

# **GENERAL ANATOMY**

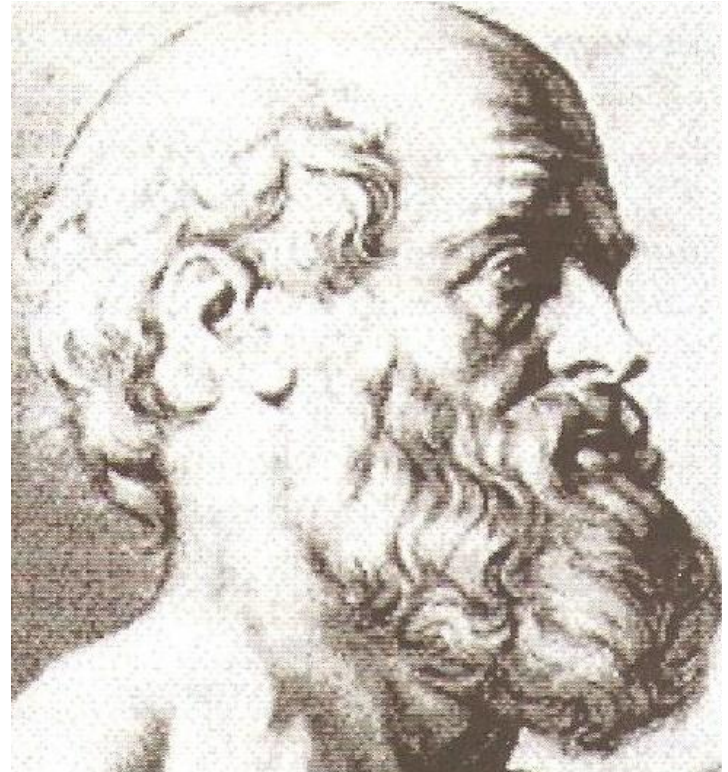
**Dr. Archana Rani  
Associate Professor  
Department of Anatomy  
KGMU, UP, Lucknow**

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# HISTORY OF ANATOMY

## HIPPOCRATES(460-377BC)

- Greek physician
- Father of Medicine
- His name is memorialized in the *Hippocratic oath*
- Humoral theory :
  - Four body humors –
    - blood
    - phlegum
    - yellow bile
    - black bile
- Attributed diseases to natural causes .



# GRECIAN PERIOD

## HEROPHILUS (about 325BC)

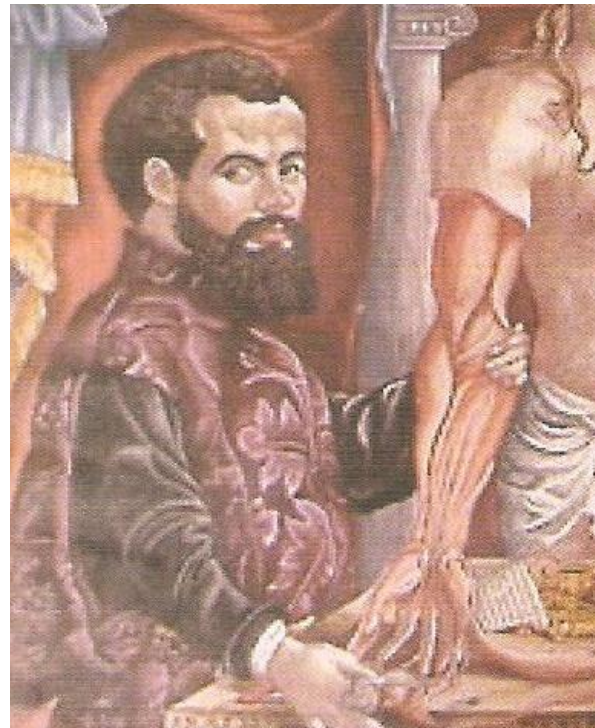
- **Father of Anatomy**
- Performed:
  - vivi-sections (dissections of living humans) and dissections of human cadavers
- regarded brain as seat of intelligence
- described cerebrum, cerebellum, fourth ventricle
- first to identify nerves as sensory or motor.



# SIXTEENTH CENTURY

## VESALIUS(1514- 1654)

- His work *De humani corporis fabrica* written in 7 volumes
- His work revolutionised the teaching of anatomy and ruled for two centuries
- Chose not to have his name attached to the parts of body he described unlike anatomists Sylvius, Fallopius, Eustachius.
- **Father of Modern Anatomy**
- **‘Reformer of Anatomy’**



# GENERAL ANATOMY

**Anatomy = Ana (Gr) Tome (Gr)**

**Apart**

**To Cut**

**Dissection = Dissecare (Latin)**

**To cut apart**

# SUBDIVISIONS OF ANATOMY

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- Gross/ Cadaveric Anatomy
- Microscopic Anatomy (Histology)
- Developmental Anatomy (Embryology)
- Living Anatomy
- Clinical Anatomy (Applied)
- Neuroanatomy
- Surface (Topographic) Anatomy
- Radiographic Anatomy
- Comparative Anatomy
- Sectional Anatomy

# GROSS ANATOMY

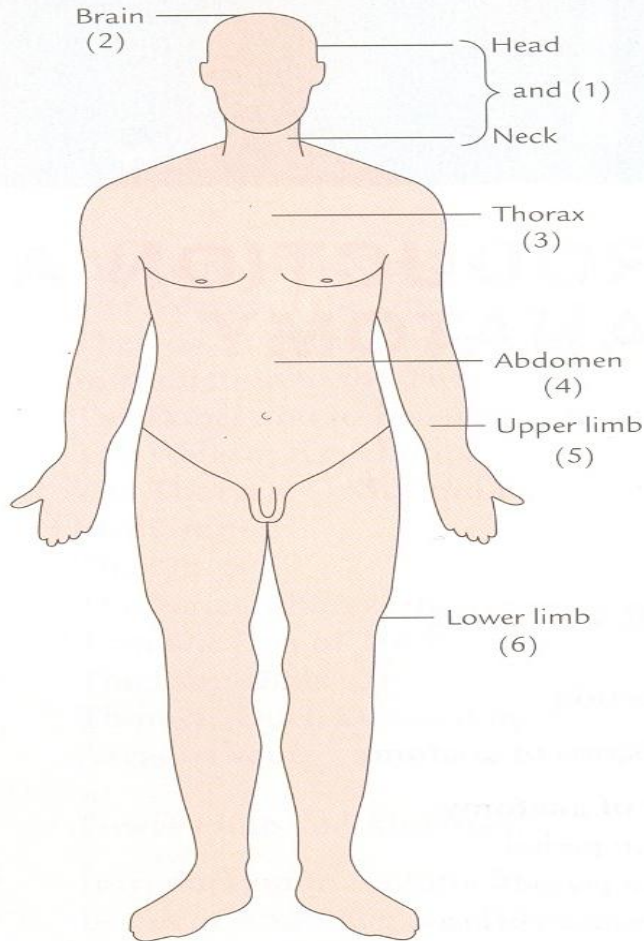
- **REGIONAL ANATOMY**

- Head and neck
- Brain
- Thorax
- Abdomen
- Upper Limb
- Lower limb

- **SYSTEMIC ANATOMY**

- Integumentary system
- Skeletal system
- Muscular system
- Nervous system
- Cardiovascular system
- Lymphatic system
- Endocrine system
- Digestive system, Respiratory system, Urogenital system

