

Introduction to Human Anatomy and Physiology



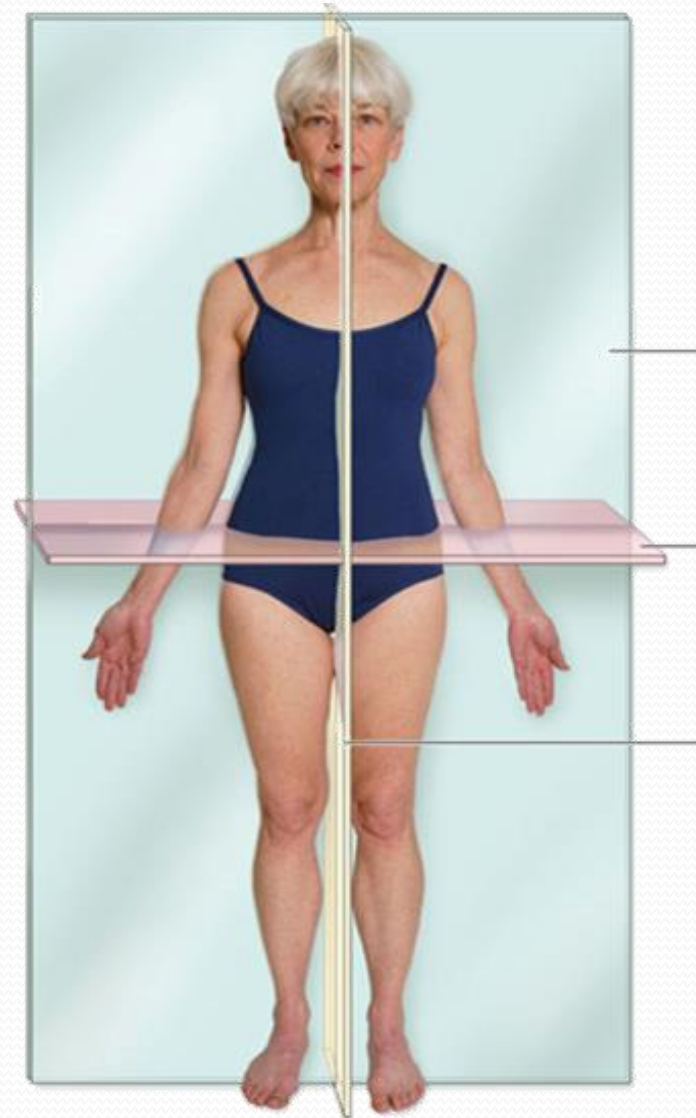
Ms. Mais Abdelhaq

Anatomical Terminology

❖ Anatomical position

The individual stands upright with:

1. Head, gaze (eyes), and toes directed anteriorly
2. Arms adjacent to the sides with the palms facing anteriorly
3. Feet parallel and flat on the floor

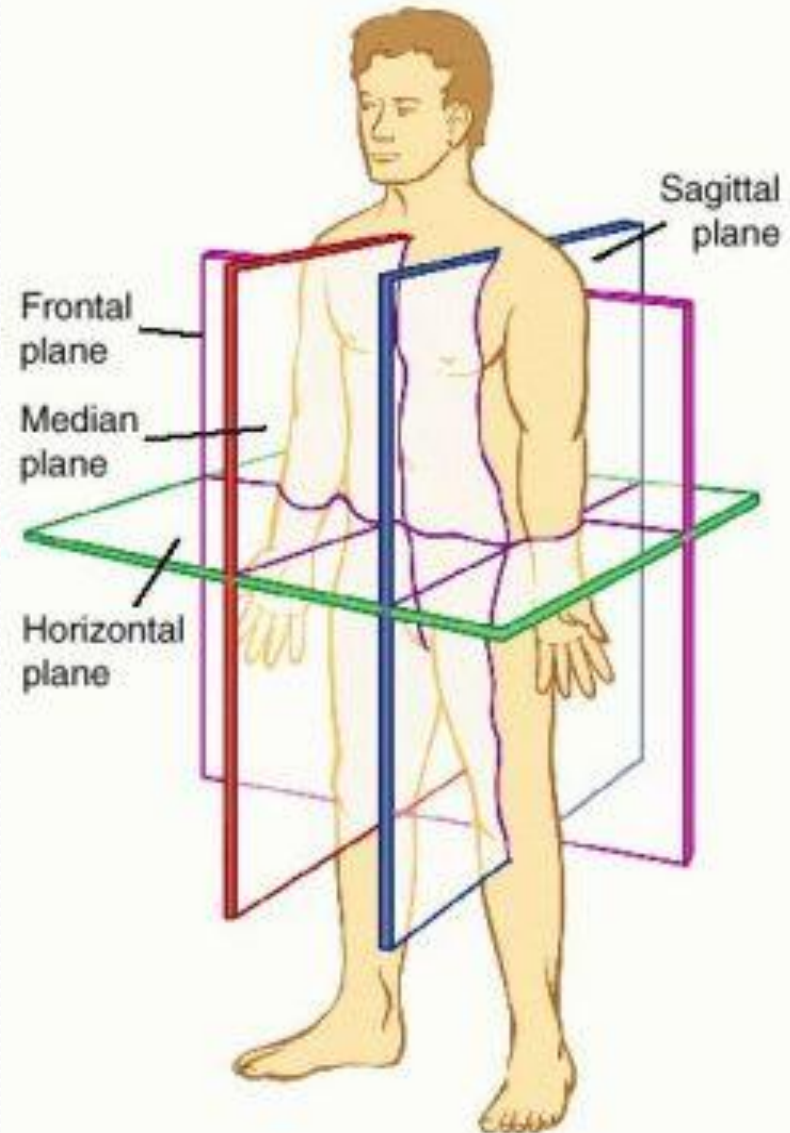


Anatomical Planes

❖ A **plane** is an imaginary surface that slices the body into specific sections.

