

Anatomy

HAYAT BATCH

done by : Rama Abdelsattar Alwraikat

lecture no : Lec 1 (Introduction)



General Anatomy

Lecture 1: Introduction to Human Anatomy

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Anatomical Position & Planes

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* **Anatomy** is the study of structures that can be seen **without** using a microscope (**GROSS ANATOMY**).

* Anatomy forms the basis for the practice of medicine

* Observation and visualization are the primary techniques a student should use to learn anatomy.

تصور أو تخيل to see

ملاحظة

Anatomy → Cutting to study the structure

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

طريقتين لدراسة ال anatomy

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

* **Regional Anatomy:** parts of body e.g. head, neck, thorax, abdomen, upper limb & lower limb.
 كل منطقة لوجها الصدر البطن (٦ أطراف سفلية) رقبية رأس

* **Systemic Anatomy:** e.g. cardiovascular system, respiratory system, urinary system, etc.
 كل جهاز لوجها التنفسي الدوري البولي

* **Developmental Anatomy (Embryology).**

* **Applied Anatomy (clinical).**

* **Radiological Anatomy.** (X-Ray / CT / MRI)
 الأشعة علم الأجنة

* **Surface Anatomy.** اسمع صمامات القلب من خارج الجسم

Branches in anatomy

* **Microscopic Anatomy**
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 مجهرية

↓
 under the microscope → Histology



Body Regions

1. Head and Neck.

2. Abdomen & Pelvis. ^{البطن} ^{حوض}

3. Lower limb. الأضراف السفلية

4. Upper limb. الأضراف العلوية

5. Thorax. الصدر

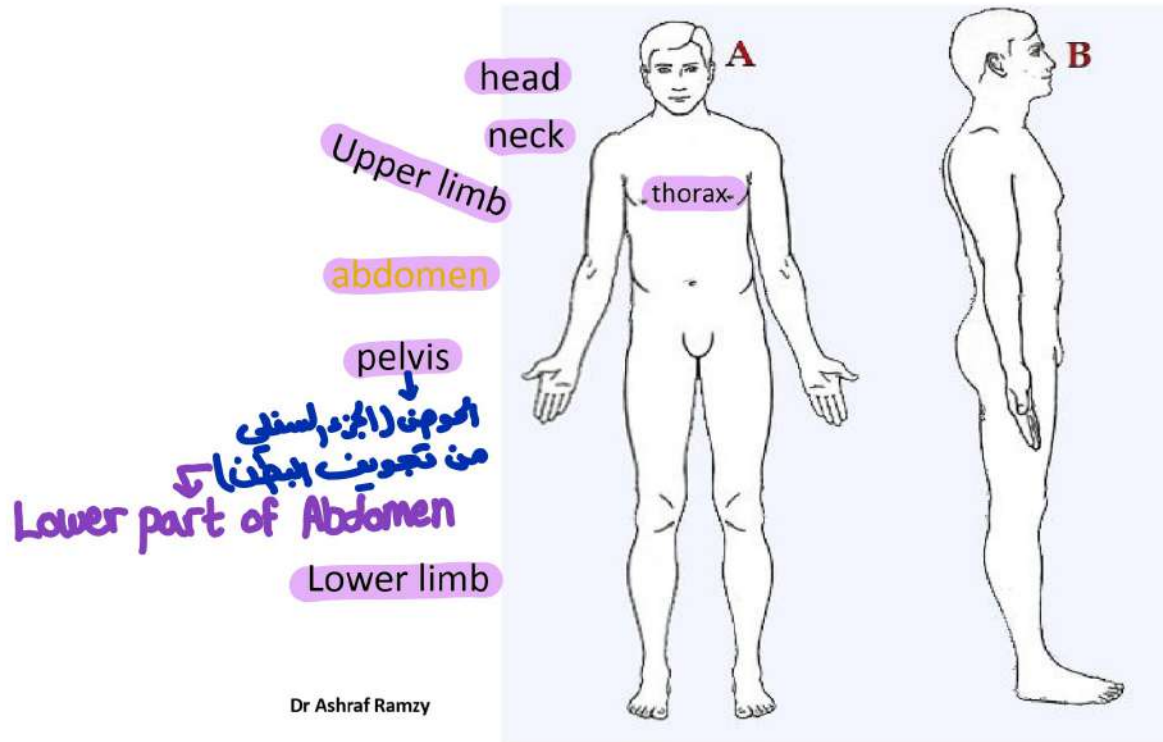
6. Brain & spinal cord (Neuroanatomy). ^{تتبع}

الدماغ

الحبل الشوكي

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تتبع
الاعصاب





Anatomical Position ↓

(الوضع التشريحي)

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

بمراقبة يدي

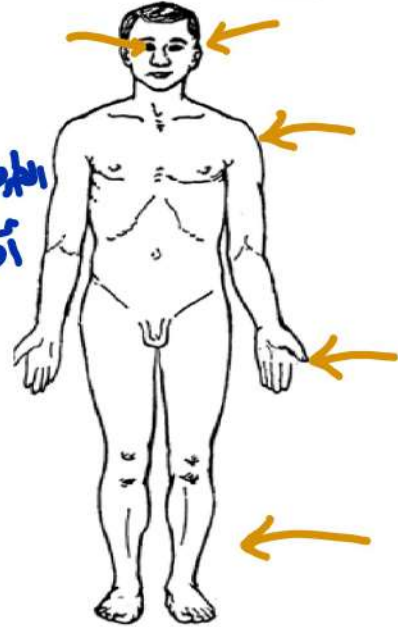
- Eyes opened

قف (معتاد)