# SUB – DIVISIONS OF BODY



□ Head and Neck

□ Brain

□ Superior Extremity

□ Thorax

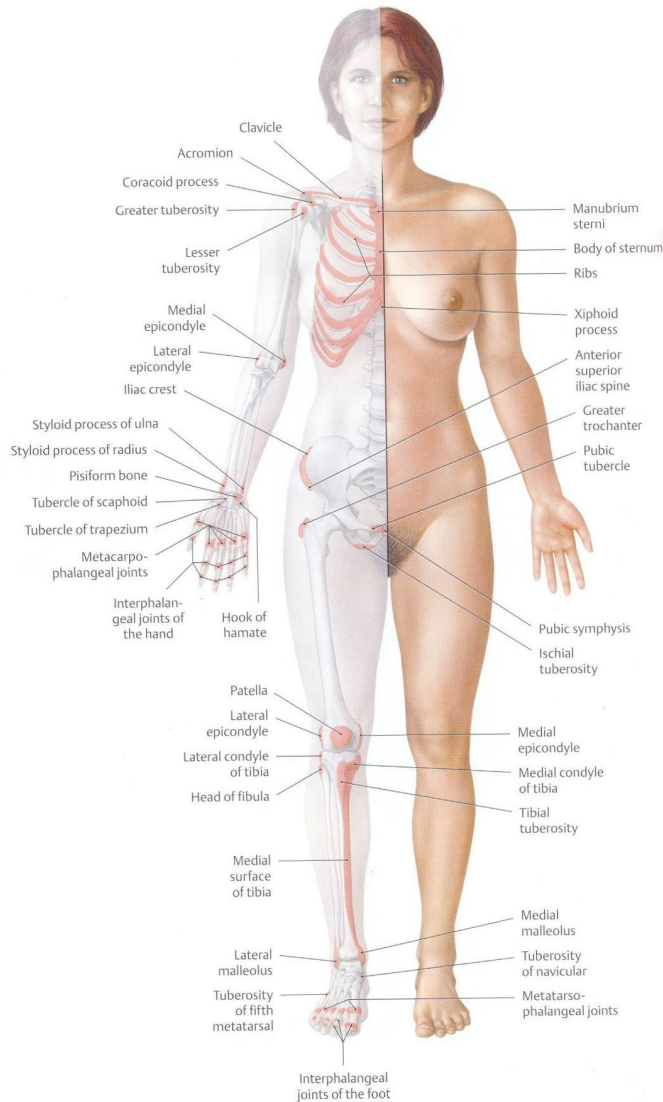
□ Abdomen and Pelvis

□ Inferior Extremity

**Fig. 1.1** Various regions of the body.



# ANATOMICAL POSITION



**B Surface contours and palpable bony prominences of the trunk and upper and lower limbs in the female**  
Anterior view.

