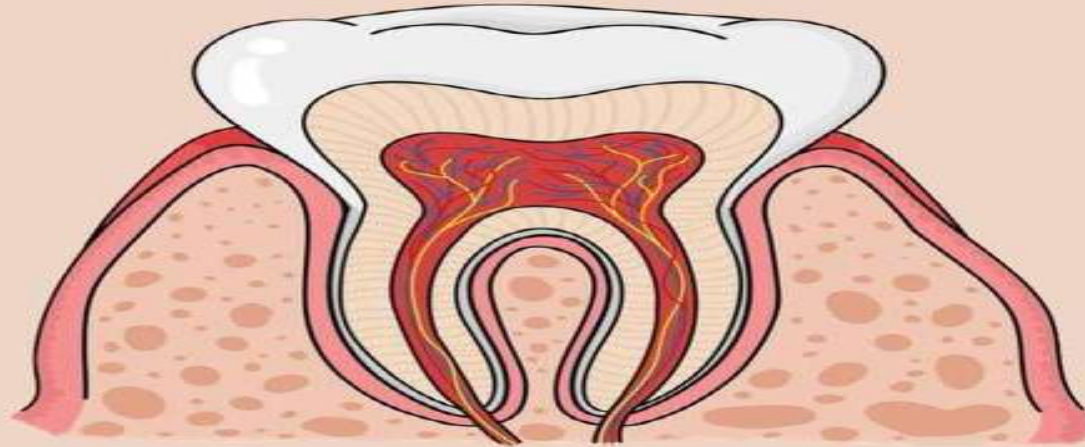




ANATOMY



LEC NO. : L-1
DONE BY : Malak al-hmeed

وَقُلْ رَبِّ زِدْنِي عِلْمًا



Anatomy & Embryology

Lecture 1: Introduction to Human Anatomy

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Human Anatomy & Embryology



المادة تدرس وجاهيا في قاعة صيدلة 101 و يوجد مجموعة للطلبة منصة مايكروسوفت تيمز
(Microsoft Teams)

Dr. Jihad Alzyoud

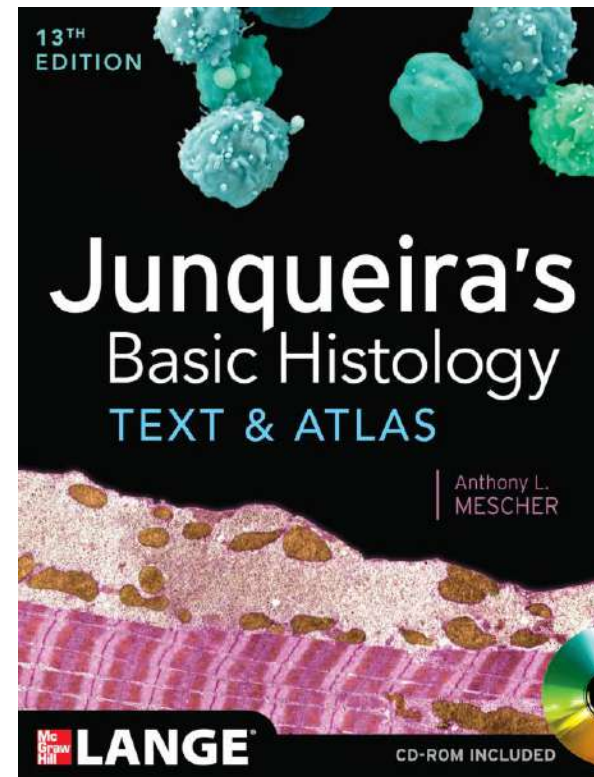
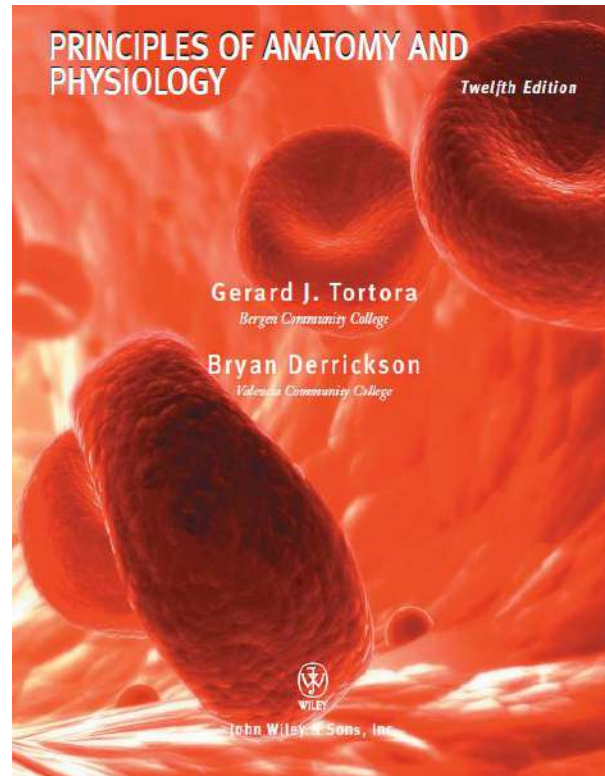
Dr. Heba Ali

Faculty of Dentistry

Department of Basic Dental Science

Recommended Books and Atlases:

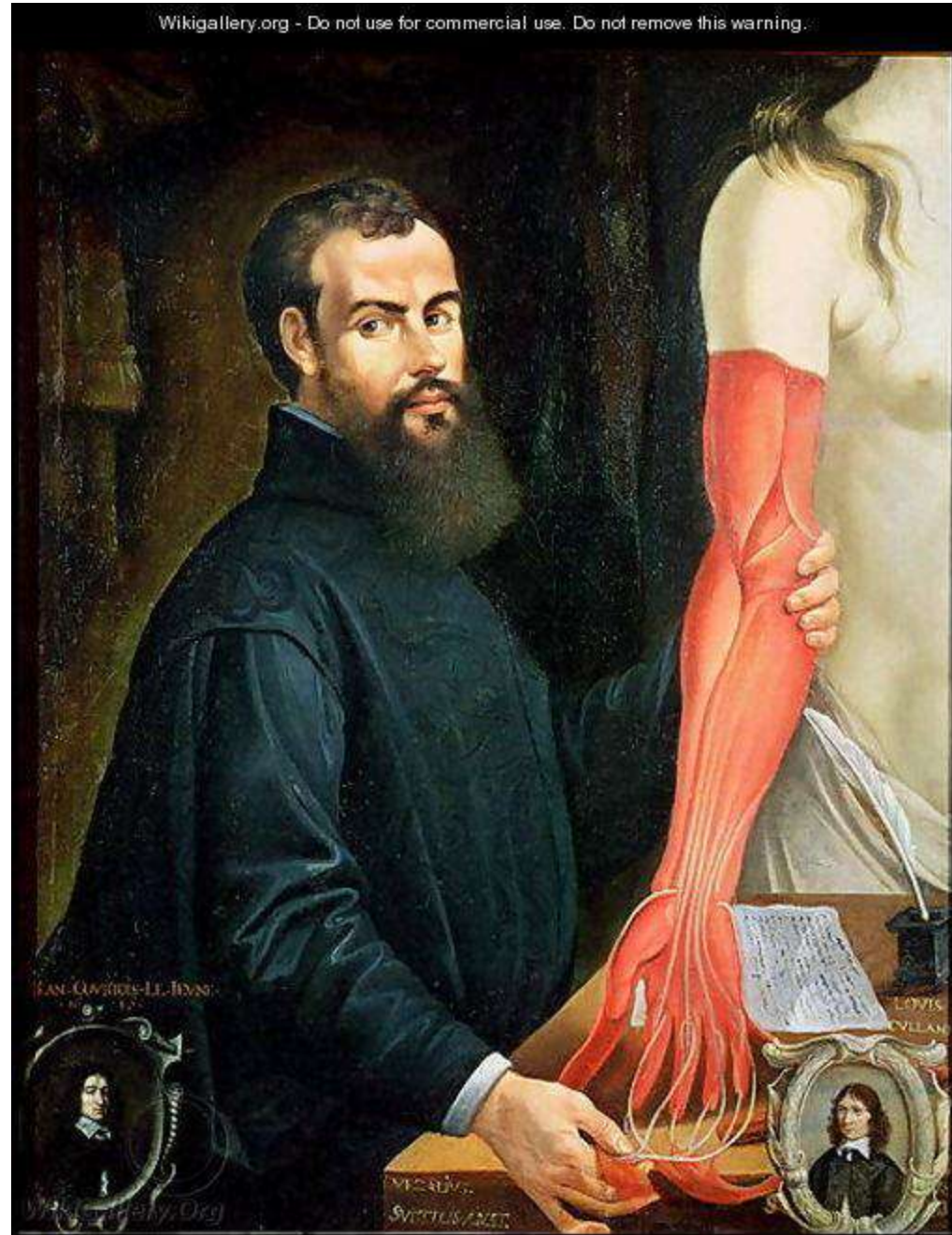
- 1) Principles of Anatomy and Physiology. Tortora and Derrickson. 12th Edition
- 2) Basic Histology Text and Atlas, Junqueira and Carneiro, 12th Edition
- 3) **Snell's Clinical Anatomy**
- 4) **Colour Textbook of Histology, Gartner and Hiatt**



**Andreas Vesalius
1514-64“**

أندرياس فيزاليوس

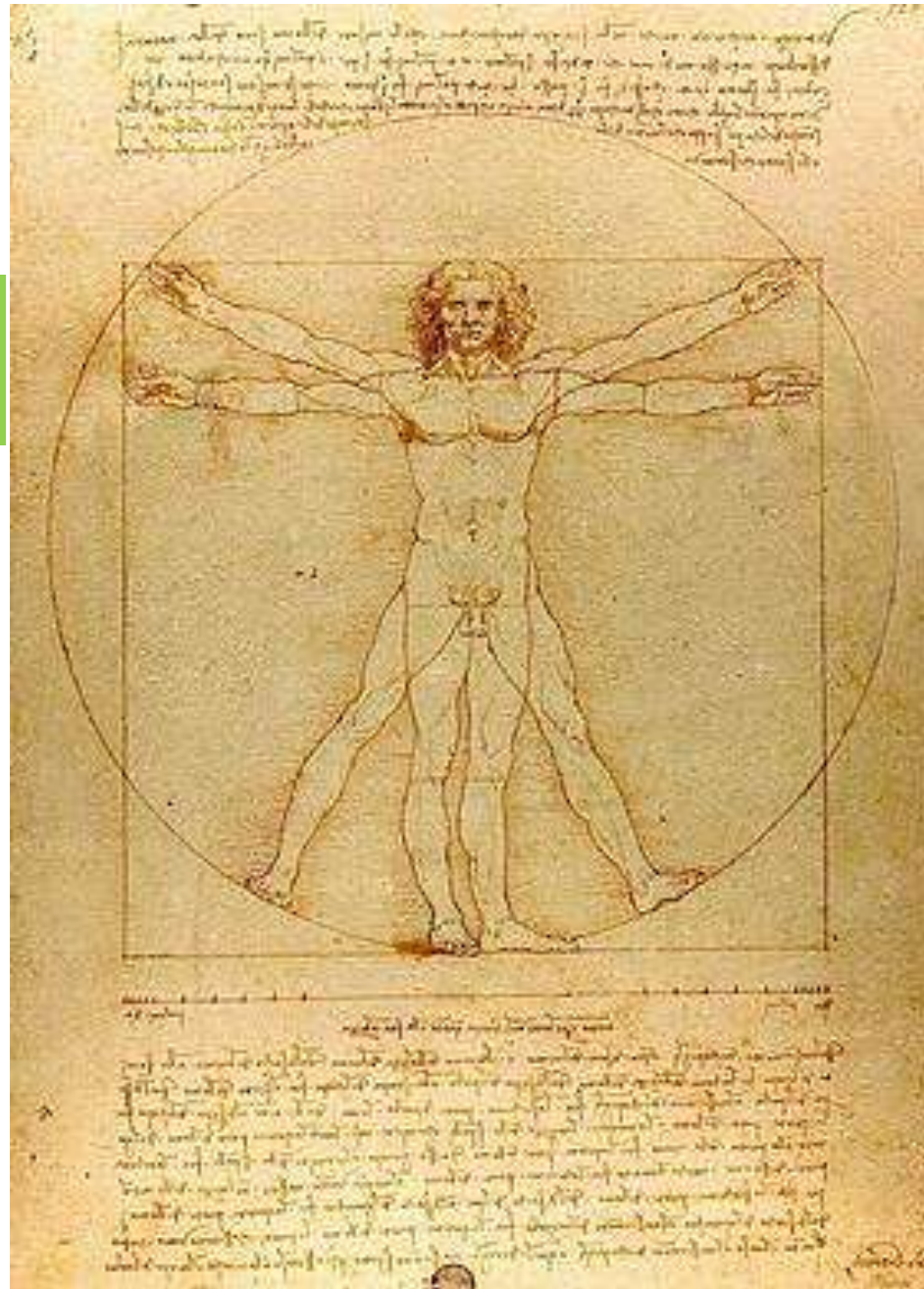
*“On the Fabric of the
Human Body”*



**Leonardo da Vinci 1519 –
1452**

Vitruvian Man

الرجل الفيتروفي



Anatomy

* **Definition:** anatome = up (ana) + cutting (tome).

