



# AL-MUSTAQBAL UNIVERSITY

Collage of Science and Health and Medical Technology

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**First Stage  
Anatomy**

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# Anatomical terms of position , L1

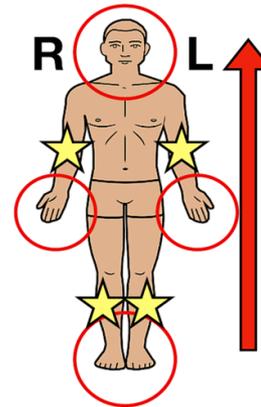
**Definition of Anatomy.** **Anatomy may be defined as the science that concerned with the study of the structure and function of human body.**

Linguistically, the term (anatomy) consists of two parts; **ana-**, which means away and **-tomy** which means to cut, so it means to cut away or dissect.

**Descriptive Anatomic Terms:** It is important for medical personnel to have a knowledge of the basic anatomic terms. Without anatomic terms, abnormal functions of joints, the actions of muscles, the alteration of position of organs, or the exact location of swellings or tumors cannot be accurately discussed or recorded.

## Anatomical position

### Anatomical Position



- Standing upright
- Head and eyes directed straight ahead
- Upper limbs at the sides
- Upper limbs slightly away from trunk
- Palms facing forward
- Thumbs pointing away from body
- Lower limbs parallel
- Feet flat on the ground and facing forward

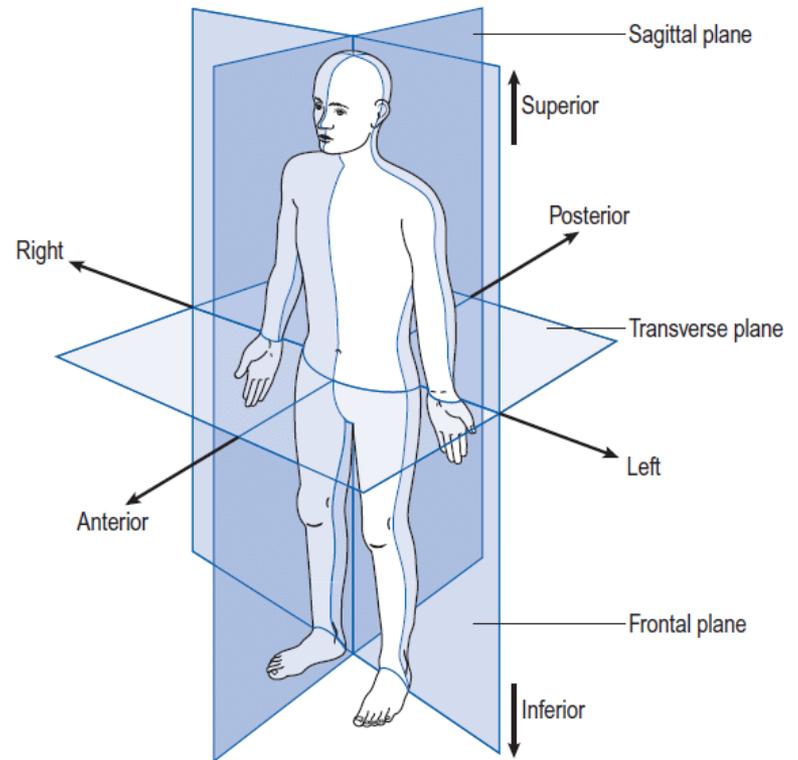
## Terms Related to Position

All descriptions of the human body are based on the assumption that the person is **standing erect, with the upper limbs by the sides and the face and palms of the hands directed forward**. This is the so-called **anatomic position**.

