

Lab no 1

Structural organization of the human body

Physiology is the science which deals with functions of the body parts, and how they work.

Since function cannot be completely separated from structure, you will learn about the human body by studying its anatomy and physiology together.

Anatomical position;

To accurately describe body parts and position, assume that the body is in a specific position called the anatomical position. In this position the body is erect with feet together and the arms hanging at the sides with the palms facing forward.

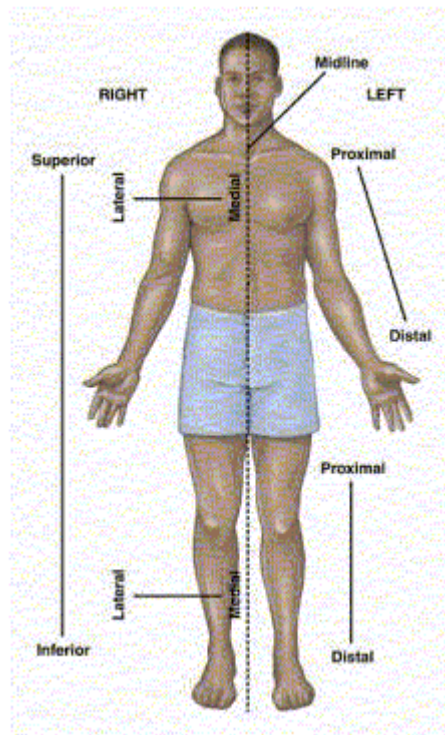


Figure no. 1; anatomical position

Regional terms;

There are many visible landmarks on the surface of the body. Once you know their proper anatomical names, you can be specific in referring to different regions of the body.

a. Anterior body landmarks;

look at figure no.1, to find the following body regions. Once you have identified all the anterior body landmarks, cover the labels that describe what the structures are, and again go through the list pointing out the specific areas on your own body.

Abdominal	Anterior body trunk inferior to ribs
Antecubital	Anterior surface of elbow
Axillary	Armpit
Brachial	Arm
Buccal	Cheek area
Cervical	Neck region
Digital	Fingers, toes
Femoral	Thigh
Inguinal	Area where thigh meets body trunk
Oral	Mouth
Orbital	Eye area
Patellar	Anterior knee
Pubic	Genital region
Thoracic	Chest
Umbilical	Navel

b. Posterior body landmarks;

Identify the following body region on the figure no. 1 and then locate them on yourself.

Deltoid	Curve of shoulder formed by large deltoid muscle
Gluteal	Buttocks
Lumbar	Area of the back between ribs and hips
Occipital	Posterior surface of head
Popliteal	Posterior knee area
Scapular	Shoulder blade region
Sural	The posterior surface of the lower leg, the calf

