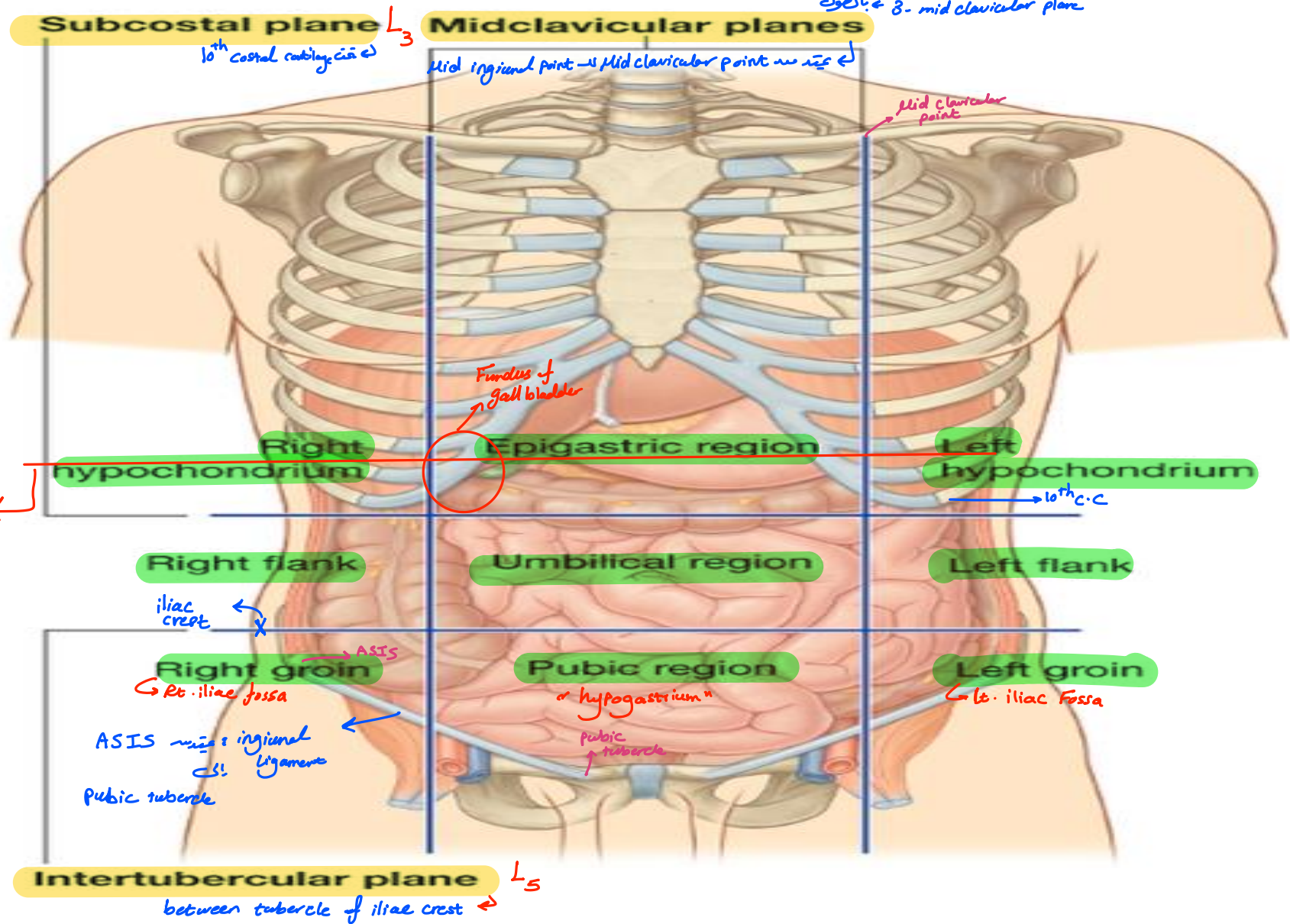


Abdominal Regions

→ divided to 9 regions by 2 imaginary lines
 1- subcostal plane
 2- intertubercular plane
 3- mid claviclar plane



The Body Regions →

أحياناً عرضة لـ pain
 : ما عند هذه جميع منه إبرة
 له : . umbilical region
 له : . small intestine

<u>Right Hypochondrium</u> (Liver & Gallbladder)	<u>Epigastric area</u> : <u>Stomach</u> ← distal part & Pancreas liver ~ جزء + Transverse colon ~ جزء +	<u>Left Hypochondrium</u> : (Spleen , fundus of stomach) + part of splenic flexure of the colon.
<u>Right Lumbar</u> : (Kidney & Adrenal gland)	<u>Umbilical area</u> Small Intestine	<u>Left Lumbar</u> : (Kidney & Adrenal gland)
<u>Right Iliac fossa</u> : Appendix, Rt ovary Cecum	→ suprapubic region <u>Hypogastric region</u> : (Urinary bladder , small intestine) + uterus + part of Fallopian tube + part of sigmoid colon	<u>Left Iliac fossa</u> : (Pelvic Colon , Lt ovary)

← اقصیٰ: بالائینی حصہ کے لئے
 Fundus of gall bladder

↑
 الجراحۃ لایالہ کیسے نریں؟
 Transpyloric plane?