للأمام

الطرف العلوي بجوار الجسم أو الجنب

للأمام



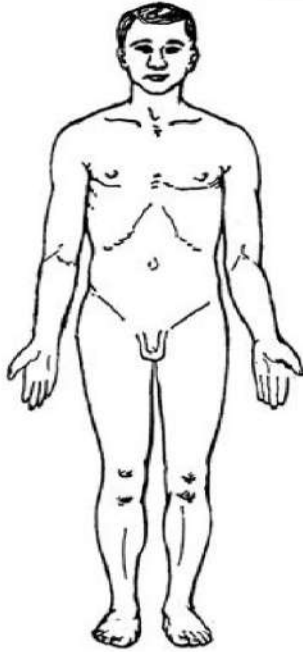


Fig. (1) Anatomical Position



Supine

متخذه انتم على ظهره



prone

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متخذه انتم على صدره
او بطنه



Anatomical Planes

متساويين

* **Median (midsagittal) plane** = vertical in midline, divides body into **right & left equal parts.** (يقسم الجسم بالطول لصفين متساويين (يمين ويسار))

* **Coronal plane** = vertical, perpendicular to median, divides body into **anterior & posterior parts.** (يقسم الجسم بالطول لجزئين (امامي وخلفي))

* **Horizontal (transverse)** = perpendicular to median & coronal planes divides body into upper & lower parts. (يقسم الجسم بالعرض (فوق وتحت) مو متساويين)

* **Parasagittal** = vertical, parallel to median. (يقسم الجسم بالطول (يمين ويسار) مو متساويين)

معلم

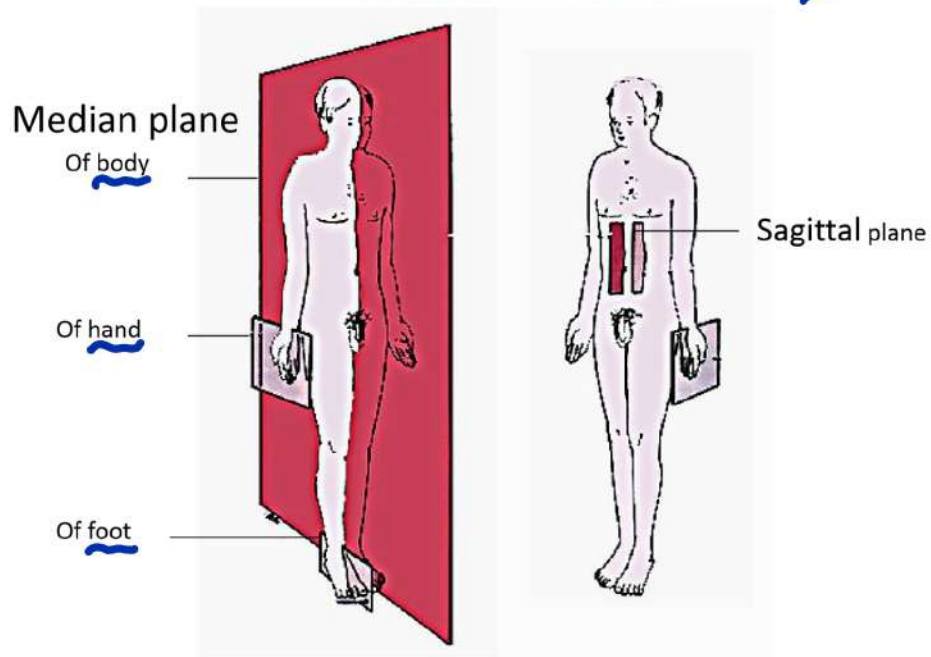
Left Parasagittal → Small left & large right part