* **Descriptive anatomy:** **Regional or Systemic.**

* **Regional Anatomy:** parts of body e.g. head, neck, thorax, abdomen, upper limb & lower limb.

* **Systemic Anatomy:** e.g. cardiovascular system, respiratory system, urinary system, etc.

* **Developmental Anatomy (Embryology).** مراحل تطور الجنين

* **Applied Anatomy (clinical).** The relationship between anatomy and

* **Radiological Anatomy.**

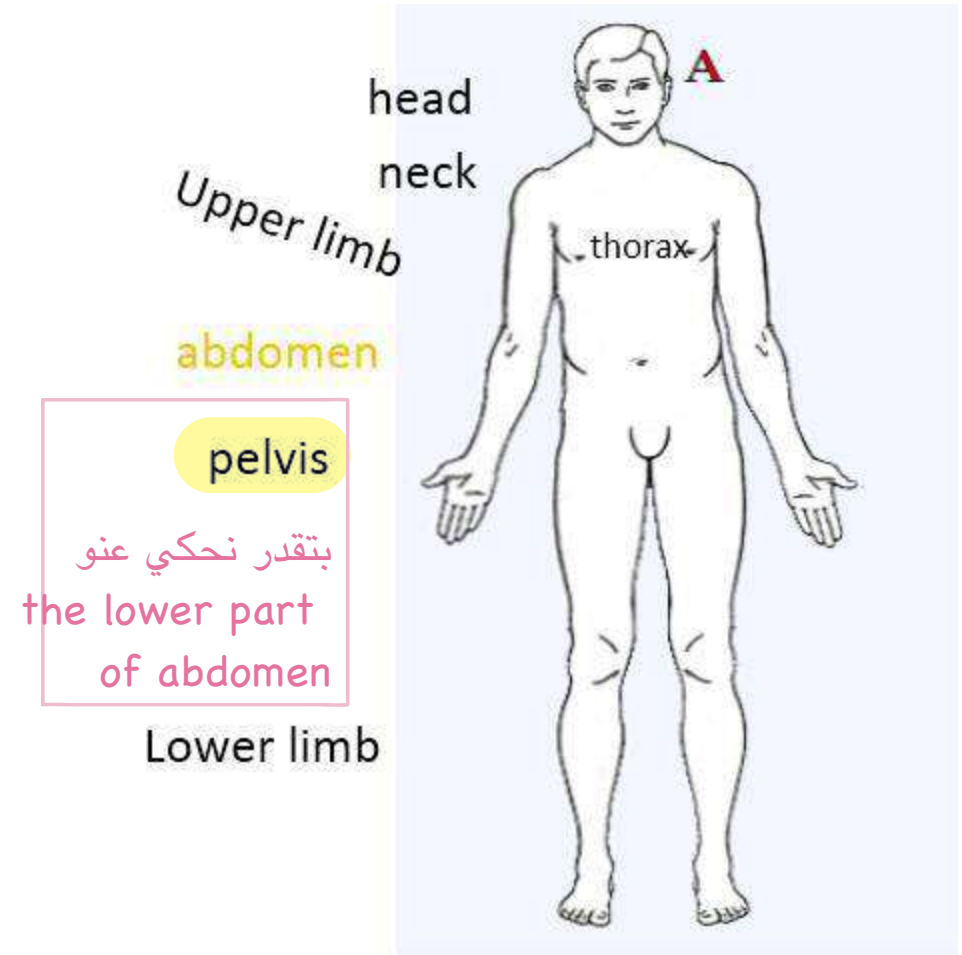
* **Surface Anatomy.**

دراسة الانتومي من خلال انواع
الاشعة مثل x-ray & MRI

دراسة Skin structure

Body Regions

1. Head and Neck.
2. Abdomen & Pelvis.
3. Lower limb.
4. Upper limb.
5. Thorax.
6. Brain & spinal cord (Neuroanatomy).



Gross anatomy

➤ Regional Anatomy:

Study of all the structures present in a specific region of the body.

Major regions of the body:

1) Head and neck

2) Thorax = Chest

3) Abdomen

حوض 4) Pelvis/Perineum

5) Back

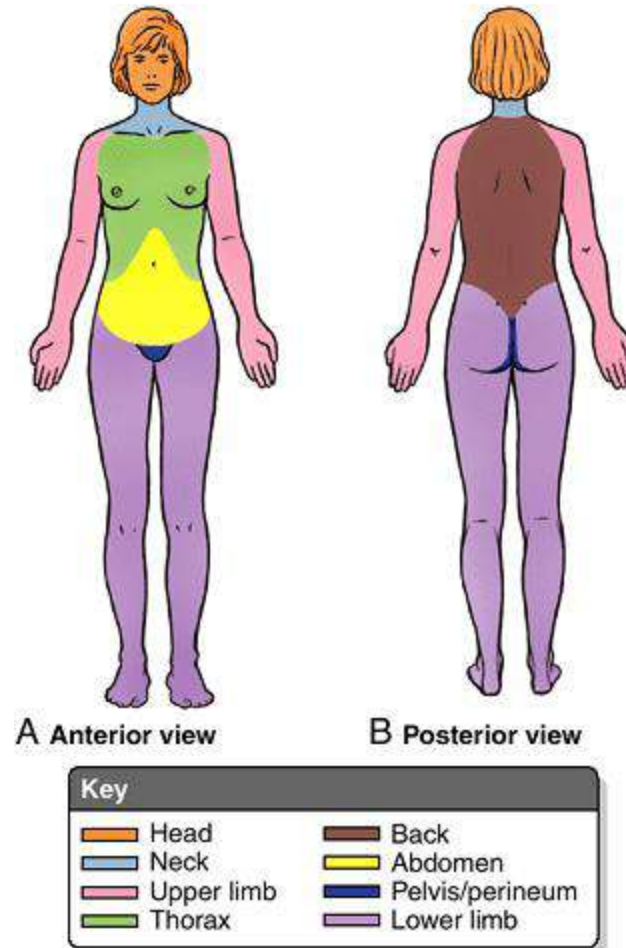
6) Upper limb = shoulder + Arm + Forearm + wrist + Hand

7) Lower limb = buttock (hip) + Thigh + Leg + ankle + Foot

جذع

Trunk

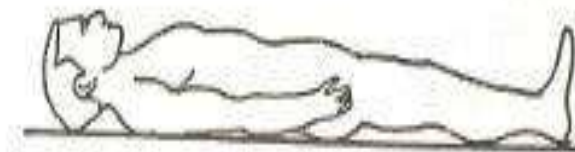
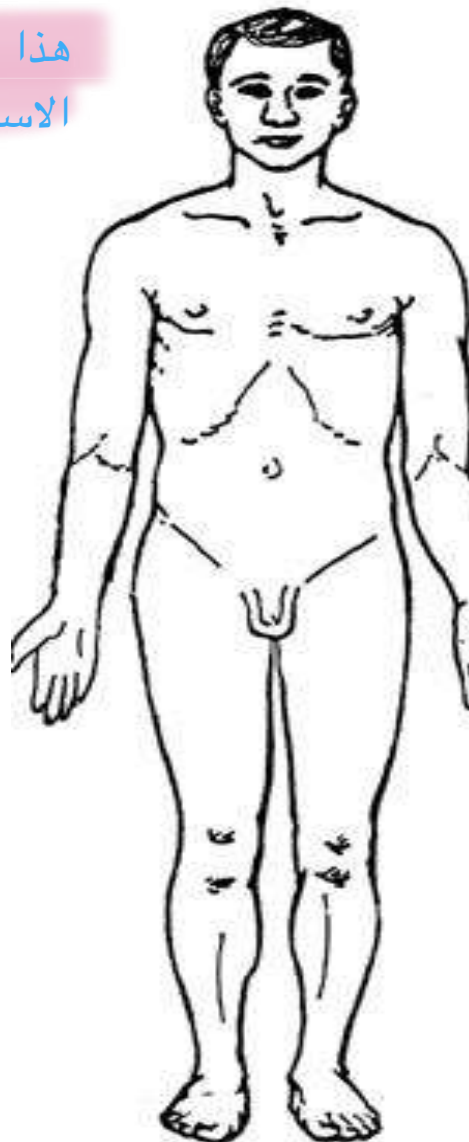
Fig.3: Major regions of the body.



Anatomical Position

هذا هو الوضع المرجعي
الاساسي في علم التشريح :

- **Body erect (person standing).**
- **Face directed forward.**
- **Limbs at sides of body.**
- **Legs & feet close together.**
- **Palms directed forward.**



Supine

على الظهر



prone

على البطن

Anatomical Planes

* **Median (midsagittal) plane** = vertical in midline, divides body into right & left equal parts.

** **Parasagittal** = vertical, parallel to median.

اجزاء غير متساوية

ويمكن التعبير عنه بطريقتان:

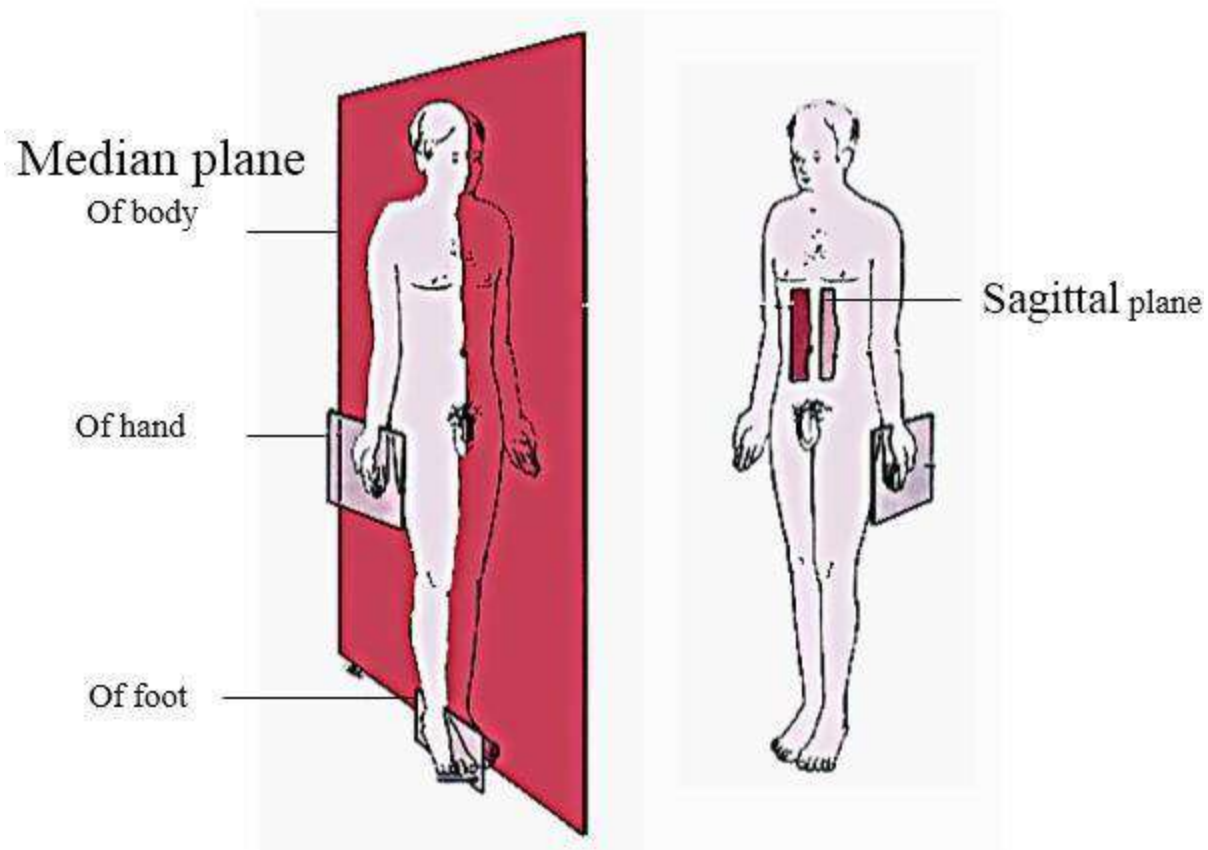
Left Parasagittal

plane : هون بكون الجزء الايمن اكبر من الجزء الايسر

Right parasagittal

plane: هون بكون الجزء الايسر اكبر من الايمن

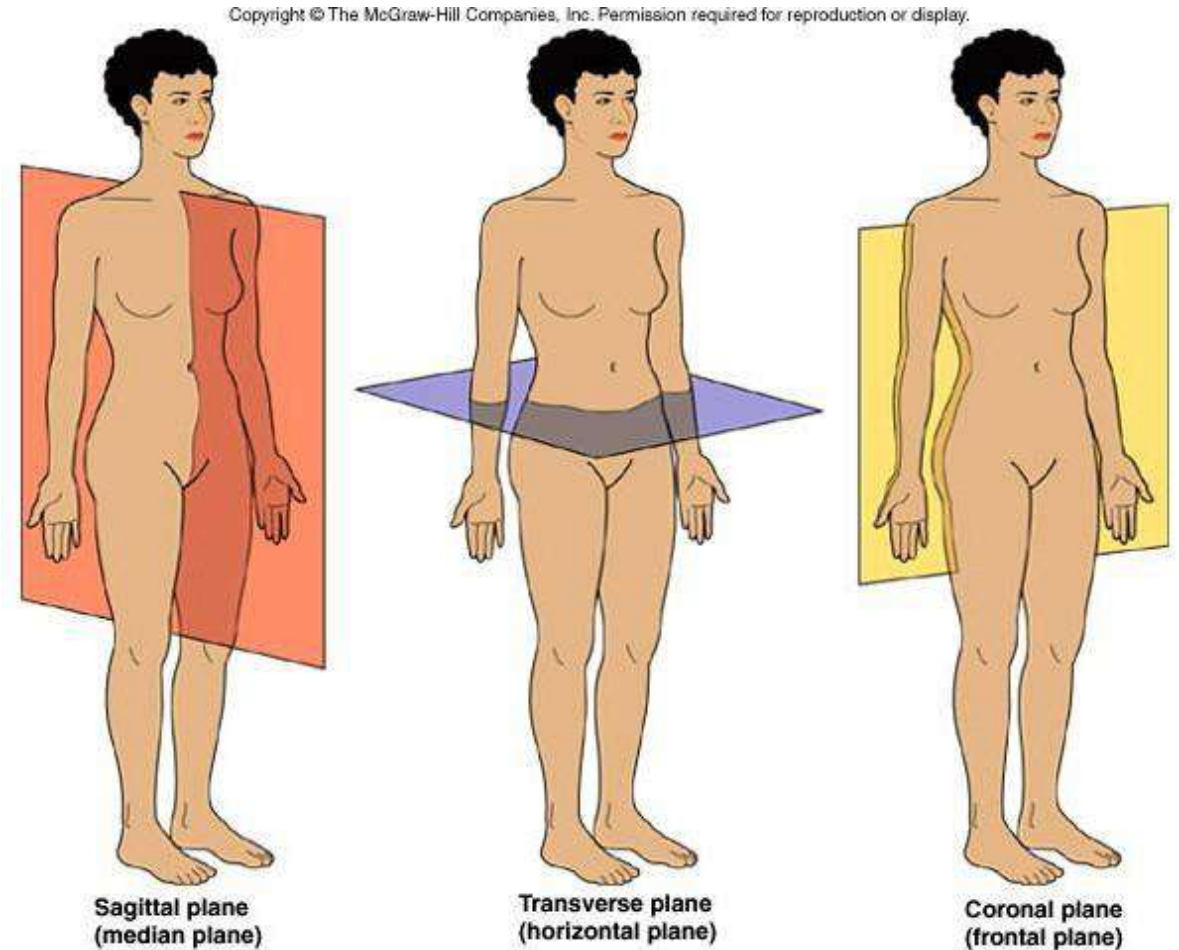
Median Plane



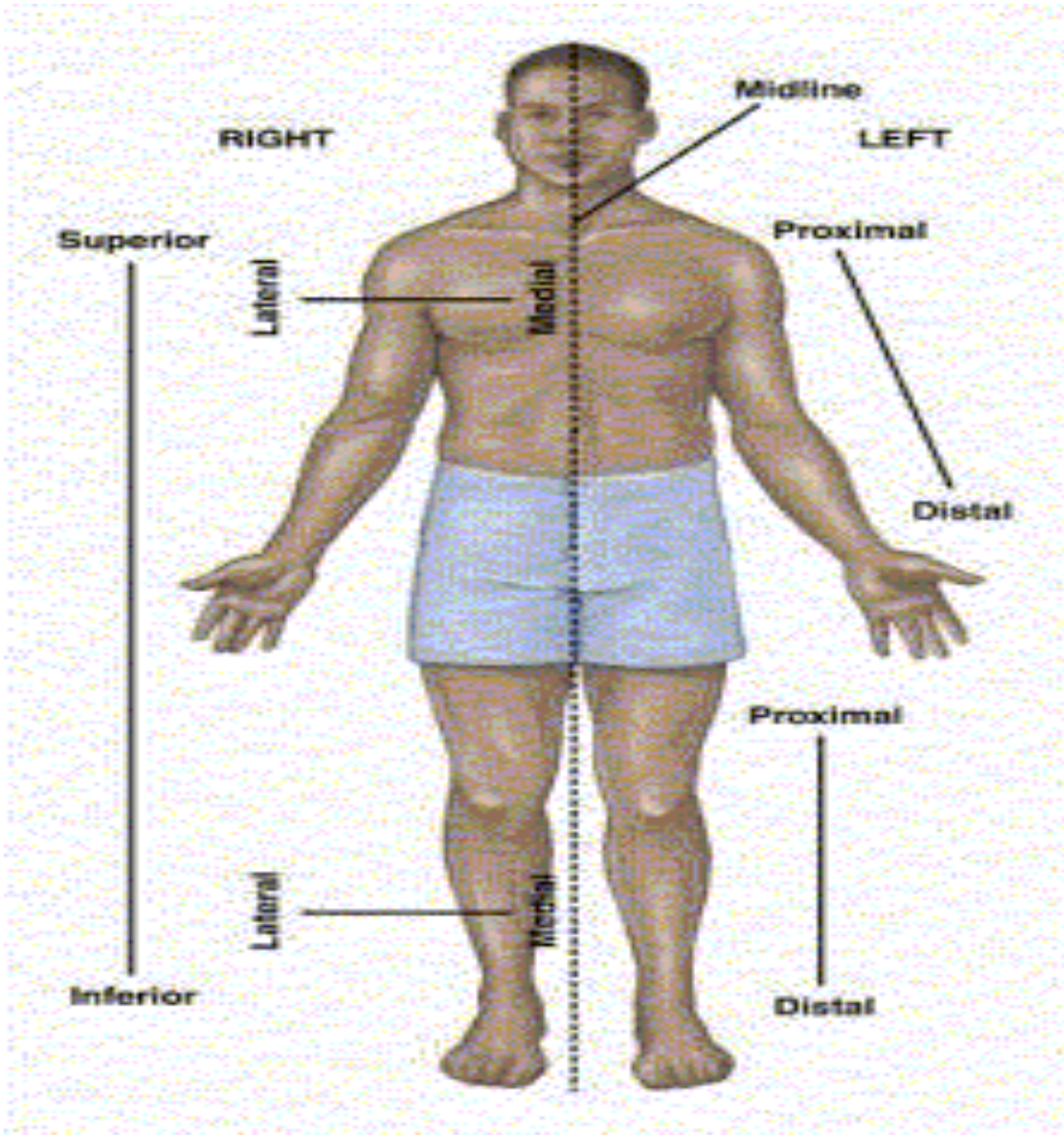
Anatomical Planes

* **Coronal plane** = vertical, perpendicular to median, divides body into anterior & posterior parts.

* **Horizontal (transverse)** = perpendicular to median & coronal planes divides body into upper & lower parts.



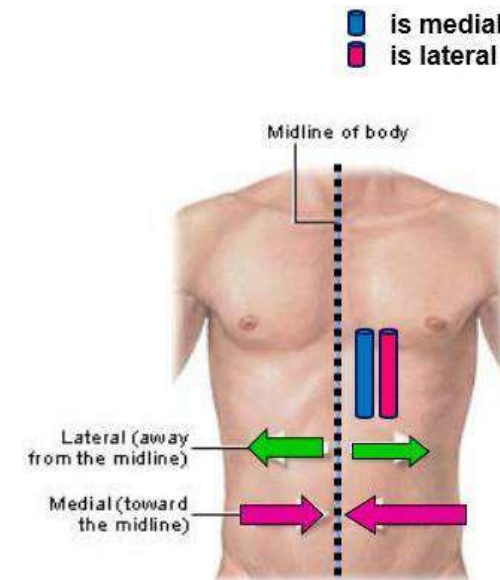
Anatomical Terms



1. Medial & Lateral:

* Medial = closer to median plane.

* Lateral = away from median plane.



2. Anterior & posterior:

- **Anterior or Ventral** → towards the front of the body
- **Posterior or dorsal** → towards the back of the body
- **Anterior surface of hand** → palmar surface
- **Posterior surface of hand** → dorsal surface
- **Upper surface of foot** → dorsal surface
- **Lower surface of foot** → plantar surface



3. Superior & inferior:

لا توجد حالة مطلقة
بنقدر نحكي عنها

superior or inferior

•* **Superior**
(**cephalic or cranial**) =
towards head.

التحديد يعتمد على
مقارنة جزء بجزء اخر

* **Inferior (caudal)**
= **towards feet.**



4. Proximal & Distal:

***Proximal** →
closer to trunk.

***Distal** → **away
from trunk.**

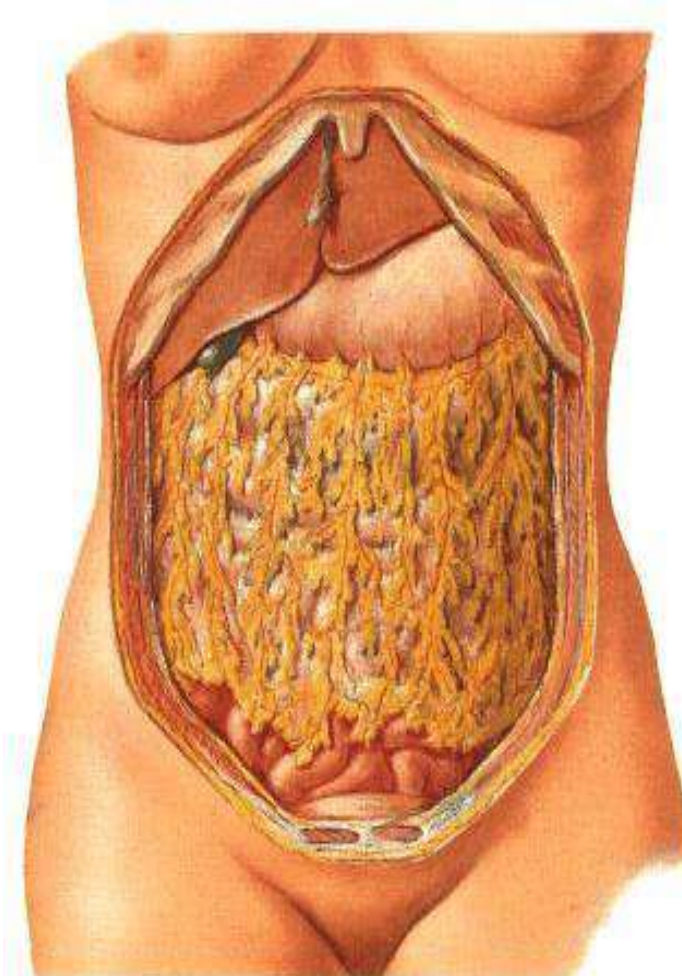


5. Superficial &

Deep: مرتبط بال skin

* **Superficial** →
towards surface of
body.