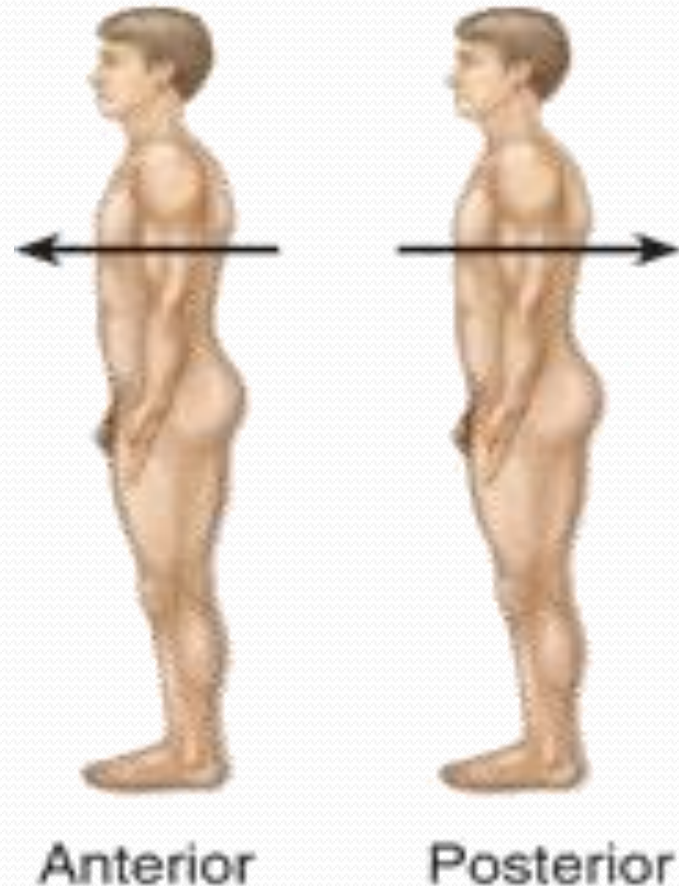
1. Median (midsagittal)
2. Sagittal
3. Frontal (coronal)
4. Transverse (horizontal)

❖ Planes are used to describe sections



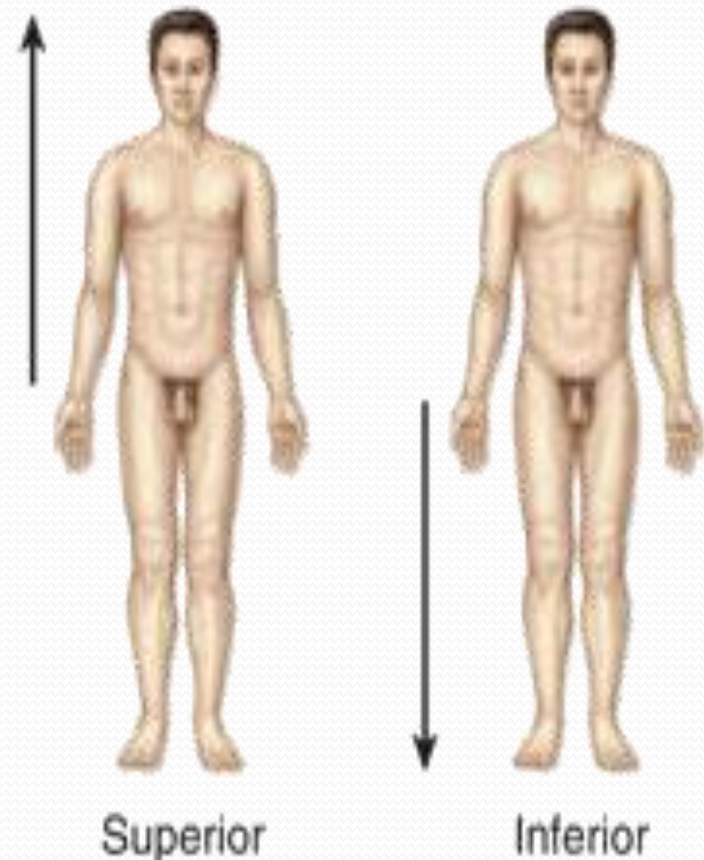
Relative and Directional Terms of the Body

- ❖ Relative to front (belly side) or back (back side) of the body :
- **Anterior** = towards the front surface
- **Posterior** = towards the back surface
- **Dorsal** = At the back side of the human body
- **Ventral** = At the belly side of the human body



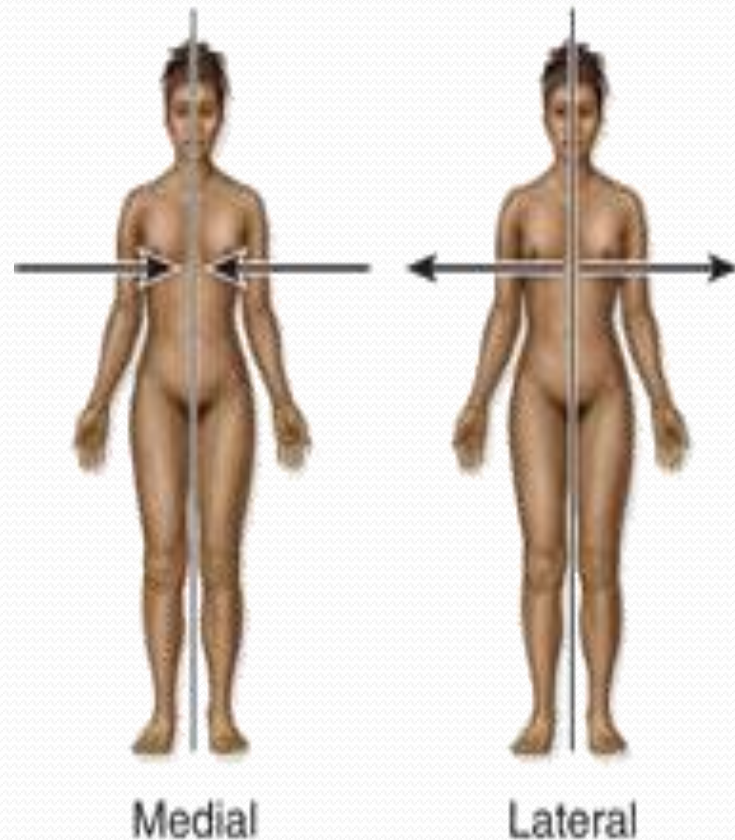
Relative and Directional Terms of the Body

- ❖ Relative to the head or tail of the body:
 - **Superior** = Towards the head or above
 - **Inferior** = Toward the feet
 - **Cranial** = At the head end (skull)
 - **Caudal** = At the rear or tail end