Right Parasagittal → Small right & large left part

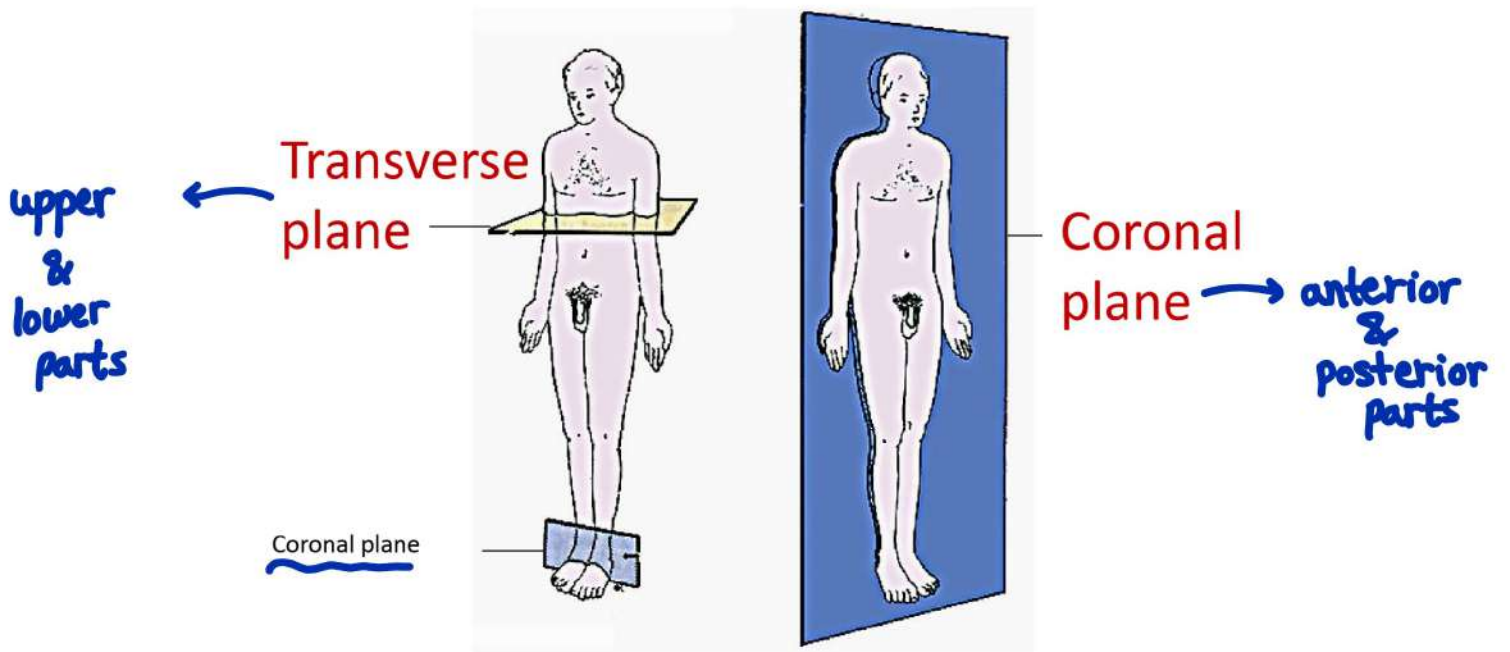




Median Plane → equal left & right parts or sides



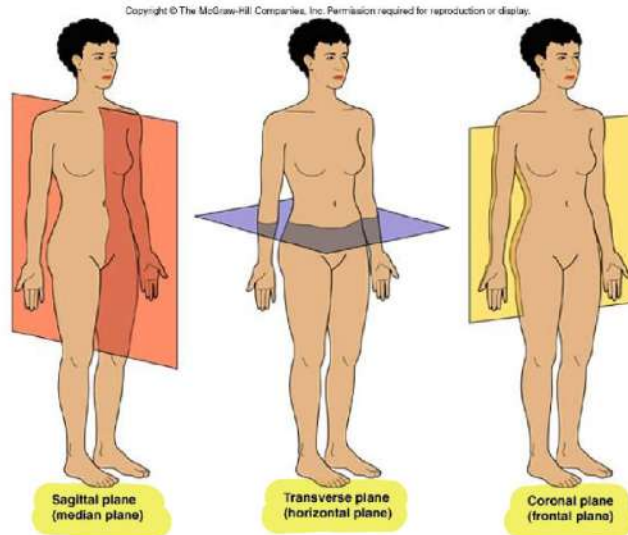
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Anatomical Planes



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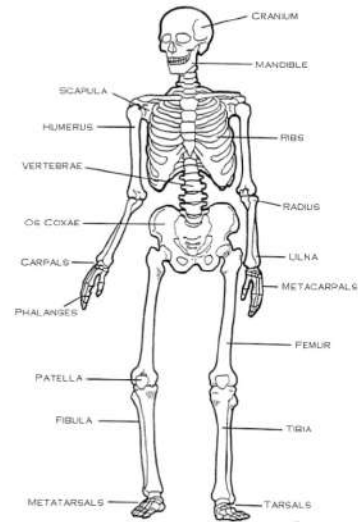
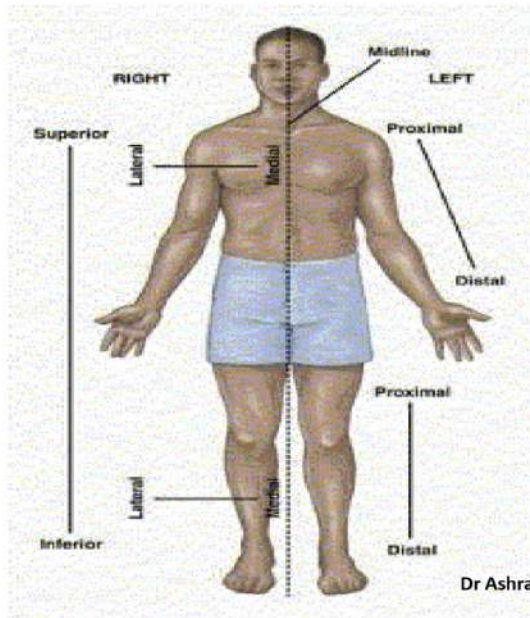