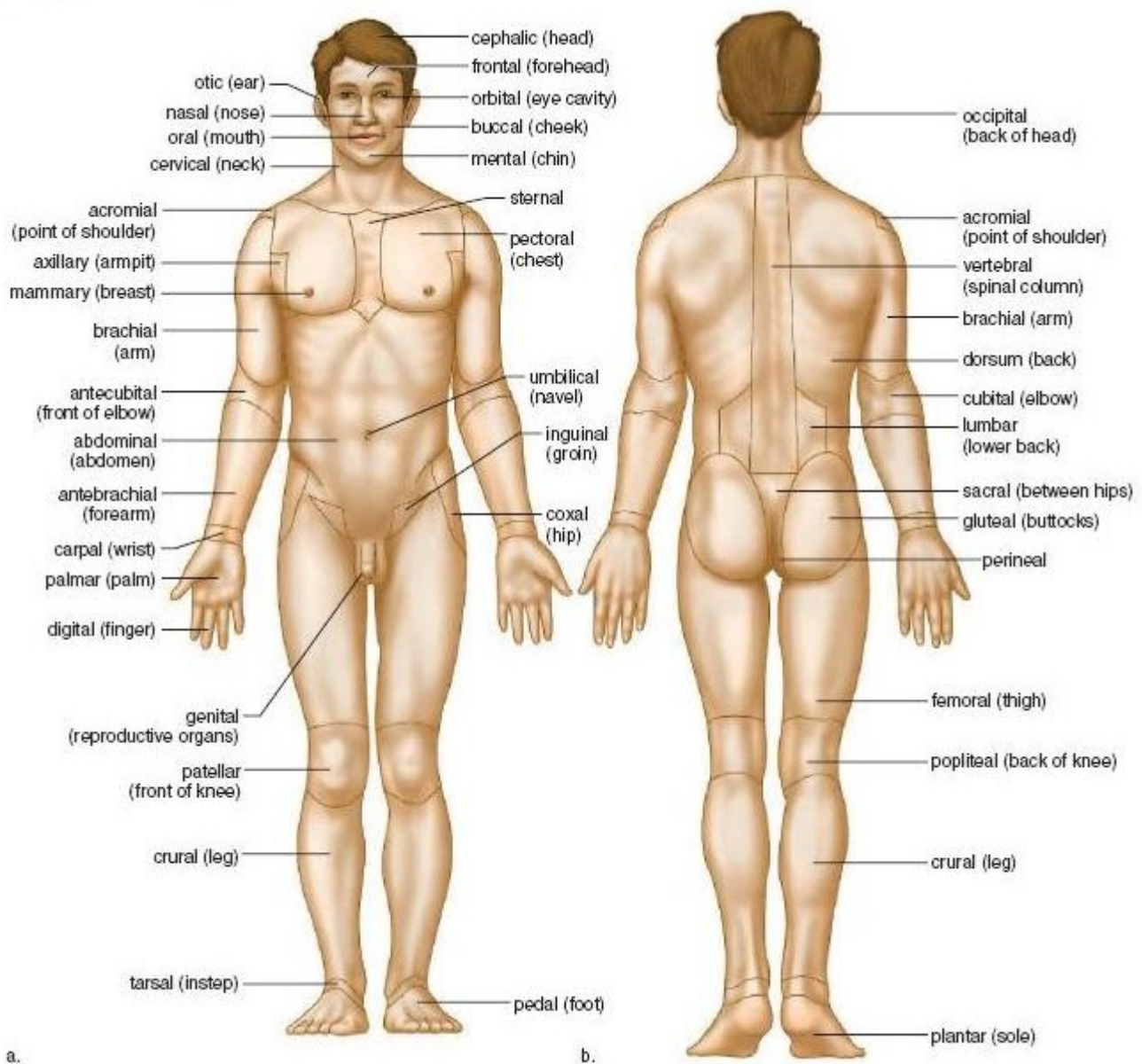


Figure no. 2; Surface anatomy; regional terms.
 a) Anterior body landmarks, b) posterior body landmarks.

Orientation and directional terms;

Directional terms are used to locate various body structures in relation to one another; such terms are precise and avoid the use of unnecessary words. Such of these terms are;

Superior	Toward the head or the upper part of a structure.
Example	The heart is superior to the liver. The forehead is superior to the nose.
Inferior	Away from the head or toward the lower part of a structure.
Example	The stomach is inferior to the lungs.
Anterior	Toward or at the front of the body.
Example	The sternum (breastbone) is anterior to the heart.
Posterior	Near to or at the back of the body.
Example	The esophagus is posterior to the trachea.
Medial	Near the midline of the body or a structure. The midline is an imaginary vertical line that divides the body into equal left and right sides.
Example	The heart is medial to the arm.
Lateral	Away from the midline of the body or a structure.
Example	The lungs are lateral to the heart.
Proximal	Near to the attachment of an extremity (limb) to the trunk or a structure, nearer to the point of origin.
Example	The humerus is proximal to the radius.
Distal	Farther from the attachment of an extremity (limb) to the trunk or structure, farther from the point of origin.
Example	The knee is distal to the thigh.
Superficial	Toward or on the surface of the body.
Example	The skin is superficial to the skeleton.
Deep	Away from the surface of the body.
Example	The lungs are deep to the skin.