□ Standing up right

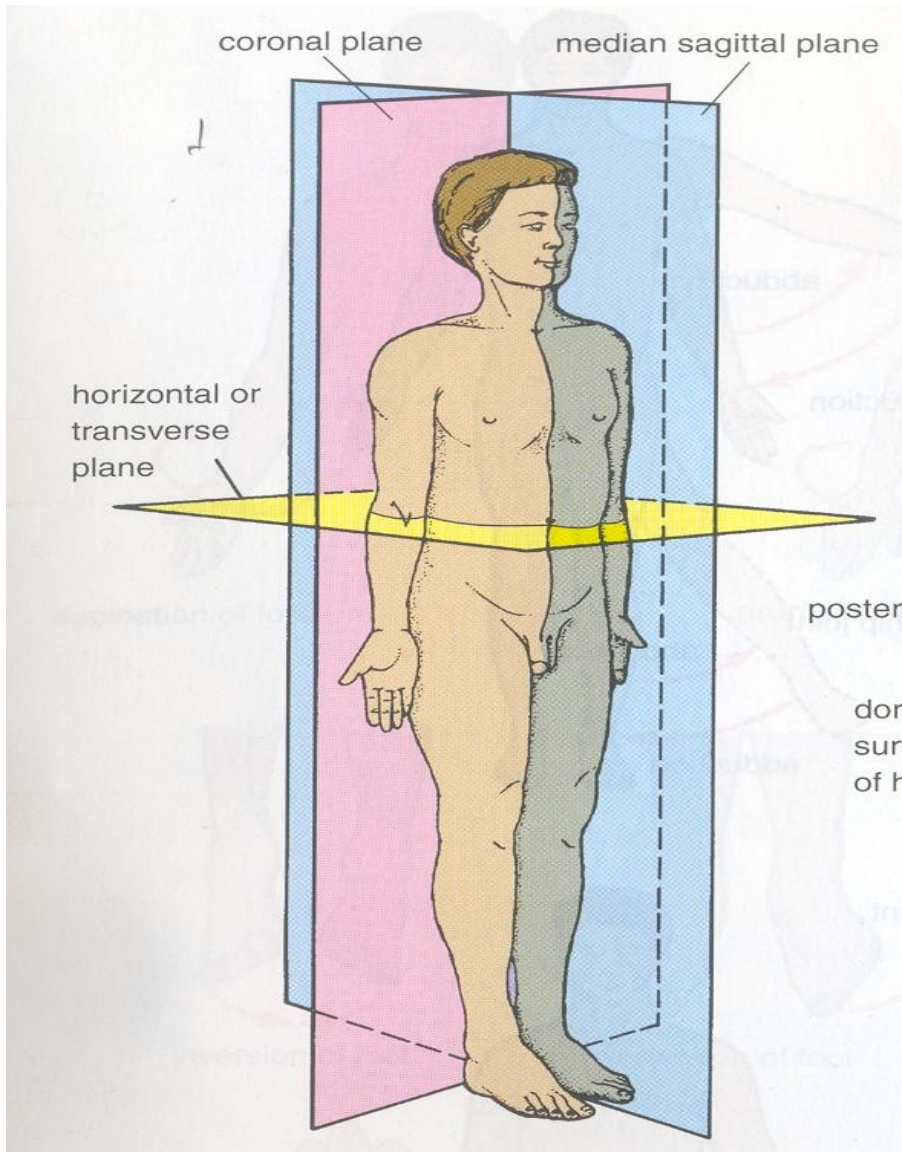
□ Looking straight towards horizon

□ Upper limbs hanging by the side of body

□ Palms facing forwards

□ Lower limbs are parallel with toes pointing forwards

# TERMS OF PLANES



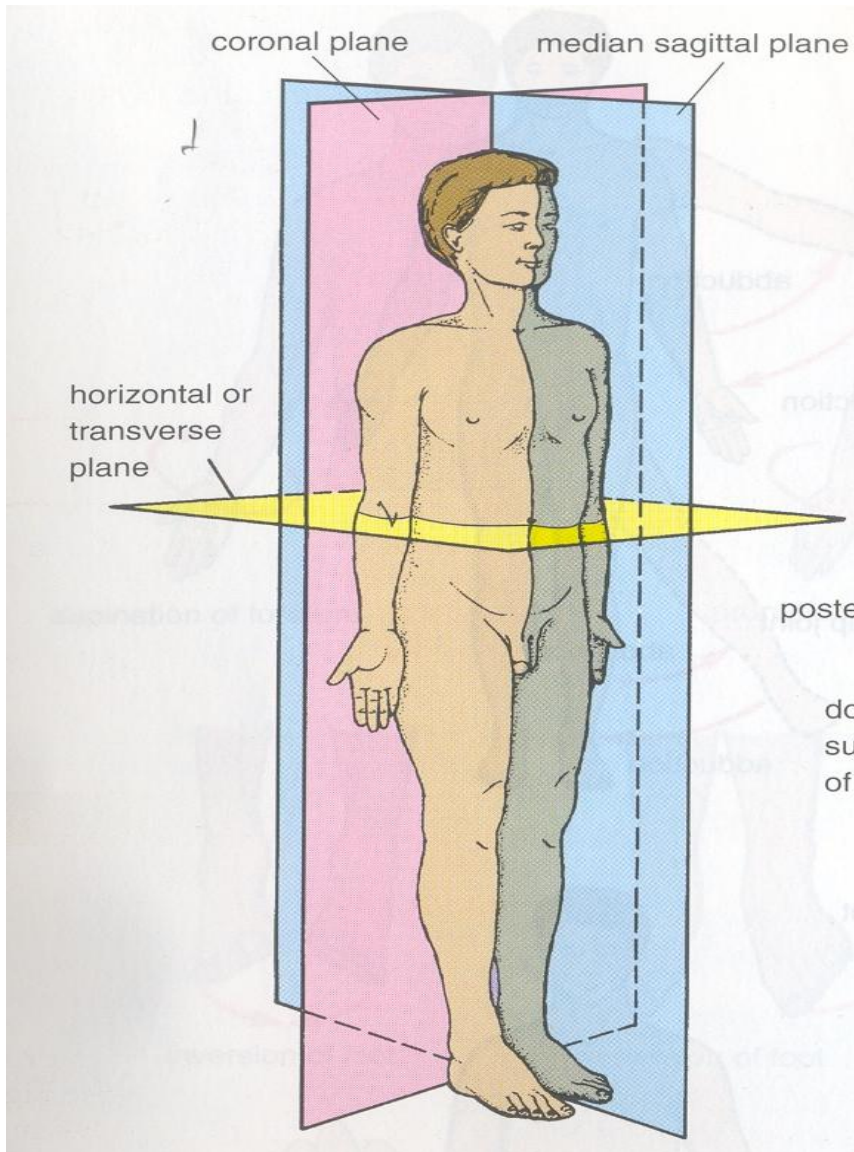
## 1. MID SAGITTAL (Median Plane):

A vertical plane dividing the body into right and left equal halves.

## 2. SAGITTAL:

A vertical plane which is parallel to the sagittal plane.

# TERMS OF PLANES



### 3. CORONAL PLANE

(Frontal Plane):

A vertical plane which is at right angles to the median plane dividing the body into an anterior and a posterior part.

### 4. TRANSVERSE PLANE:

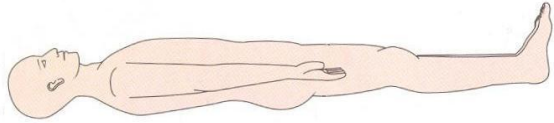
A plane at right angles to the sagittal / coronal plane dividing the body into an upper and lower part.

# TERMS OF PLANES

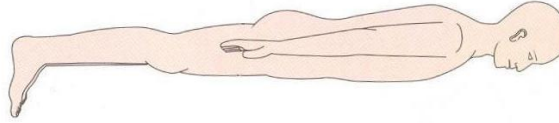
- **HORIZONTAL PLANE:** A plane parallel to the ground.
- **OBLIQUE PLANE:** Any plane other than of aforementioned planes.

# TERMS OF POSTURE

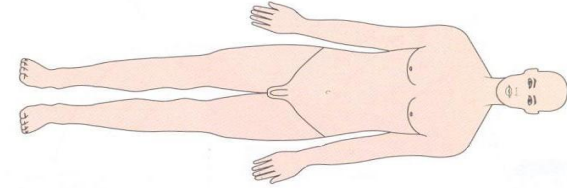
**Supine**



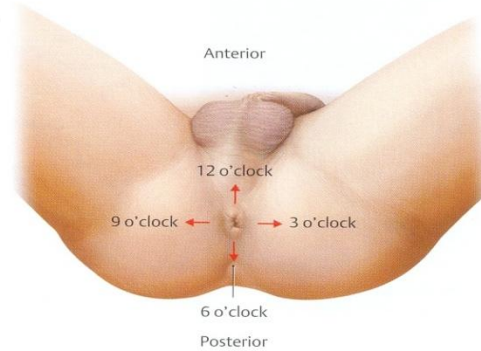
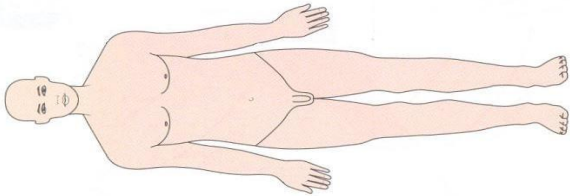
**Prone**