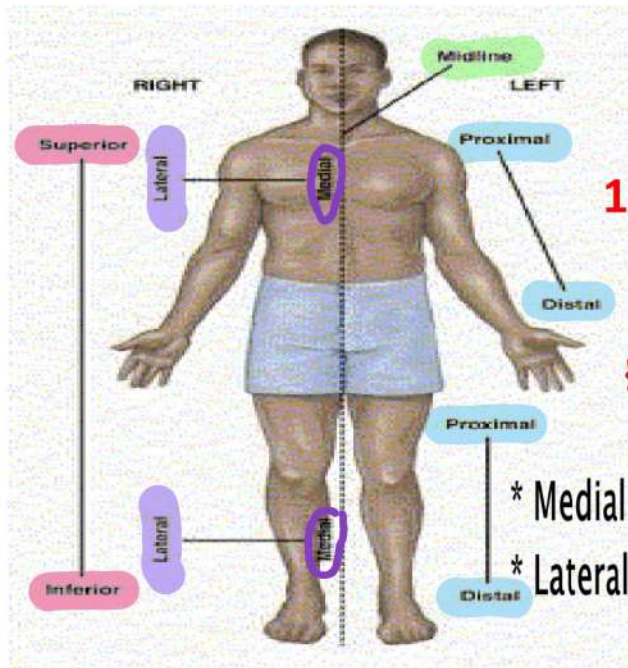
Anatomical Terms

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Anatomical Terms





1. Medial & Lateral:

* eye → medial
 * ear → lateral

* Medial = closer to median plane. ^{قرباً} المنكسف
 * Lateral = away from median plane.

* لا يوجد part دائماً medial
 أو دائماً lateral هي مجرد
 مقارنة تختلف حسب
 الأجزاء المراد المقارنة بينها

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* sholder → lateral
 ear → medial



امامي خلفي

2. Anterior & posterior:

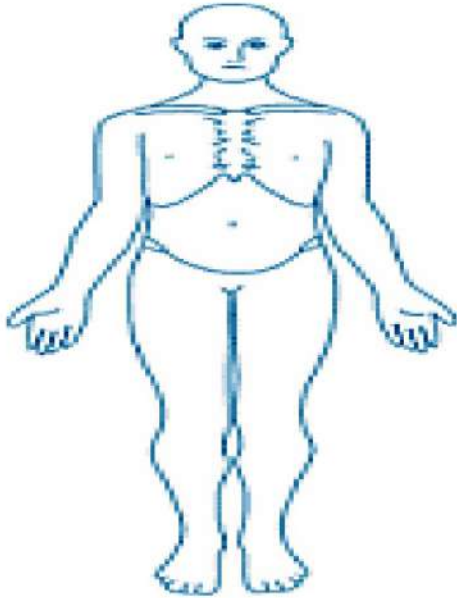
- Body**
- Anterior or Ventral → towards the front of the body
 - Posterior or dorsal → towards the back of the body
- Hand**
- Anterior surface of hand → palmar surface
 - Posterior surface of hand → dorsal surface
- foot**
- Upper surface of foot → dorsal surface القدم من فوقه
 - Lower surface of foot → plantar surface بطن القدم



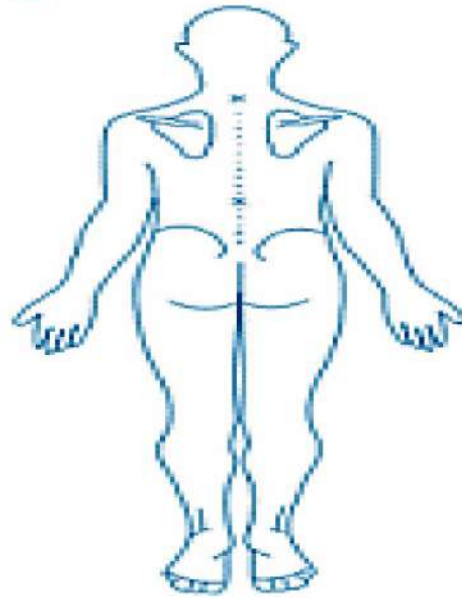
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Anterior



Posterior



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3. Superior & inferior:

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

كلمة لاتينية
يظهر على
الجمجمة

head.

أقرب للأعلى

أقرب
Cranium
جزء
من
skull
الجمجمة

* **Inferior (caudal)**

= **towards feet.**

أقرب للأسفل

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* eyes → superior
nose → inferior

* nose → superior
mouth → inferior

أيضاً هنا مجرد مقارنة
كما في السابقه

* هنا المرجع لنا دائماً
Anatomical position

فما بمغزوه كيف كان واقف
على رجليه أو على يديه



4. Proximal & Distal:

* **Proximal** → closer to trunk.

* **Distal** → away from trunk. (origin)

جذع الجسم



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* Arm → Proximal
forearm → Distal

* forearm → Proximal
Hand → Distal

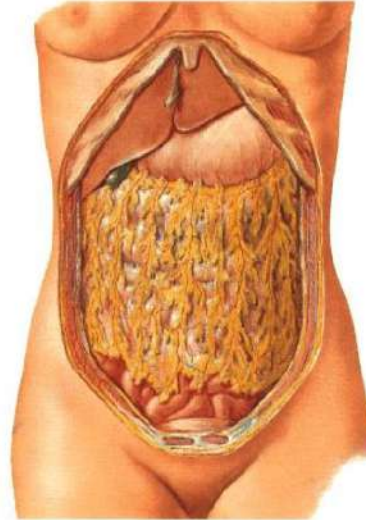


5. Superficial & الجلد (skin) ^{ترتيب من السطحي}

Deep: ^{عميق}

* Superficial → **towards surface of body. (skin)**

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





Revision →

Anatomical Terms

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



* Neck → two important arteries

واحد خارجي

external

واحد داخلي
(من الجزء الداخلي من الرقبة)

internal

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

مركزي
طرفي

→ left ear & right eye

right upper limb & left lower limb

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→ right upper limb & right lower limb

CNS *
↓
Central nervous system

example
↓
Contralateral

← جملة في الجهة اليمنى من الدماغ تحدث شلل في الجهة اليسار من الجسم



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.