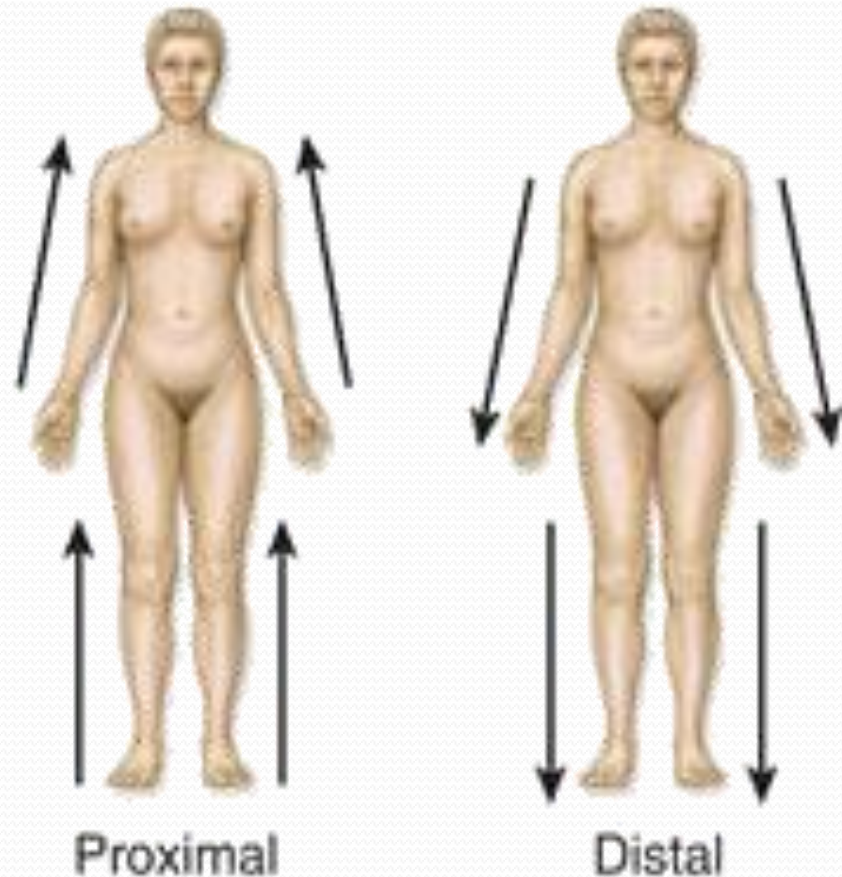
Relative and Directional Terms of the Body

- ❖ Relative to the midline or center of the body:
 - **Medial** = towards the midline of the body
 - **Lateral** = away from the midline of the body
 - **Deep** = on the inside, underneath another structure
 - **Superficial** = On the outside



Relative and Directional Terms of the Body

- ❖ Relative to the point of attachment:
 - **Proximal** = Closest to point of attachment to trunk
 - **Distal** = Furthest from point of attachment to trunk



Terms of Laterality

- Bilateral vs. Unilateral
- Ipsilateral vs. Contralateral

TABLE 1.1 Orientation and Directional Terms

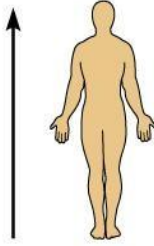
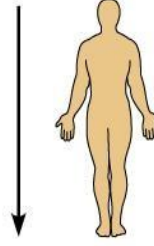
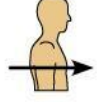
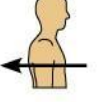
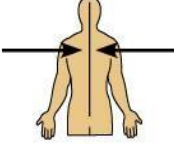
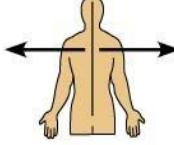
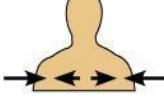
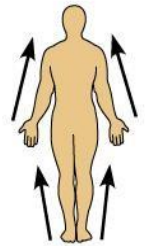
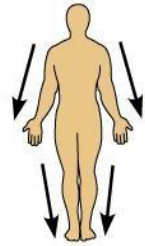
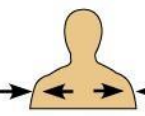
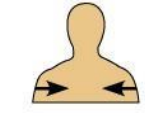
TERM	DEFINITION	EXAMPLE	
Superior (cranial)	Toward the head end or upper part of a structure or the body; above		The head is superior to the abdomen
Inferior (caudal)	Away from the head end or toward the lower part of a structure or the body; below		The navel is inferior to the chin
Ventral (anterior)*	Toward or at the front of the body; in front of		The breastbone is anterior to the spine
Dorsal (posterior)*	Toward or at the back of the body; behind		The heart is posterior to the breastbone
Medial	Toward or at the midline of the body; on the inner side of		The heart is medial to the arm
Lateral	Away from the midline of the body; on the outer side of		The arms are lateral to the chest
Intermediate	Between a more medial and a more lateral structure		The collarbone is intermediate between the breastbone and shoulder

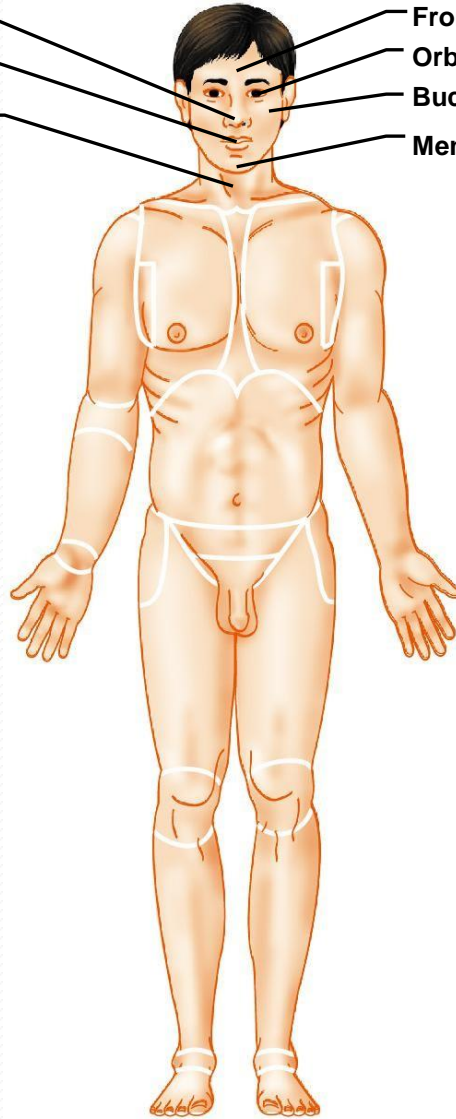
TABLE 1.1 Orientation and Directional Terms

TERM	DEFINITION	EXAMPLE	
Proximal	Closer to the origin of the body part or the point of attachment of a limb to the body trunk		The elbow is proximal to the wrist
Distal	Farther from the origin of a body part or the point of attachment of a limb to the body trunk		The knee is distal to the thigh
Superficial (external)	Toward or at the body surface		The skin is superficial to the skeletal muscles
Deep (internal)	Away from the body surface; more internal		The lungs are deep to the skin

*The terms *ventral* and *anterior* are synonymous in humans, but this is not the case in four-legged animals. Whereas *anterior* refers to the leading portion of the body (abdominal surface in humans, head in a cat), *ventral* specifically refers to the "belly" of a vertebrate animal and thus is the inferior surface of four-legged animals. Likewise, although the dorsal and posterior surfaces are the same in humans, the term *dorsal* specifically refers to an animal's back. Thus, the dorsal surface of four-legged animals is their superior surface.

