



ANATOMY

First Exam Sheets

Lecture 1

Sheet By: Haneen Al Afeef

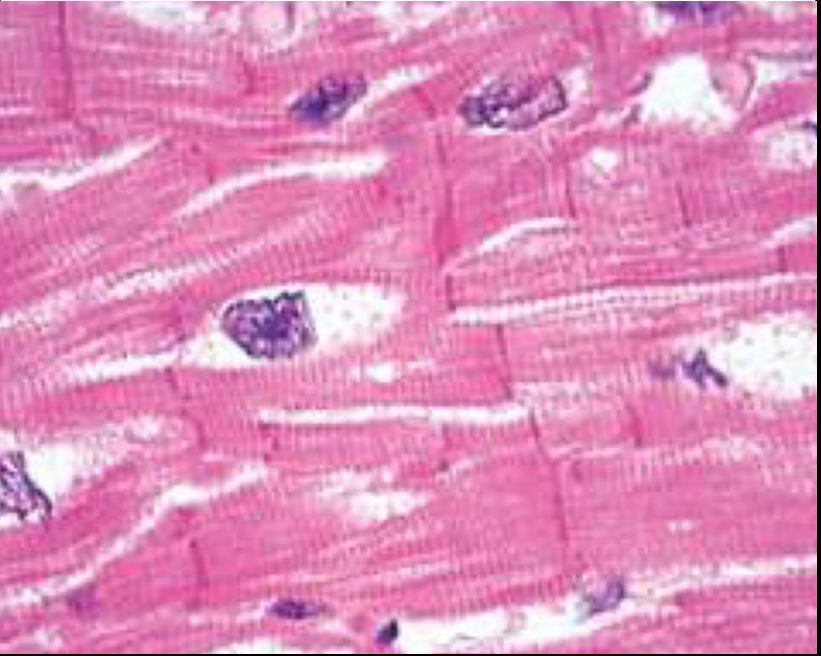
Video By: Shatha Al Afeef

What is Anatomy?

- Is the study of the various structures of the human body and the relationship of these structures to each other.

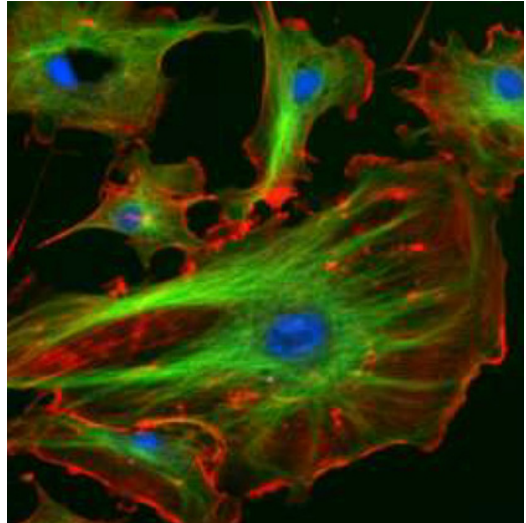
Various methods to study anatomy

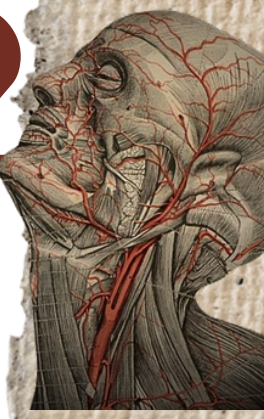
Various methods are used to study body structures leading to the appearance of various disciplines of anatomy

Discipline معايير الدراسة	Definition	Method Used	Example
يكون العضو موجود على الصورة وليس Gross خاصة الى ادوات ليدية يمكن رؤية بالعين Anatomy	Study of body structures ادوات تكبير without using magnifying instruments (with the eyes).	Dissection (cutting) of the طريقه هي قطع cadavers. العضو المراد دراسته من الجثة	
علم الأنسجة Histology	Study of cells and tissues بمساعدة with the aid of a magnifying instrument—the microscope الاداة المتكبرة للتكبير هي Microscope	Microscopy	

لوجاب صورة
رنة زي هيل؟
Gross
برضو



Radiographic Anatomy	Study body structures by using imaging techniques.	X-Ray. <u>CT-Scan</u> . → المصورة الحثيقية مقطعية Ultrasound. MRI.....	
Embryology علم الأجنة	Study of human development	Imaging and <u>dissection</u> إذا كان لها بطن أمه الجنين فيض	
Cytology (← هو فرع من histology) (branch of histology)	Study of cells	Microscopy	
Surface Anatomy له لما يكون الشئ واقف قدامي (حائش) أو جنة / واكن عارف الأعضاء التي في الجسد عن طريق Land Mark موجودين على السطح.	Study of surface markings of the internal <u>organs</u> اعضاء داخلية	<u>Inspection</u> and <u>palpation</u> بالنظر بالتقسس	
Sectional Anatomy لقسيم الجثة الى عدة اجزاء	Study of structures through body sections	Dissection and imaging لا نضع لهم الي دجلعوا جسم الانسان على شكل (Slids) MRI CT-Scan	



How is anatomy studied:

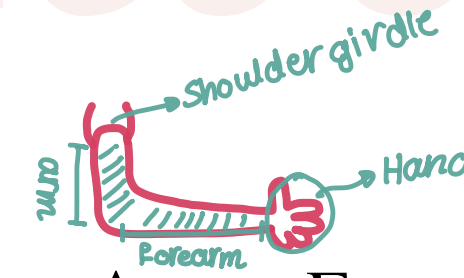
Regional Anatomy

الدراسة تكون لمنطقة معينة بعض
النظر اذا كان في عضو يعود لجهاز معين

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

Major regions of the body:

- 1) Head
- 2) Neck
- 3) Thorax = Chest ^{الصدر}
- 4) Abdomen ^{البطن}
- 5) Pelvis and perineum ^{الخص}
- 6) Back ^{اخران علوية}
- 7) Upper limb = Shoulder girdle + Arm + Forearm + Hand ^{وصلة الكتف}
- 8) Lower limb = Pelvic girdle + Gluteal region + Thigh + Leg + Foot