Anatomical Terms of Movements

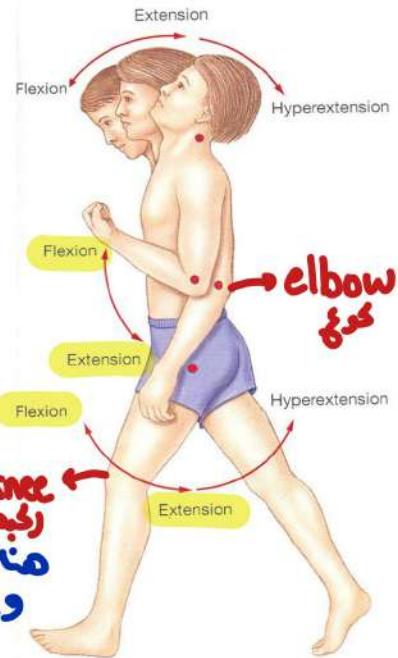
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• **Flexion** → to **bend** = **angle** = **approximation of 2 ventral surfaces**

يعني ←
زاوية ←
تقريب ←

• **Extension** → to **stretch** = **straighten** = **approximation of 2 dorsal surfaces.**



من العكس والاستثناء لوحده
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flexion → angle
but approximation
of 2 dorsal surfaces

Extension → approximation
of 2 ventral surfaces



flexion



flexion

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extension



extension

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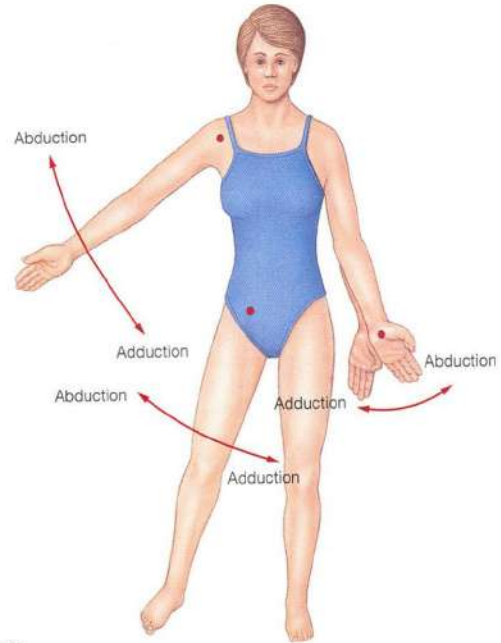


ابعد

• **Abduction** →
moving a part
away from
midline.

اقرب

• **Adduction** →
moving a part
towards the
midline.



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- **Abduction of fingers & toes** → **spreading** of fingers or toes apart. (Taking your fingers or toes away from each other)
- **Adduction of fingers & toes** → **drawing or approximating** fingers or toes together.

شبه القدم ←



opposition

→ putting the thumb opposite the rest of the fingers

abduction

adduction

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* محور اليد ← middle finger
 * محور القدم ← second toe



← المصورة من وجودها
 بالسلايدات لكن الدكتور
 ذكرهم بالمجازة



- **Opposition:**
- **Circumduction** → **the combination in sequence of movements of flexion, abduction, extension & adduction.**

shoulders limb
فقط
يحدث
فيه

تجميعه الى



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

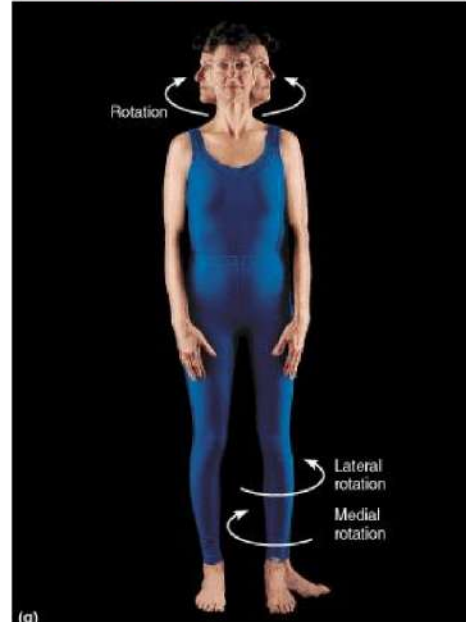
يلف للداخل

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

يلف للخارج

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Face & Leg فقط

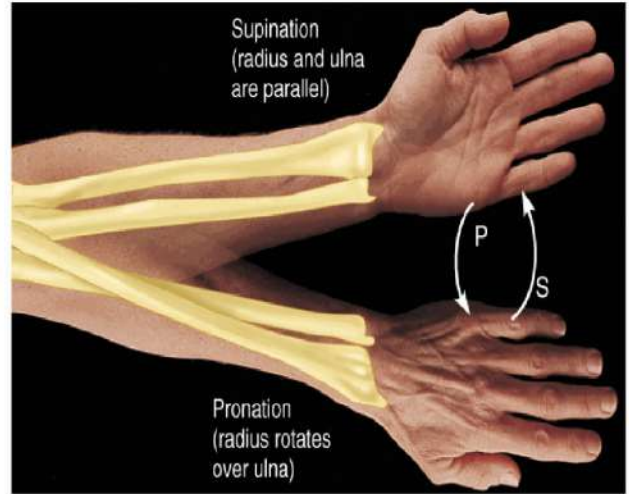




Forearm فقرع

Ⓞ **Pronation** → medial rotation of forearm which brings palm of hand to face posteriorly → forwards
 Ⓞ **Supination** → lateral rotation of forearm which brings palm of hand to face anteriorly → Anatomical Position
 الجاذب
 ↓
 Towards