The various parts of the body are then described in relation to certain imaginary planes. These are;

**Median Sagittal Plane, coronal plan and, transverse plan.**

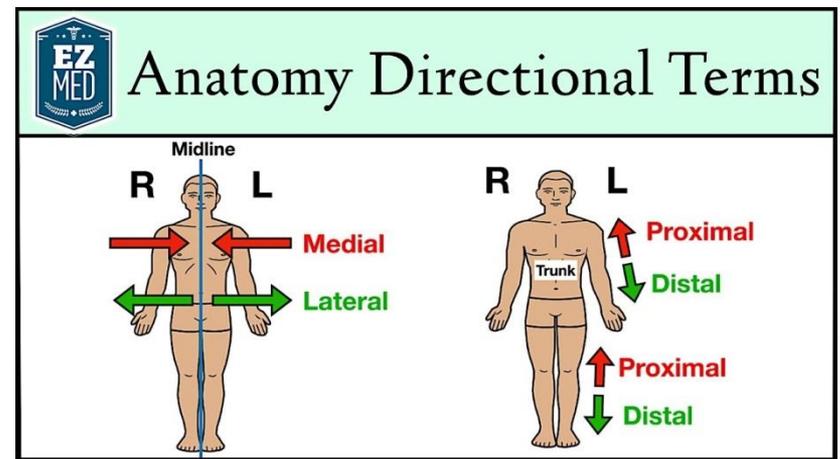
**The median sagittal plan** is a vertical plane passing through the center of the body, dividing it into two equal right and left halves .



Planes situated to one or the other side of the median plane and parallel to it are termed **paramedian**.

A structure situated nearer to the median plane of the body than another is said to be **medial** to the other.

Similarly, a structure that lies farther away from the median plane than another is said to be **lateral** to the other



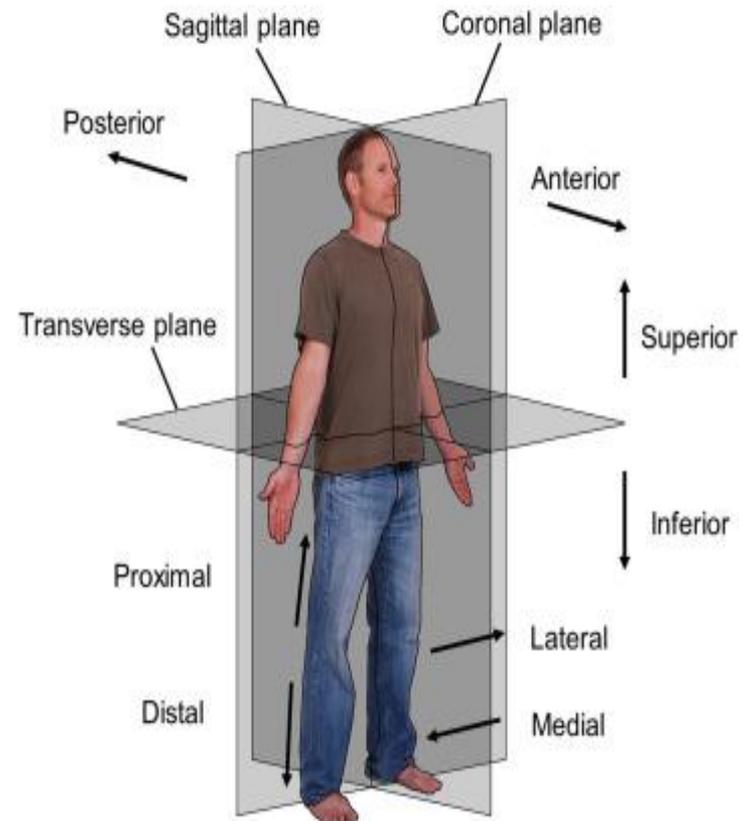
## Coronal Planes.

These planes are imaginary vertical planes at right angles to the median plane.