* **Deep** → **away from**
surface of body.



Anatomical Terms

- * **Medial** = closer to median plane.
- * **Lateral** = away from median plane.
- البطني * **Anterior (ventral)** = towards front of body.
- الظهري * **Posterior (dorsal)** = towards back of body.
- العلوي * **Superior (cephalic or cranial)** = towards head
- السفلي * **Inferior (caudal)** = towards feet.
- السطحي * **Superficial** = towards surface of body.
- العمق * **Deep** = towards center of body.
- القريب من الجذع * **Proximal** = nearer origin.
- البعيد من الجذع * **Distal** = further from origin.

هون بنعبر عن
cavity الي الها

* **External (outer):** means towards the surface and applies to the hollow-out structure.

* **Internal (inner):** means towards the cavity of a hollow-out structure.

* **Central:** means towards the center of the body.

* **Peripheral:** means away from the center of the body.

* **Ipsilateral:** means of the same side of the body.

* **Contralateral:** means of the opposite side of the body.

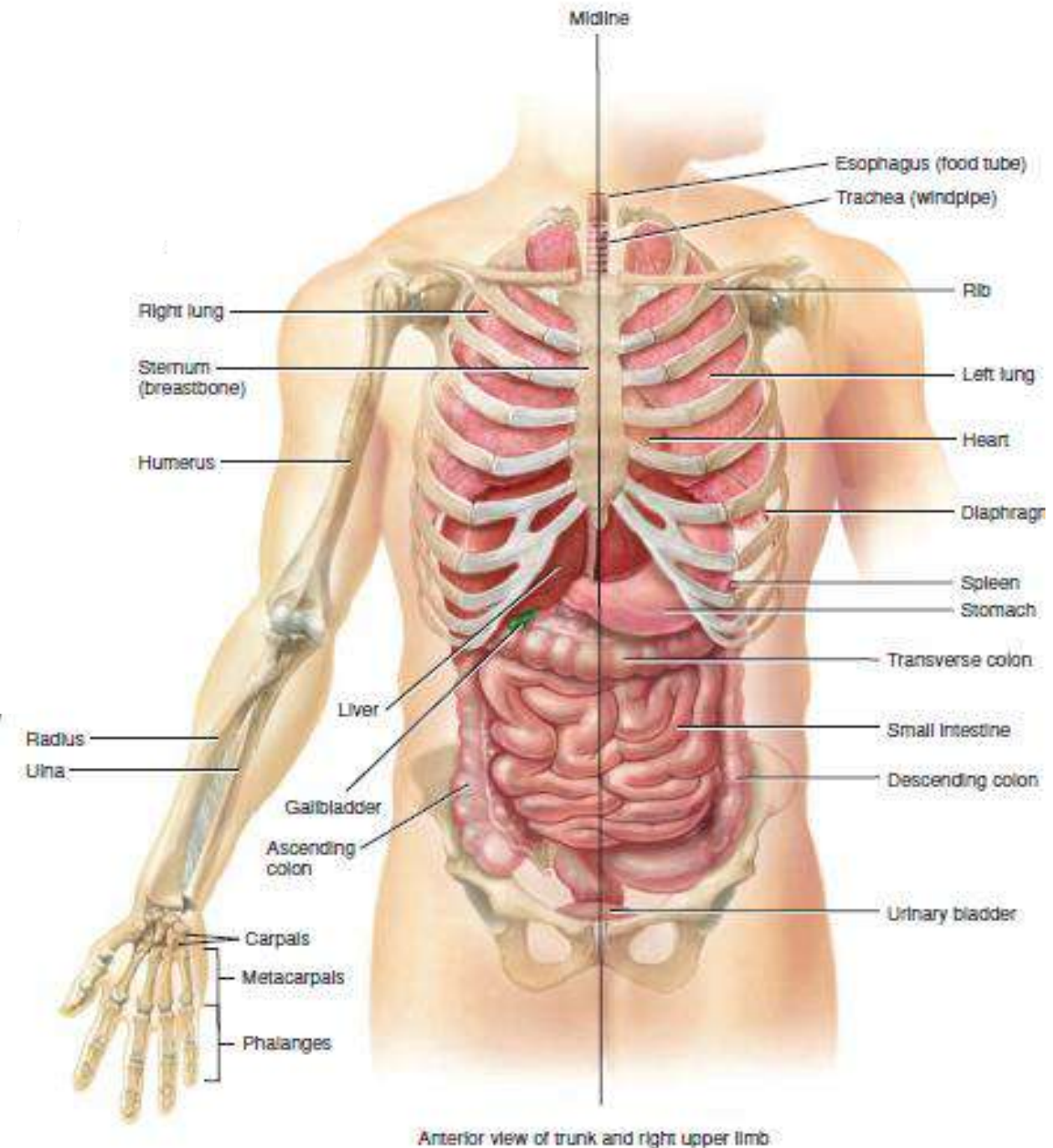
بنستخدمها كثير بوصف brain & nerve

Specific terms for the limbs :

- **In the forearm :** radial = lateral & ulnar = medial.
- **In the hand :** palmar = anterior & dorsal = posterior.
- **In the leg:** fibular = lateral & tibial = medial.
- **In the foot:** plantar = inferior & dorsal = superior.

Quiz #1

1. Is the radius proximal to the Humerus?
2. Is the Esophagus anterior to the trachea?
3. Are the ribs superficial to the lungs?
4. Is the urinary bladder medial to the ascending colon?
5. Is the sternum lateral to the descending colon?



Answers for quiz # 1

1. No, the radius is distal to the humerus.
2. No, the esophagus is posterior to the trachea.
3. Yes, the ribs are superficial to the lungs.
4. Yes, the urinary bladder is medial to the ascending colon.
5. No, the sternum is medial to the descending colon.

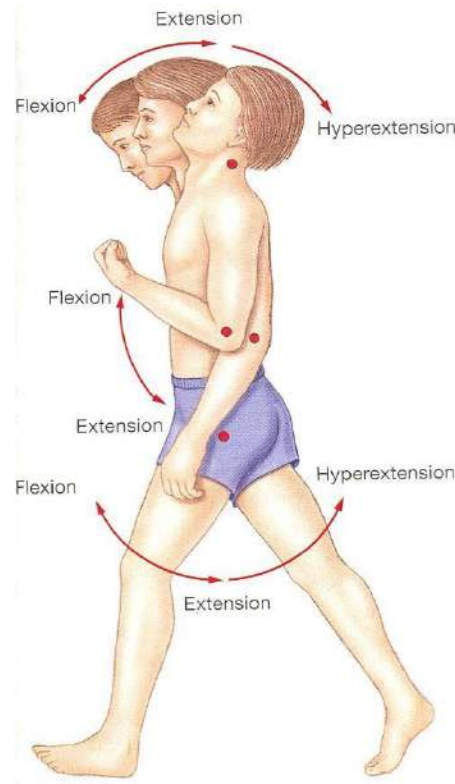
Anatomical Terms of Movements

حركة وعكسها دائما

- **Flexion** → to bend = angle = approximation of 2 ventral surfaces
- **Extension** → to stretch = straighten = approximation of 2 dorsal surfaces.

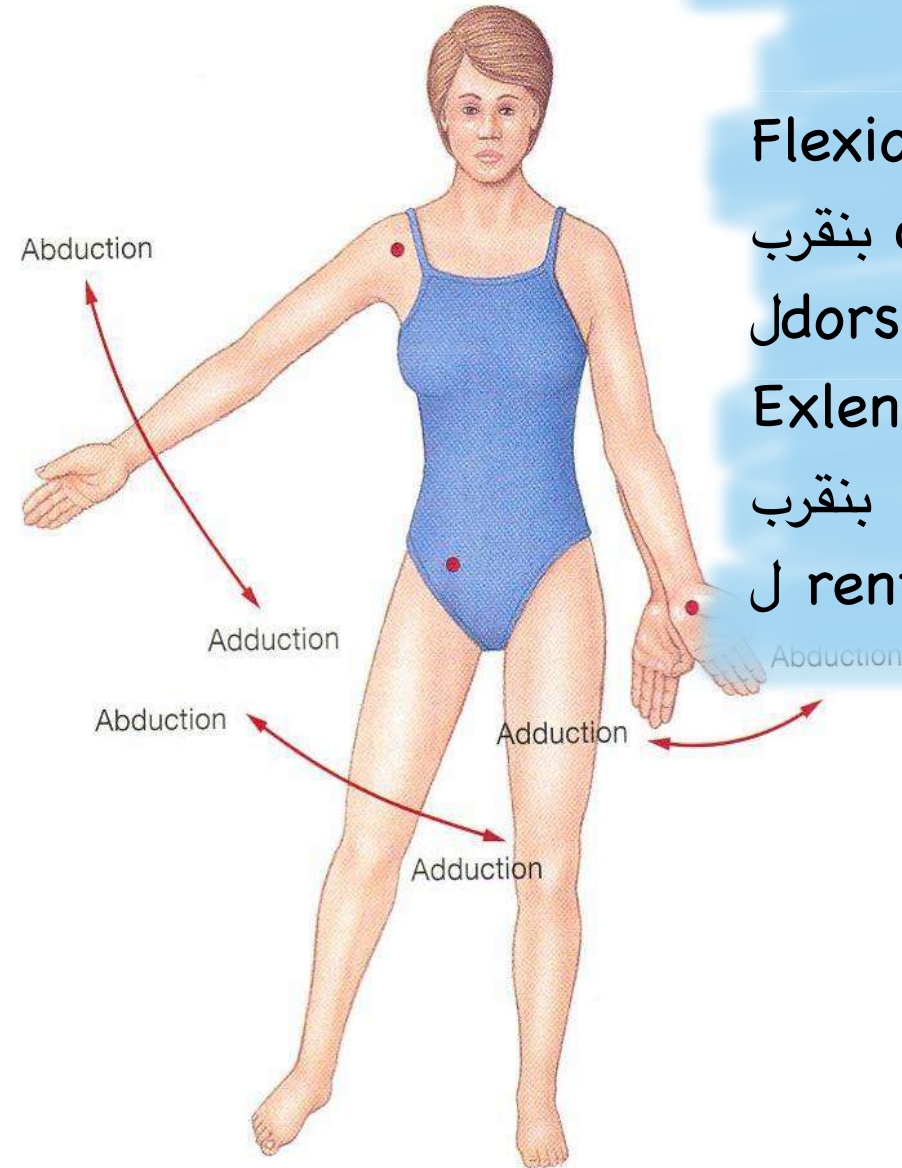
Flexion : نصنع زاوية

Extension : بنشيل الزاوية ونرجع العضو مستقيم



• **Abduction** ^{ابعد} →
moving a part
away from
midline.

• **Adduction** ^{اضم} →
moving a part
towards the
midline.