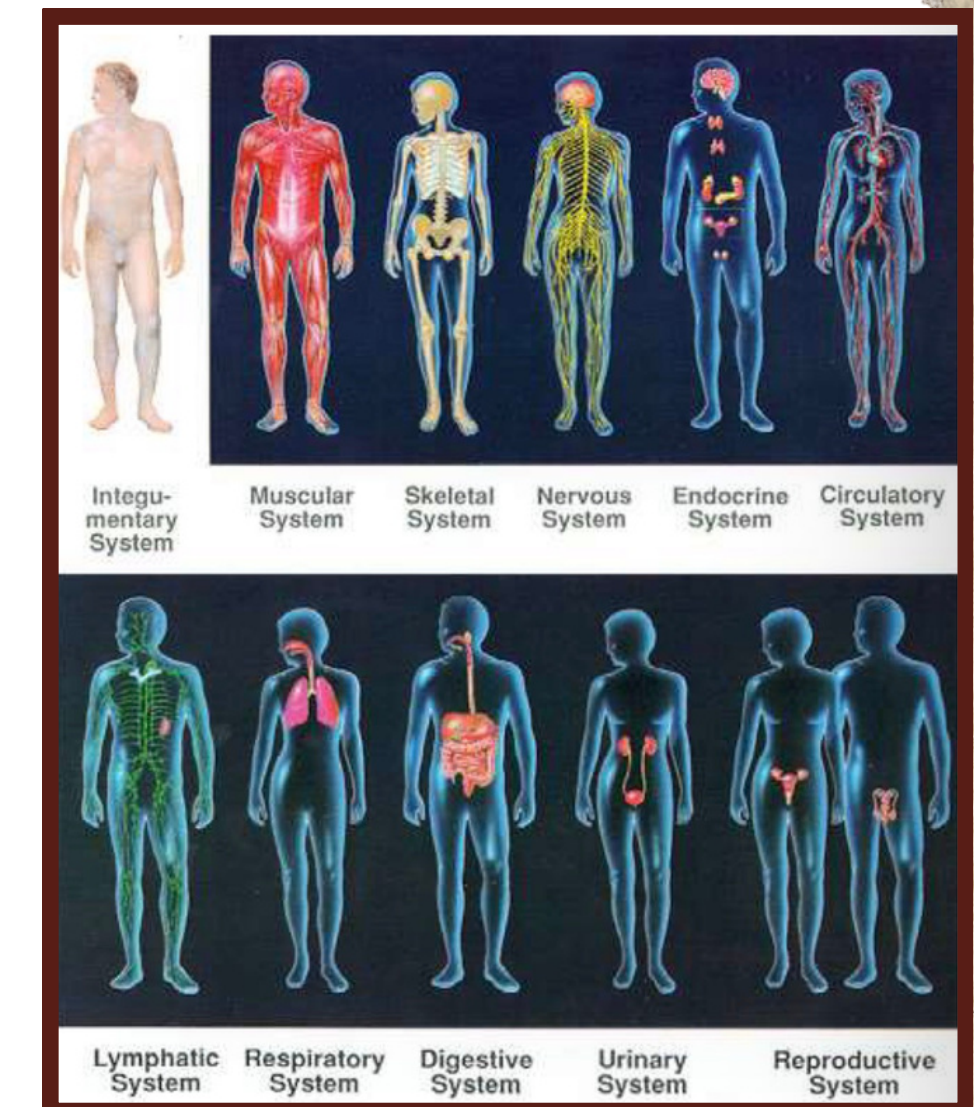
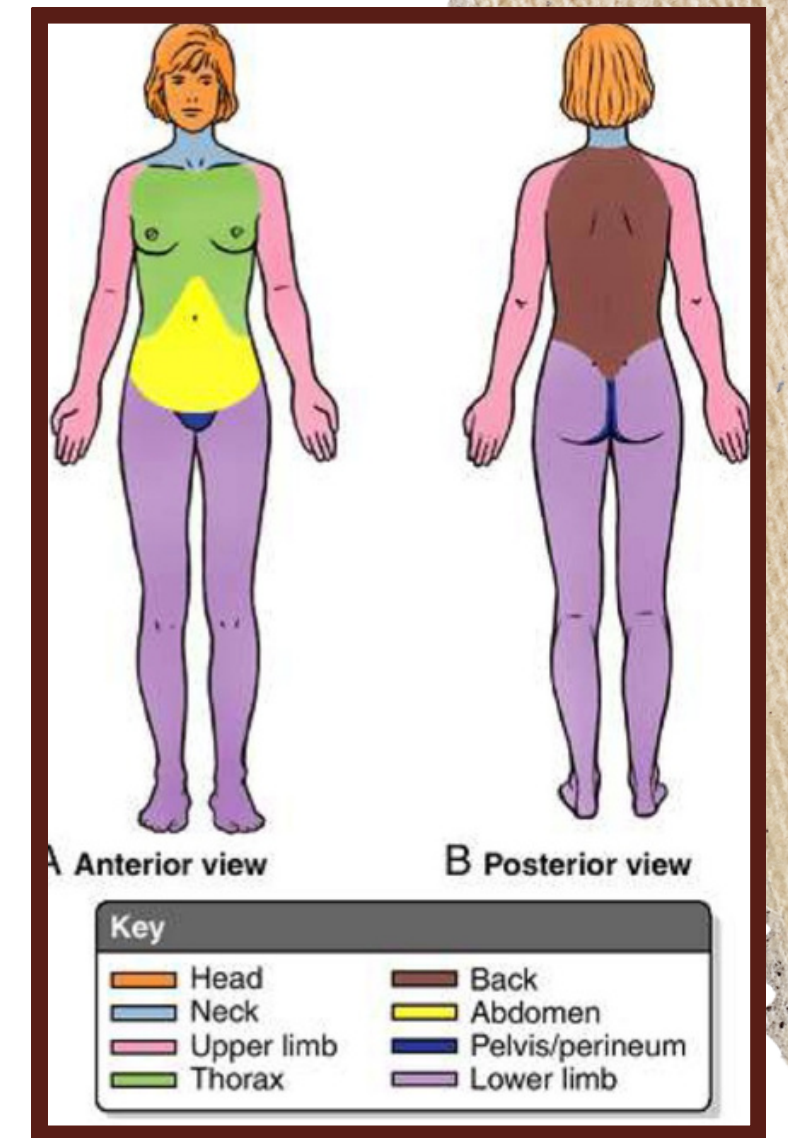
Systemic Anatomy:

تتم دراسة جهاز كامل يغطي النتر عن region بالجسم

Study of all the structures that form a specific system in the body.

يتم دراسة كل التراكيب التي تكون الجهاز الذي يتم دراسته

- In systemic anatomy, any method used will involve the study of several regions of the body.



Structural levels of organization:

- The human body can be seen to be organized at 6 levels. These levels range from the simplest and smallest to the most complex and largest.

These levels are:

- 1) Chemical: ^{احضر level}
- This is the simplest level.



للحواد

C/O/N/H

- It includes the **atoms** which are the **building blocks** of all **matter**.
- The most important atoms in the human body are oxygen, carbon, hydrogen, and nitrogen.
- Two or more atoms unite to form **molecules** that could be small like **water** or large like **DNA**.

2) **Cellular:** (اصغر تركيب وله وظيفة)
 مolecules يكونوا من 2 من Atom

- Cells are the simplest structural and functional units of the body.
- Cells are formed of various molecules.

3) **Tissue level:** (Cells + other Materials = tissue)

- Several cells come together with some other materials surrounding them to form the various tissues of the body.

- A certain type of tissue **performs** a certain function.
- There are four basic body tissues: **epithelial**, **connective**, **muscular** and **nervous**.