## Horizontal, or Transverse, Planes.

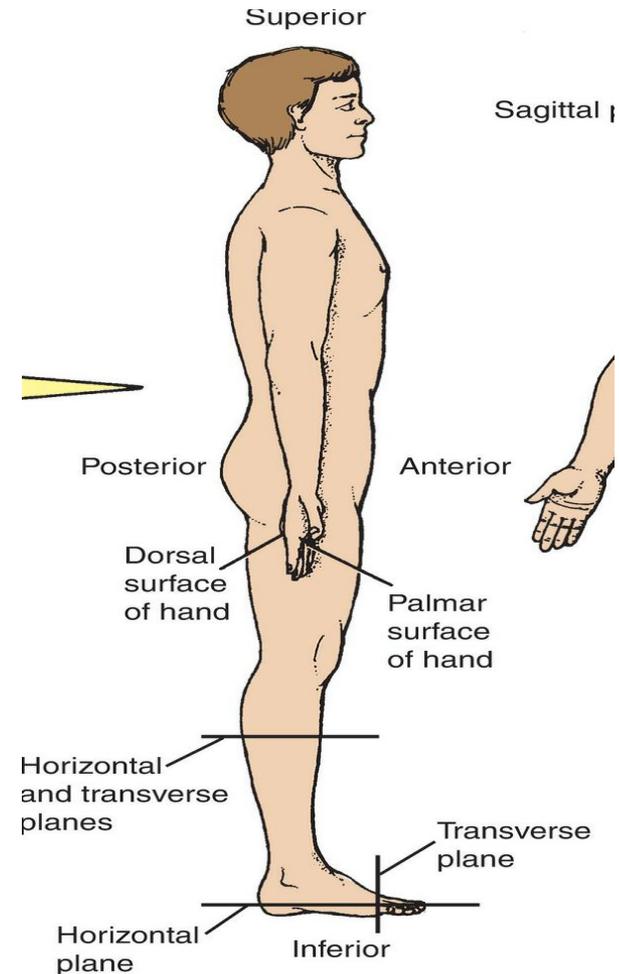
These planes are at right angles to both the median and the coronal planes.

**Anterior and Posterior** are used to indicate the **front** and **back** of the body, respectively. To describe the relationship of two structures, one is said to be anterior or posterior to the other insofar as it is **closer to the anterior or posterior body surface**.



In describing the hand, the terms **palmar** and **dorsal surfaces** are used in place of anterior and posterior, and in describing the foot, the terms **plantar** and **dorsal surfaces** are used instead of lower and upper surfaces.

The terms **proximal** and **distal** describe the relative distances from the roots of the limbs; for example, **the arm is proximal** to the forearm and the hand is **distal** to the forearm.



The terms **superficial and deep are used to** the relative distances of structures from the surface of the body, and the terms **superior and inferior** denote levels relatively high or low with reference to the upper and lower ends of the body.

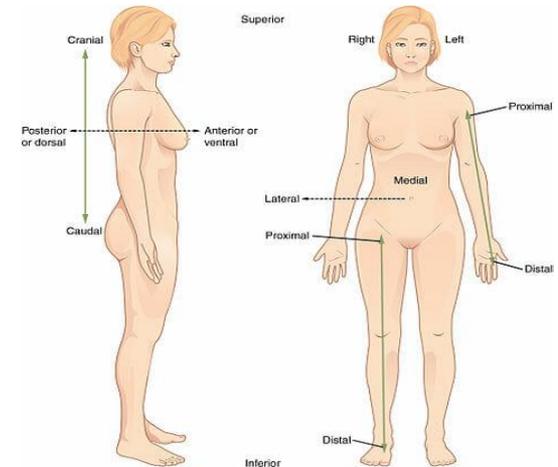
The terms **internal and external** are used to describe the relative distance of a structure from the center of an organ or cavity. for example, the **internal carotid** artery is found inside the **cranial cavity** and the **external carotid artery** is found outside the cranial cavity.

The term **ipsilateral** refers to the same side of the body; for example, **the left hand and the left foot are ipsilateral.**

**Contralateral** refers to opposite sides of the body; for example, the left **biceps brachii** muscle and the right **rectus femoris** muscle are contralateral.

The **supine** position of the body is lying on the back.