**Left Lateral**

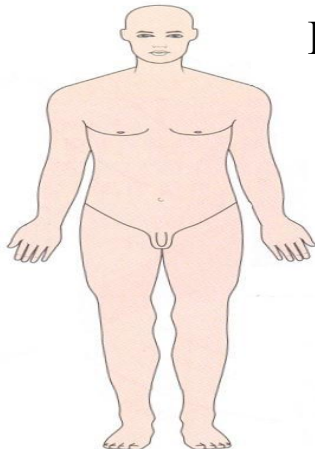


**Right Lateral**



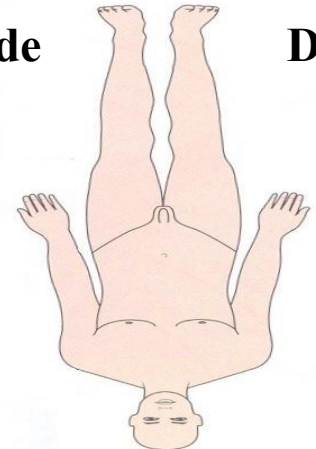
**Lithotomy**

**Erect**

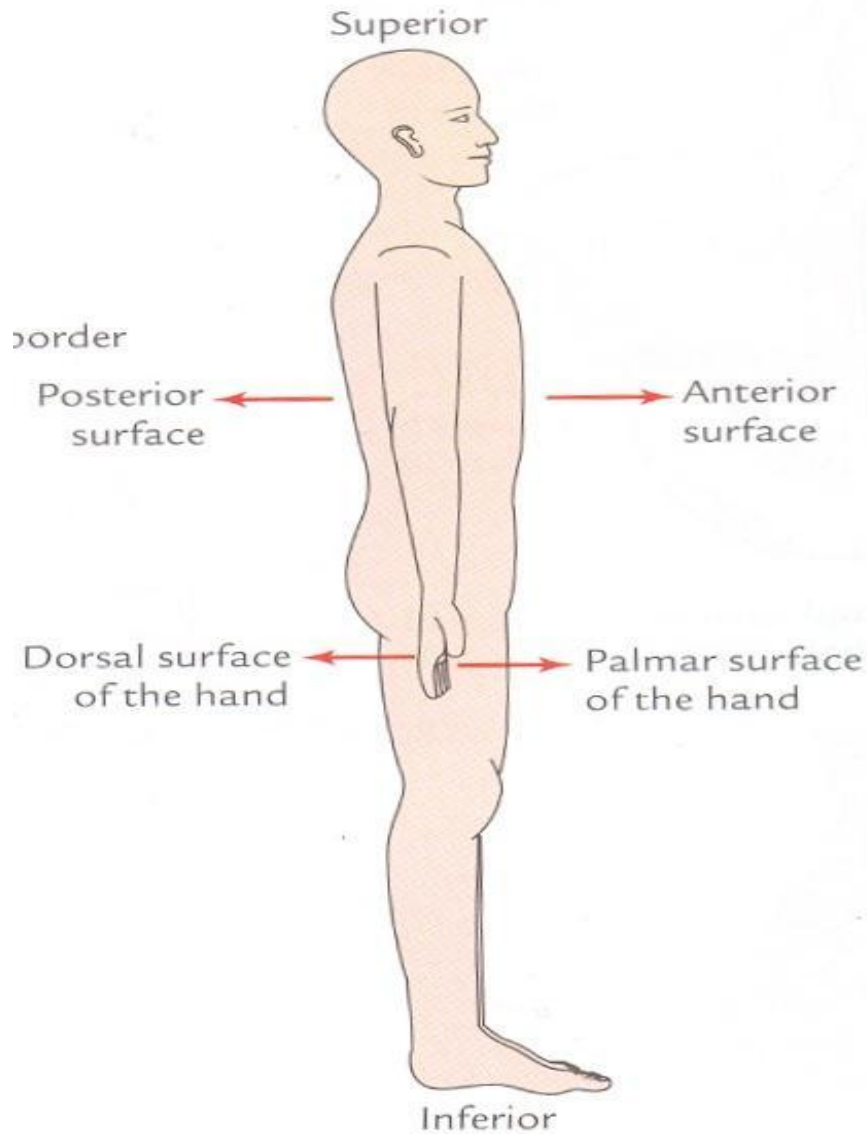


**Upside**

**Down**



# TERMS OF POSITION

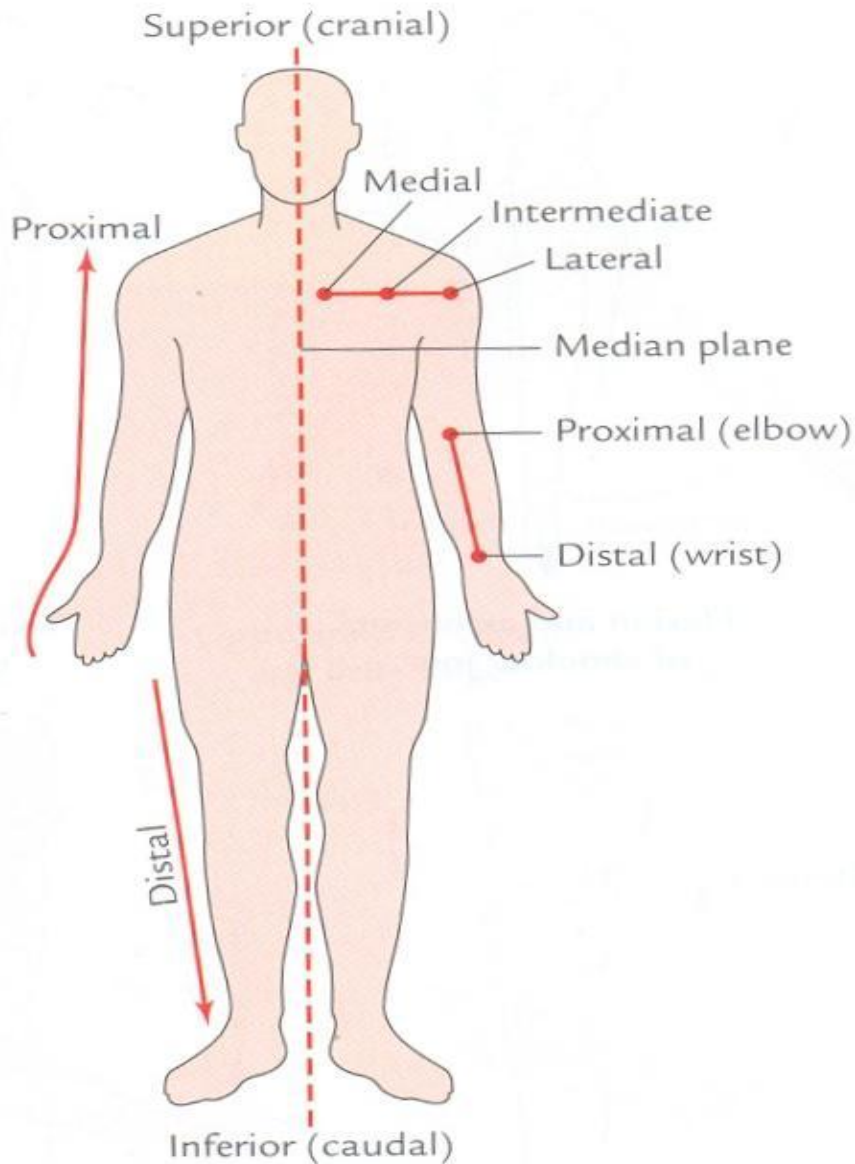


**Anterior = Ventral**

**Intermediate = Middle**

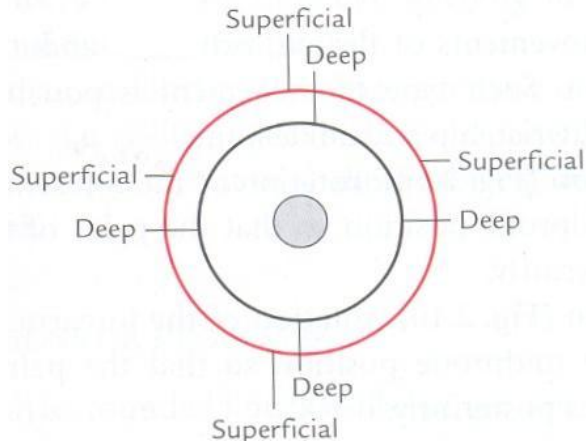
**Posterior = Dorsal**

# TERMS OF POSITION



- **Lateral**
- **Intermediate**
- **Medial**
