

## Body Structure

The human body consists of several structural and functional levels of organization. The levels of organization from the least to the most complex are the:

- **Cellular level**, the smallest structural and functional unit of the body
- **Tissue level**, groups of cells that perform a specialized function
- **Organ level**, groups of tissues that perform a specific function
- **System level**, groups of organs that are interconnected or that have similar or interrelated functions
- **Organism level**, collection of body systems that makes up the most complex level—a living human being.

### BASIC STRUCTURAL UNITS

Word Element	Meaning	Word Analysis
<b>chondr/o</b>	cartilage	<b>chondr/oma</b> : tumor of the cartilage <i>-oma</i> : tumor
<b>cyt/o</b>	cell	<b>cyt/o/meter</b> : instrument for counting and measuring cells <i>-meter</i> : instrument for measuring <b>cyt/o/toxic</b> : substance that is detrimental or destructive to cells <b>-toxic</b> : poison
<b>hist/o</b>	tissue	<b>hist/o/lysis</b> : separation; destruction; or loosening of tissue

		<i>-lysis</i> : separation; destruction; loosening
<b>nucle/o</b>	nucleus	<b>nucle/ar</b> : pertaining to a nucleus <i>-ar</i> : pertaining to

### DIRECTIONAL

Word Element	Meaning	Word Analysis
<b>anter/o</b>	anterior, front	<b>anter/ior</b> : toward the front of the body, organ, or structure <i>-ior</i> : pertaining to
<b>caud/o</b>	tail	<b>caud/ad</b> : toward the tail; in a posterior direction <i>-ad</i> : toward
<b>dist/o</b>	far, farthest	<b>dist/al</b> : pertaining to a point farthest from the center, a medial line, or the trunk; opposed to proximal <i>-al</i> : pertaining to
<b>dors/o</b>	back (of body)	<b>dors/al</b> : pertaining to the back or posterior of the body <i>-al</i> : pertaining to
<b>infer/o</b>	lower, below	<b>infer/ior</b> : pertaining to below or lower; toward the tail <i>-ior</i> : pertaining to
<b>later/o</b>	side, to one side	<b>later/al</b> : pertaining to the side <i>-al</i> : pertaining to
<b>medi/o</b>	middle	<b>medi/al</b> : pertaining to the middle <i>-al</i> : pertaining to

<b>poster/o</b>	back (of body), behind, posterior	<b>poster/ior</b> : pertaining to or toward the rear or caudal end <b>-ior</b> : pertaining to
<b>proxim/o</b>	near, nearest	<b>proxim/al</b> : nearest the point of attachment, center of the body, or point of reference <b>-al</b> : pertaining to
<b>super/o</b>	upper, above	<b>super/ior</b> : pertaining to above or higher; toward the head <b>-ior</b> : pertaining to
<b>ventr/o</b>	belly, belly side	<b>ventr/al</b> : pertaining to the belly side or front of the body <b>-al</b> : pertaining to

What is the difference between anatomy and physiology?

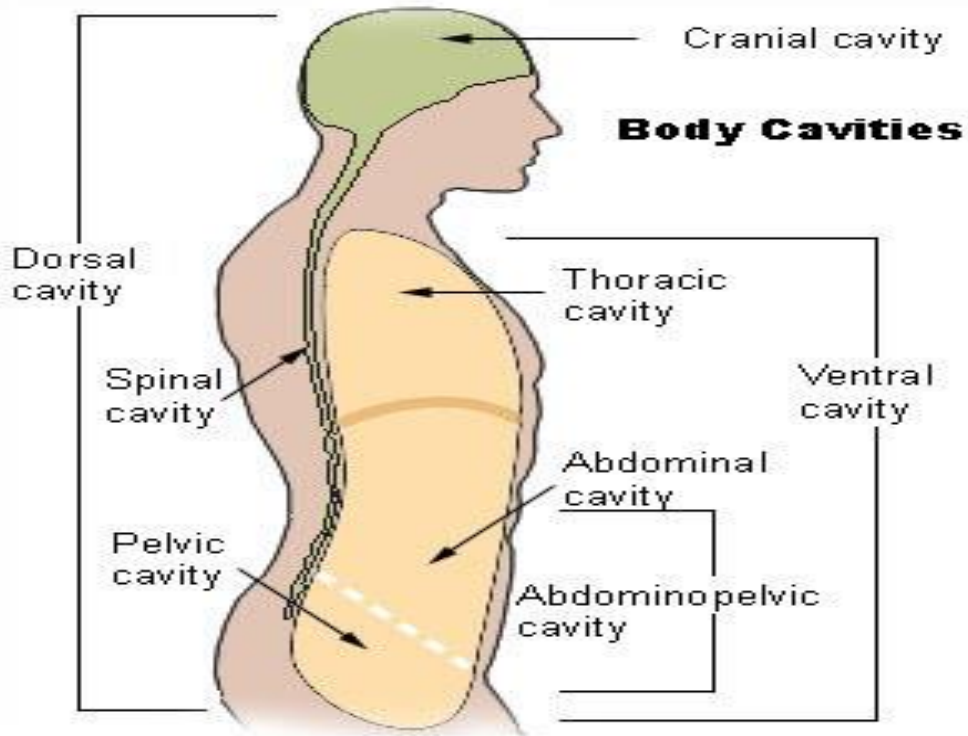
Briefly, anatomy is the study of the body, and physiology is the study of the body's functions

What are the names of the two main body cavities?

The two major body cavities, one in the front of the body and one in the back, the front body cavity is called the **ventral cavity**. The cavity in the back of the body is called the **dorsal cavity**

the two major body cavities and their subdivisions

<b>ventral cavity</b>	<b>dorsal cavity</b>
1. thoracic	1. cranial
2. abdominopelvic	2. spinal



New roots related to the body

Root	Meaning
Abdomen/o	abdomen
Crani/o	Skull
Thorac/o	Chest
Angi/o	Vessel
My/o	Muscle
Pneum/o Pneumon/o Pneumat/o	Lung

Exercise: write the definition of the followings:

1. Visceromegaly: abnormal enlargement of an organ
2. Craniopathy: abnormal condition of any of the cranial bones
3. Angioplasty: surgical repair by opening a clogged blood vessel
4. Myalgia: muscle pain
5. Pneumatocele: protrusion of the lung.

In the anatomic position, the body is erect and facing forward with the palms of the hands also facing forward.

Referring to the Figure, you can see that the ear is **lateral** to the nose, the elbow is **proximal** to the wrist, the ankle is **distal** to the knee, the nose is **superior** to the chest and **medial** to the ears, etc.

