

# Introduction to Anatomy

## Definition of Anatomy :

It is the science dealing with the study of the structure (تكوين), arrangement (ترتيب) and geography (جغرافيا) of the human body, which forms the keystone for all other branches of medical science (العلوم الطبية) .

## What we will cover:

- brief history.
- Medical terminology.
- Anatomical planes, Directions and Movements.

## History:

- From 300 BC and second century.
- scientist, Doctors, and artist would experiment and practice on the dead bodies.
- cadavers were positioned flat on their backs, thus making it easier to draw and reference from that position.

## Methods used in study of anatomy:

- Gross Anatomy: "Macroscopic Anatomy"
- Cross-sectional anatomy.
- Surface Anatomy.
- Radiological Anatomy
- Living Anatomy.
- Surgical anatomy.
- Applied anatomy.

## Gross Anatomy: "Macroscopic Anatomy":

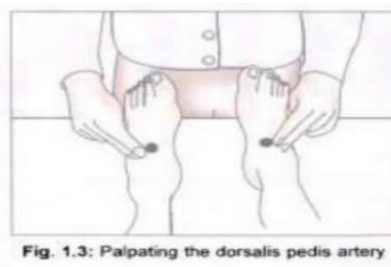
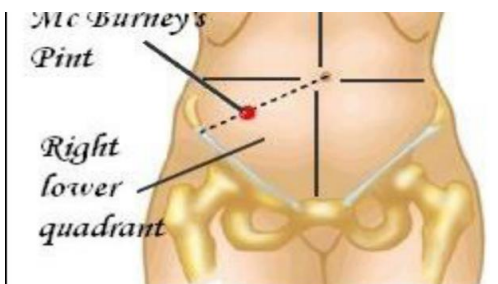
it is the study of anatomy on dead bodies the cadavers by naked eye by dissection.

## Living Anatomy:

Study of anatomy on livings by **palpation**, using hand, **inspection** using eye & **auscultation** using stethoscope OR **endoscopy** as bronchoscopy.

## Surface anatomy (Topographic anatomy):

Study of deeper parts of the body in relation to the skin surface. It is helpful in clinical practice and surgical operations .



## Radiographic and imaging anatomy:

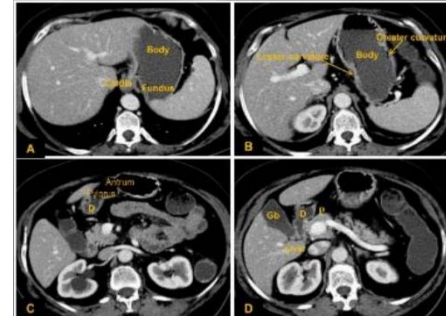
Study of the bones and deeper organs by plain and contrast radiography by ultrasound and by computerized tomographic (CT) scans.



## Cross sectional anatomy:

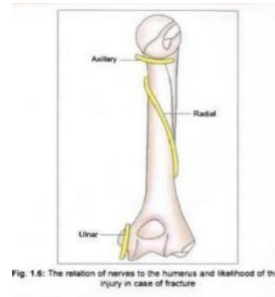
It is the study of the structure and arrangement of the different parts of the body as seen in cross-sections or slices of the body.

It is the essential base in the field of computerized tomography (CT-scanning) and Magnetic Resonance Image (MRI) technique.



## Applied anatomy:

Deals with application of anatomical knowledge to the medical And surgical practice.



## Surgical anatomy:

The anatomy of surgical exposure and incision



## Anatomical terms:

### Positions:

- Anatomical position.
- supine position.
- prone position.

### Terms of positions

#### 1-Anatomical position:

the anatomical position is a standardized method for observing or imaging the body .

When in the anatomical position,

- the subject stands.
- body is standing erect,
- the eyes looking forwards,
- the upper limbs are straight by the side,
- the palms facing forward,
- the feet are close together.