* the plane half way between
 xiphoid process and umbilicus

↑
 the plane which passes
 through the 9th costal
 cartilage

↑
 Transpyloric plane

Subcostal plane

Umbilicus

Supracristal plane

Intertubercular plane

Jugular notch

xiphoid
 process

End of ninth costal cartilage

Lower edge of tenth
 costal cartilage

Highest point on iliac crest

Tubercle of crest of ilium

Pubic symphysis

L₁

L₃

L₅

LI

LII

LIII

LIV

LV

9

10

Regions of Abdominal Area

Right
hypochondriac
region

Epi-
gastric
region

Left
hypochondriac
region

Right
lumbar
region

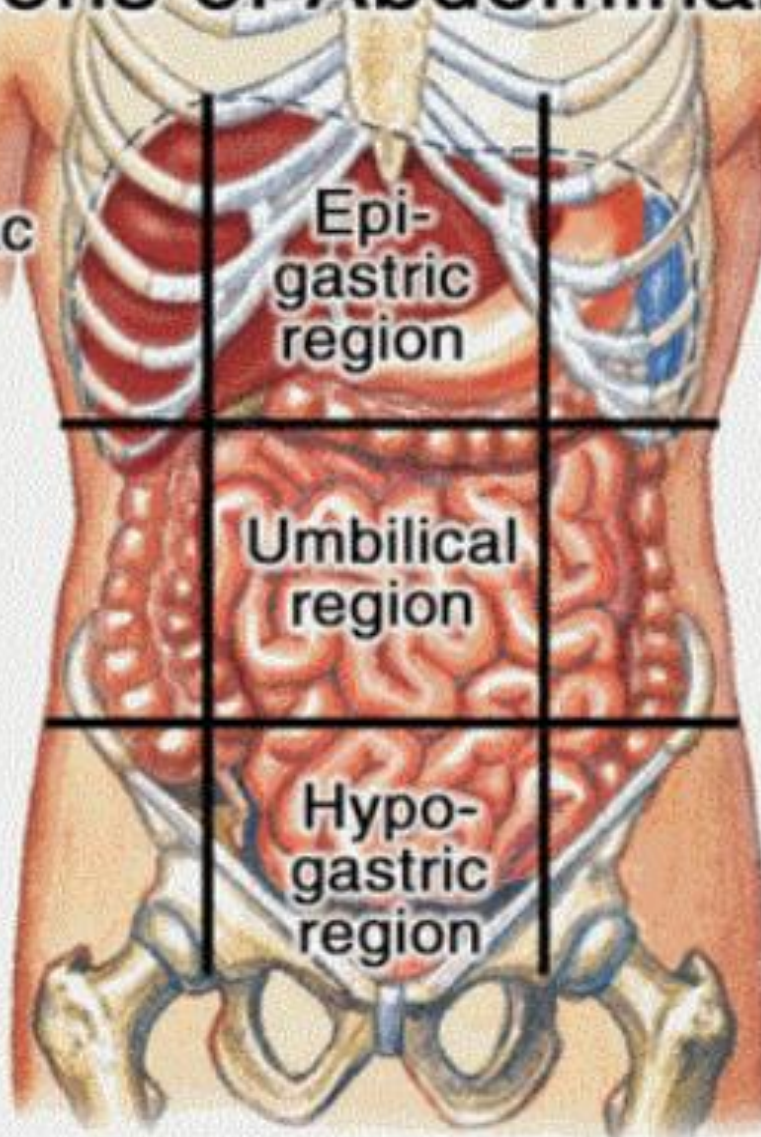
Umbilical
region

Left
lumbar
region

Right
iliac
region

Hypo-
gastric
region

Left
iliac
region



* Thoracoabdominal Structures:

→ part in chest and part in abdomen

→ 4 structures: 1. stomach

2. liver

3. spleen

4. diaphragm

→ lie above rib cage and below the nipple line.

* True abdominal structures:

: lie just in abdomen

ex: Aorta

colon

small bowel

sigmoid colon

cecum, etc...



Abdominal Lines and Planes

Vertical Lines: Midline, mid-clavicular line

Horizontal Planes:

Fundus of gall bladder

Transpyloric Plane : passes through tips of ninth costal cartilages on both sides. It lies at level of body of first lumbar vertebra (L1), pylorus of the stomach, duodenojejunal junction, neck of pancreas, and hila of kidneys.

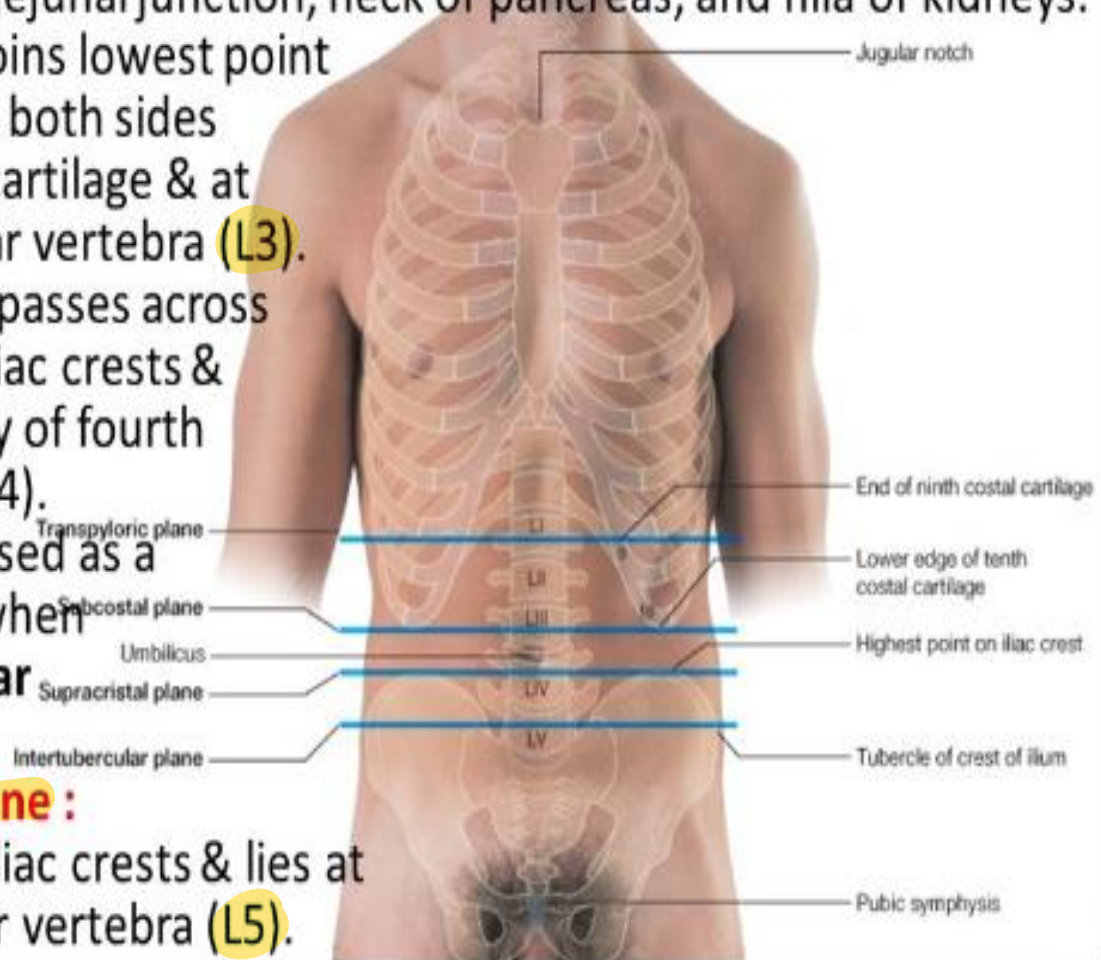
Subcostal Plane : joins lowest point of costal margin on both sides that is 10th costal cartilage & at level of third lumbar vertebra (L3).