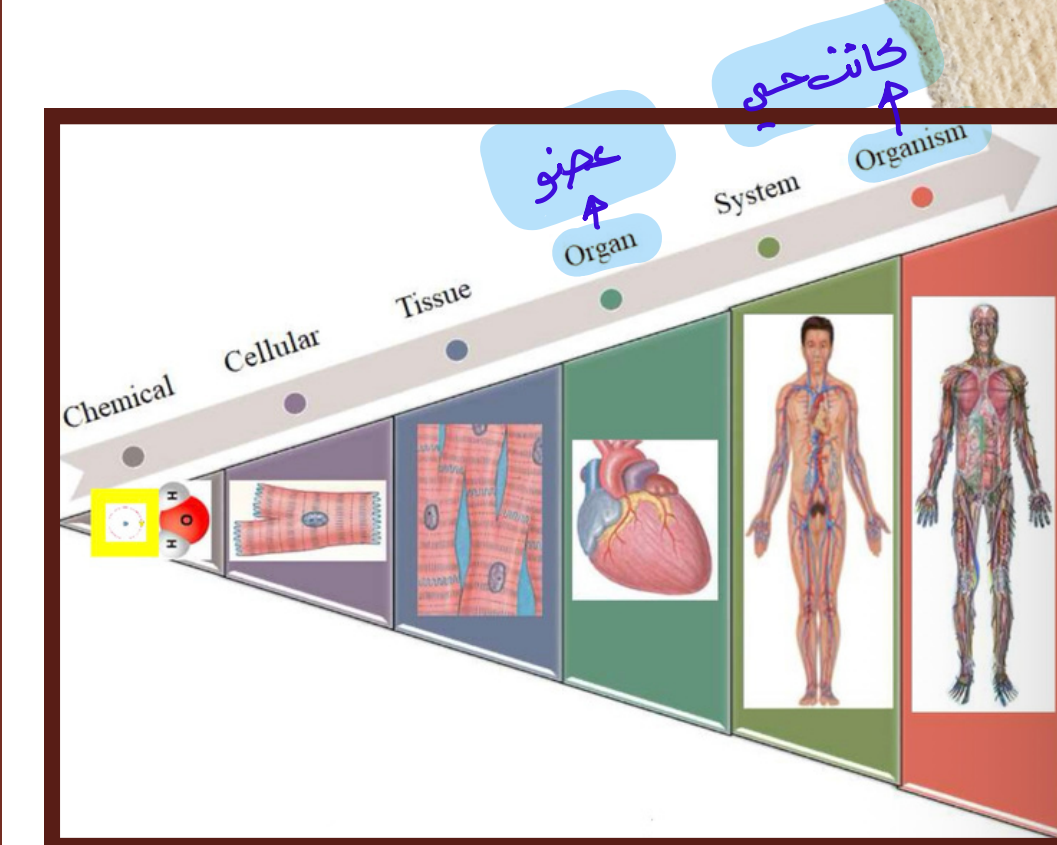
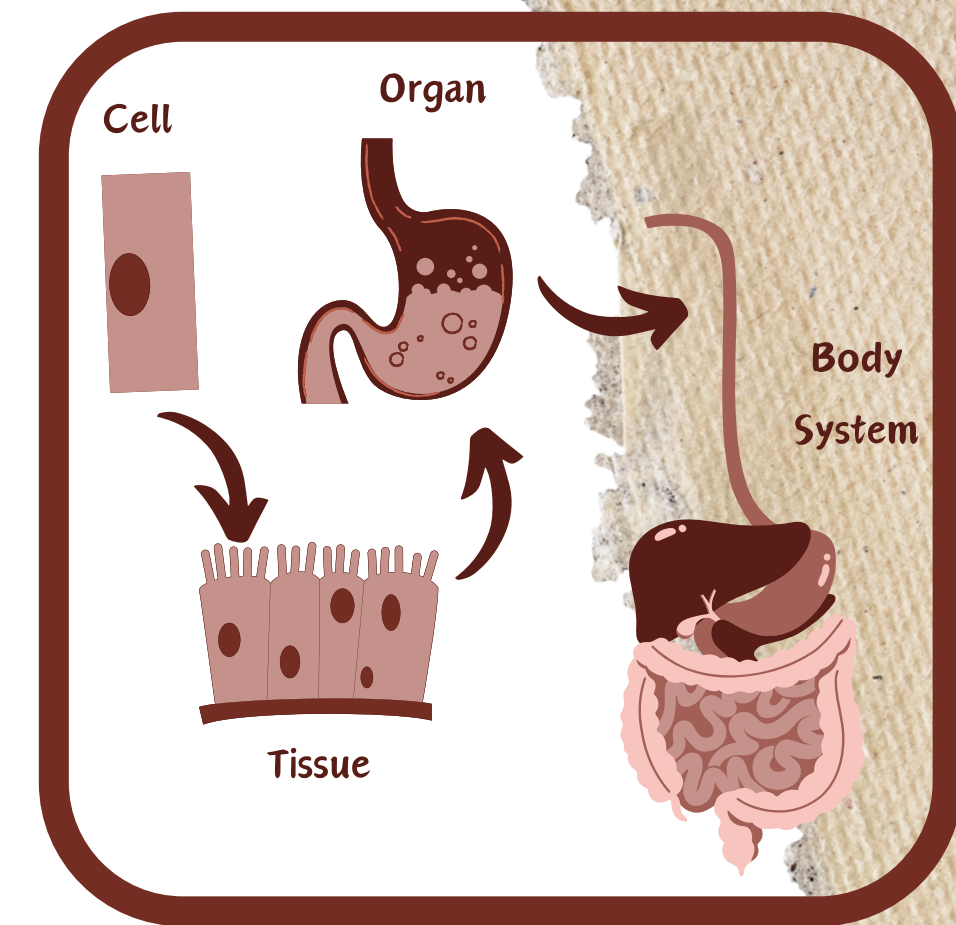
4) **Organ level:**

- An organ is formed of several types of tissues.
- It has a specific shape and performs a specified function.

5) **System level:**

- A system consists of several organs that act together to perform certain functions.
- Example: the digestive system is formed of all the organs that help in the **digestion** and **absorption** of food.

و مثال: كل الاعضاء التي تكون الجهاز الهضمي لها نفس الوظيفة في الهضم و في الامتصاص



Anatomical Position:

لازم يكون في position
معين قففت عليه .

الاصحية

- In order to ¹understand the position of a structure and the ²positional relationship between structures, a position of reference must be used. This reference position is called the **Standard Anatomical Position**.