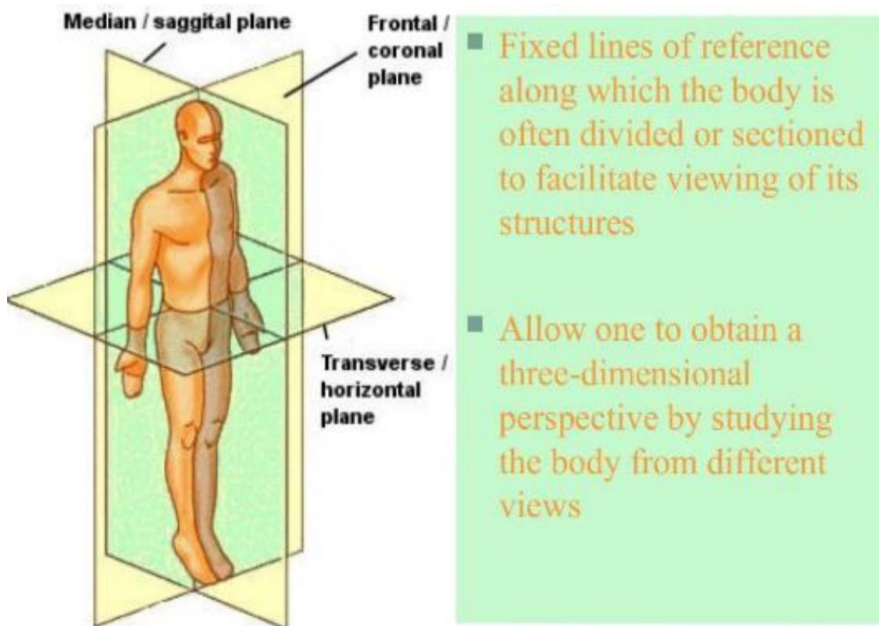


**2-Supine position:** مستلقى على الظهر

-The body lies down on the back, with the face looking upwards.

**3-Prone position:** مستلقى على البطن

-The body lies down with the face looking downwards.

**Terms of planes:****1-Median plane (Midsagittal plane): -**

It is a vertical antero-posterior plane, which divides the body into two equal parts (right and left halves).

It is in the direction of sagittal suture of the skull.

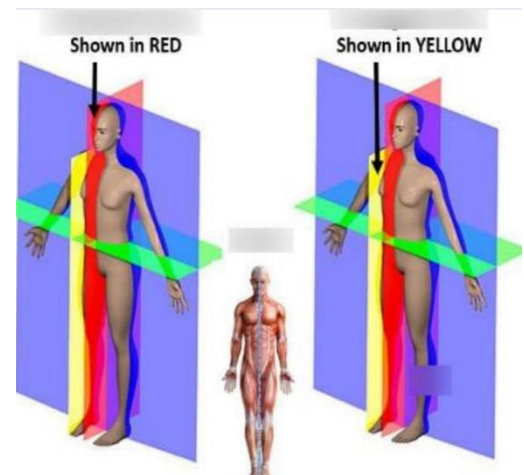
**2-The Paramedian sagittal plane:**

It is any vertical plane parallel to the median plane.

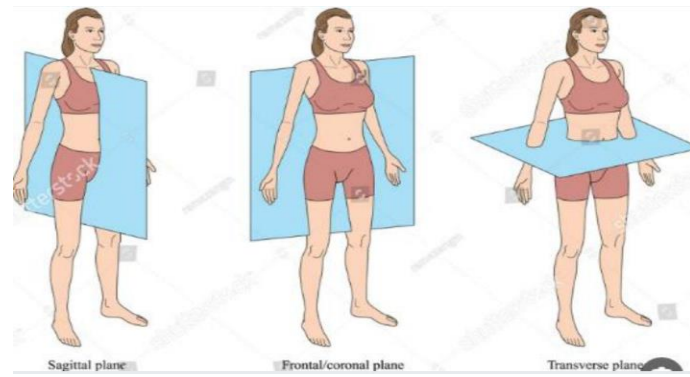
**3- Coronal plane:**

It is side to side vertical plane, which divides the body into anterior and posterior parts.

It lies at right angles to the median sagittal plane, and in the direction of the coronal suture of the skull.



**4- Transverse (axial) plane:** It is the plane of cross-sectioning of the body. It lies at right angles to the vertical planes / or the long axis of the part.