يوجد استثناء
فقط للركبة بحيث
في حالة :

Flexion :

dorsal بنقرب

Jdorsal

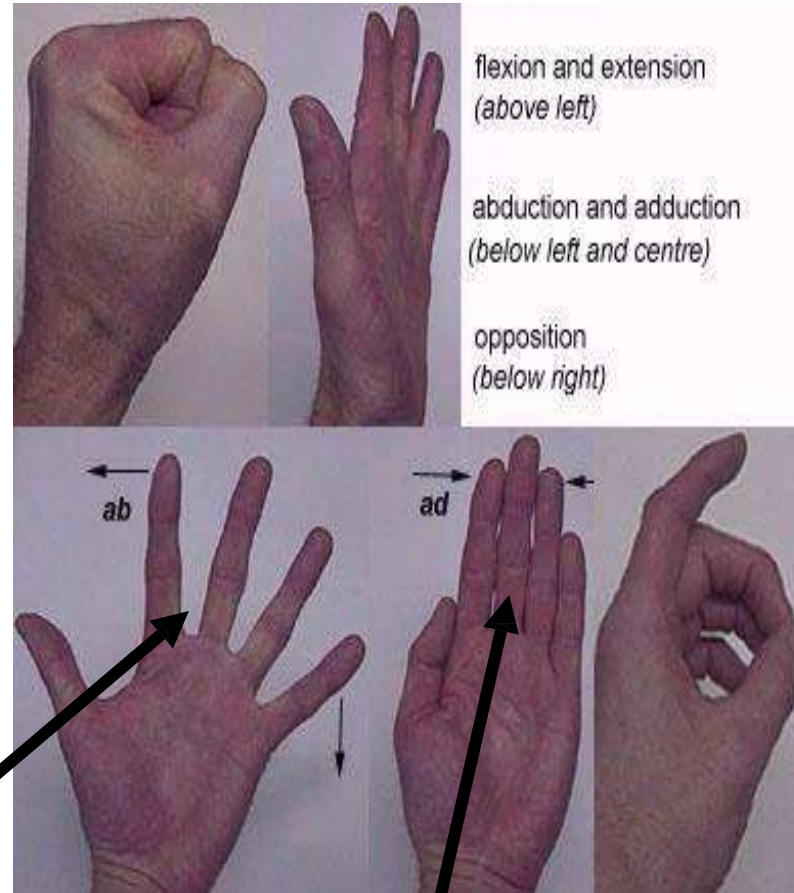
Exlension :

rentral بنقرب

J rentral

• **Abduction of fingers & toes** → spreading of fingers or toes apart.

• **Adduction of fingers & toes** → drawing or approximating fingers or toes together.



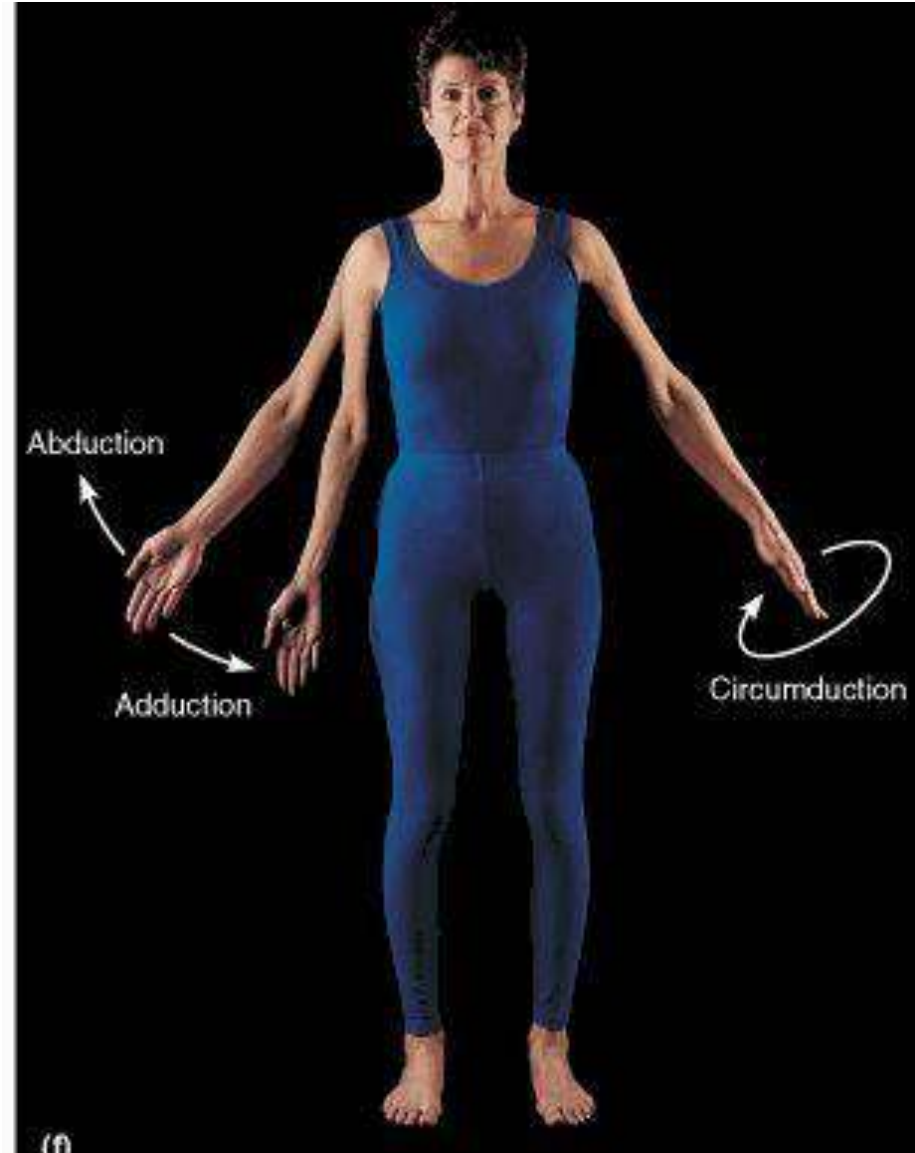
في اليد بنحدد
بالنسبة
middle
finger
وفي القدم
بالنسبة ل
second
finger

• **Opposition:** هاي الحالة خاصة بابهام اليد

• **Circumduction** →

the combination
in sequence of
movements of
flexion, abduction,
extension &
adduction.

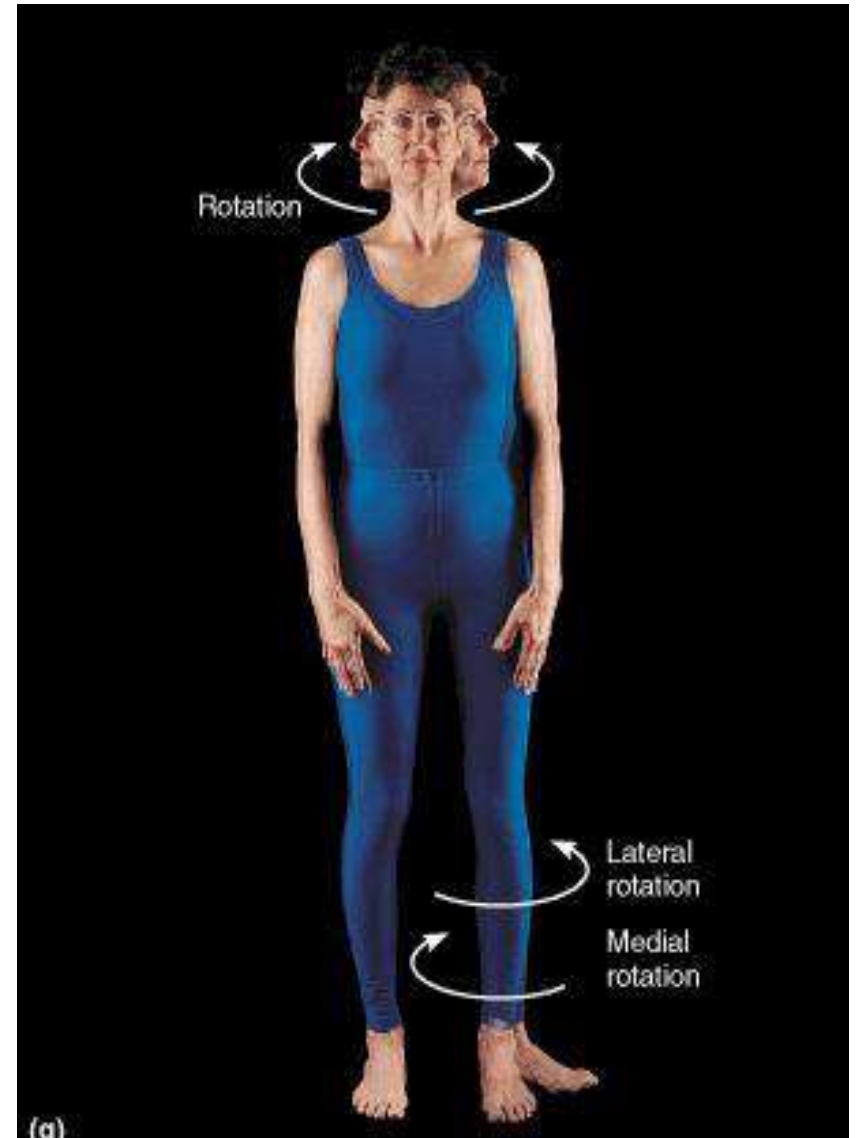
تحصل ايضا في hip and shoulder joint



- **Medial rotation** →
brings anterior surface
to face medially

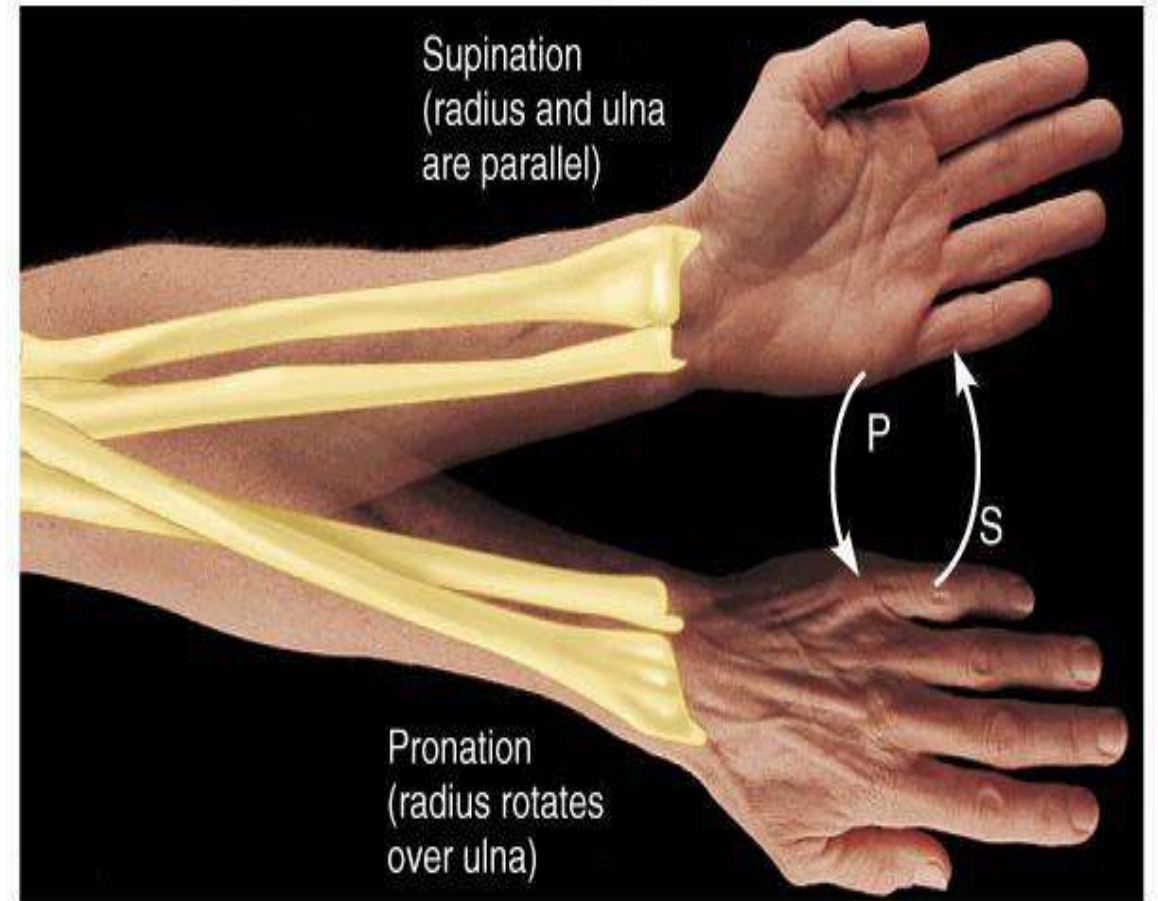
- **Lateral rotation** →
brings anterior surface
to face laterally