Intercristal Plane : passes across highest points on iliac crests & lies on level of body of fourth Lumbar vertebra (L4).

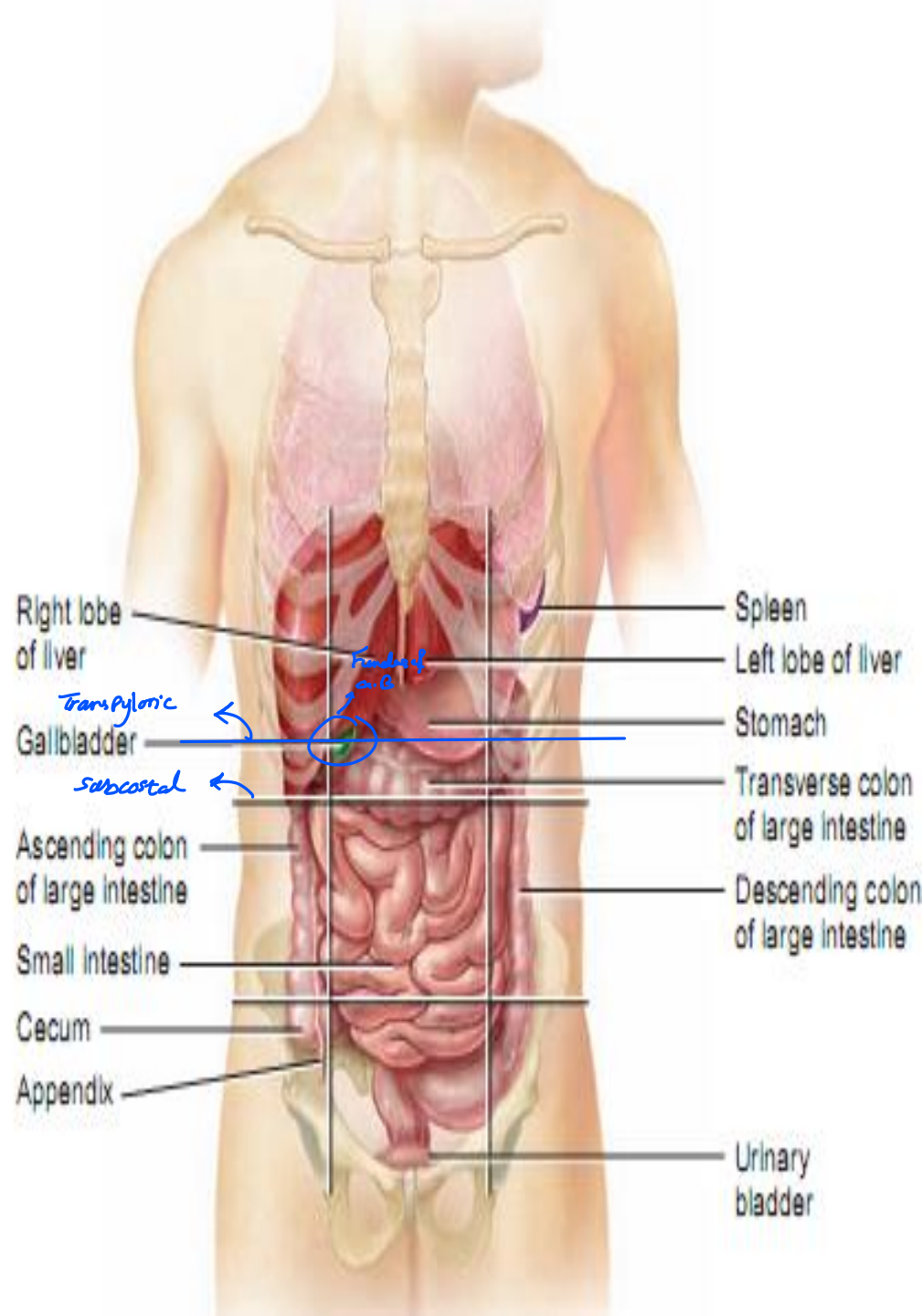
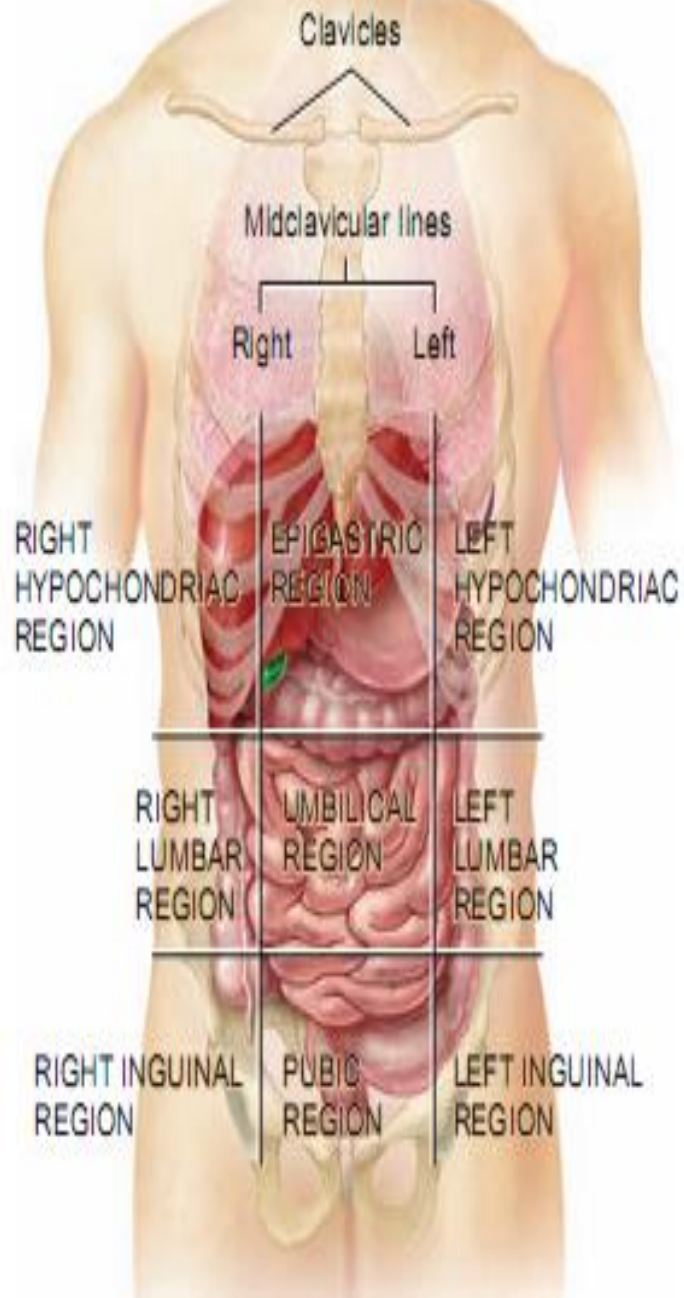
This is commonly used as a surface landmark when performing a **lumbar spinal tap**.