- In this position

1- لقف منتصباً

1. The subject stands erect

2- اتجاه الاعمين والرأس للأمام

2. The head is level with eyes facing forward

3- الذراعين على الجنبين +
جانب اليد نحو الأمام

3. Upper limbs at the sides and the palm facing forward

جانب اليد

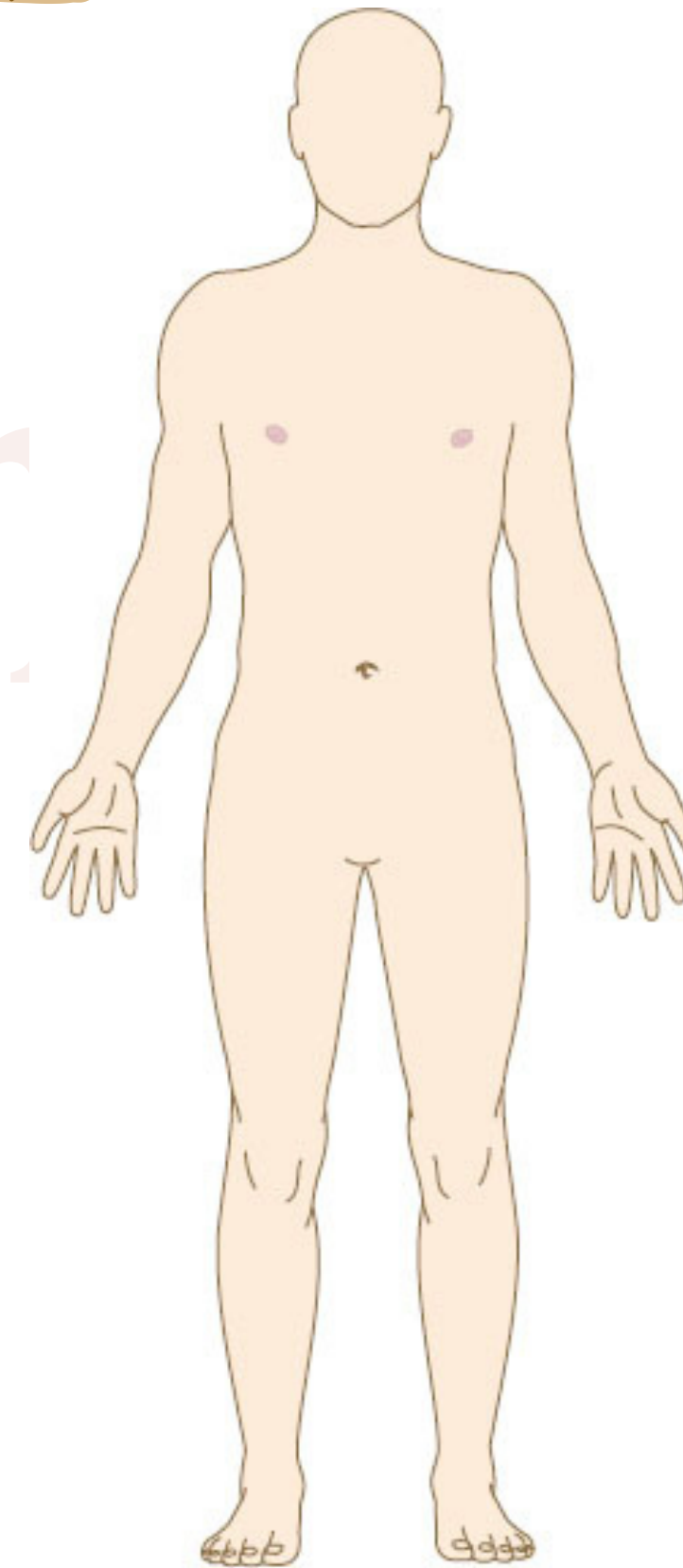
4. Feet level on the ground and directed forward

4- الاقدام على الارض
و اتجاه الاقدام

[Face up] : supine

[Face down] : prone → position آخر

- When the person is lying down, he's either in a prone position ^{على بطنه} (on his belly) or in a supine position (on his back).



Anatomical Plans:

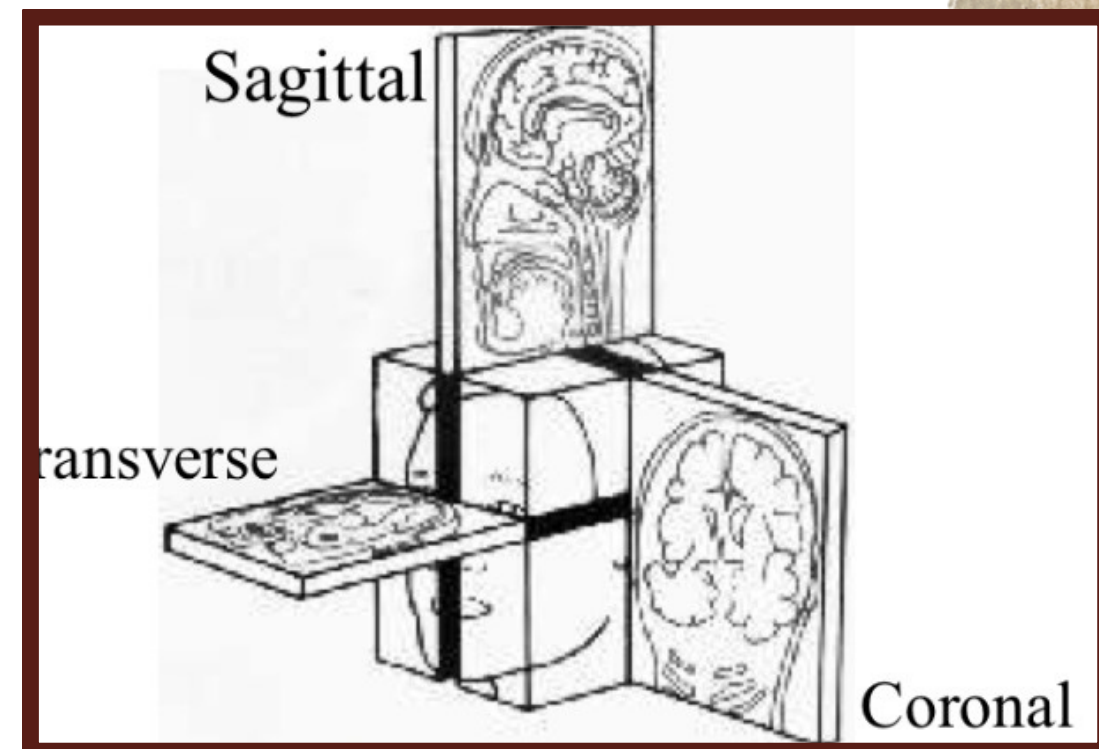
هذه عبارة عن السطح وهمية
تقسيم جسم الانسان
يمين - يسار
أمام - خلف

- These are imaginary flat surfaces that pass through the body, region, or organ.

عامودي

1) **Sagittal plane** is a vertical plane that divides the body, region, or organ into right and left parts.

- If the plane passes through the midline of the body dividing it into equal halves, then it's called a **midsagittal** or **median plane**.
- If the sagittal plane divides the body into unequal parts, then it's called a **parasagittal plane**.



6

2) **Coronal (Frontal) plane:** is the plane that divides the body, region, or organ into **front** and **back** portions.

3) **Transverse (Cross-sectional) plane:** is the plane that divides the body, region, or organ into **upper** and **lower** parts.