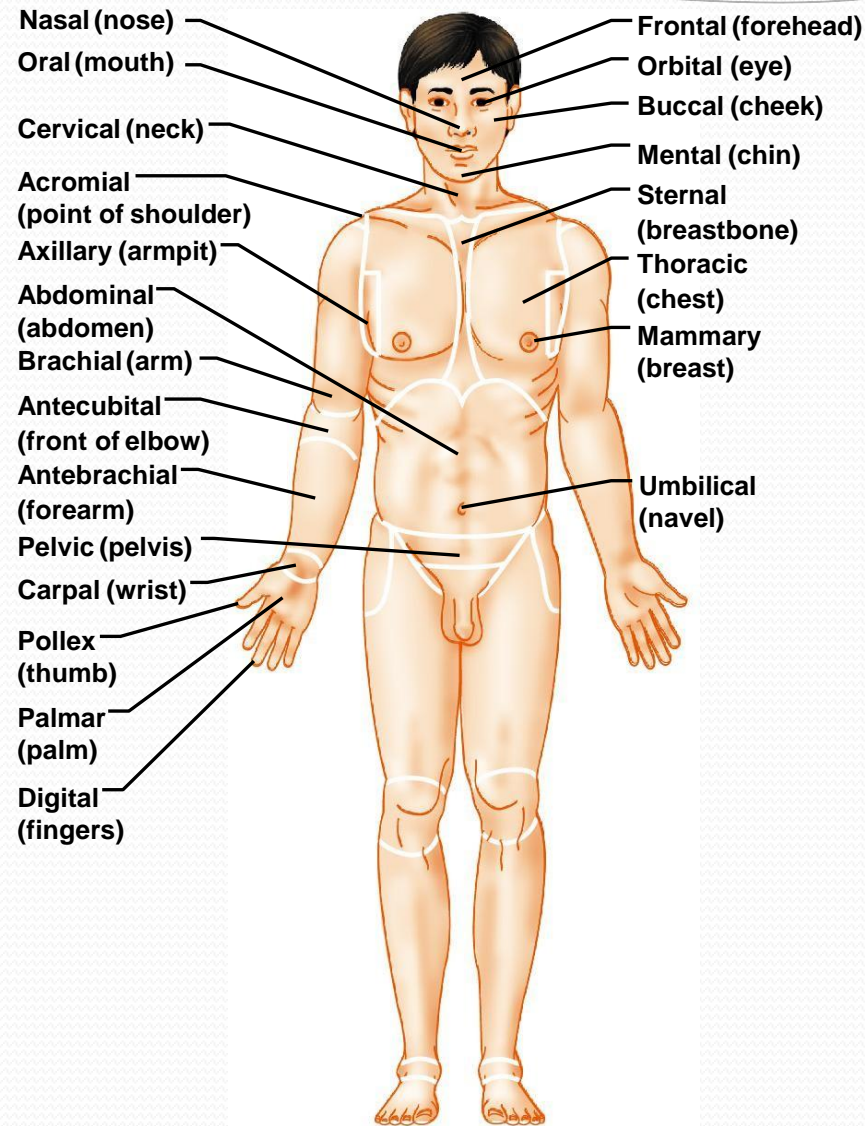
Regional Terms: Anterior View

Nasal (nose) Frontal (forehead)
Oral (mouth) Orbital (eye)
Cervical (neck) Buccal (cheek)
Mental (chin)