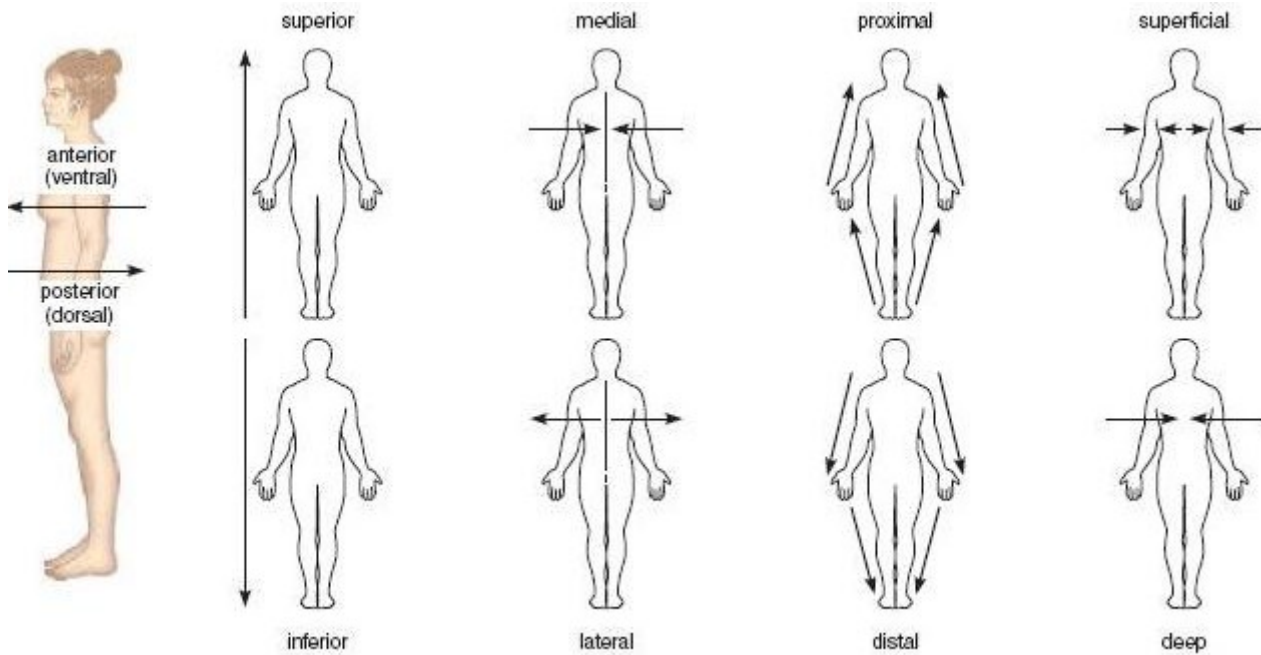


Figure no. 3; direction and orientation

Body planes and sections

When preparing to look at the internal structures of the body it is necessary to make a section or cut. When the section is made through the body wall or through an organ, it is made along an imaginary line called a plane. Since the body is three-dimensional, we can refer to three types of planes or sections that lie at the right angles to one another. Figure no.2.

- a. **Sagittal plane;** is a vertical plane that divides the body or an organ into right and left sides. More specifically, if such a plane passes through the midline of the body or organ and divides it into equal right and left sides, it is called a **midsagittal (median) plane**.
- b. **Frontal (coronal) plane;** divides the body or organ into anterior (front) and posterior (back) portions.
- c. **Transverse plane;** divides the body or organ into superior (top) and inferior (bottom) portions.