Intertubercular Plane :

joins tubercles on iliac crests & lies at level of fifth lumbar vertebra (L5).



خط
الذي
يقسم
البدن
إلى
أجزاء



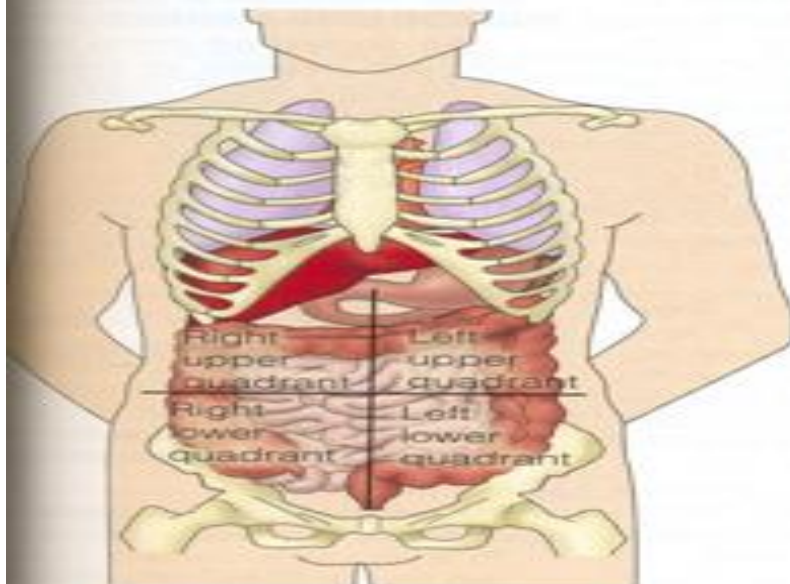
The **epigastric** (ep'i-gas'trik) **region** is located superior to the umbilical region (*epi* = upon, above; *gastric* = stomach).

The **hypogastric (pubic) region** is inferior to the umbilical region (*hypo* = below).

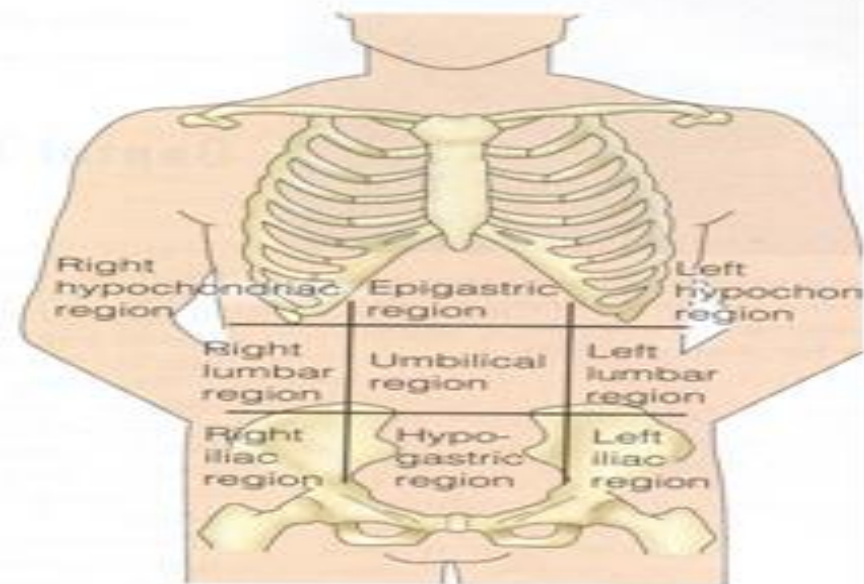
The **right and left iliac, or inguinal, regions** are lateral to the hypogastric region (*iliac* = superior part of the hip bone).