- **Median**

# OTHER TERMS



**For solid organs:**

**-Superficial**

**-Deep**

**For hollow organs:**

**-Interior**

**-Exterior**

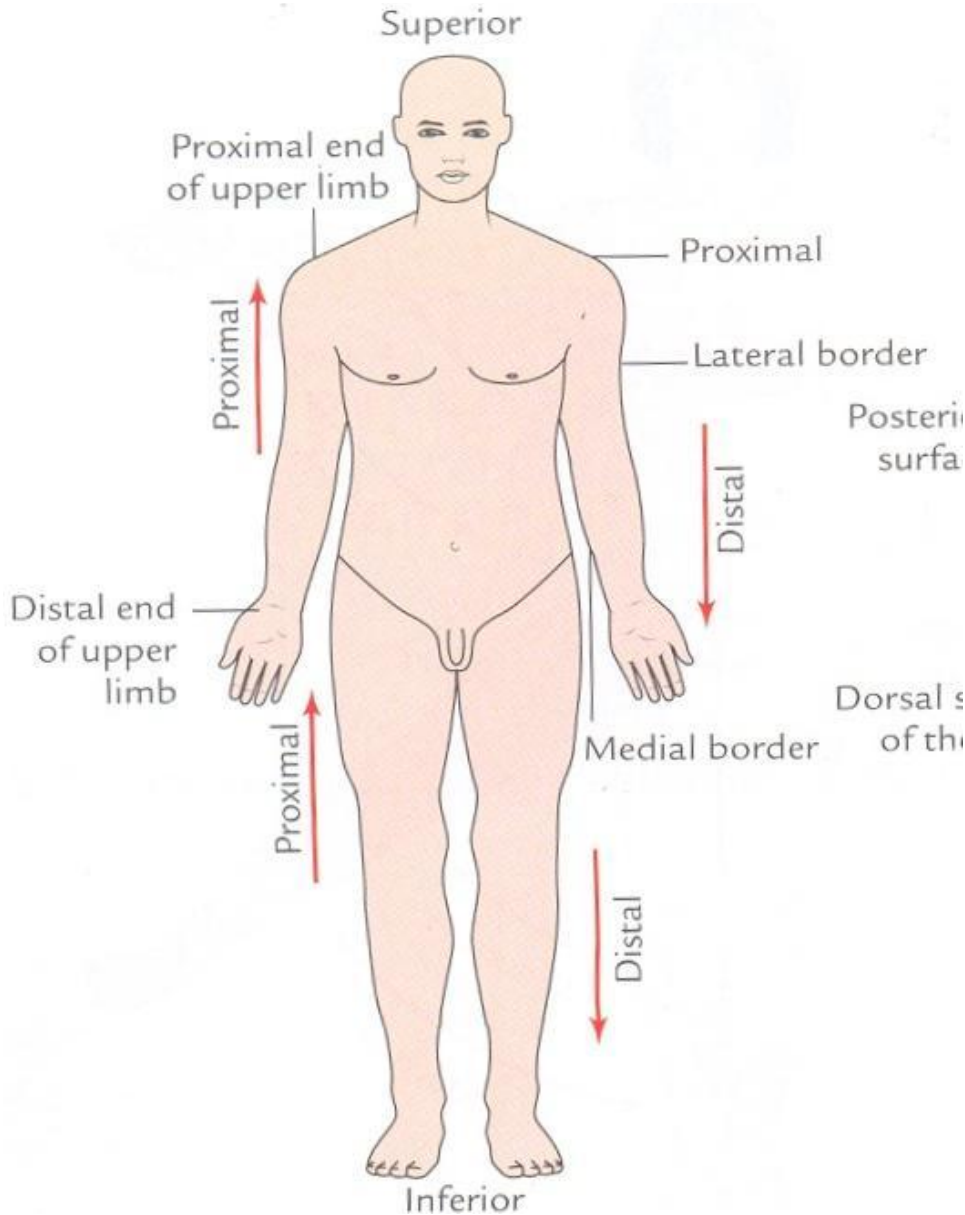
**For indicating the side:**

**-Ipsilateral**

**-Contralateral**



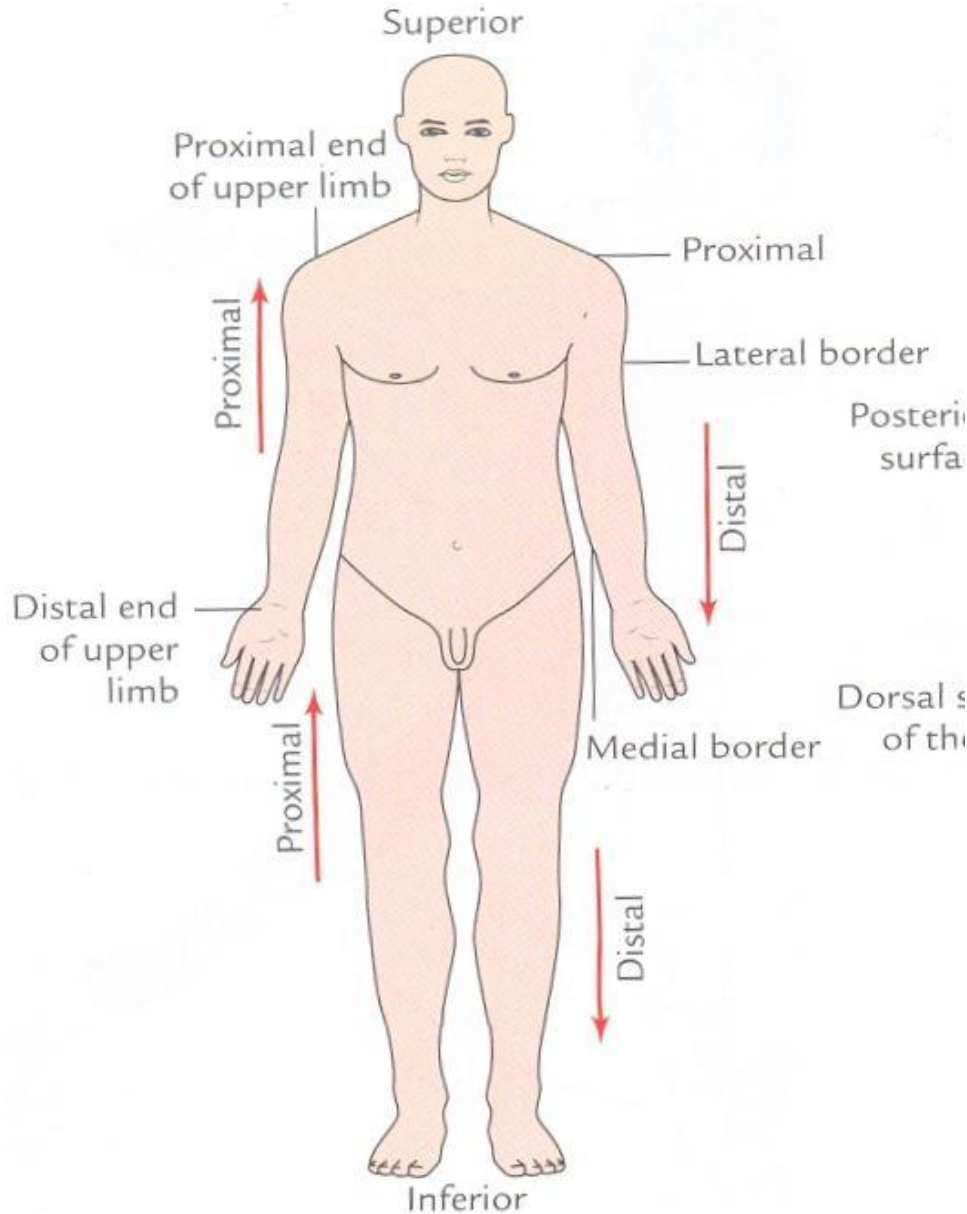
# TERMS OF POSITION



**Superior = Cephalic**

**Inferior = Caudal**

# TERMS FOR LIMBS



**Proximal**

**Distal**

**Radial**

**Ulnar**

**Tibial**

**Fibular**

**Preaxial border**

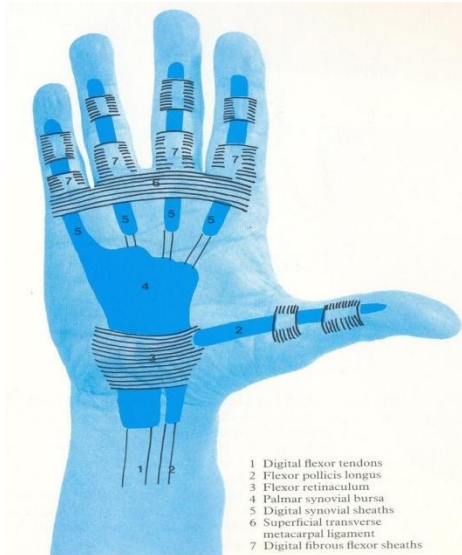