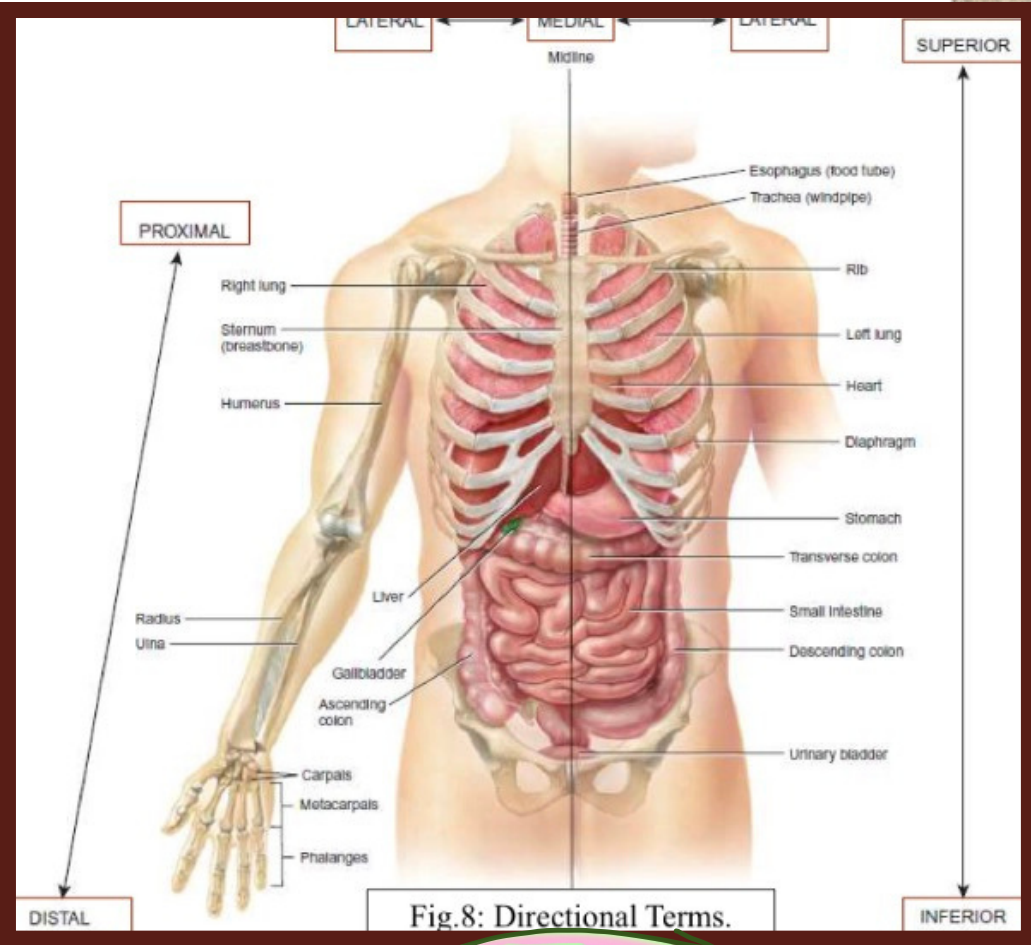
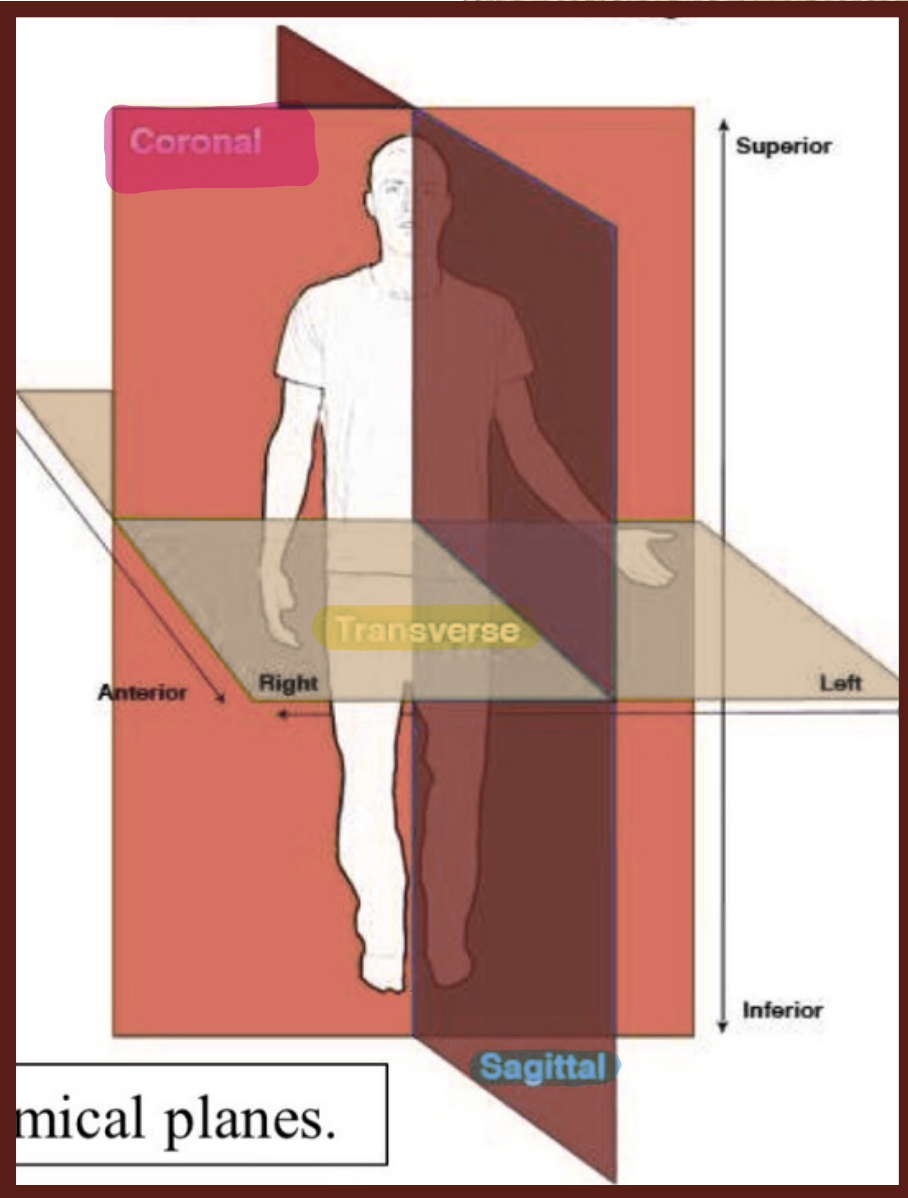
- These planes are at **right angles** to each other. → جميع الاسطح الوهمية تتشكل بفهم زاوية 90° درجة
- A plane that passes through the body or organ at an angle not 90° is called an **oblique plane**. → اذ كانت الزاوية بفهم ليست 90°

Directional Terms in Anatomy:

لوصف مكان الأعضاء
بالنسبة الى بعضها البعض فنتج
مصطلحات :

- To appreciate the relative position of a structure, some directional terms are used in anatomy.
- These terms only make sense when describing the position of a structure relative to another.
- The subject is in the standard anatomical position.