The **right and left lumbar regions** lie lateral to the umbilical region (*lumbus* = loin).

The **right and left hypochondriac** (hi'po-kon'dre-ak) **regions** flank the epigastric region and contain the lower ribs (*chondro* = cartilage).



(a)



(b)

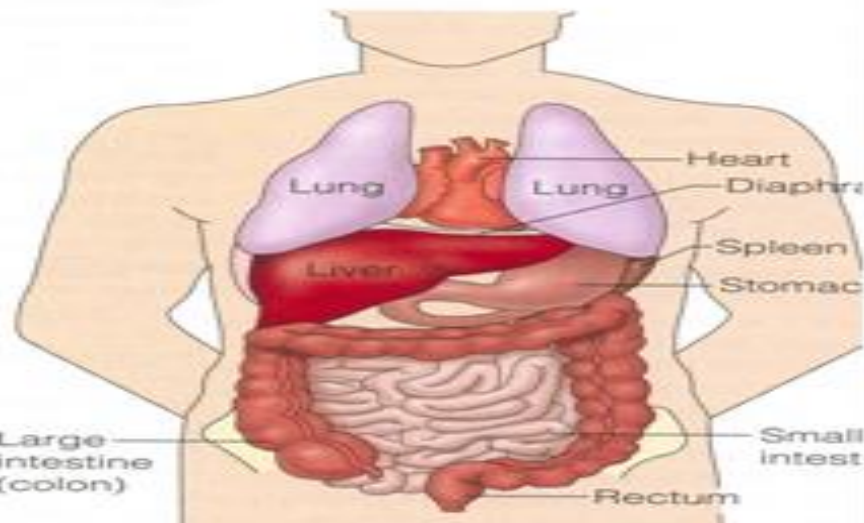
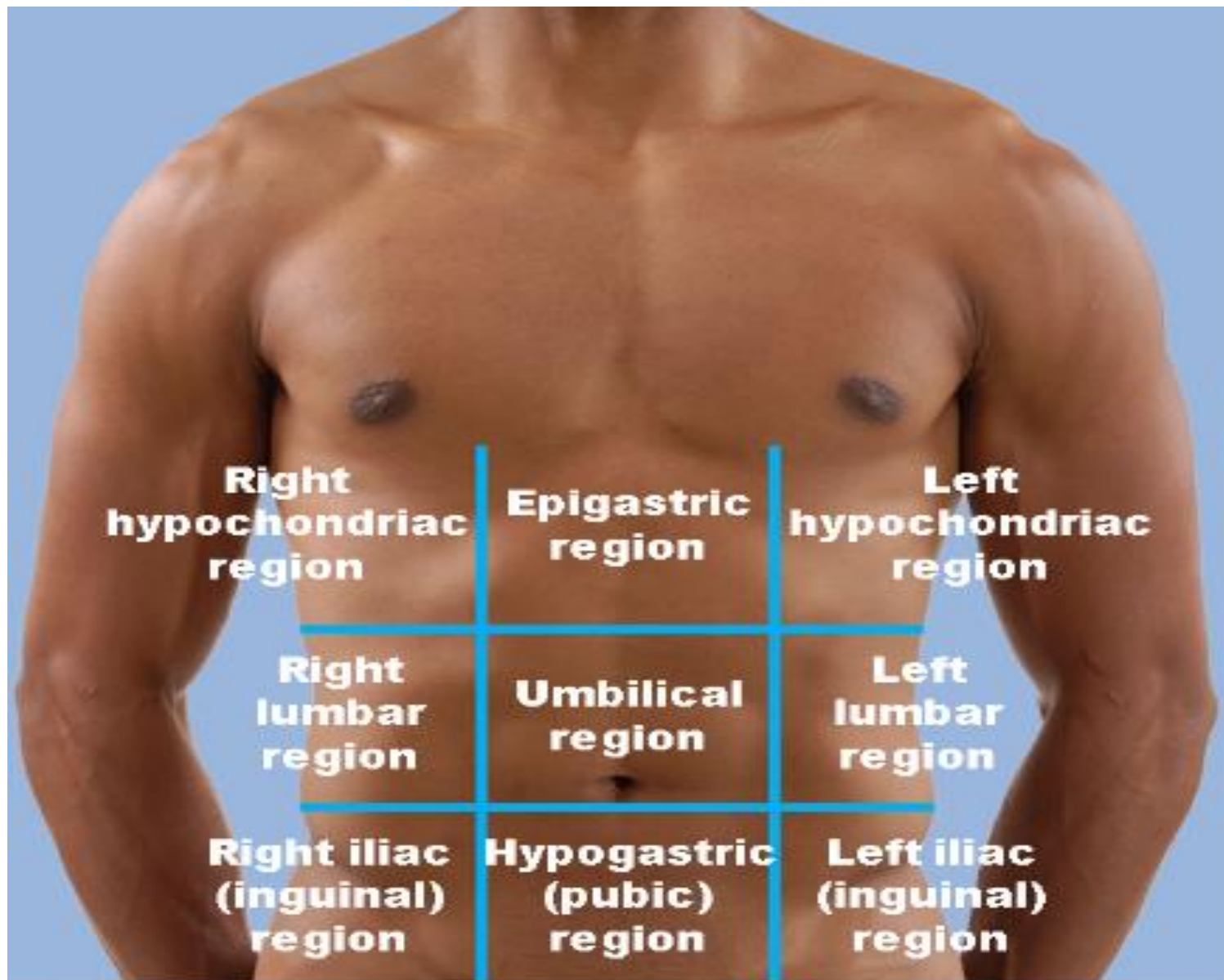