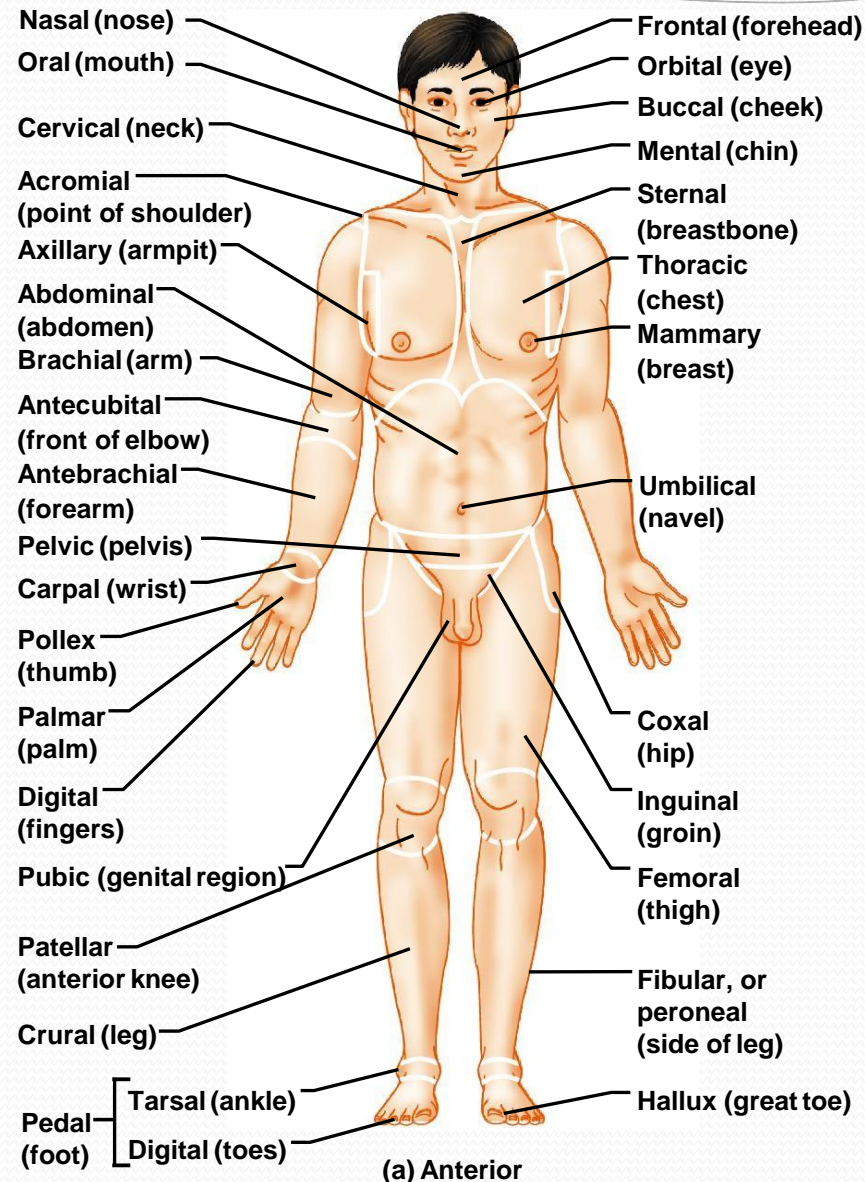
(a) Anterior

Regional Terms: Anterior View

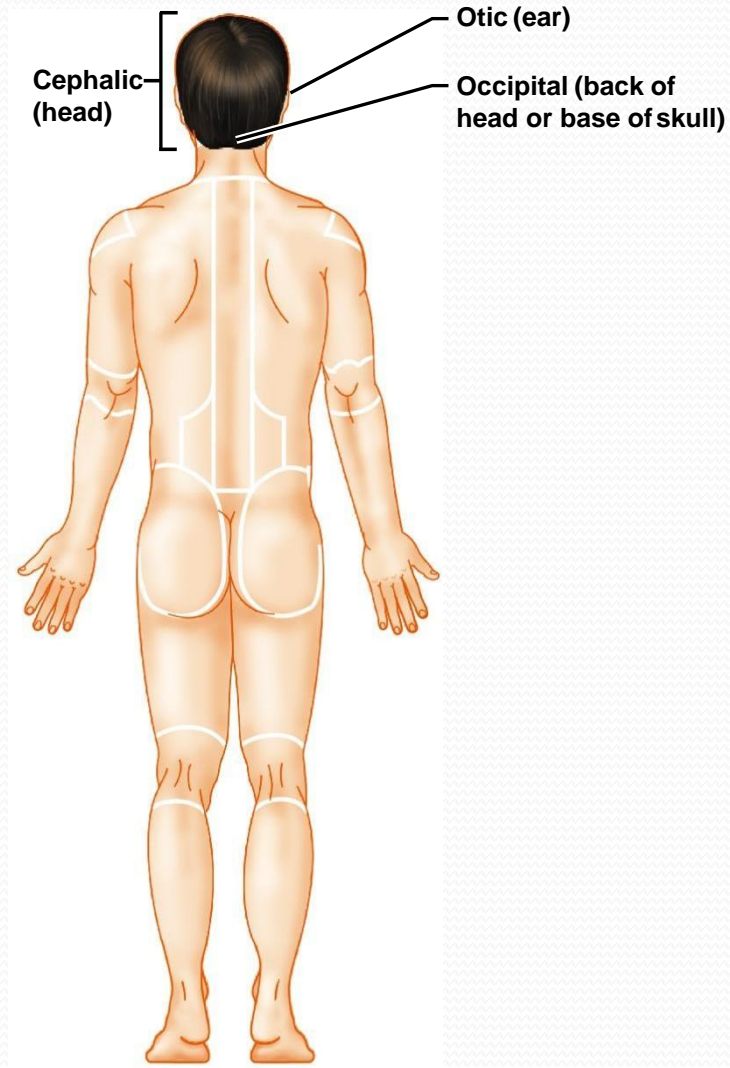


(a) Anterior

Regional Terms: Anterior View

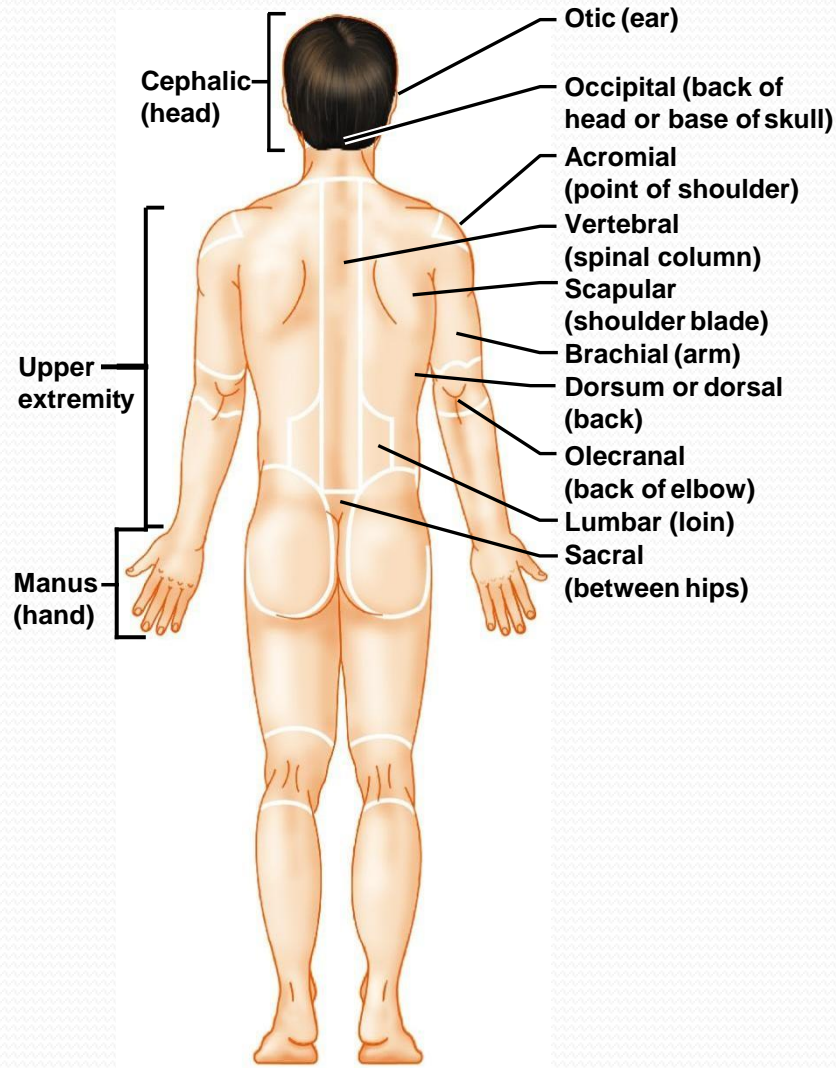


Regional Terms: Posterior View



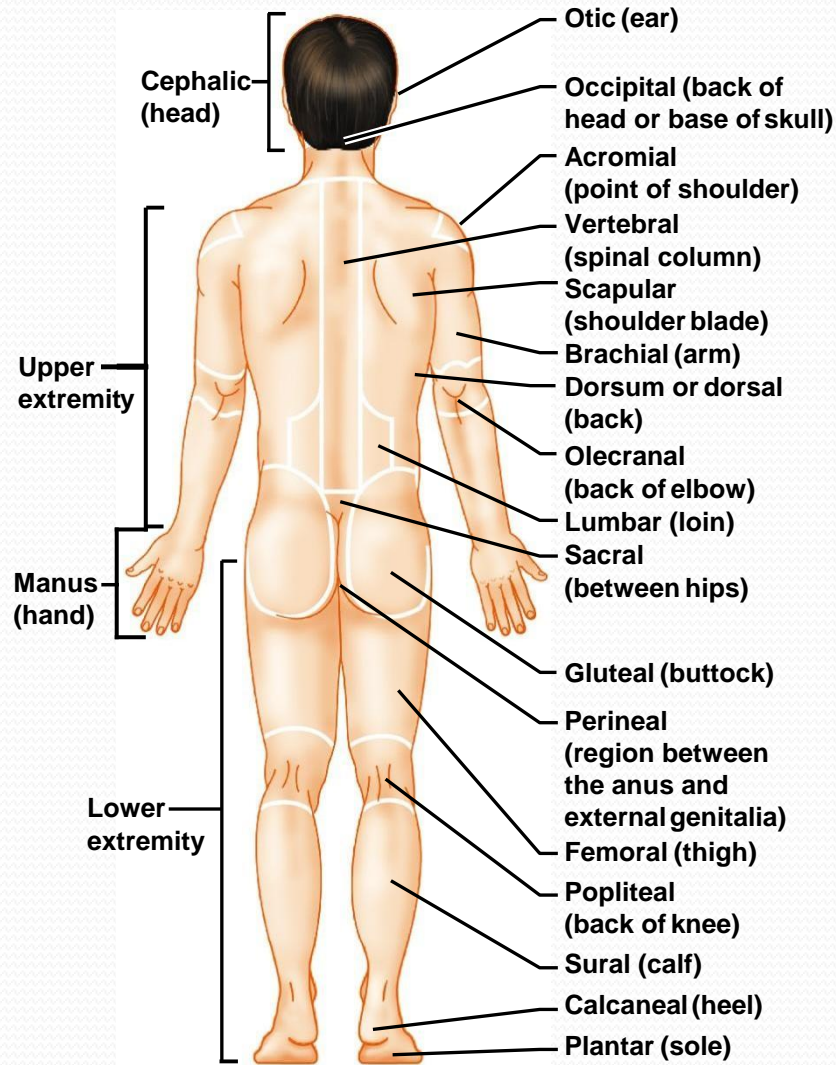
(b) Posterior

Regional Terms: Posterior View



(b) Posterior

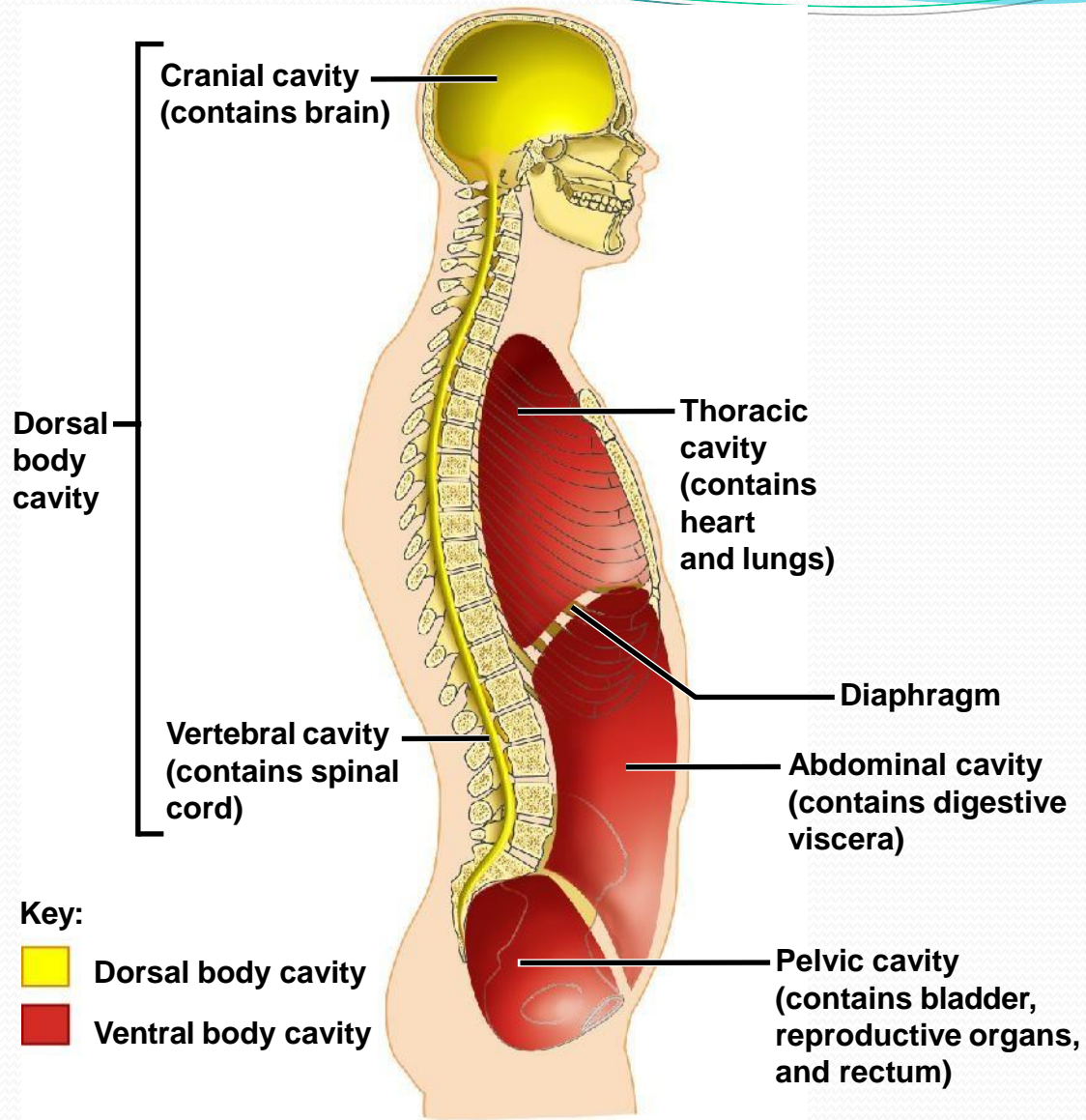
Regional Terms: Posterior View



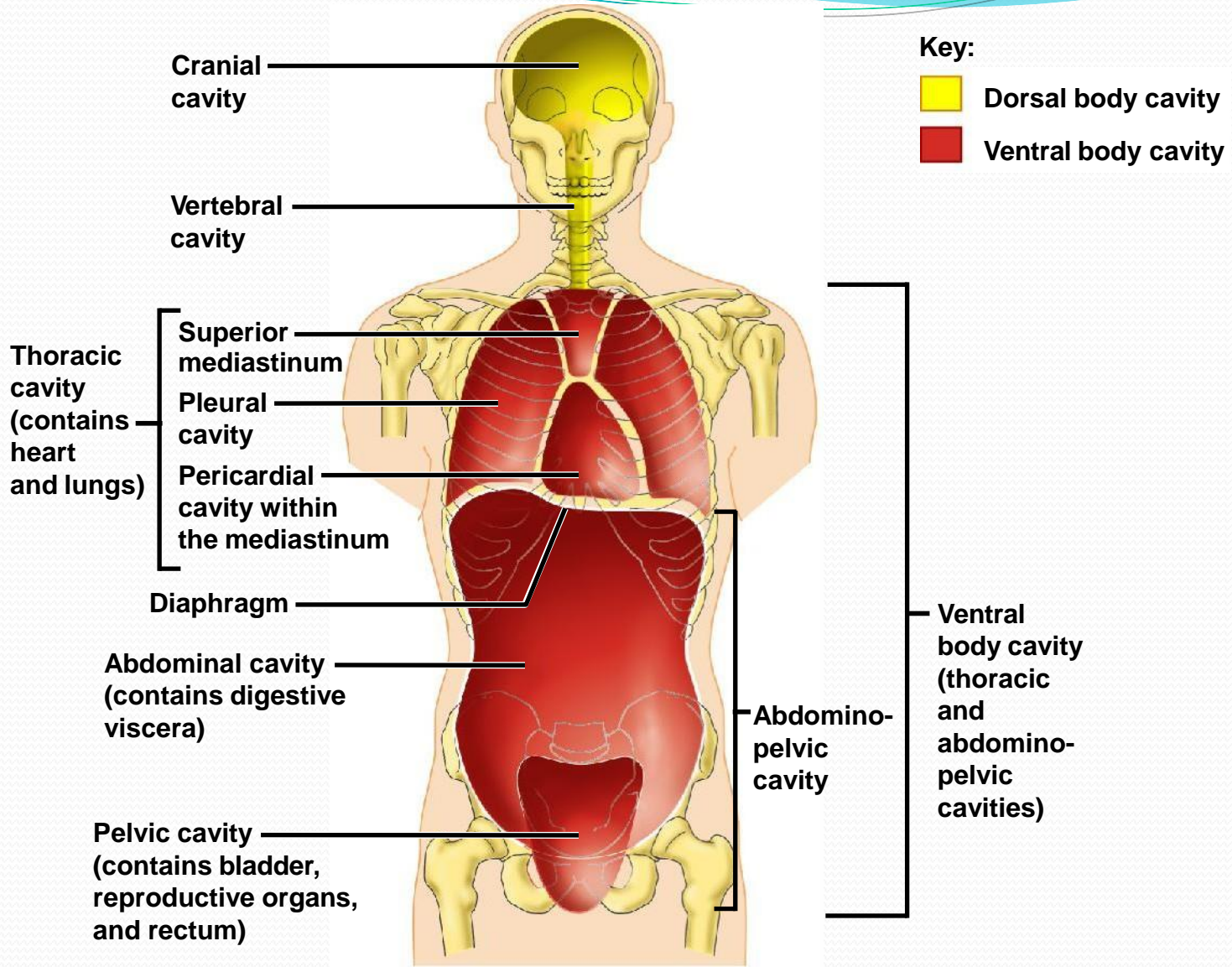
(b) Posterior

Body Cavities