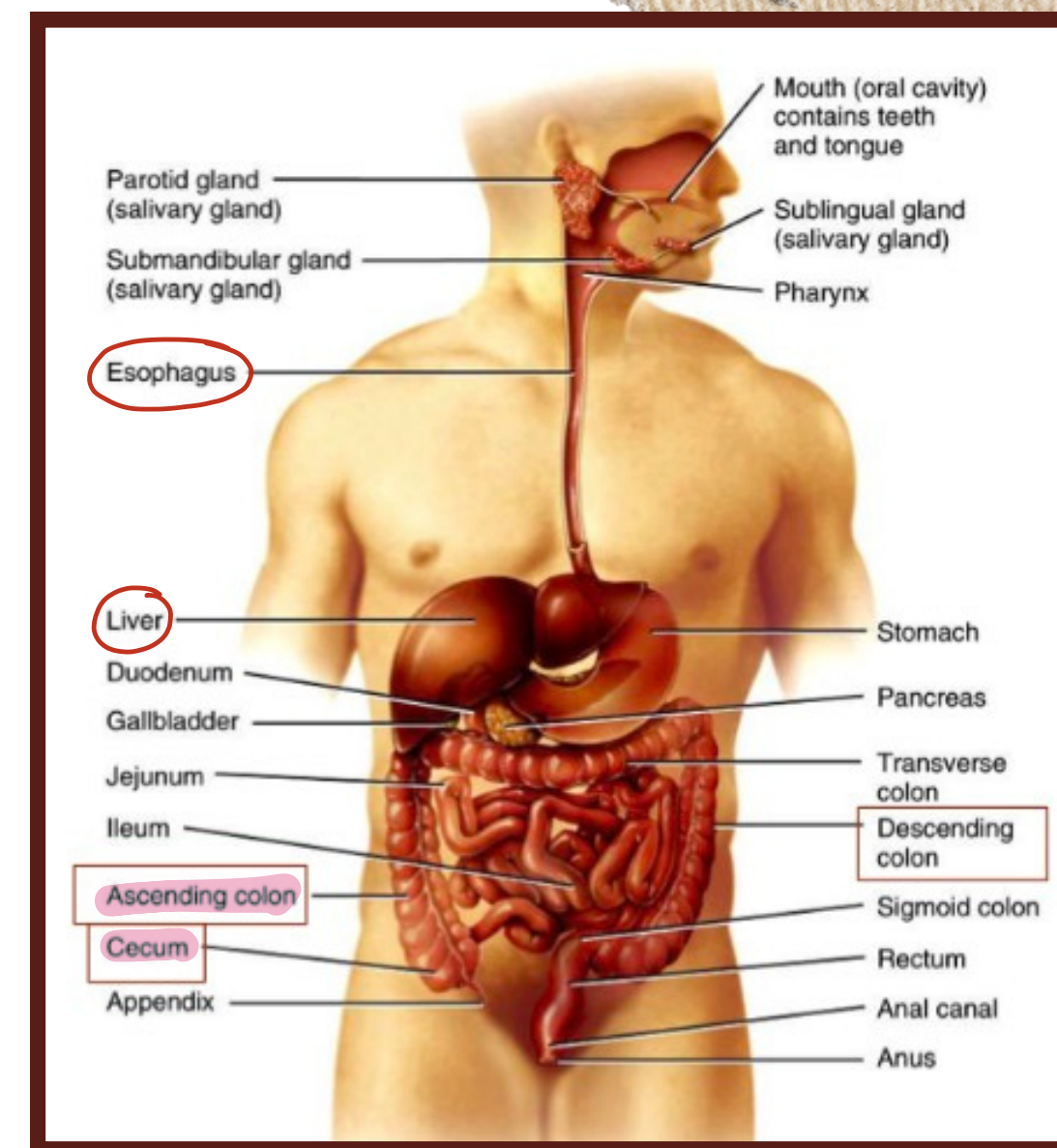
Term	Meaning	Example
Anterior	Nearer to the <u>front</u>	The eyes are anterior to the brain.
Posterior	Nearer to the <u>back</u>	The spine is posterior to the heart.
Superior	Above or higher in position, أعلى باتجاه الرأس towards the head	The head is superior to the chest.
Inferior	Below or lower in position, أسفل باتجاه الأقدام towards the feet	The stomach is inferior to the heart.



Midline

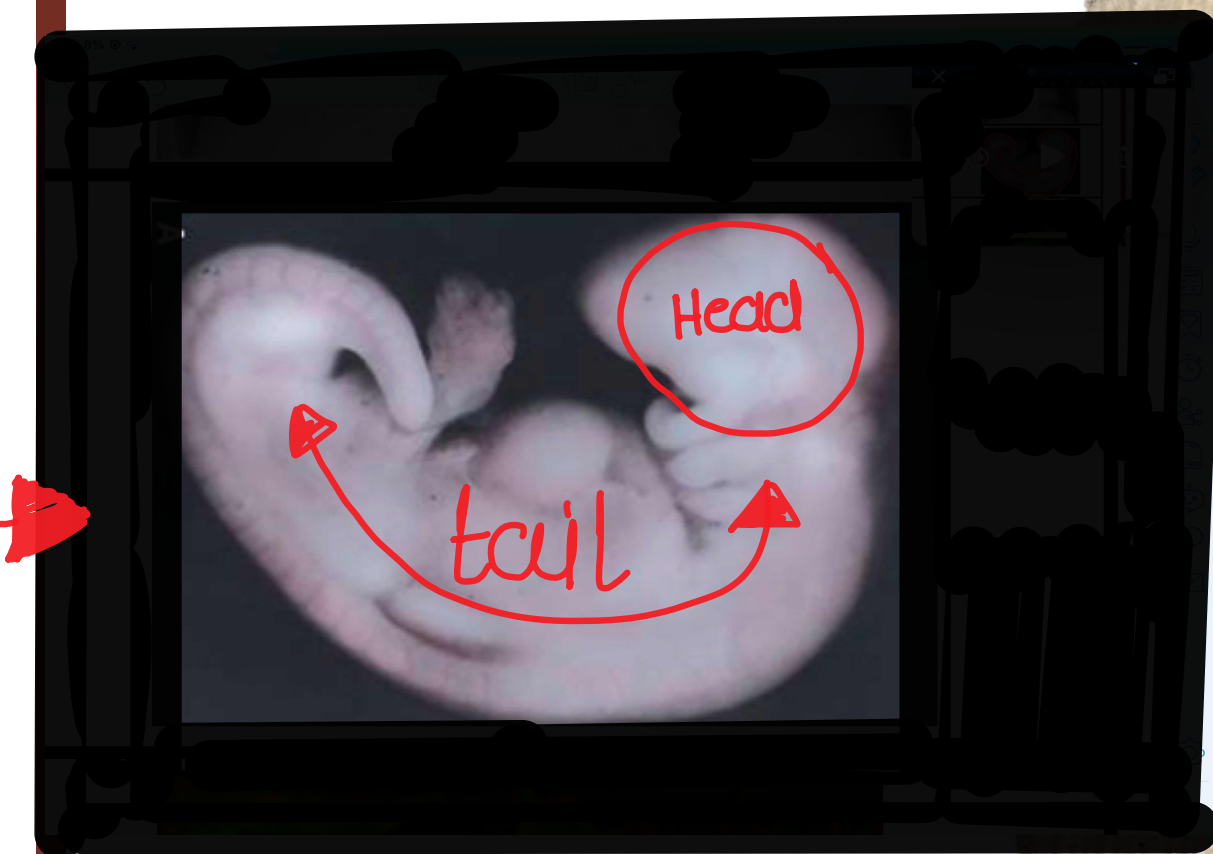
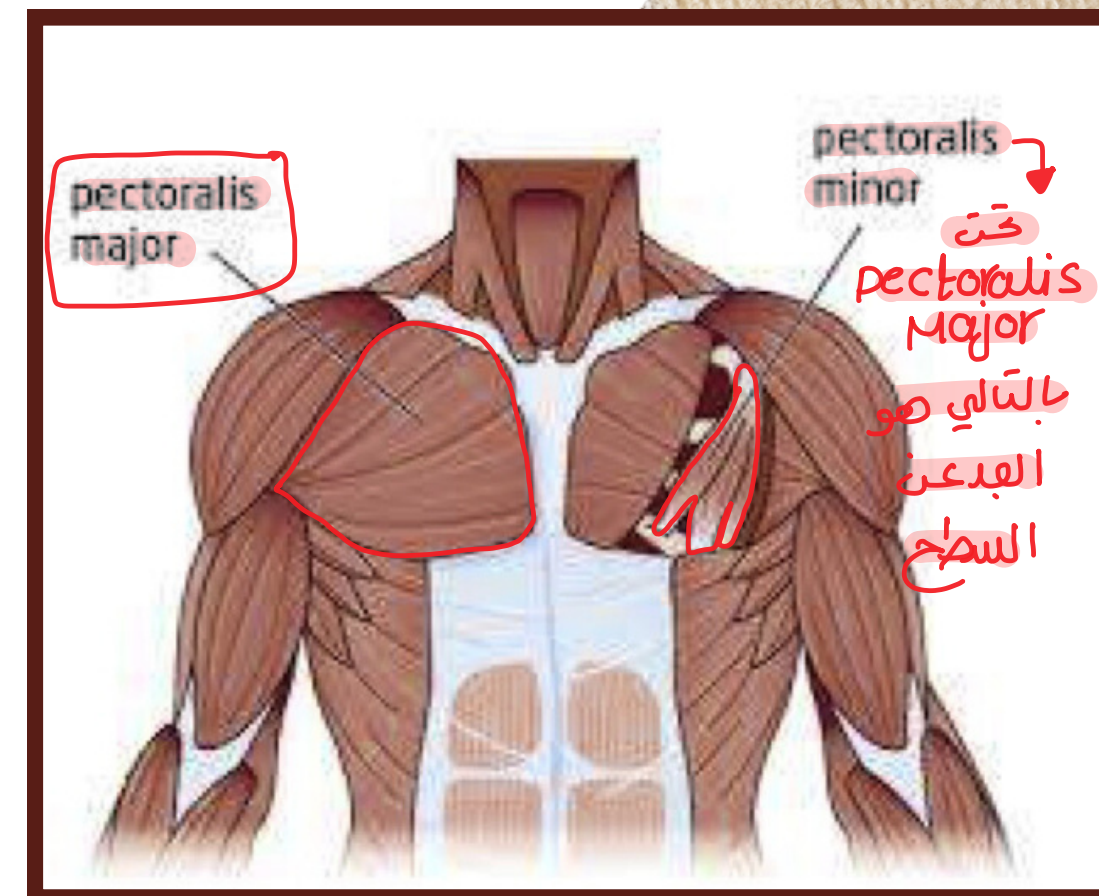


