

# Medical Terminology

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## Lecture Three

### BODY ORGANIZATION

#### Introduction

To begin building medical terms, we must first come to understand how the human body is constructed and how it works. The first distinction to be made is between the terms anatomy and physiology. Briefly, anatomy (Greek word *anatome* means “dissection”; ana- means “apart” and -tome means “to cut”) is the study of body structure, and physiology (physio means “physical” and -logy means “the study of”) is the study of the body’s functions.

The human body has a chemical basis, and the chemicals act together to form cells. The cells, which power the biologic “machinery” contained within them, process the food we eat and the air we breathe. The human body also removes unwanted substances and enables cells to reproduce themselves, each cell according to the DNA code it contains.

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## Word Elements • Body Organization



ROOT	MEANING
anter/o	front, anterior
cerv/o	neck
chondr/o	cartilage
cyt/o, -cyte	cell
dors/o	back
inguin/o	groin
my/o	muscle
myel/o	spinal cord
neur/o	nerve, neuron
poster/o	posterior, back
proxim/o	near
super/o	superior
trans/o	across

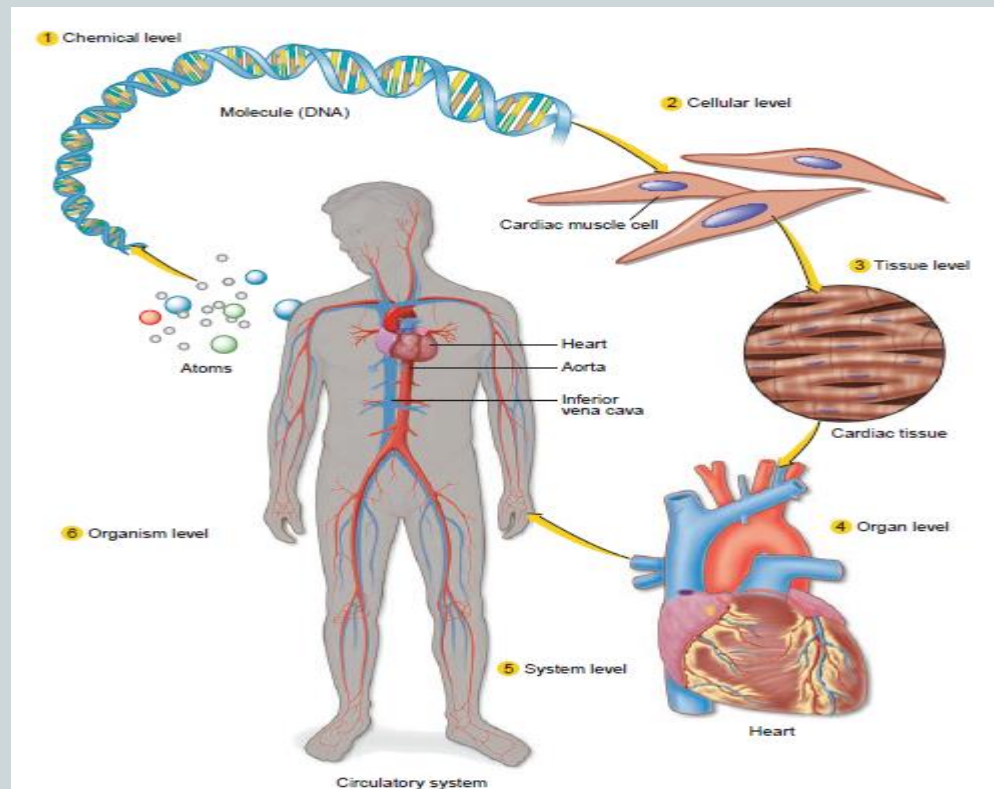
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## Level Organization

Body consist of four structural levels of organization , cellular , tissue , organ and system the level act together to form human organism .



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## CELLULAR LEVEL

Cellular level body consist of millions of cells that work together and individual which enable it to form.

Cell element.

1-Cell membrane.

2-Nucleus.

3-Cytoplas.

## Tissue Level

The next level of organization in the body is the tissue level. Tissues are composed of similar cells that work together to perform common tasks. For example, muscle cells group together to form muscles, which contract to produce movement. The four types of body tissues are muscle, connective, nervous, and epithelial.

