midline	The mouth is medial to the cheeks.
Lateral	Pertaining to the side; toward the side	The eyes are lateral to the nose.

External	Outside, exterior to	The ribs are external to the lungs.
Internal	Within, interior to	The brain is internal to the skull.
Superficial	Toward or on the surface	A scrape from a fall is a superficial wound.
Deep	Away from the surface	A bullet wound can penetrate deep into the abdomen.
Proximal	Near the point of attachment to the trunk or a structure	The ankle is proximal to the foot.
Distal	Farther from the point of attachment to the trunk or a structure	The toes are distal to the ankle.
Parietal	Pertaining to the outer wall of a cavity	The parietal pleura lines the chest cavity.
Visceral	Pertaining to the organs within a cavity	The visceral pleura covers the lungs.

## Body Planes:

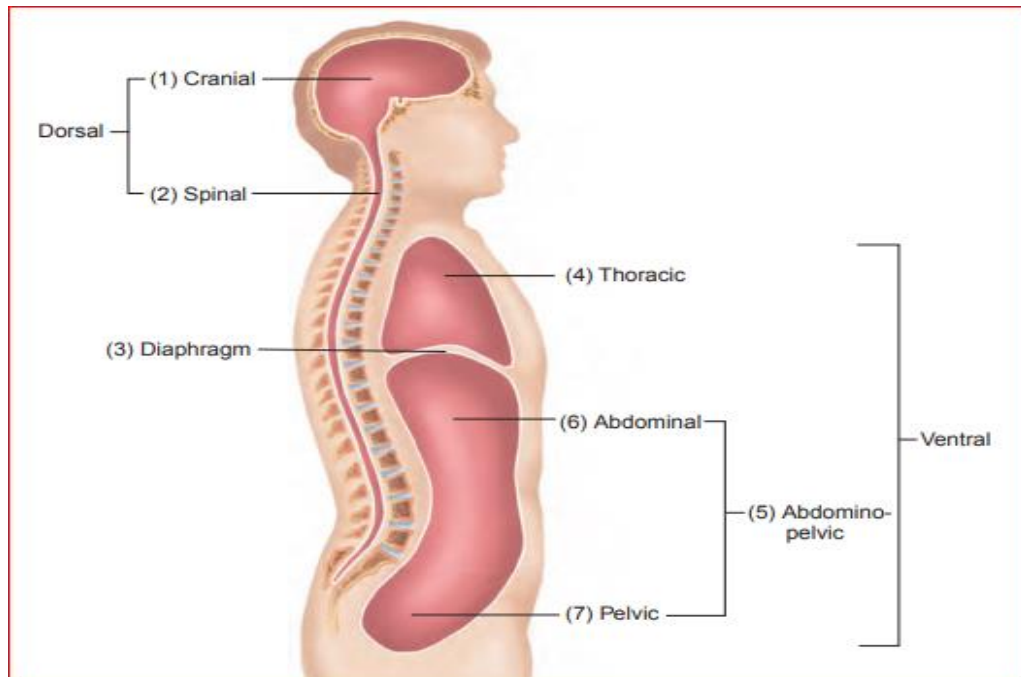
They are used to denote the clinical *divisions* of the abdomen as well as the *location* of organs contained within the divisions. Body planes are also used to describe the location of x-ray images and computed tomography (CT) scanning.

**1. Median plane** — vertical plane that passes through the midline of the body and divides the body or organ into equal right and left sides; also called midsagittal plane.

**2. Frontal plane** — plane that divides the body into **anterior** (front) and **posterior** (back) portions; also called coronal plane.

**3. Horizontal plane** — plane that separates the body into **superior** (upper) and **inferior** (lower) portions; also called transverse plane.

### Quadrants And Regions:



### Abdominopelvic Quadrants:

Four quadrants identify the placement of internal organs in the abdominopelvic cavity.

**1. Right upper quadrant (RUQ)** — contains the right lobe of the liver, the gallbladder, part of the pancreas, and part of the small and large intestine.

**2. Right lower quadrant (RLQ)** — contains part of the small and large intestine, the appendix, the right ovary, the right fallopian tube, and the right ureter.

**3. Left upper quadrant (LUQ)** — contains the left lobe of the liver, the stomach, the spleen, part of the pancreas, and part of the small and large intestine.

**4. Left lower quadrant (LLQ)** — contains part of the small and large intestine, the left ovary, the left fallopian tube, and the left ureter.

## **Abdominopelvic Regions:**

The abdominopelvic cavity can be divided into nine regions. Quadrants are normally used to describe and diagnose conditions, whereas region designations are used mainly to indicate the location of internal organs.

**1. Right hypochondriac** — upper right region located under the cartilage of the ribs. **2. Left hypochondriac** — upper left region located under the cartilage of the ribs. **3. Right lumbar** — middle right region located near the waist. **4. Left lumbar** — middle left region located near the waist. **5. Right iliac** — lower right region located near the groin (also called right inguinal region). **6. Left iliac** — lower left region located near the groin (also called left inguinal region). **7. Epigastric** — middle region located above the stomach. **8. Umbilical** — middle region located in the area of the umbilicus, or navel. **9. Hypogastric** — lower middle region located below the stomach and umbilical region.

## **Positioning For Examinations And Treatments:**

Various body positions are employed during *medical examinations, x-rays, surgeries, and therapeutic treatments*. The position used depends on the *procedure or treatment and the sex of the patient*.



**The lithotomy position** is a common position for *surgical procedures and medical examinations* involving the *pelvis and lower abdomen*, as well as a common position for *childbirth* in Western nations.

**The knee-chest position:** is a position used in a number of medical situations including *gynecological examination and surgery, lumbar spine surgery, repair of vesico-vaginal hernia*.

**Sims Position:** a standard position in which the patient lies on their left side, with right hip and knees bent. The lower arm is behind the back, the thighs flexed.

**Fowler's position** is a standard patient position in which the patient is seated in a semi-sitting position (45–60 degrees) and may have knees either bent or straight.

**Supine position:** position refers to one of the ways an individual can lie on a table during a surgical procedure or a physical exam.