- **Dorsal cavity** protects the nervous system, and is divided into two subdivisions
 - Cranial cavity – within the skull; encases the brain
 - Vertebral cavity – runs within the vertebral column; encases the spinal cord
- **Ventral cavity** houses the internal organs (viscera), and is divided into two subdivisions
 - Thoracic
 - Abdominopelvic



(a) Lateral view



(b) Anterior view

Body Cavities

- Thoracic cavity is subdivided into:
 - Pleural cavities – each houses a lung
 - Mediastinum – contains the pericardial cavity; surrounds the remaining thoracic organs
 - Pericardial cavity – encloses the heart

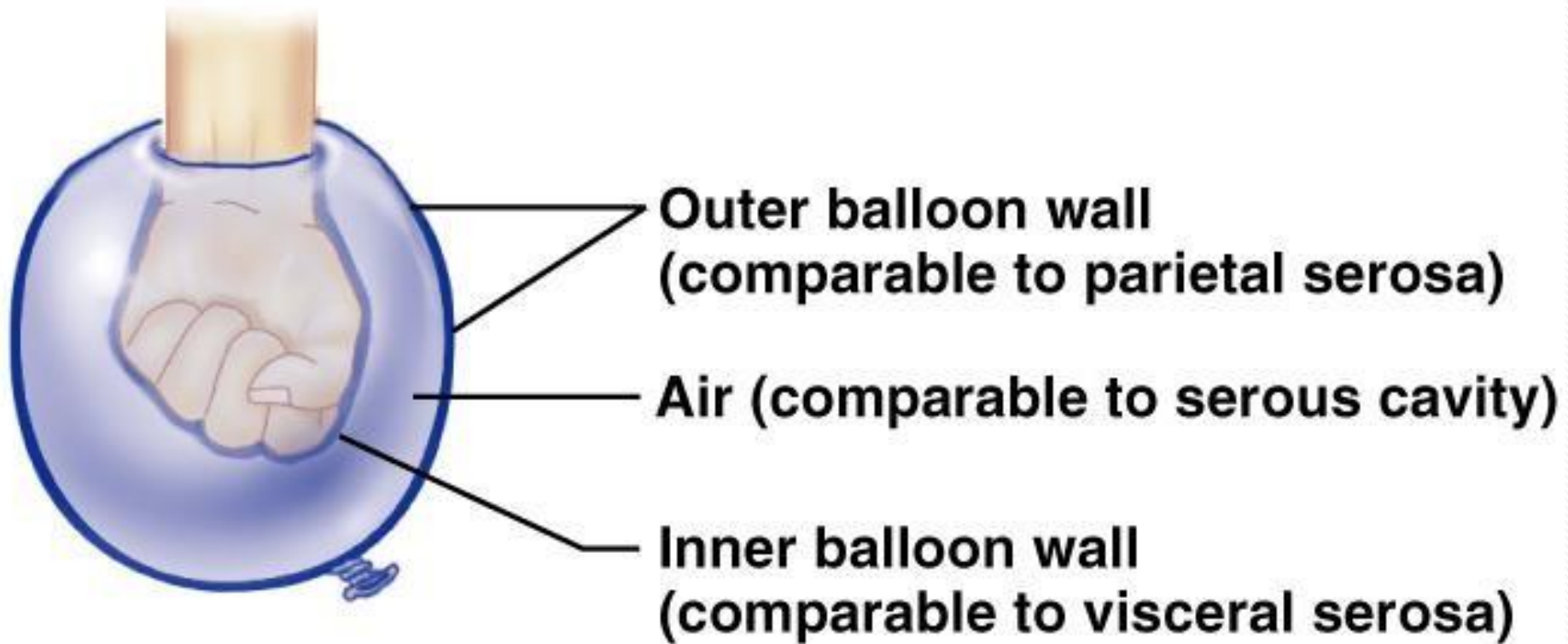
Body Cavities

- The abdominopelvic cavity is separated from the thoracic cavity by the dome-shaped diaphragm
- It is composed of two subdivisions
 - Abdominal cavity – contains the stomach, intestines, spleen, liver, and other organs
 - Pelvic cavity – lies within the pelvis and contains the bladder, reproductive organs, and rectum