Figure 1.8 Abdominopelvic surface and
v. (a) The four quadrants. **(b)** Nine regions de-
 ived by four planes. The superior horizontal plane
 is the inferior aspect of the ribs; the inferior hori-



(a) Nine regions delineated by four planes

ESOPHAGUS

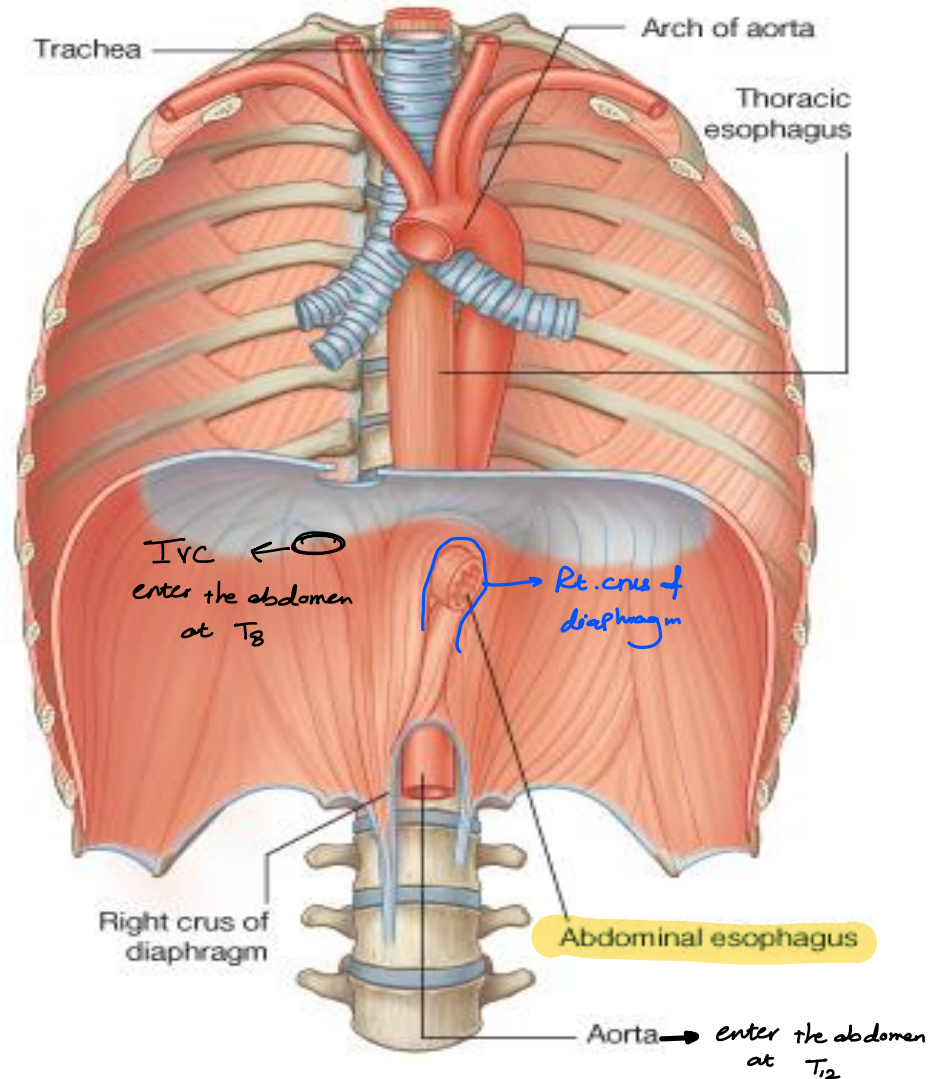
* lower border of C₆: *very important land mark*

- End of Larynx
- Begin of trachea
- End of pharynx
- Begin of esophagus

Begins at lower border of cricoid cartilage at lower

The esophagus enters the abdomen through an opening in the *Slings of Rt crus* of the diaphragm.

After a course of about (2.5 cm), it enters the stomach on its right side. At T₁₀.



T₈ → IVC

T₁₀ → esophagus

T₁₂ → Aorta

Anatomy of esophagus

Begin:

Upper Esophageal
Sphincter (UES)

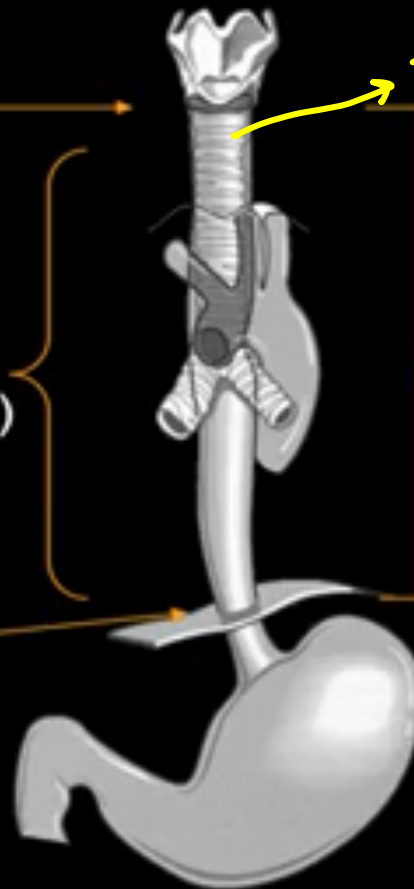
Esophageal Body
(cervical & thoracic)

end:

Lower Esophageal
Sphincter (LES)

trachea
≈ 12 cm

18 to 24 cm
length of esophagus
≈ 25 cm



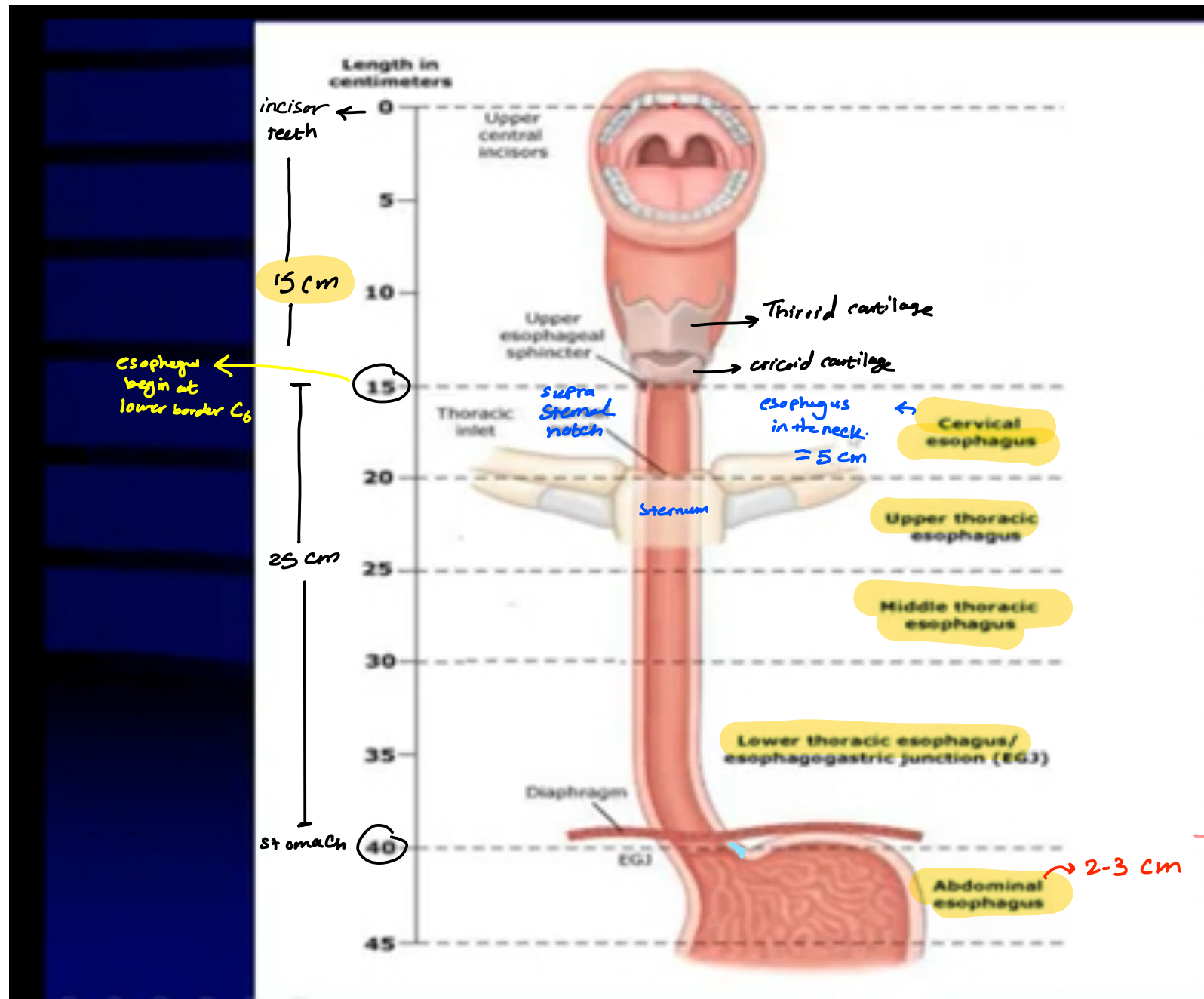
* لمانع *gastroscope* قد يشق فتحة في *stomach*
esophagus و *teeth* من 38cm ♀ - 40cm ♂
 25cm *stomach* و *esophagus* ~ 15cm

* *esophagus* = 3 parts:
 1- cervical
 2- Thoracic (upper, middle, lower)
 3- Abdominal

* Thoracic *esophagus* the longest part.

* length of *esophagus* important to prevent its reflux.

* *abdominal* عكس اتجاه *esophagus*
 → *acid* كان *أحمض*
Reflux esophagitis
 كان *أقلم*.



Abdominal ESOPHAGUS

ال vagus الع: Left ١*
esophagus الع: anterior
abdomen الع:
ال vagus الع: Rt. *
: posterior

- The esophagus is related
 - Anteriorly → posterior surface of the left lobe of the liver, left Vagus.
 - Posteriorly → the left crus of the diaphragm, right Vagus.
- The esophagus conducts food from the pharynx into the stomach.
 - Wave-like contractions of the muscular coat, called *peristalsis*, propel the food onward.