تحصل ايضا في shoulder



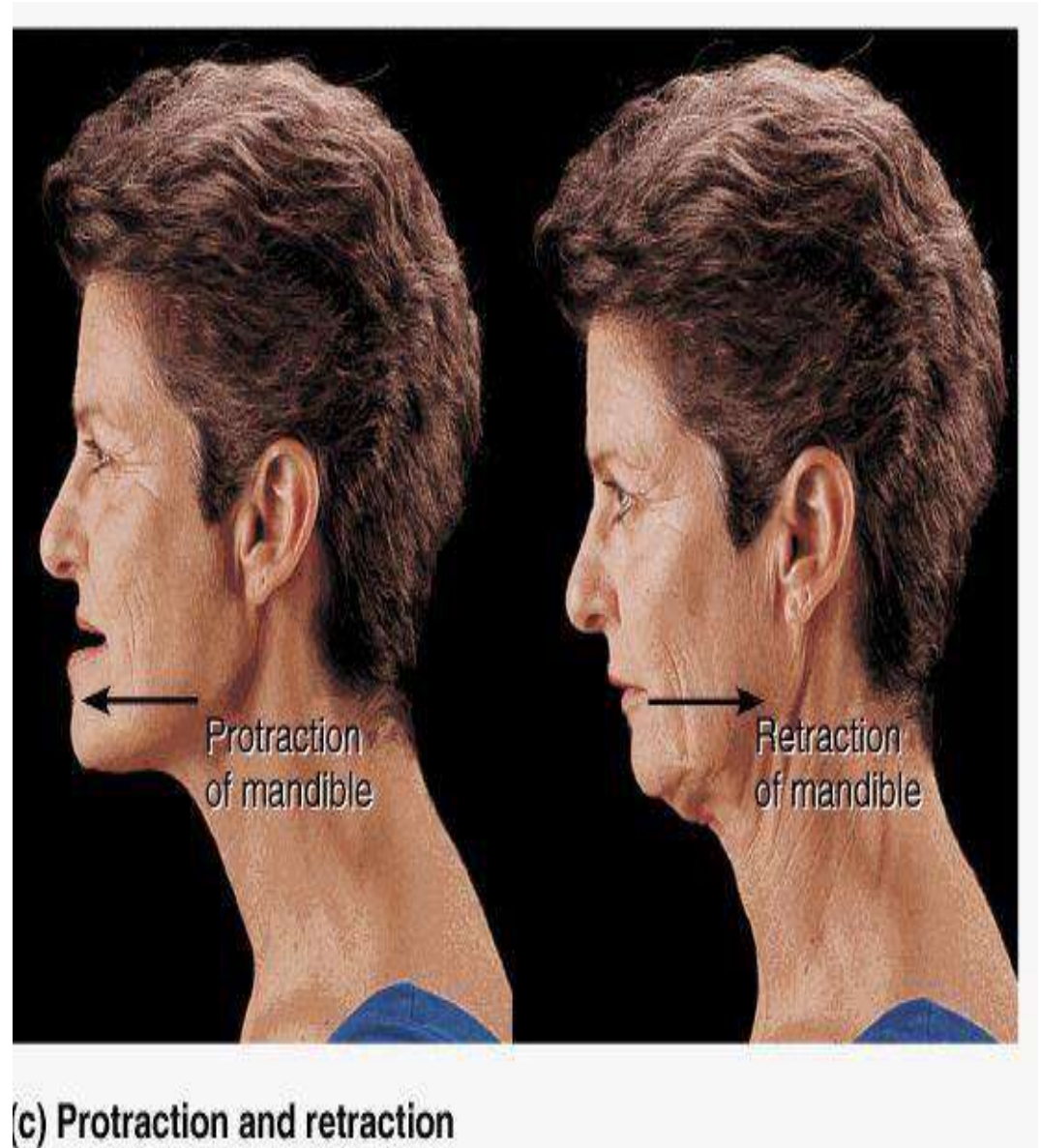
(g)

- **Pronation** → medial rotation of forearm which brings palm of hand to face posteriorly
- **Supination** → lateral rotation of forearm which brings palm of hand to face anteriorly



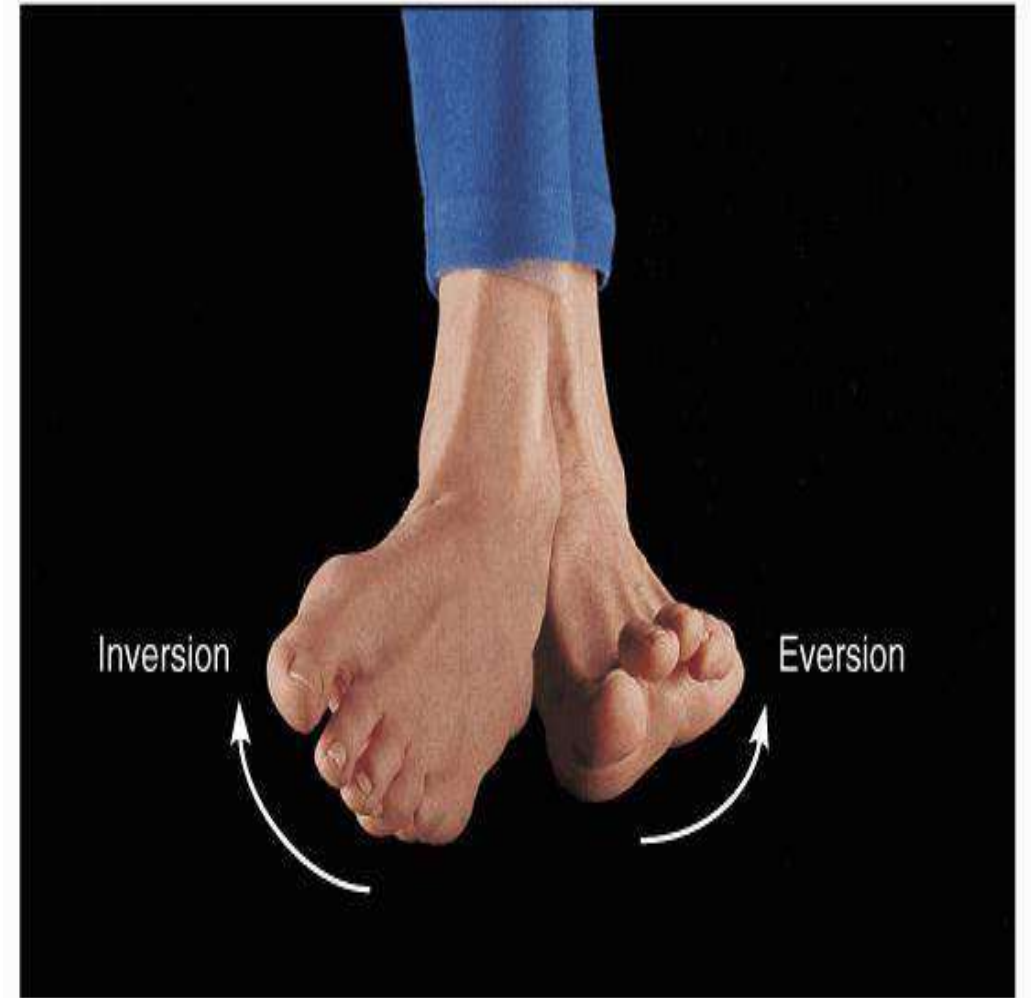
(a) Supination (S) and pronation (P)

- **Protraction** → moving the jaw forwards.
- **Retraction** → moving the jaw backwards.
- **Protraction & retraction can also occur at the shoulders.**



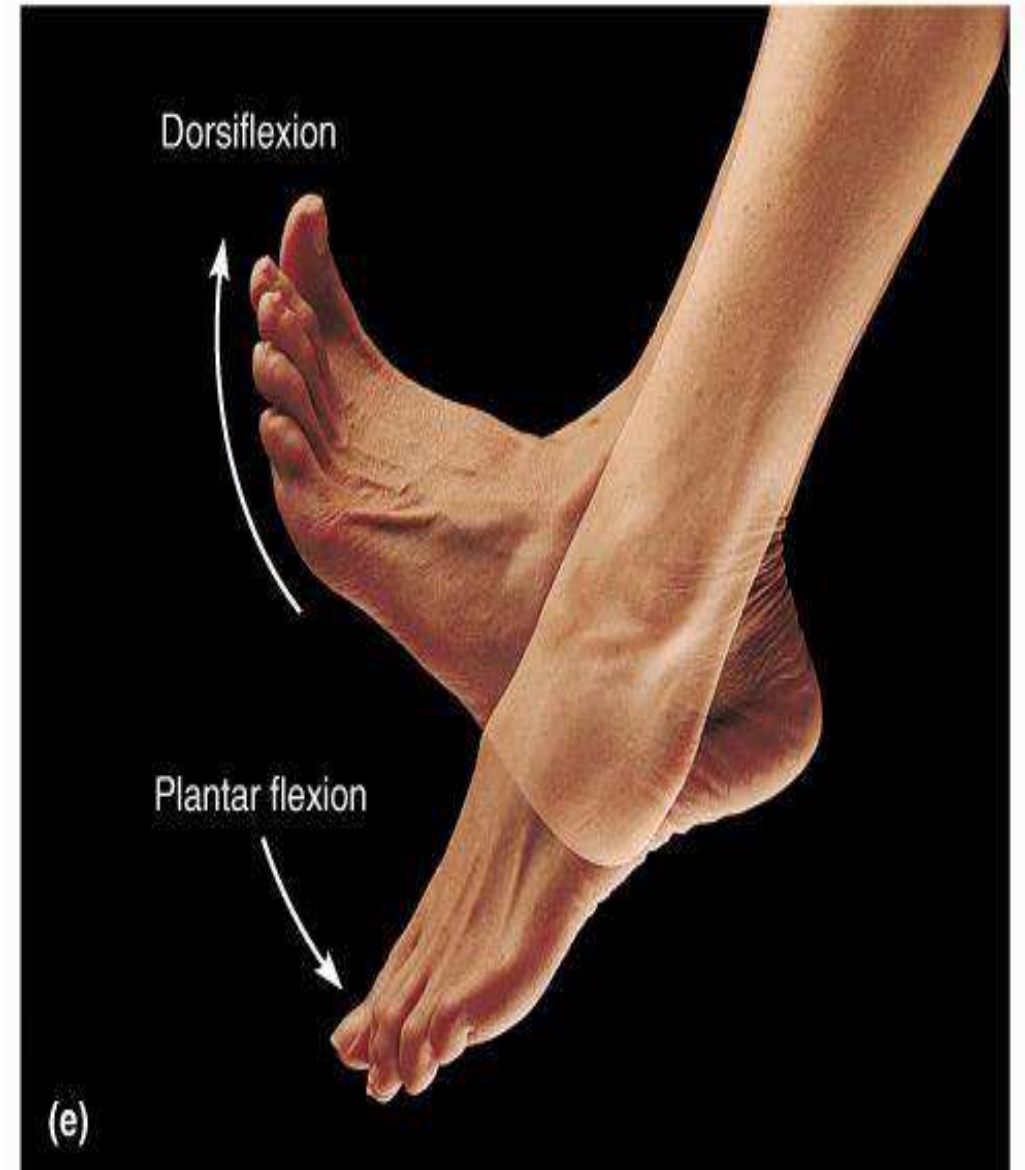
• **Inversion** →
moving foot so that
sole faces medially.