- Muscle tissue: There are both voluntary and involuntary muscles. Voluntary muscle tissue is found in areas of your body that you have control over, such as your arms and legs.

Involuntary muscle tissue is found in those parts over which you lack direct control, such as your intestines.

- Connective tissue: This type of tissue supports the internal structures of the body. An example is cartilage, which is found primarily in the joints.
- Nervous tissue: This type of tissue is made up of nerve cells or neurons. Neurons transmit electrical impulses that control body activity.
- Epithelial tissue: This type of tissue covers the body outside and also lines the cavities on the inside of the body. It helps to support and protect the body while allowing for excretion of fluids.

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## Organ Level

Tissues with common functions come together to form the organs in the body. Organs are structures that perform specialized functions. Examples are the brain, stomach, and heart.

## System Level

A group of organs forms a system in the body. Each system has a common purpose to perform specialized functions. The body systems and a brief description of the function of each are listed below:

- Integumentary system: Protects the body against invasion by bacteria; regulates body temperature and water content.
- Skeletal system: Provides support and gives shape to the body; stores minerals; manufactures some blood cells.
- Muscular system: Enables movement of the body; holds the body erect.
- Nervous system: Transmits messages throughout the body; coordinates the reception of stimuli.
- Endocrine system: Integrates all body functions; produces hormones.
- Circulatory system: Pumps nutrients and oxygen in the blood to all parts of the body; carries waste products to the kidneys and lungs.

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- Immune system: Protects the body from harmful substances; returns excess fluids and cellular waste to the circulatory system.
- Respiratory system: Brings oxygen into the body for transportation to the cells; removes carbon dioxide.
- Digestive system: Breaks down ingested food so that it can be absorbed into the bloodstream; eliminates solid wastes.
- Urinary system: Maintains fluid and electrolyte balance in the body; filters blood to remove wastes and excretes liquid waste.
- Reproductive system: Permits the creation of new life.

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## Anatomical Position And Directional And Positional Terms

1- Anatomical position : when the bodies erected facing forward and the arms are at the sides with the palms of the hand facing for which.

2-Superior : refer to above Or near the hand .

3-Inferior : refer to below or toward the feet.

4-Anterior and Ventral are directional : are directional term that related to the front of the body.

5-Posterior and dorsal : relate to the backside of the body.

6-Medial : means toward the midline of the body.

7-Lateral : refer to away from the midline of the body.

8-Proximal and distal : proximal refers to something near to point of attachment or origin distal away from point of attachment .



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9- The two terms Supine and Prone : Supine refer to a position which the patient is horizontal lying and face up.

Prone : Is opposite of supine with the patient laying face down .

The body cavities and division

The body has two major cavities and it is a hollow space that contains body organ the cavity is back of the body called dorsal and it sub divided to cranial and spinal cavities.

The Ventral extends from the neck to the pelvis is subdivided into pelvic and thoracic it contains the internal organs.

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Tab. 3.2 Nine Regions of abdomen

left hypochondriac region	left lateral region just below the ribs
left lumbar region	left lateral region in the middle row
left inguinal region	left lower region of the lower row by the groin
epigastric region	middle region in the upper row
umbilical region	middle region in the middle row
hypogastric region	middle section in the lower row
right hypochondriac region	right lateral region just below the ribs
right lumbar region	right lateral region in the middle row
right inguinal region	right lower region of the lower row by the groin

Tab 3.3 Four quadrants of abdomen

Term	Organs in Quadrant
left upper quadrant (LUQ)	left lobe of liver, spleen, stomach, portions of the pancreas, small intestines, and colon
right upper quadrant (RUQ)	right lobe of liver, gallbladder, portions of the pancreas, small intestines, and colon
right lower quadrant (RLQ)	contains portions of small intestines and colon, right ovary and fallopian tube, appendix, and right ureter
left lower quadrant (LLQ)	contains portions of small intestines and colon, left ovary and fallopian tube, and left ureter

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## Abbreviation

### *Abbreviation Table • Body Organization*



**ABBREVIATION**

**MEANING**

LUQ	left upper quadrant
RUQ	right upper quadrant
LLQ	left lower quadrant
RLQ	right lower quadrant