The **prone** position is lying face downward



Supine (On back)



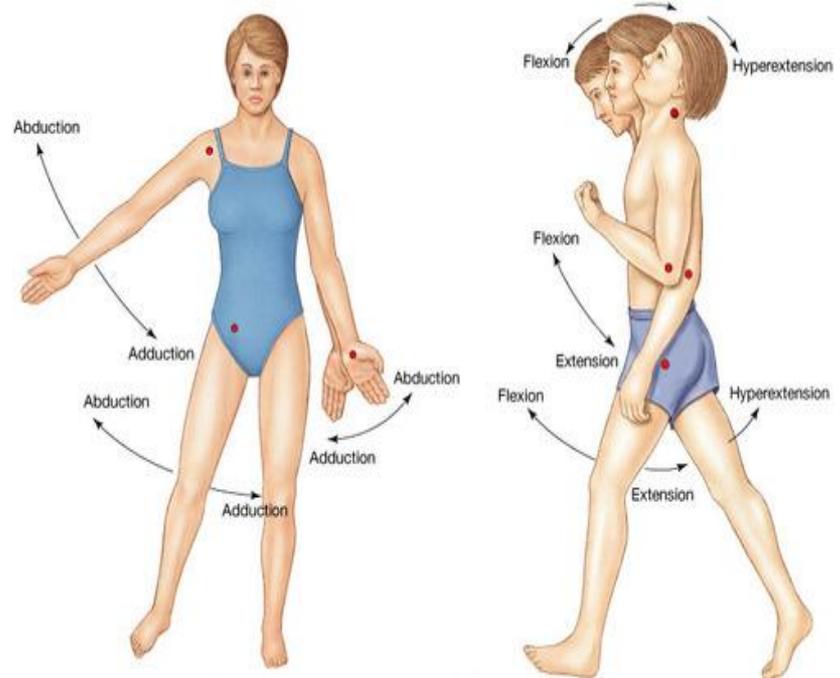
Prone (On front)



# Terms of movement

**Movements usually occurs at joint**, a site where two or more bones come together. Some joints have **no movement** (e.g. **sutures of the skull**), some have only **slight movement** (e.g. **superior tibiofibular joint**), and some are **freely movable** (e.g. **shoulder joint**).

**Flexion** is a movement that takes place in a sagittal plane. For example, flexion of the elbow joint approximates the anterior surface of the forearm to the anterior surface of the arm.



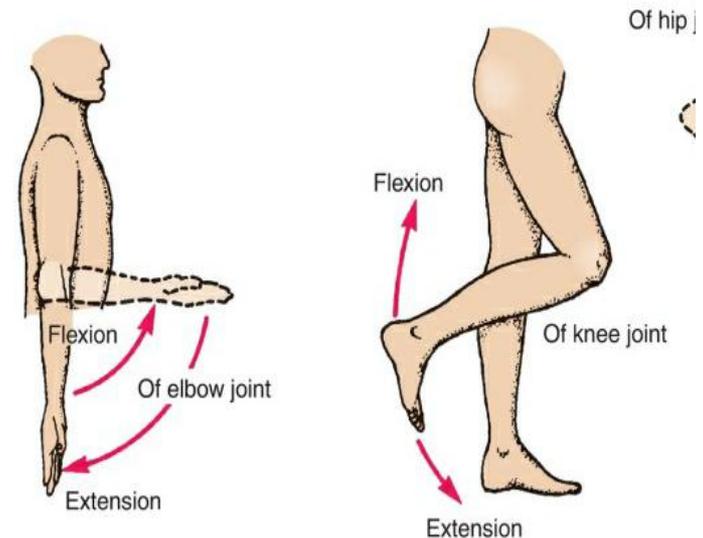
# Terms of movement

**Abduction** is a movement of a limb away from the midline of the body in the coronal plane.

**Adduction** is a movement of a limb toward the body in the coronal plane. In the **fingers and toes**, abduction is applied to the spreading of these structures and adduction is applied to the drawing together of these structures.

**Extension** means straightening the joint and usually takes place in a posterior direction.

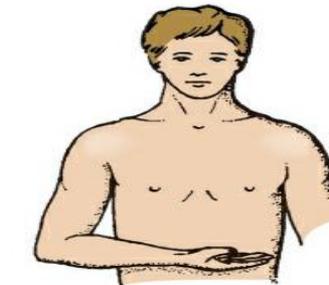
**Lateral flexion** is a movement of the trunk in the coronal plane.