• **Eversion** → moving
foot so that sole
faces laterally.

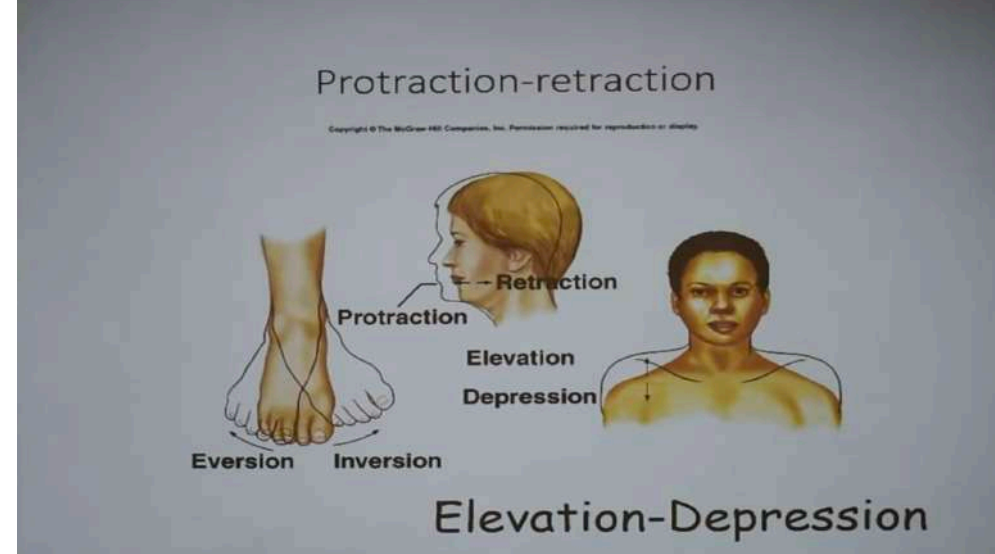
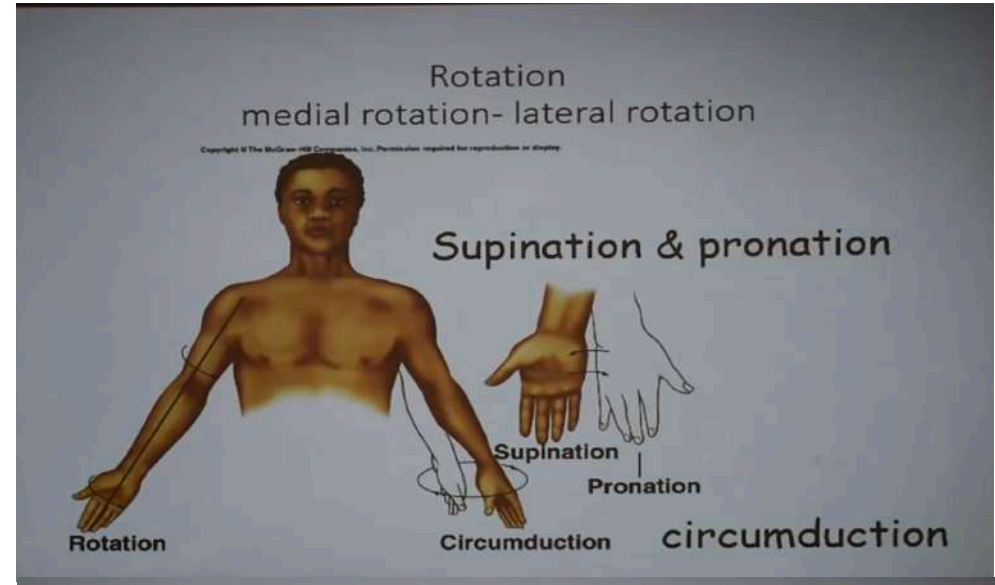
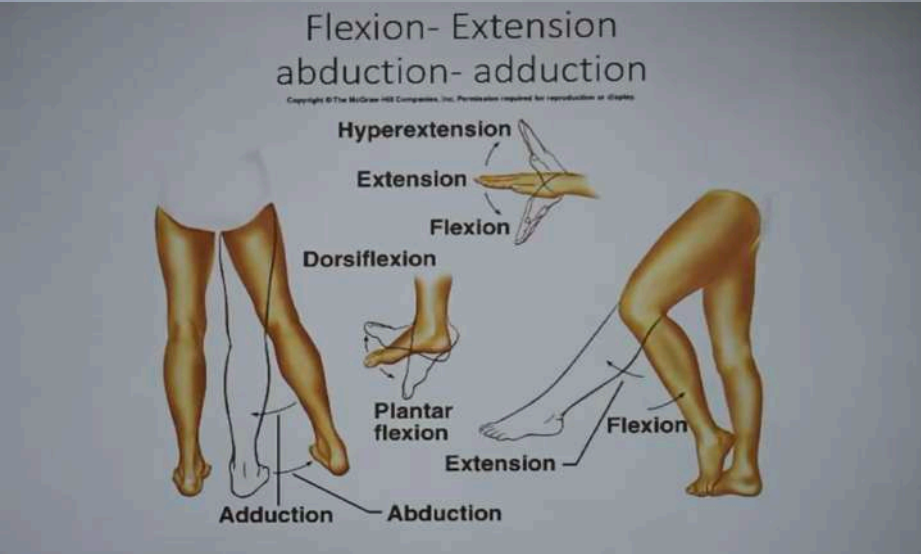
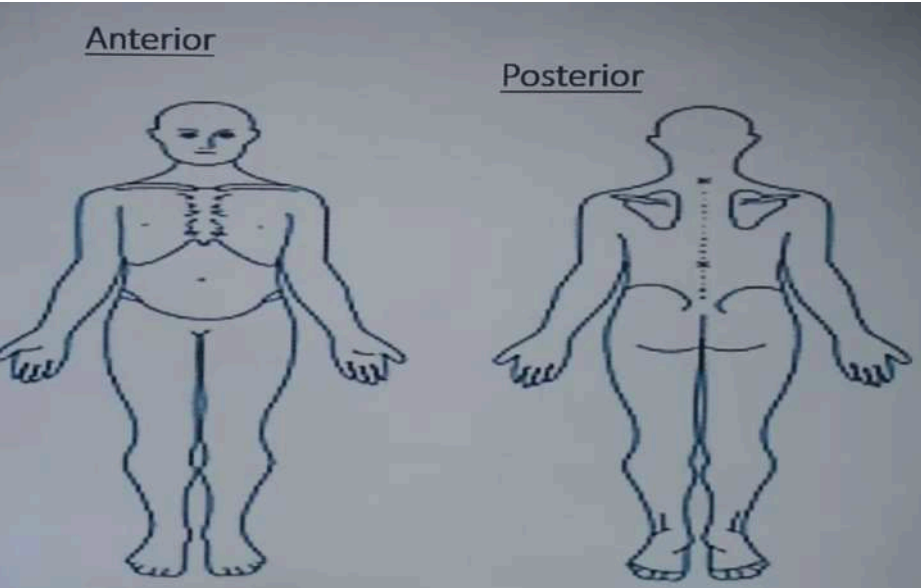


(b) Inversion and eversion

- **Dorsiflexion** → bending foot or ankle upwards.
- **Plantar flexion** → bending foot or ankle downwards.



صور توضيحية :



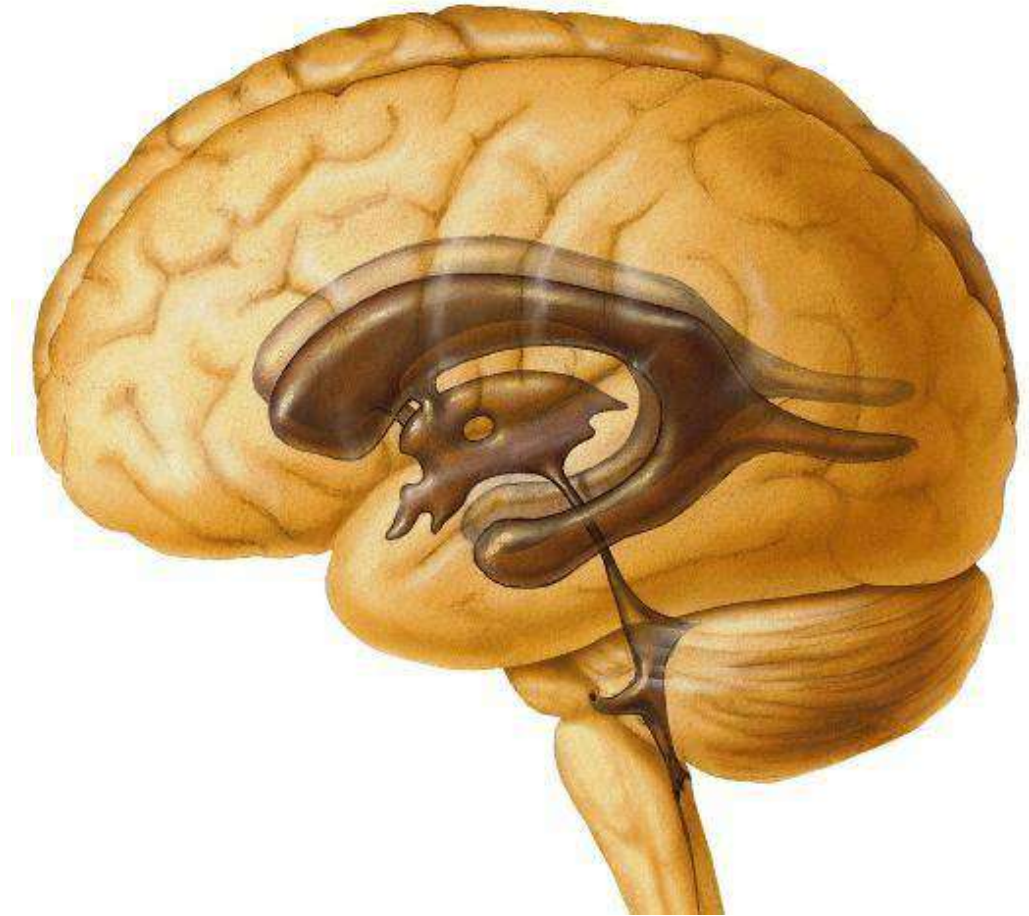
Body Cavities

1. Cranial Cavity

*The cavity inside the skull.

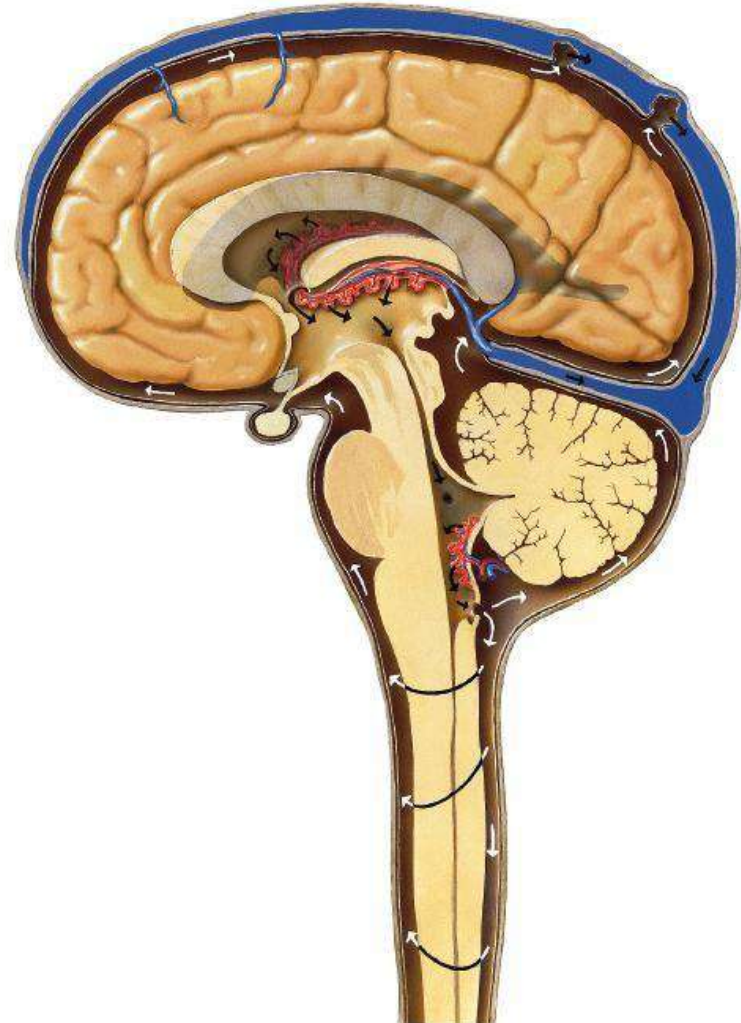
*Contains the brain.