Term	Meaning	Example
[طرفي] بعيد عن (Midline) Lateral	Farther from the midline.	رئة The <u>lungs</u> are lateral to the heart.
اقرب الى (Midline) Medial	Nearer to the midline.	كبد المريء The <u>esophagus</u> is medial to the <u>liver</u>.
وجود على Midline Median	In the median plane of the body.	عمود فقري The <u>spine</u> lies in the median plane.
أقرب إلى موضع اتصال الطرف Proximal	Nearer to the <u>attachment</u> of a <u>limb</u> to the trunk; nearer to the origination of a structure.	The shoulder is proximal to the hand.
أبعد عن موضع اتصال الطرف Distal	Farther from the <u>attachment</u> of a <u>limb</u> to the trunk; farther from the origination of a structure.	The fingers are distal to the elbow.
على نفس الجهة Ipsilateral	On the <u>same side</u> of the body's midline as another structure.	ك س Cecum is ipsilateral to the ascending colon
على الجهة الأخرى Contralateral	On the <u>opposite side</u> of the body's midline from another structure.	Cecum is contralateral to the descending colon.



Summary of the course

	the body.	to the pe
	ابعد Away from the surface of the body.	The bones are
ic ر جَائِه	جمجمة Relating to the <u>skull</u> or head; towards the head (in humans = superior).	The neck is c
جَائِه الأسفل	Relating to the tail; at or near the <u>tail</u> (in humans = inferior).	The legs are ca
جَائِه البطن	Towards the belly (in humans = anterior)	The chest is v
جَائِه الظهر	Towards the back (in humans = posterior)	The spine is c



Abdominopelvic Regions:

منطقة البطن و الحوض

- The abdomen and pelvis are divided into regions to facilitate the description of the position of various organs.
- Two methods are used: the **4-quadrant method** and the **9-region method**.

لنقسم البطن والحوض الى مناطق لتسهيل وصف مواضع الاعضاء المختلفة.

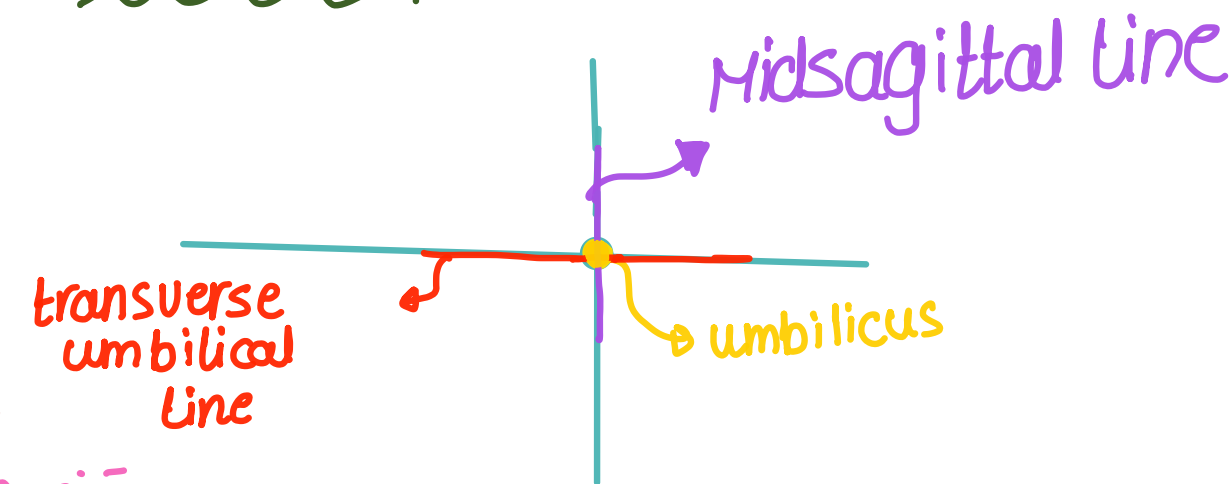
In the 4-quadrant method:

- two lines are used to divide the abdomen into 4 quadrants.
- These lines are the midsagittal line and the transverse umbilical line (pass through the umbilicus).
- These lines meet at the umbilicus.

In the 9-region method: → لنقسم البطن الى 9 مناطق [أدق أكثر]

2 vertical and 2 transverse lines divide the abdomen into 9 regions.

- The upper transverse (subcostal) line is drawn just inferior to the ribcage.
- The lower transverse (transtubercular) line intersects the right and left iliac tubercles.
- The two vertical lines are the right and left midclavicular lines.
- These pass through the middle of the right and left clavicles.



قفص صدري

كيف نرسم 9 مناطق؟

نوعان
عظمة الترقوة
نأخذ المنتصف لكل جهة

الخط الافقي العلوي
الخط الافقي السفلي
الواصل بين نوعان الحوض الامامي

Done!

OF COURSE IT'S HARD. IT'S SUPPOSED TO BE HARD!
IF IT WAS EASY, EVERYONE WOULD DO IT.
HARD IS WHAT MAKES IT GREAT.