**Postaxial border**

# TERMS OF POSITION



**Skull - Inferior surface is called as Base**

**Hand - Posterior surface - Dorsum of Hand**  
**- Anterior surface - Palmar surface**



# TERMS OF POSITION

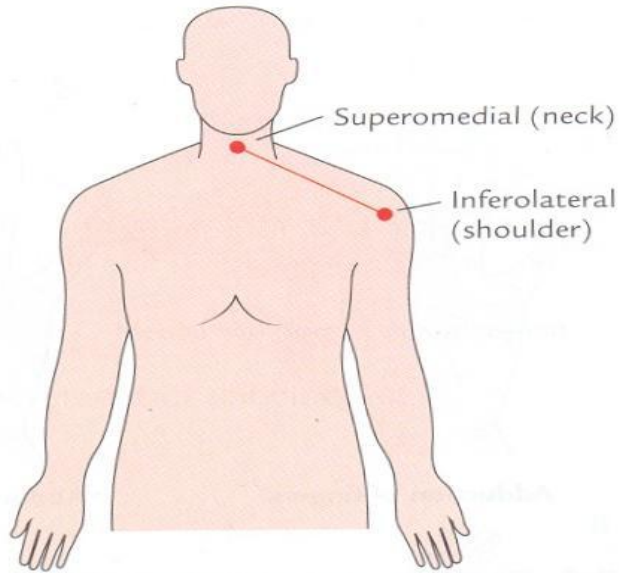
## Foot



- Superior surface -  
**Dorsum of Foot**

- Inferior Surface -  
**Plantar Surface**

# TERMS OF POSITION



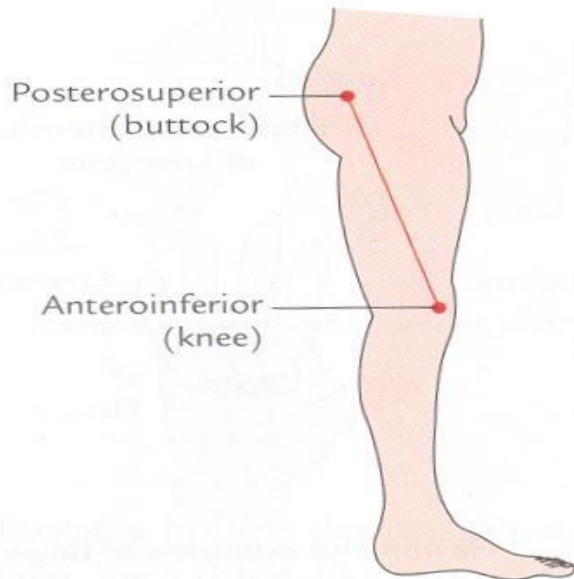
## Combination of Terms:

- **Supero medial**

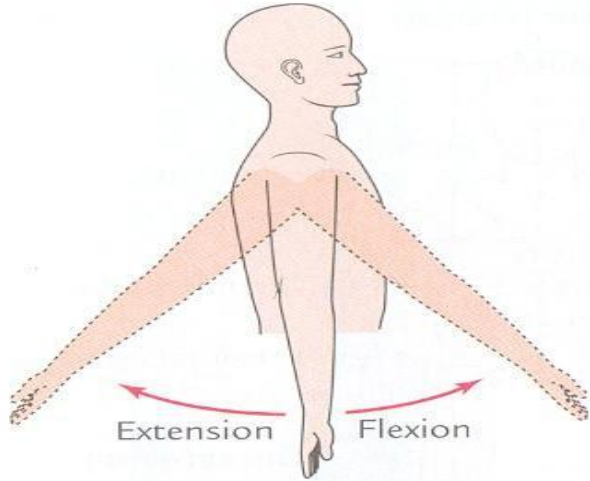
- **Infero lateral**

- **Postero superior**

- **Antero inferior**



# TERMS OF MOVEMENT

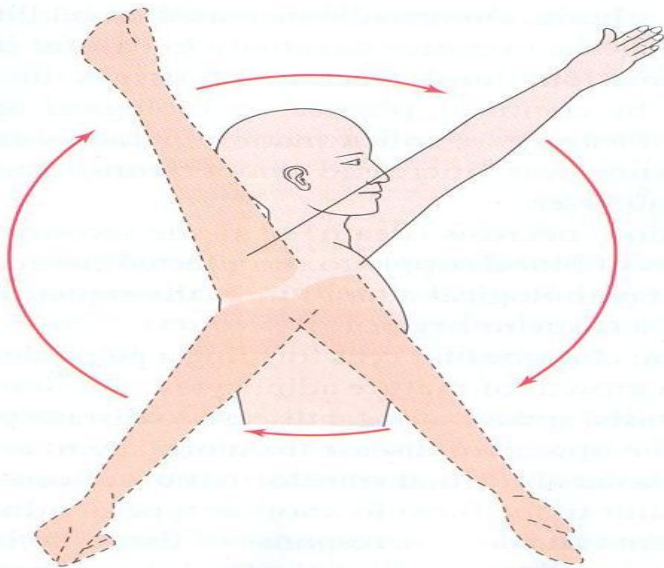


Flexion and extension  
of shoulder joint

**Flexion:** - Moving part is carried forwards  
- Movement on the transverse  
axis

**Extension-** Moving part is carried  
backwards

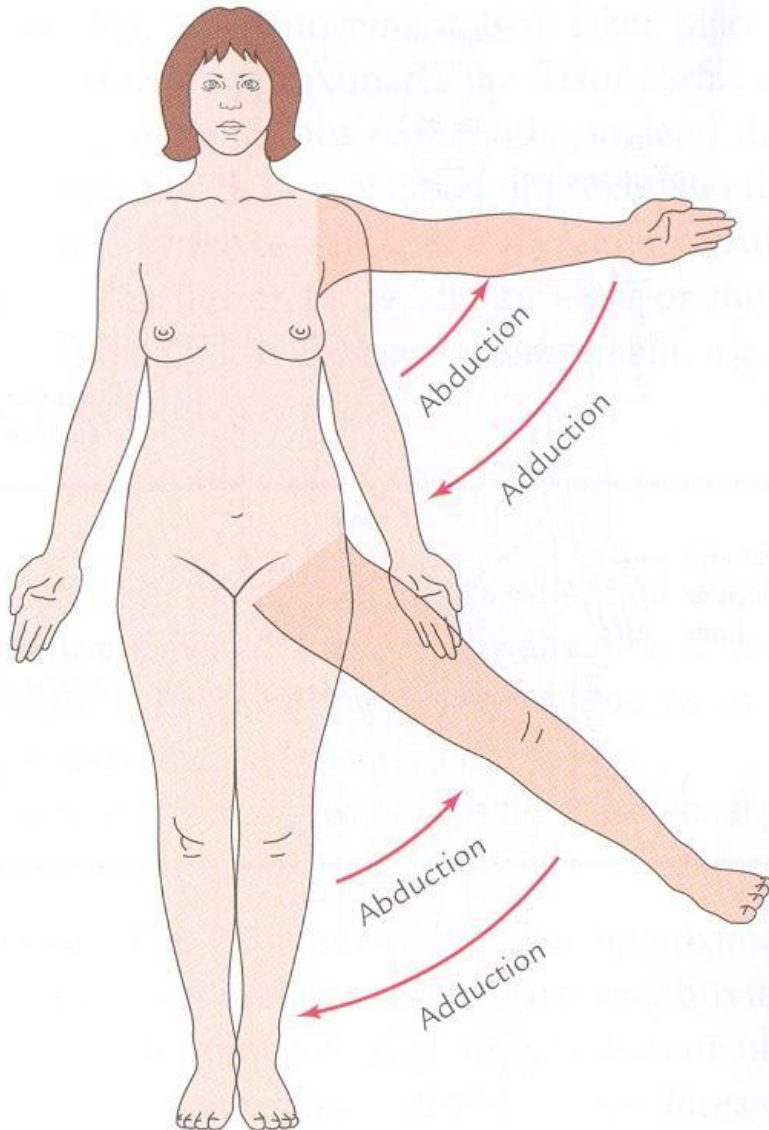
- Movement on the transverse  
axis.



Circumduction of shoulder joint.

**Circumduction:** Moving part forms the  
base of a cone

# TERMS OF MOVEMENT



**Abduction:** - Moving part is carried away from the body/

reference line.

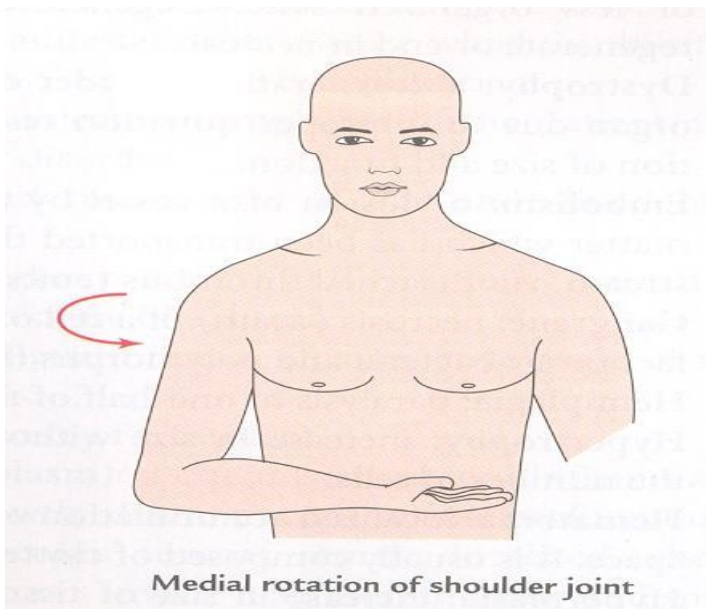
- Movement on antero – posterior axis.

**Adduction:** - Moving part is carried towards the body /

reference line.

-Movement on antero – posterior axis.

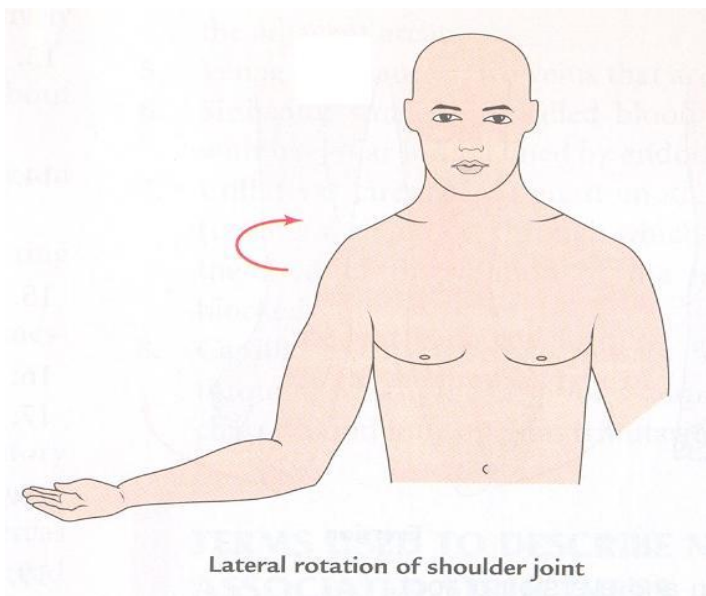
# TERMS OF MOVEMENT



## Medial Rotation –

-Moving part is rotated towards the mid line.

- Movement on vertical axis.



## Lateral Rotation –

- Moving part is rotated away from the mid line.

- Movement on vertical axis.