*Meninges



2. Vertebral Cavity

- * The cavity of the vertebral column.
- * Contains the spinal cord.
- * Meninges



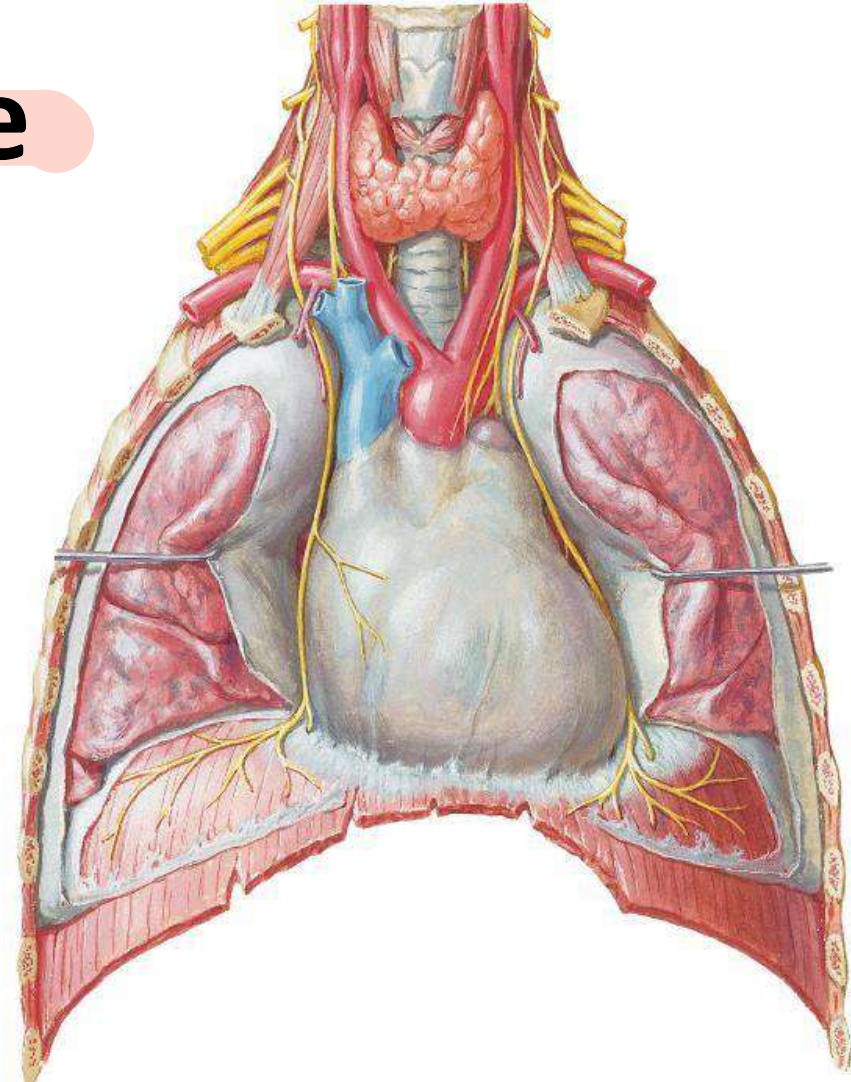
3. Thoracic Cavity

* Contains the heart inside the pericardial cavity.

* Pericardium

* Contains the lungs inside the pleural cavities.

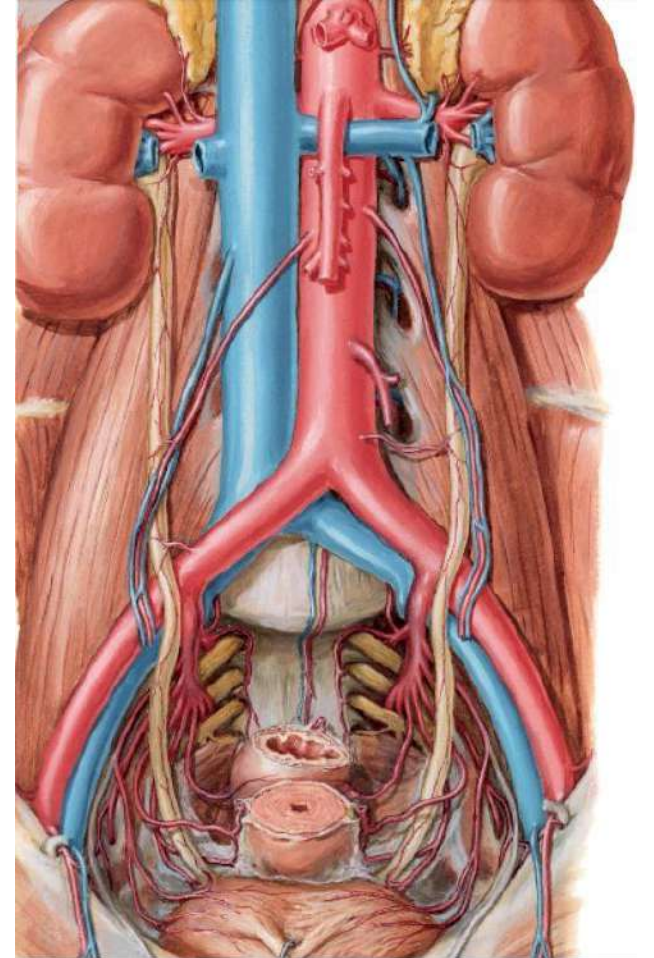
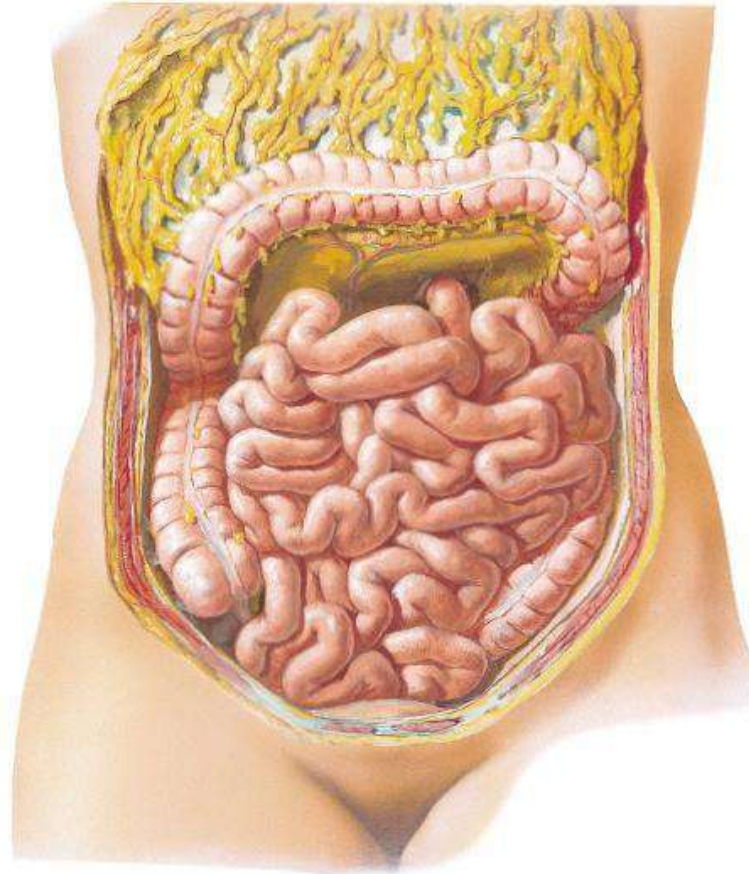
* Pleura



4. Abdominal Cavity

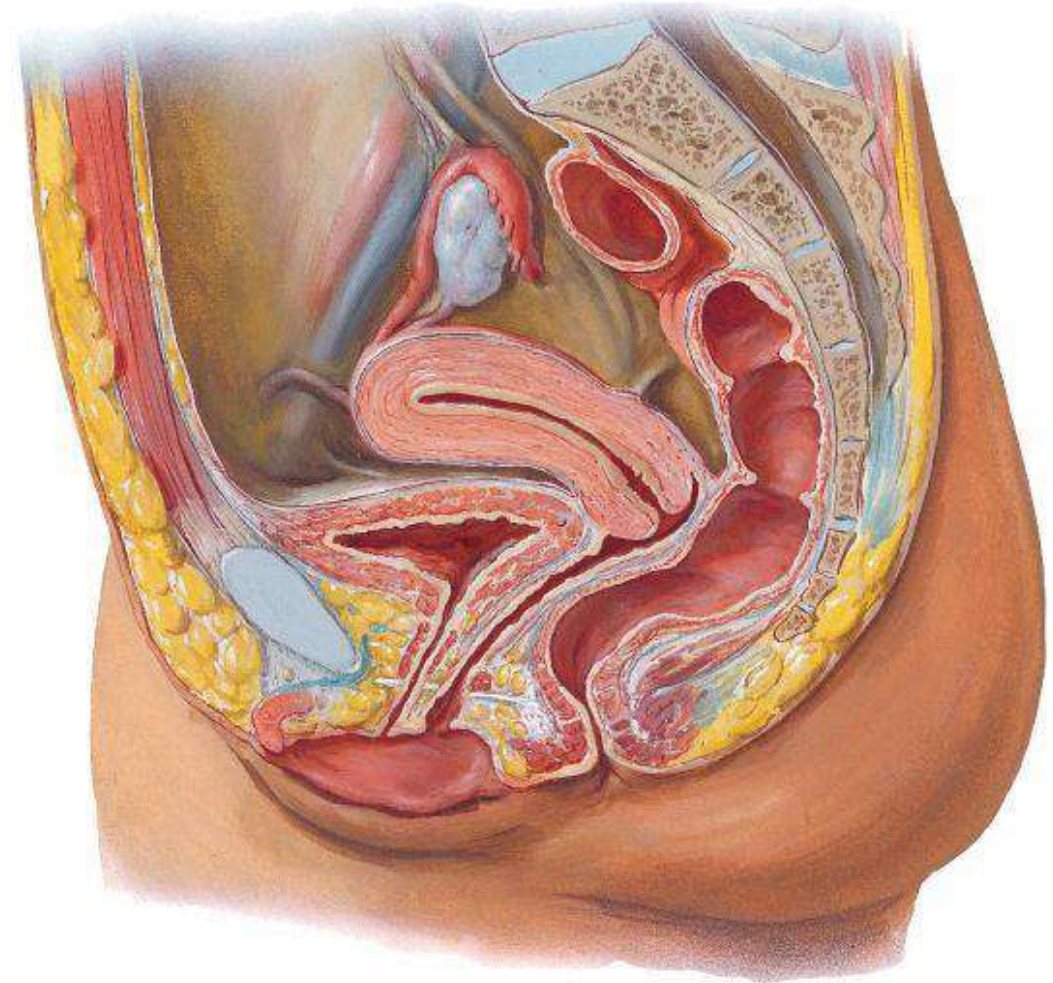
* Contains abdominal organs such as organs of gastro-intestinal tract & kidneys.

* Peritoneum



5. Pelvic Cavity

* Contains pelvic organs such as urinary bladder, rectum & uterus & ovaries (in females).





Thank You
Thank You
Thank You!!!!