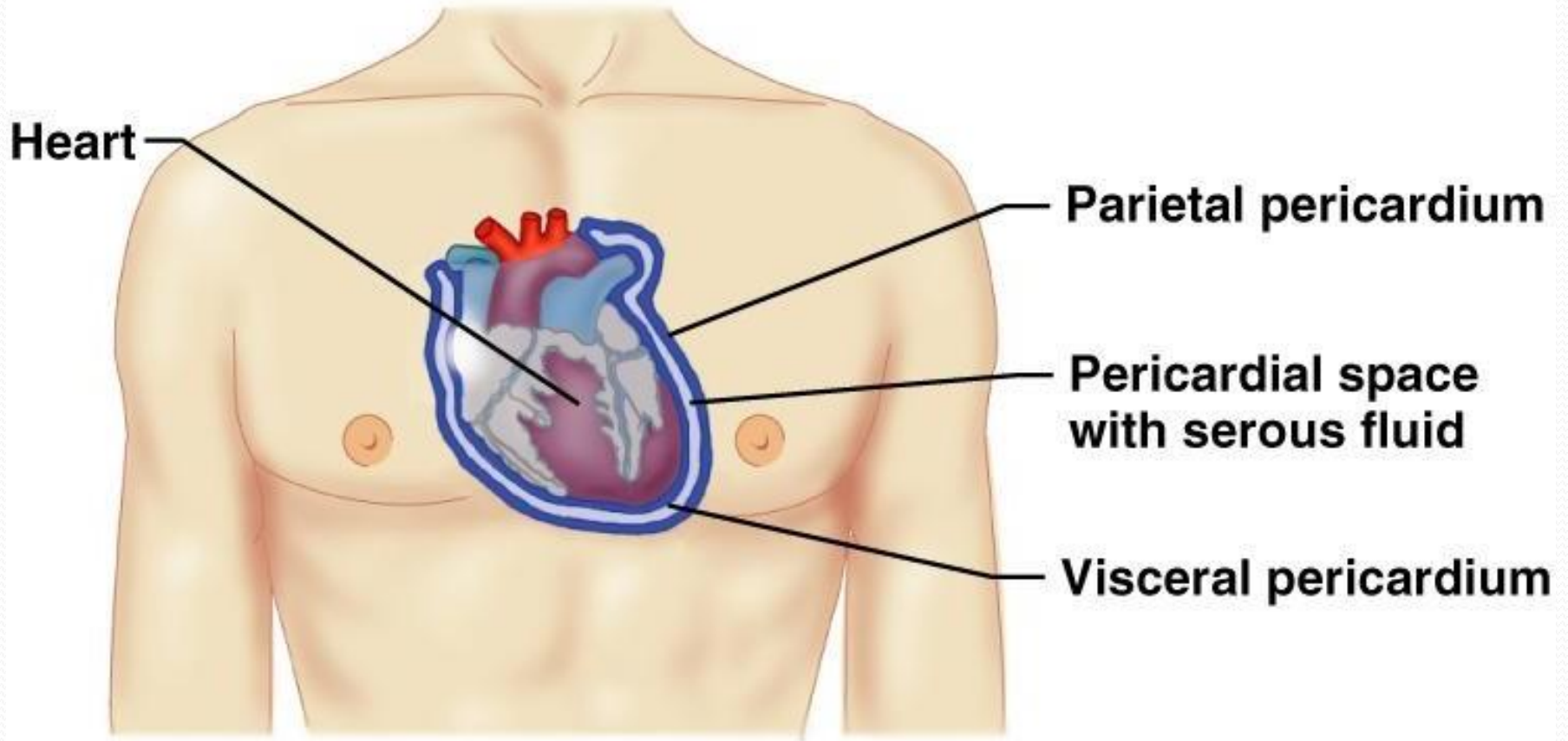
Cavity Membranes

- Parietal layer: lines the outside
- Visceral layer: lines the inside
- Serous fluid

Membrane Relationship



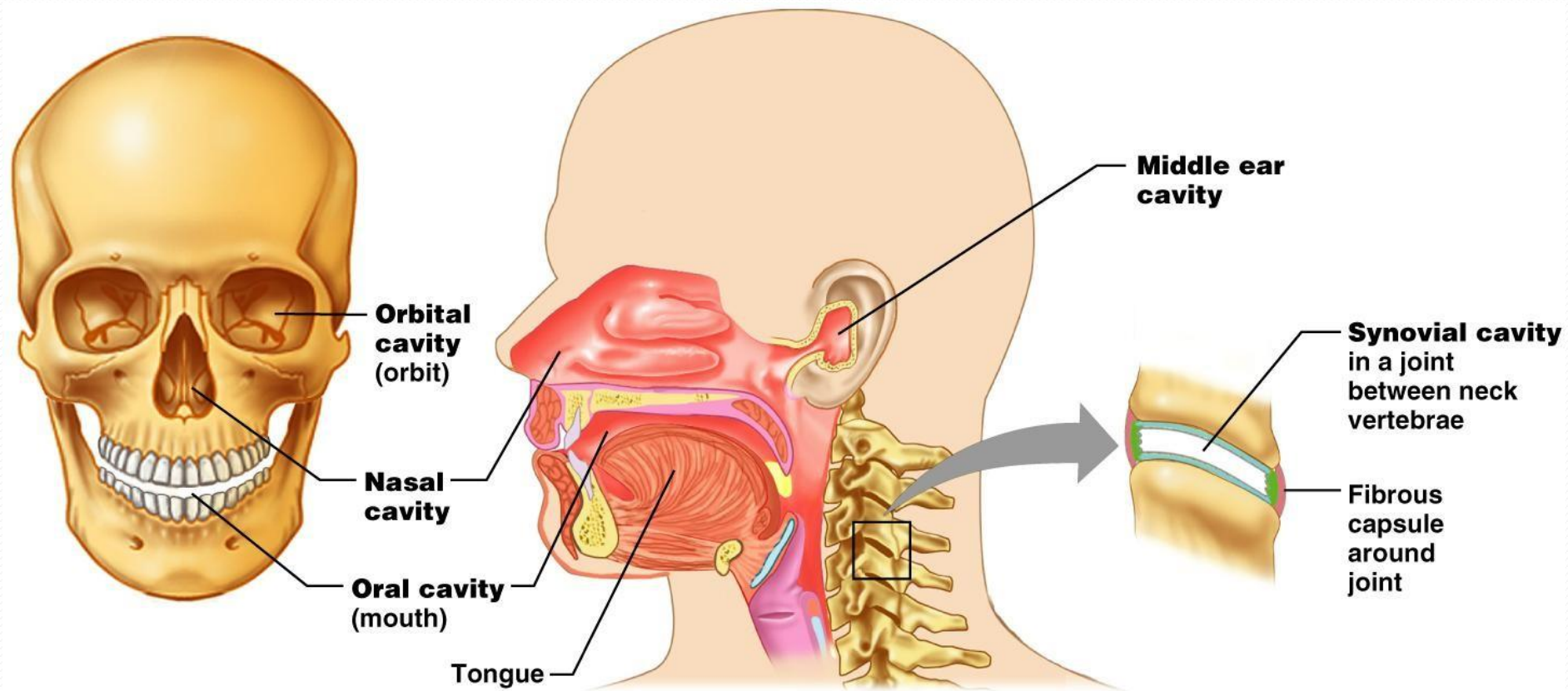
(a)



(b)

Other Body Cavities

- Oral and digestive – mouth and cavities of the digestive organs
- Nasal –located within and posterior to the nose
- Orbital – house the eyes
- Middle ear – contains bones (ossicles) that transmit sound vibrations
- Synovial – joint cavities



**Thank you brain for all you
remember!**