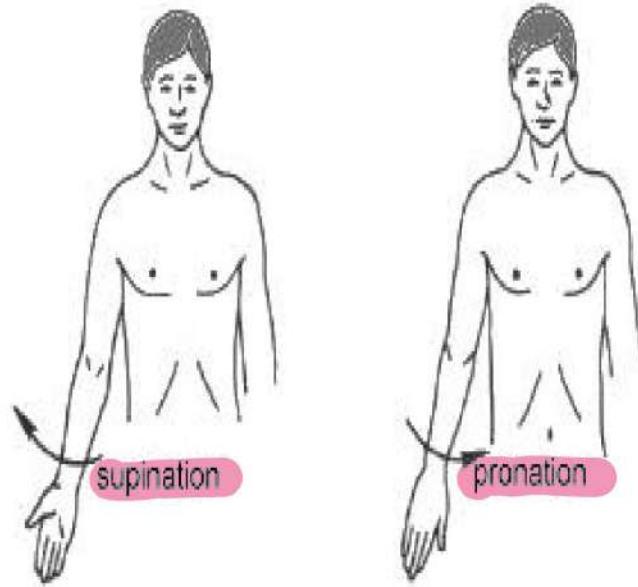
just for forearm



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

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لازم يكون في pronation
عشان تعمل supination



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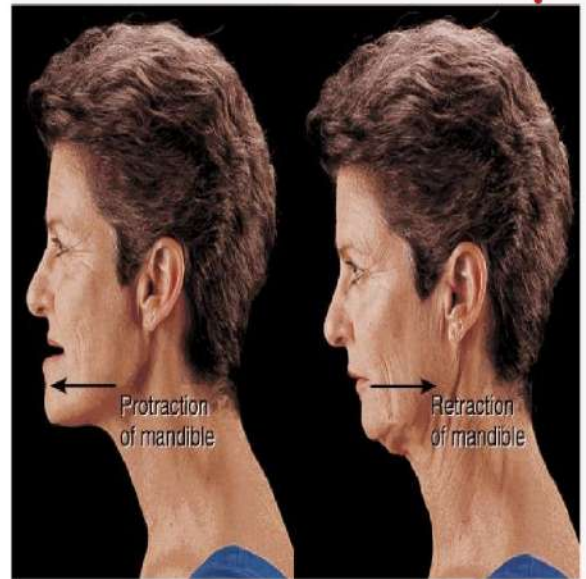


• **Protraction** → moving the **jaw** forwards.

• **Retraction** → moving the jaw backwards.

• **Protraction & retraction can also occur at the shoulders.**

↓ Jaw & Shoulders فقط



(c) Protraction and retraction

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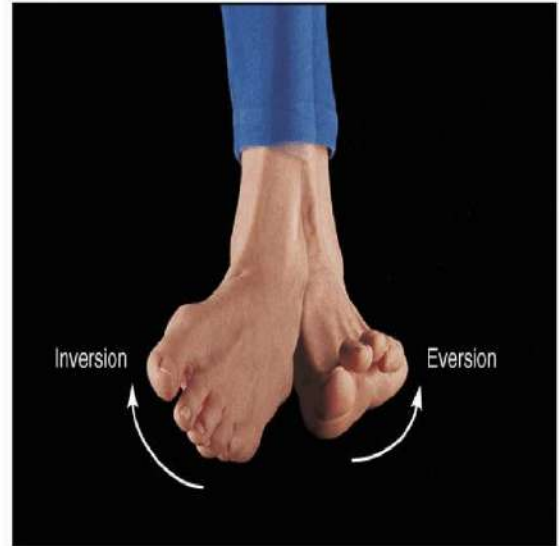
Protraction لازم يكون في
retraction عشان تعمل



Foot قدم

• Inversion → moving foot so that sole faces medially.

• Eversion → moving foot so that sole faces laterally.



(b) Inversion and eversion

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Sole → بطن القدم



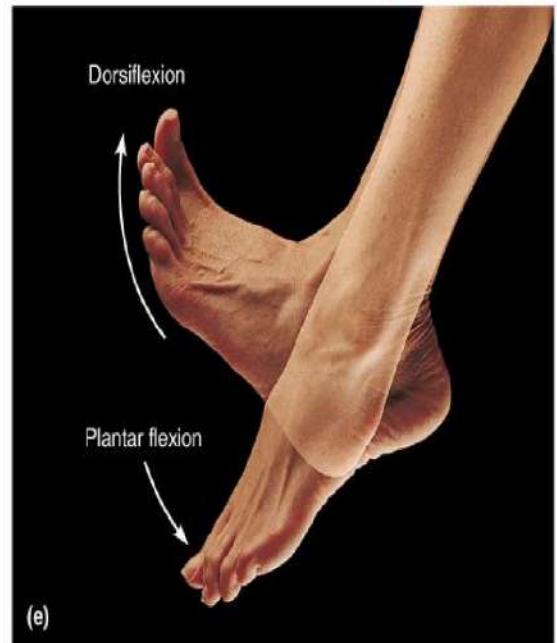


Foot فَقْم

• **Dorsiflexion** →
bending foot or
ankle upwards.

• **Plantar flexion** →
bending foot or
ankle downwards.