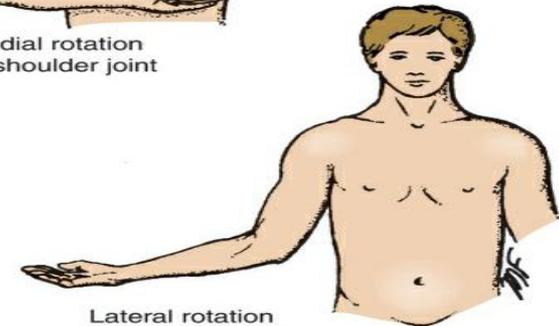
# Terms of movement

**Rotation** is the term applied to the movement of a part of the body around its long axis. **Medial rotation** is the movement that results in the anterior surface of the part facing medially. **Lateral rotation** is the movement that results in the anterior surface of the part facing laterally in such a manner that the palm of the hand faces posteriorly.

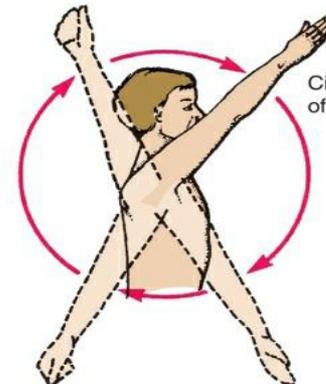
**Circumduction** is a complex sequence of movements combining flexion, extension, rotation. The overall abduction, adduction, and movement results in transcribing a cone through space, with the apex of the cone being the more proximal articular cavity of a joint and the base of the cone being the more distal end of a bone segment. Circumduction is most easily or limb envisioned at the shoulder.



Medial rotation of shoulder joint



Lateral rotation of shoulder joint



Circumduction of shoulder joint

# Terms of movement

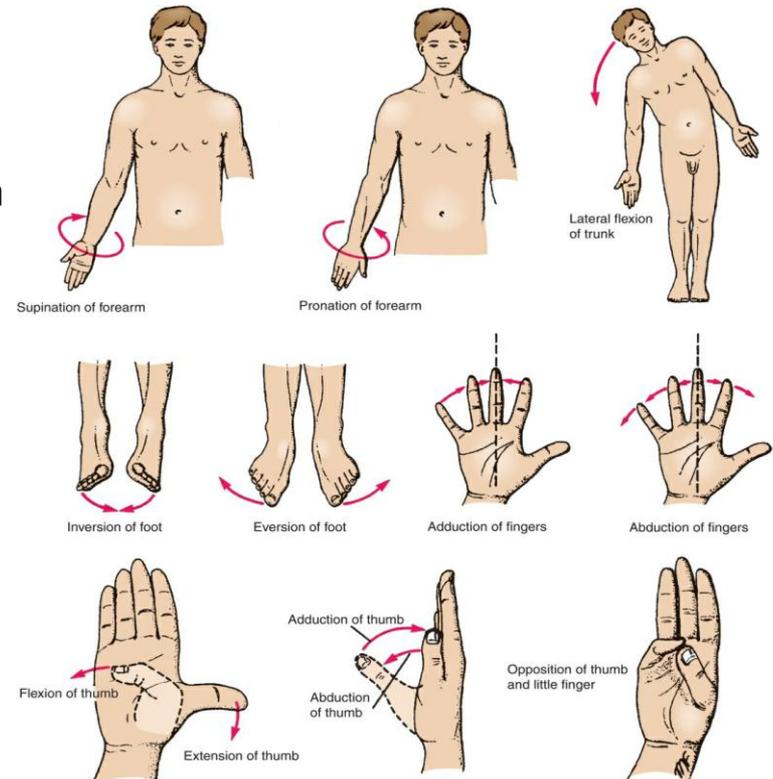
**Pronation of the forearm** is a medial rotation of the forearm in such a manner that the palm of the hand faces posteriorly.