## Quiz:

What is the plane that divides the body into anterior and posterior parts?

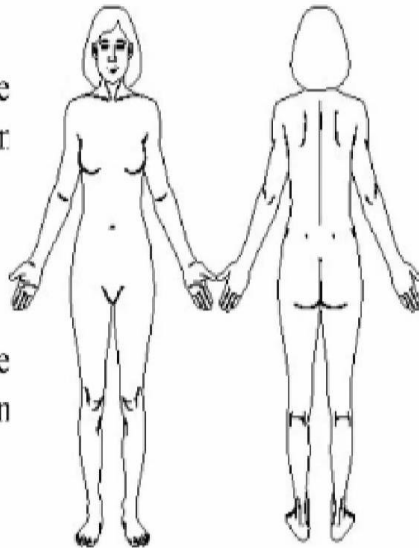
- 1- midsagittal plane.
- 2- transvers plane.
- 3- coronal plane.
- 4- paramedian sagittal plane.

## Terms of relations

<b>Anterior (Ventral)</b>	<b>Posterior (Dorsal)</b>
<b>Superior (cranial)</b>	<b>Inferior (caudal)</b>
<b>Medial</b>	<b>Lateral</b>
<b>Proximal</b>	<b>Distal</b>
<b>Superficial</b>	<b>Deep</b>
<b>Right</b>	<b>Left</b>

### Anterior **ventral**

- Refers to a structure being more in front than another structure in the body



### Posterior **Dorsal**

- Refers to a structure being more in back than another structure in the body



**Superior (Cranial):** Towards the head.

**Inferior (caudal):** towards the feet.

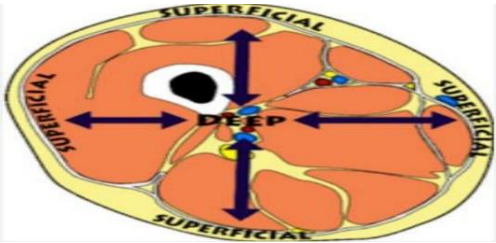
**Medial:** The direction towards the median plane.

**Lateral:** The direction is away from the median plane.

**Proximal:** nearer to the trunk Distal: away from the trunk.

**Superficial :** near the Surface

**Deep:** further from the surface



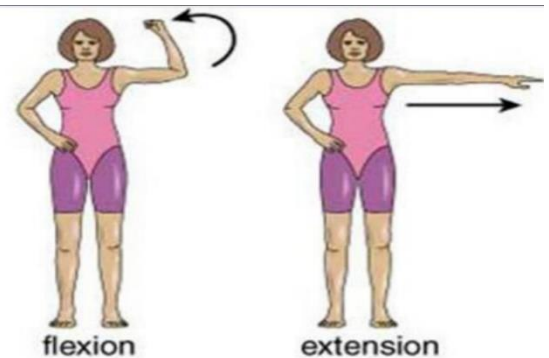
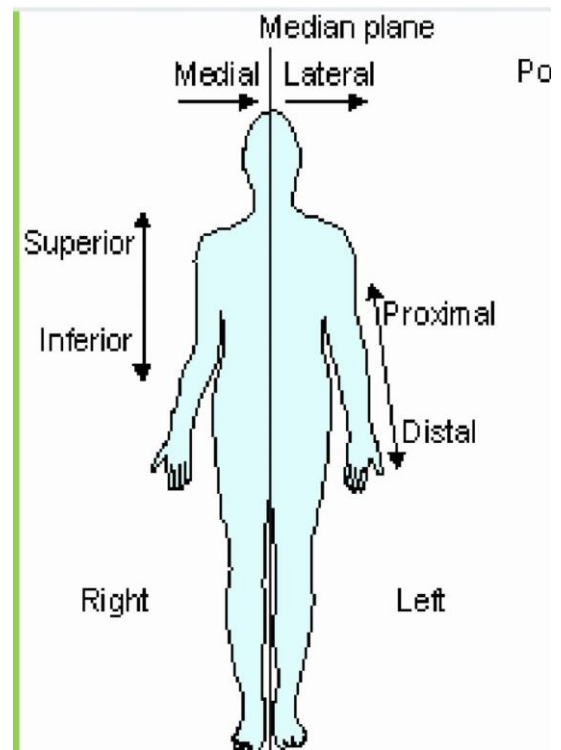
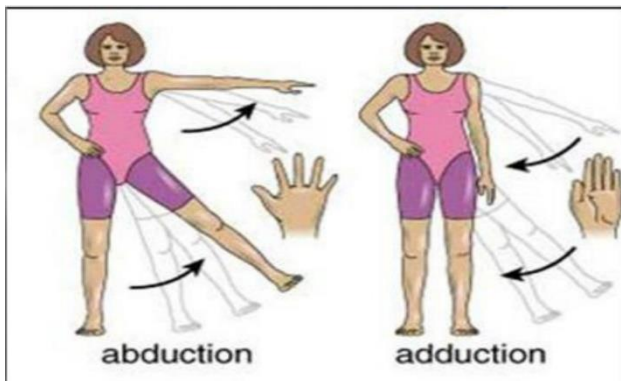
### Terms of Movements