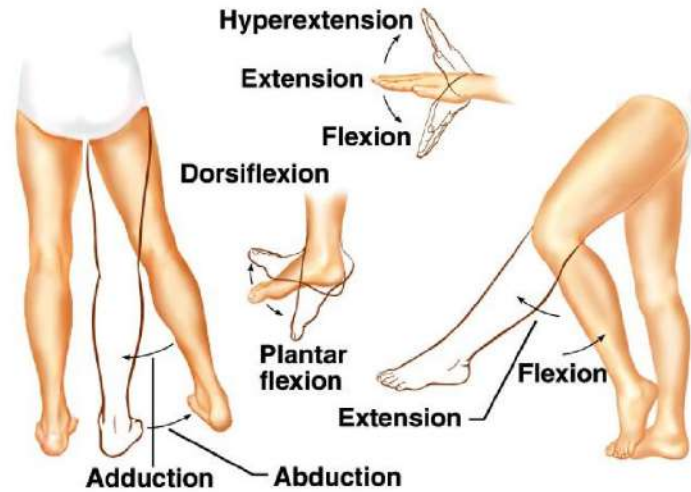
وقوف على أطراف الأصابع





Flexion- Extension Abduction- Adduction

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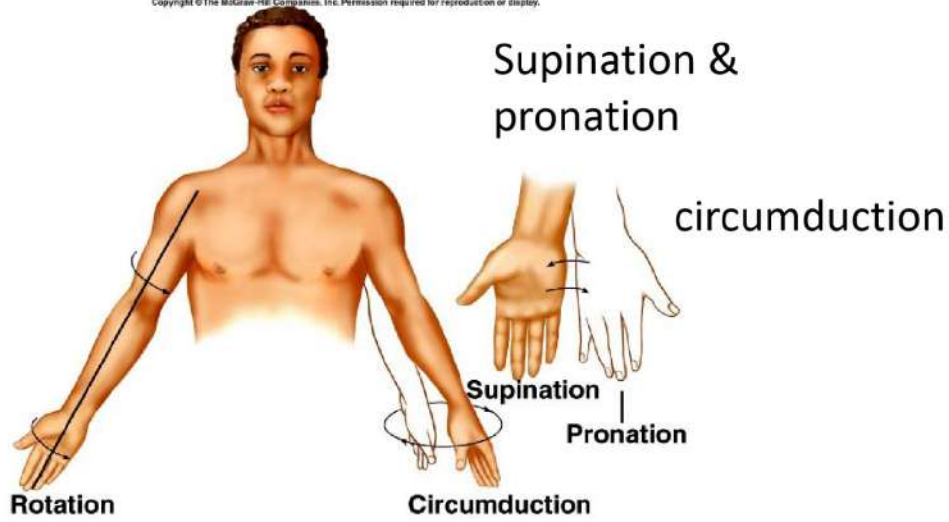
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Rotation

medial rotation- lateral rotation

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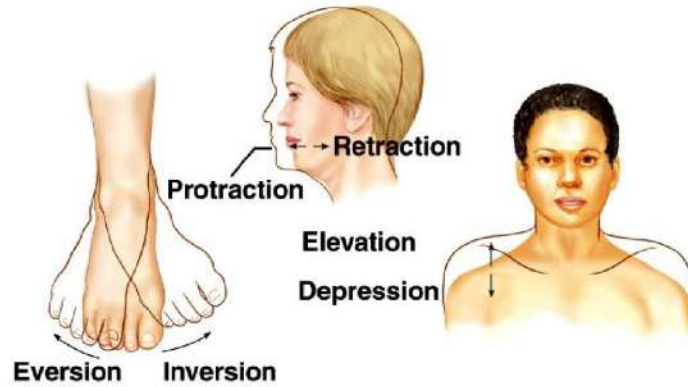


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Protraction-retraction

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Elevation-Depression

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Body Cavities

تجاويف الجسم

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من Cranium
وهي جزء من skull
(الجزء العلوي)
1. Cranial Cavity
تجويف الجمجمة

- * The cavity inside the skull.
- * Contains the brain.

جمجمة



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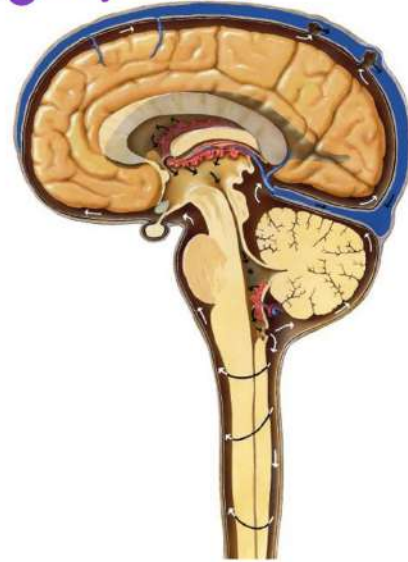
2. Vertebral Cavity