# SPECIAL TERMS OF MOVEMENT



## LEG:

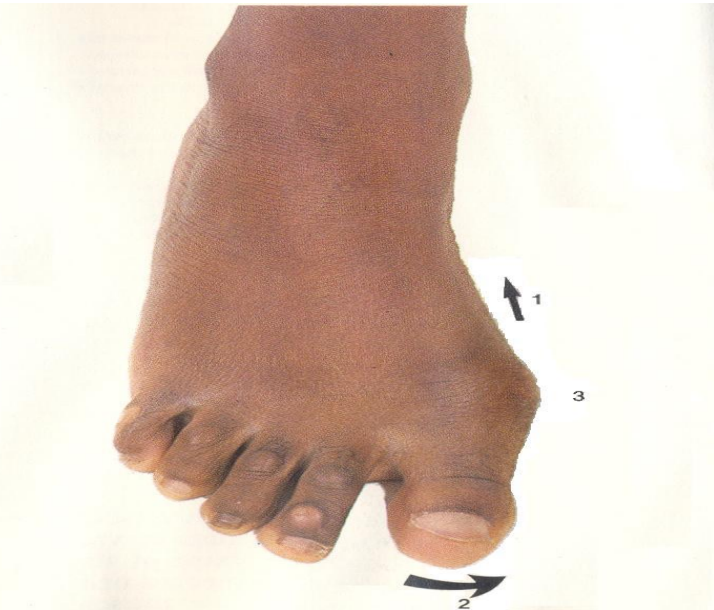
**Flexion** – A movement on knee joint in which leg is carried backwards.

**Extension** – A movement on knee joint in which leg is carried forwards.

## TOES:

**Abduction** – Toes move away from the long axis of 2<sup>nd</sup> toe.

**Adduction** – Toes move towards long axis of the 2<sup>nd</sup> toe.



# SPECIAL TERMS OF MOVEMENT



## NECK:

- Flexion
- Extension



## ROTATION:

- Right
- Left

## - LATERAL FLEXION

- Right
- Left



# SPECIAL TERMS OF MOVEMENT



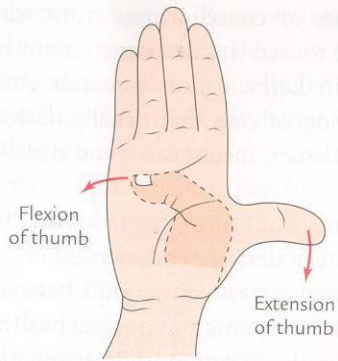
## FINGERS:

**ABDUCTION** – Fingers move away from the long axis of middle finger.

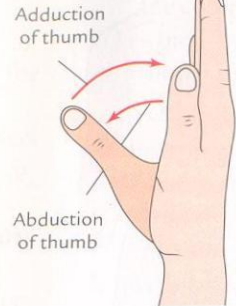


**ADDUCTION** – Fingers move towards the long axis of middle finger.

# SPECIAL TERMS OF MOVEMENT



Flexion and extension of thumb



Adduction and abduction of thumb



Opposition of thumb and little finger

## Thumb:

**Flexion**

**Extension**

**Abduction**

**Adduction**

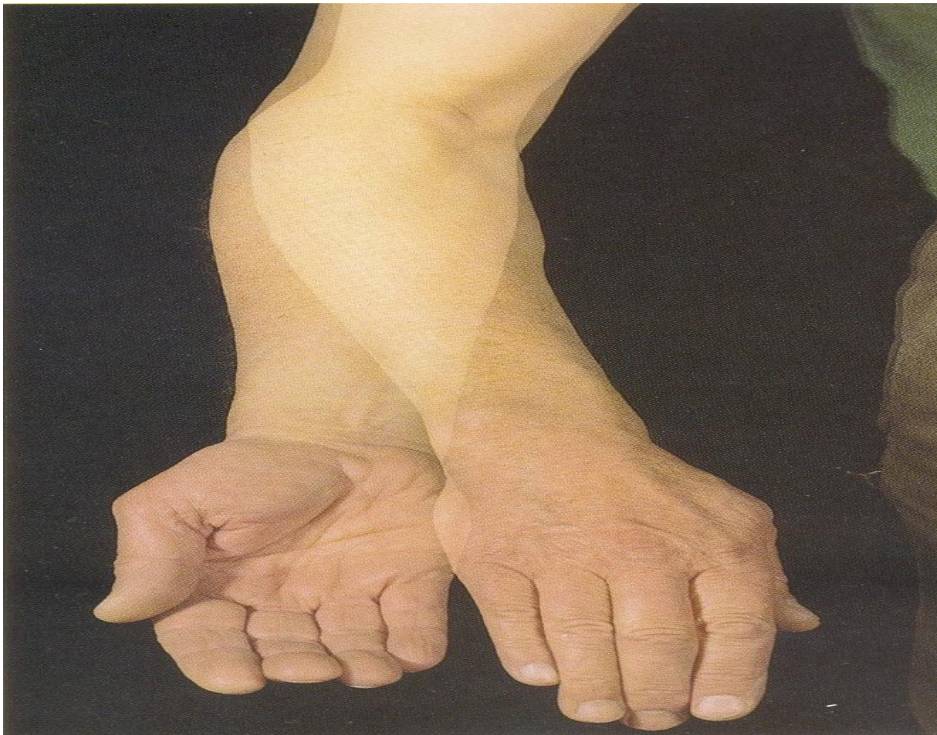
**Opposition**

## Forearm:

**Pronation – Forearm is rotated that the palm faces towards ground.**

**Supination – Forearm is rotated that the palm faces above.**

**Mid Prone Position**



## SPECIAL TERMS OF MOVEMENT



### **FOOT –**

**Inversion – Sole of the foot faces medially.**

**Eversion – Sole of the foot faces laterally.**

**Dorsiflexion – A movement of foot in which the dorsal surface of foot comes closure to the front of leg.**

**Plantarflexion – A movement of foot in which the dorsal surface of foot goes away from the front of leg.**



## SPECIAL TERMS OF MOVEMENT



**Trunk:**

**Flexion**

**Extension**



**Rotation - Left**

# SPECIAL TERMS OF MOVEMENT



**Rotation - Right**



**Lateral Flexion - Right  
- Left**

# REFERENCES

1. Cunningham's Manual of Practical Anatomy, Vol.1.
2. Grant's Method of Anatomy, 11<sup>th</sup> Edition.
3. Vishram Singh. General Anatomy, 1<sup>st</sup> Edition.



# MCQs

1. Who is the Father of Anatomy:

- a) Galen
- b) Herophilus
- c) Vesalius
- d) Hippocrates

# MCQs

2. The meaning of term anatomy is:

- a) To analyze
- b) To observe
- c) To cut up
- d) To make

# MCQs

3. The sectional plane that divides the body into anterior and posterior portions is:
- a) Transverse plane
  - b) Sagittal plane
  - c) Coronal plane
  - d) Oblique plane

# MCQs

4. Lying down position with the face directed down is called as:

- a) Supine
- b) Prone
- c) Anatomical
- d) Lithotomy

# MCQs

5. During flexion of the arm, the arm moves:

- a) Upwards
- b) Downwards
- c) Medial
- d) Lateral