سؤال الدكتور طرحه أثناء المحاضرة : ما نوع الخطوط المعودية الموجودة في 9 region Method ؟
parasagittal line

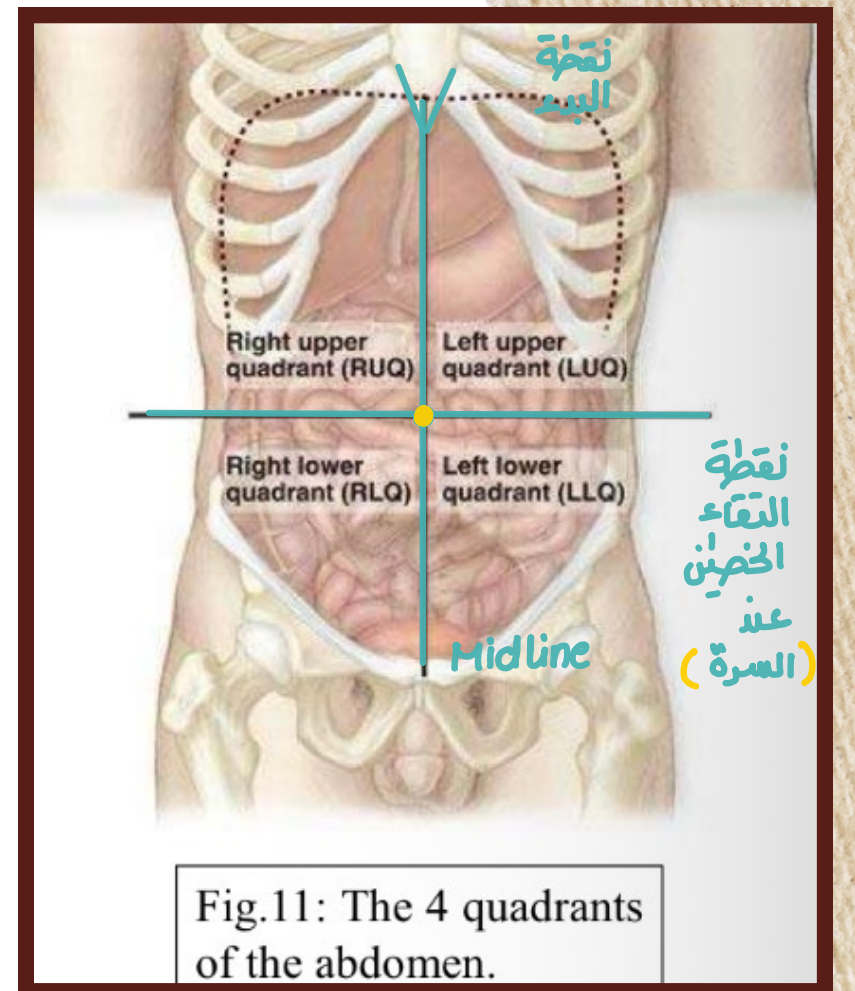


Fig.11: The 4 quadrants of the abdomen.

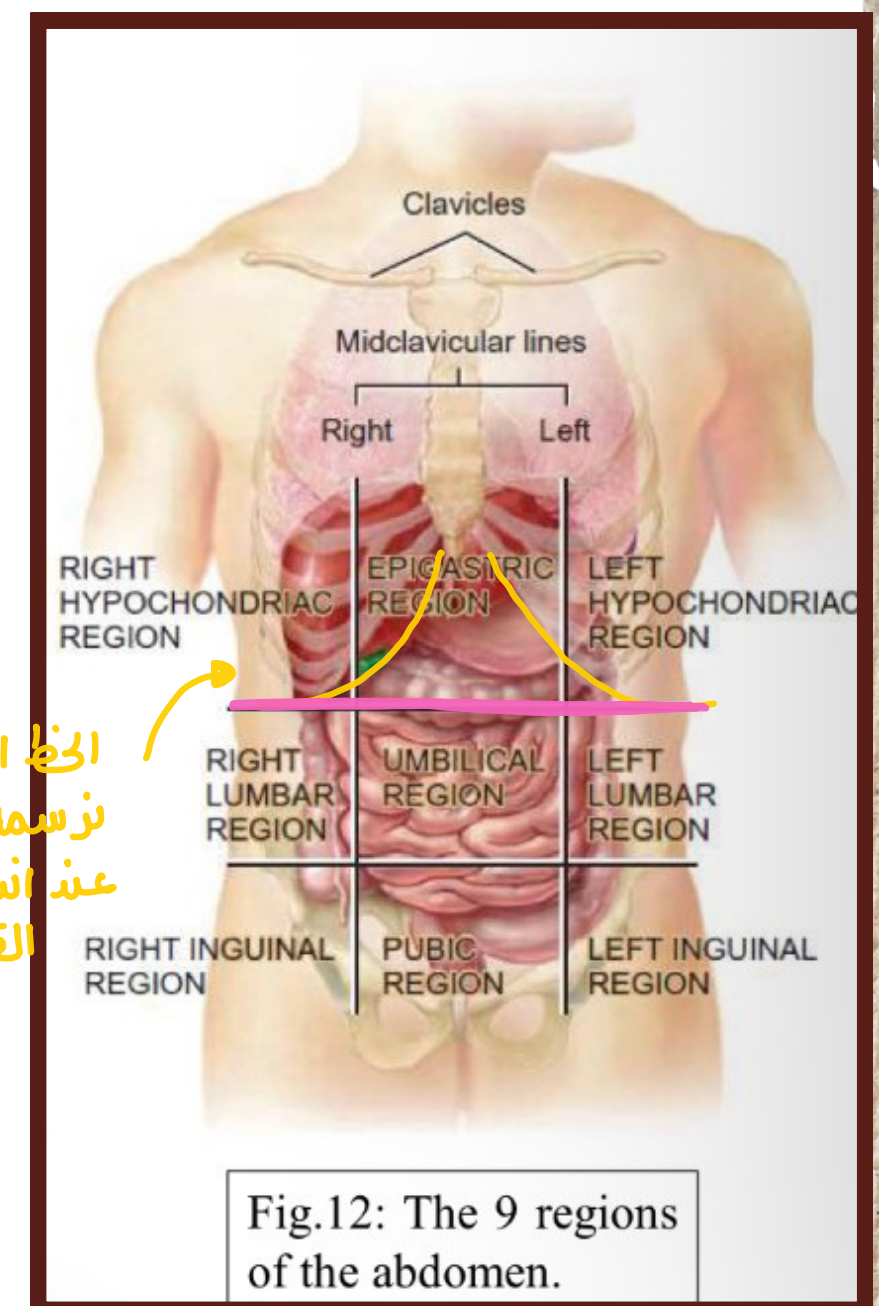


Fig.12: The 9 regions of the abdomen.

(فعلوة اضافة)

له عدد الاضلاع في جسم الانسان = 24
12 يمين 12 يسار

True ribs ← 1 - 7
لأنها متصلة بعمدة القص

False ribs ← 8 - 10
لأنها غير متصلة بسبل مباسر بعمدة القص

Floating ribs ← 11 - 12
لأنها غير متصلة بسبل نهائي بالقص
فقط متصلين بالحدود
الفقرى الخلفي *