تجويف العمود الفقري

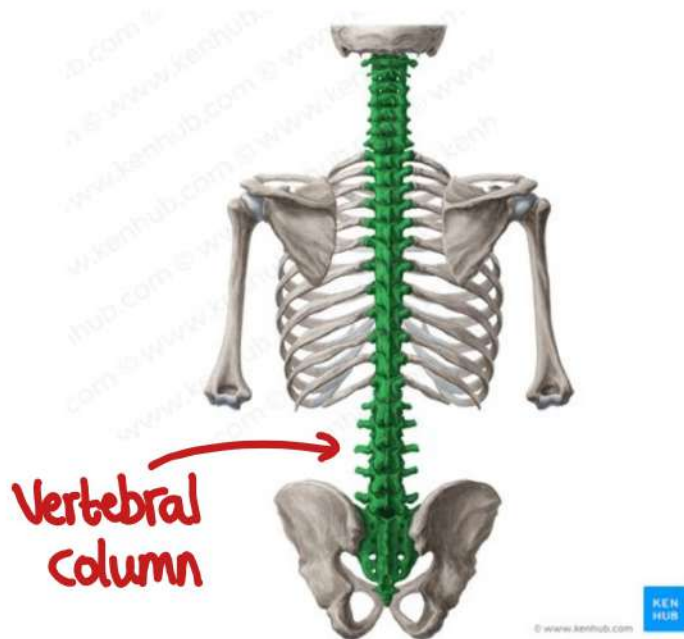
* The cavity of the vertebral column. العمود الفقري

* Contains the spinal cord.

النخاع الشوكي



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3. Thoracic Cavity

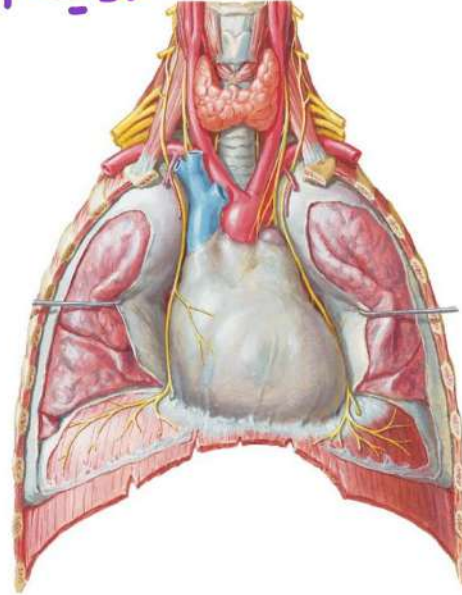
تجويف الصدر

* Contains the heart inside the pericardial cavity.

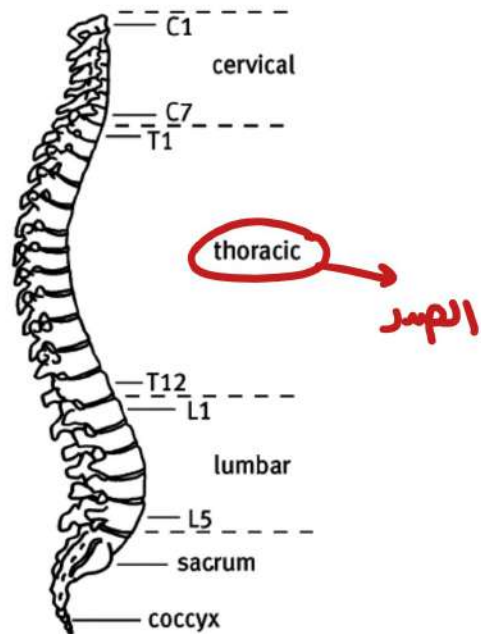
* Contains the lungs inside the pleural cavities.

← غشاء فيم القلب

↓
غشاء فيم الرئتين



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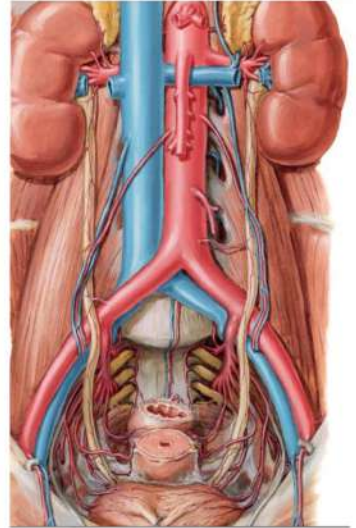




④ Abdominal Cavity

تجويف البطن

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



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5. Pelvic Cavity

تجويف الحوض

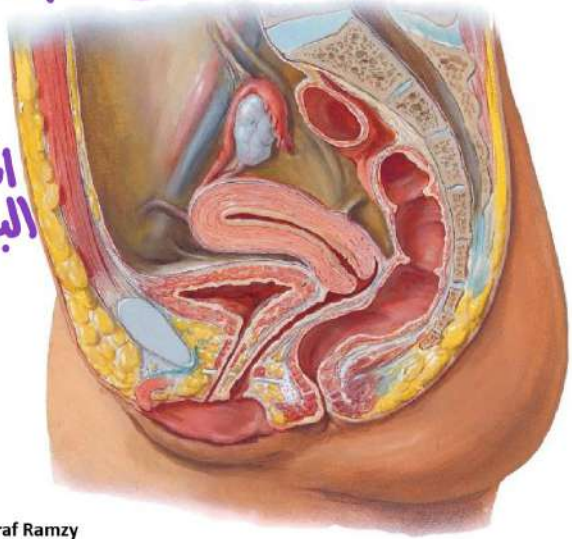
* Contains pelvic organs such as urinary bladder, rectum & uterus & ovaries (in females).

المستقيم

البويضات

المثانة البولية

الرحم



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قليلًا من التفاؤلِ يَصْنَعُ ألفَ طريقٍ نحو السَّعادةِ..

بالتوفيق 



#النادي_الطبي

#معكم_خطوة_بخطوة