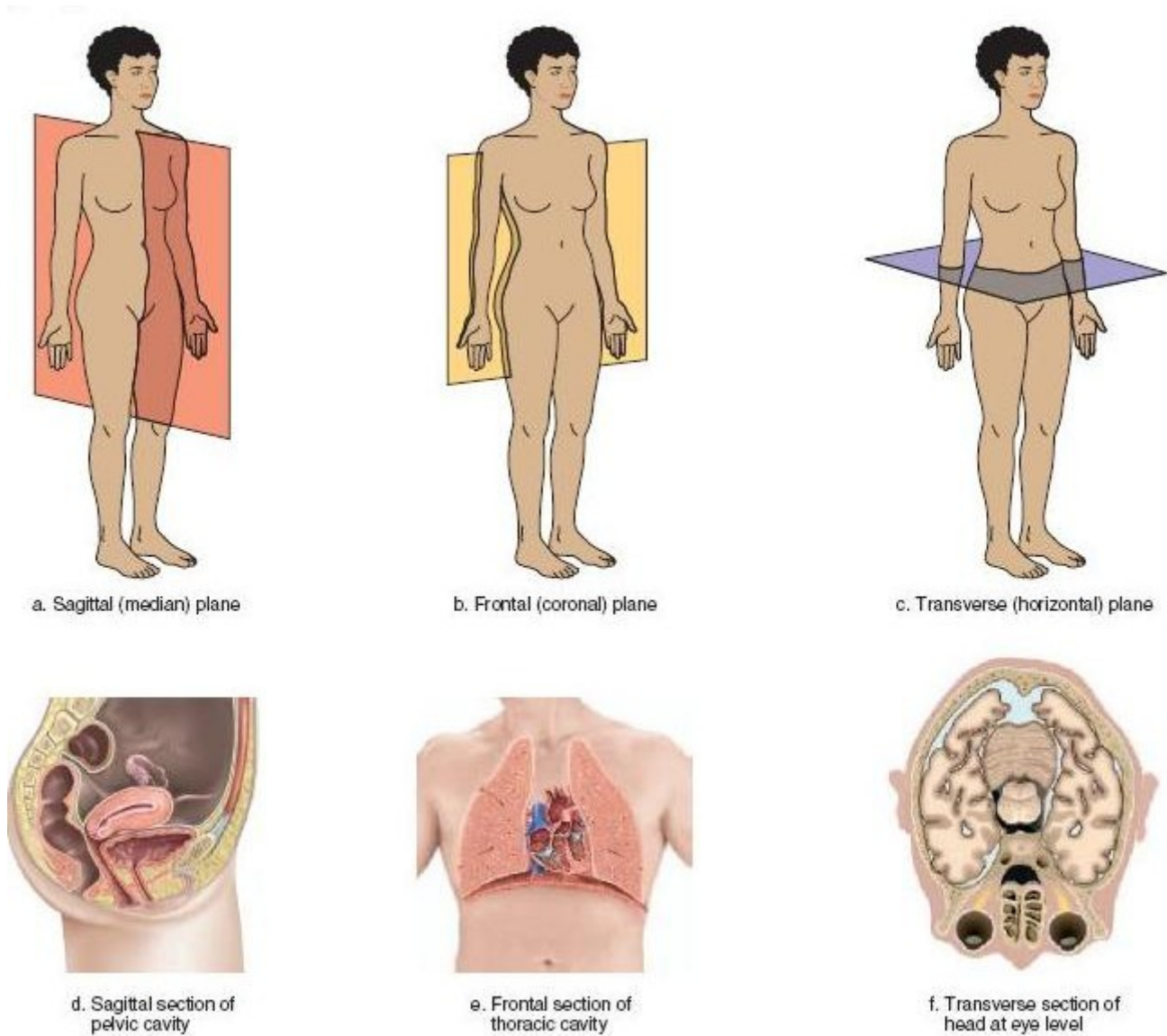


Figure no. 3; body planes and section