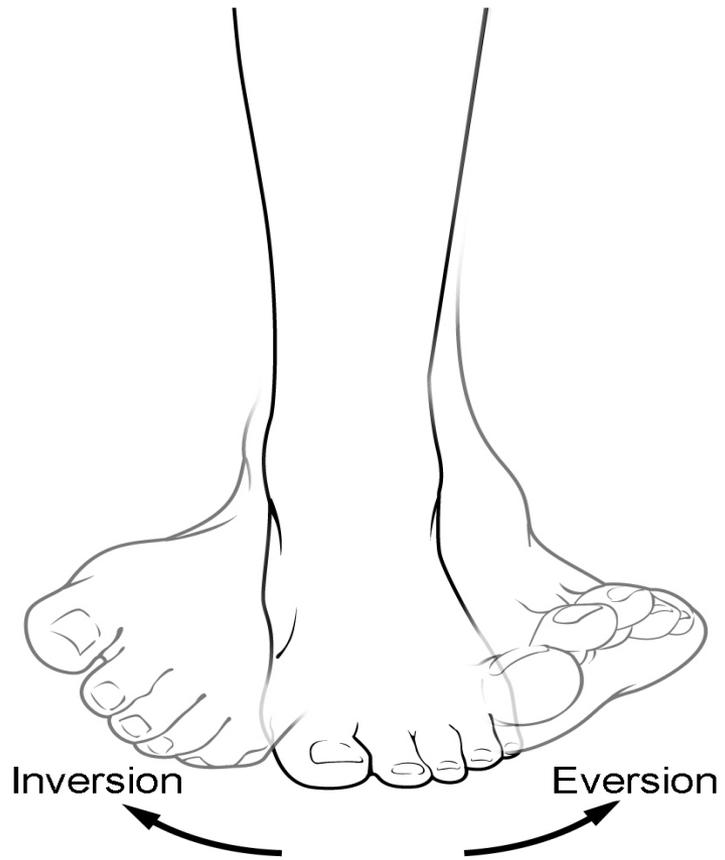
**Supination of the forearm** is a lateral rotation of the forearm from the pronated position so that the palm of the hand comes to face anteriorly.

**Inversion** is the movement of the foot so that the sole faces in a medial direction.

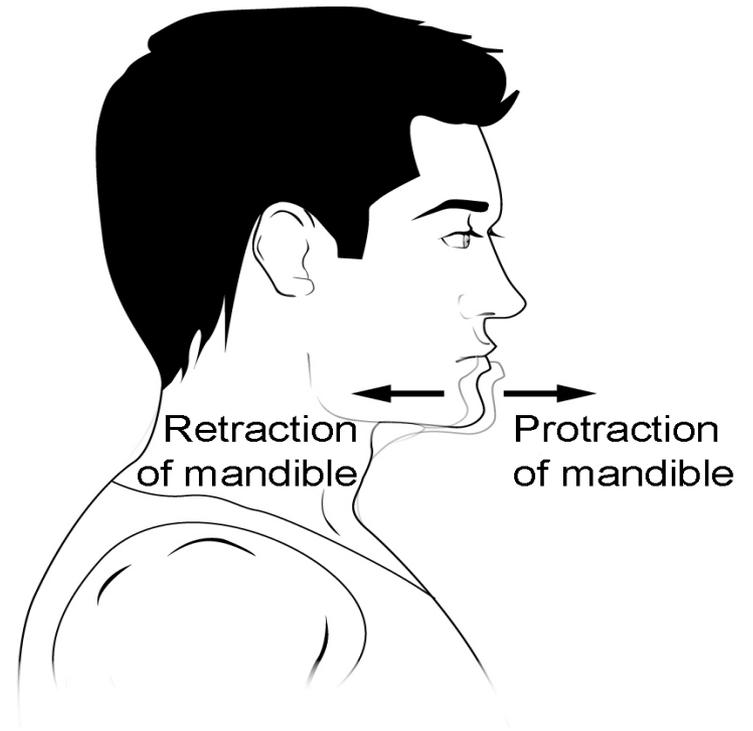
**Eversion** is the opposite movement of the foot so that the sole faces in a lateral direction.

**Protraction** is to move forward; **retraction** is to move backward (used to describe the forward and backward movement of the jaw at the temporomandibular joints).





(a) Inversion and eversion



(b) Protraction and retraction

