

Thorax

NO. _____

- A part of the body extend from the root of the neck.
- Thoracic cavity has content.

II) **Thoracic cage** → bone and cartilage
 ⇒ skeleton of the thorax

costal cartilage → hyaline cartilage → important of movement of the thorax during respiration.

* **sternum** → like dagger (سيف)

→ flat bone → full of bone marrow →

since it is a flat bone it is the first and common site to take a sample of bone marrow biopsy in case of **cancer** and **anemia**.

- broad → wide

- Handle → **Manubrium** → articulate superior with the two clavicle and first ribs.

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- **sternum notch** → behind your finger when you put it in this notch, there is a trachea

You can use this region in case of suffocation (خنق)

Body of sternum → longer one → articulate with ribs → ~~are~~ anterior to the heart (CPR)

→ we compress the heart between the sternum and vertebral column.

Tip → xiphoid process

in teen ages and before 40 it is cartilage (hyaline cartilage) → start ossify at age of 40 and above.

~~The sternum~~ **sternal angle** (known as angle of Louis)

① important to counting ribs because the first ribs are covered by clavicle

② arch of aorta are begin anterior and then go left at this level.

Vertebral column → 33 vertebrae from superior to inferior.

* between them there are vertebral disk, why?
they act as shock absorber.

* these vertebrae → they are name according to region in the body, :

- neck region → cervical

- about the abdomen → Lumbar, why →

* **Lumber jack** → the person who ~~cut~~ cut the trees from the forest → so we talking about something long and strong → receiving too much weight

- coccyx → coc → فنقار

- rudimentary → غير مكتمل (دول)

Vertebra

① **Body** → size of the body increase from superior to inferior.

(**low back pain**) عجز من أسفل الظهر يكون من تحت الكتف

Vertebral arch :

① Pedicle → small limb

② Lamina → قوس

site of fusion between pedicle and lamina is transverse process → use for balance

site of fusion between lamina and lamina is called → Posterior process (spine) → you can feel it by your finger

Thoracic vertebra → it has its own characteristics.

inside 8

Transverse process has articular surface with ribs with the same number → Thoracic Vertebra

✗ ribs are articulate with two sequential vertebrae

- aim of each ribs is reach the sternum. anterior, but ~~some~~ some they can't!

so, the ribs are classified according to their connection to the sternum

- Floating ribs (11-12) because they don't attach to the sternum, they attach to the muscles.

⇒ anterior abdominal wall

Typical Ribs.

① Head has two ~~articular~~ articular surface with two sequential vertebrae

② We have two tubercle:

1. articular : for attachment with transverse process

2. non-articular : for attachment with ligament

③ Angle : it is the site that where the ribs change their direction!

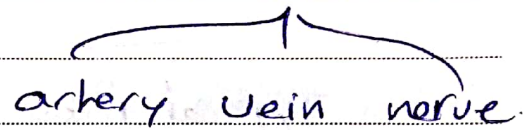
Note : serratus anterior muscle ~~is~~ is originated from the ANGLE of the UPPER 8 Ribs

④ Body (shaft) → Anterior, posterior surface → smooth
superior border → rounded / Inferior → sharp & smooth

at the posterior surface we have groove called \rightarrow costal groove

\Rightarrow For what??

passing through it the blood vessels of thoracic wall \rightarrow Inter costal vessels.



* Atypical ribs.

First ribs : has \rightarrow anterior, posterior border superior, inferior surface

Cervical ribs articulate with Thoracic rib & 1 vertebra

1 articular surface on head of 1st vertebra

1st, 2nd rounded. Groove for 1st rib

There is nerve, vein, artery in the superior surface of the ribs here.

- Some time, in some people there is an extra rib before the first → cervical ribs above the first one.

Cartilaginous, bone, fibrous : ٥ ٤ ٦ ٧ ٨ ٩ ١٠ ١١ ١٢

12th rib → ١٢ ١١ ١٠ ٩ ٨ ٧ ٦ ٥ ٤ ٣ ٢ ١

Thoracic wall

- muscles for anterior ~~abdominal~~ abdominal wall are three layer for respiration.

- the space between two ~~muscle~~ ribs called intercostal space

intercostal ← muscle ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ١٠ ١١ ١٢

intercostal ← Artery, nerve, vein ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ١٠ ١١ ١٢