1-**Flexion:** It is the angular movement (bending) of a joint.

2-**Extension:** It is the act of straightening of part or limb.

3-**Adduction:** It is the movement of the limb towards the median plane.

4-**Abduction:** It is the movement away from the median plane.



### 5-Rotation:

It is the turning movement of the body or part around its long axis.

Rotation can be medial or inward and lateral or outward rotation.



### 6-Circumduction:

It is the movement of the limb, in a circular direction.

It occurs by the succession of adduction, abduction, flexion, extension, and rotation movements.

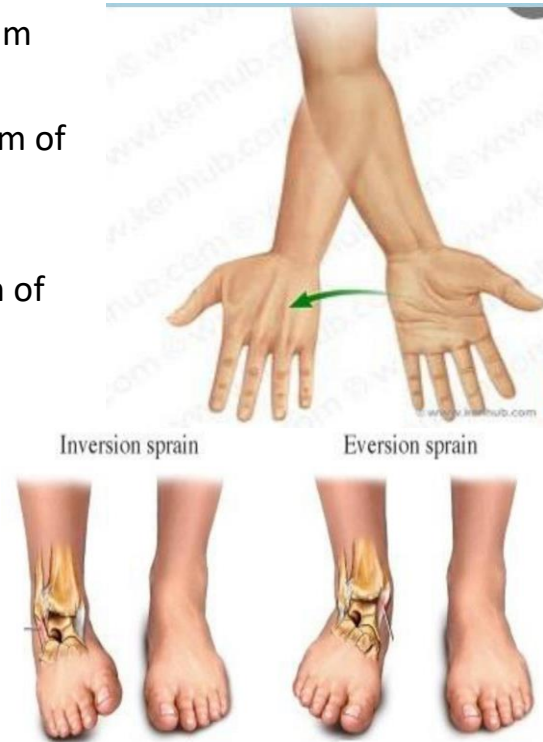


**7-Supination:** It is the rotation of the forearm to direct the palm forwards.

**8- Pronation:** It is the rotation of the forearm to direct the palm of the hand backwards .

**9-Inversion:** It is the turning inwards of the foot with elevation of its inner margin; to direct the sole medially.

**10-Eversion:** It is the turning outwards of the foot with elevation of its outer (external) margin, to direct the sole laterally.



### Quiz:

which is the movement that rotates the foot and direct the sole laterally?

- 1- Eversion
- 2- Inversion
- 3- Pronation
- 4- Supination

### Different body systems:

- 1-Skeletal system العظمى
- 2-Articulating system (joints) المفصلي
- 3-Muscular system العضلي
- 4-Nervous system العصبي
- 5-Circulatory system الدوري
- 6-Lymphatic system الليمفاوي
- 7-Respiratory system التنفسي
- 8-Digestive system الهضمي
- 9-Urinary system البولي
- 10-Reproductive system التناسلي
- 11-Glands الغدد
- 12-Special sense organs as eye,ear,nose أعضاء الحواس الخاصة