ESOPHAGUS

سلسلة blood supply → سلسلة

Blood Supply : Segmental

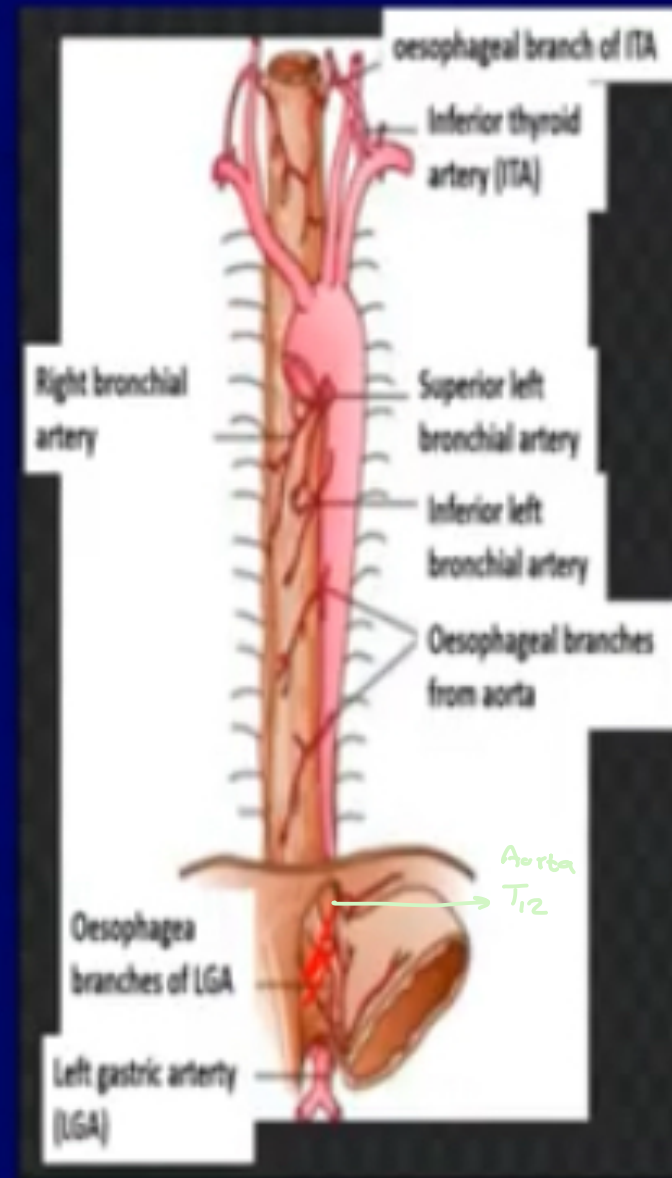
Cervical part : Inferior thyroid artery. → arise from Rt. Subclavian artery. From Thirocervical Trunk

1st part of subclavian artery

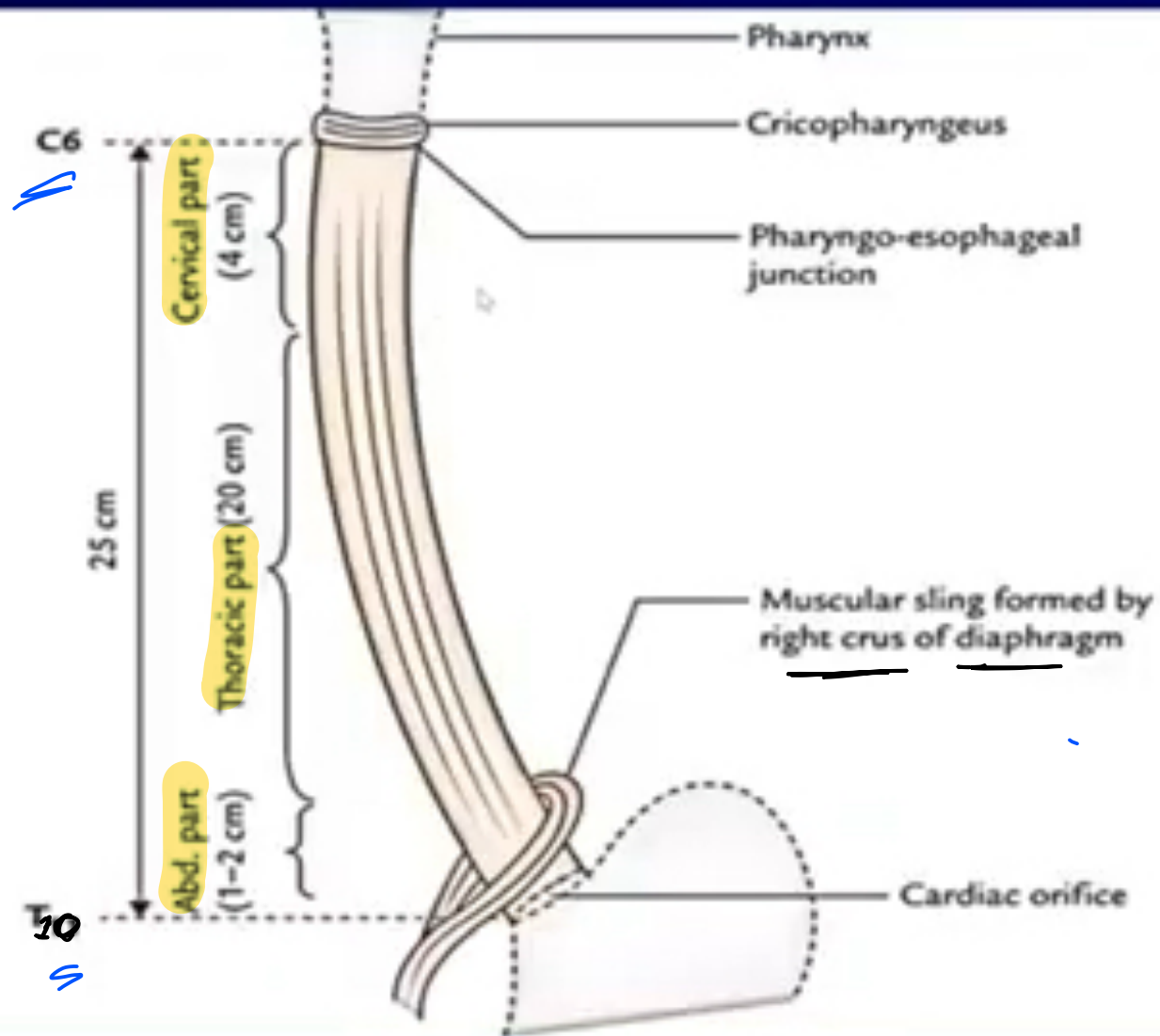
Thoracic part: Bronchial, and descending thoracic aorta.

Abdominal part: ascending branch of Left gastric artery. → arise from Celiac Trunk

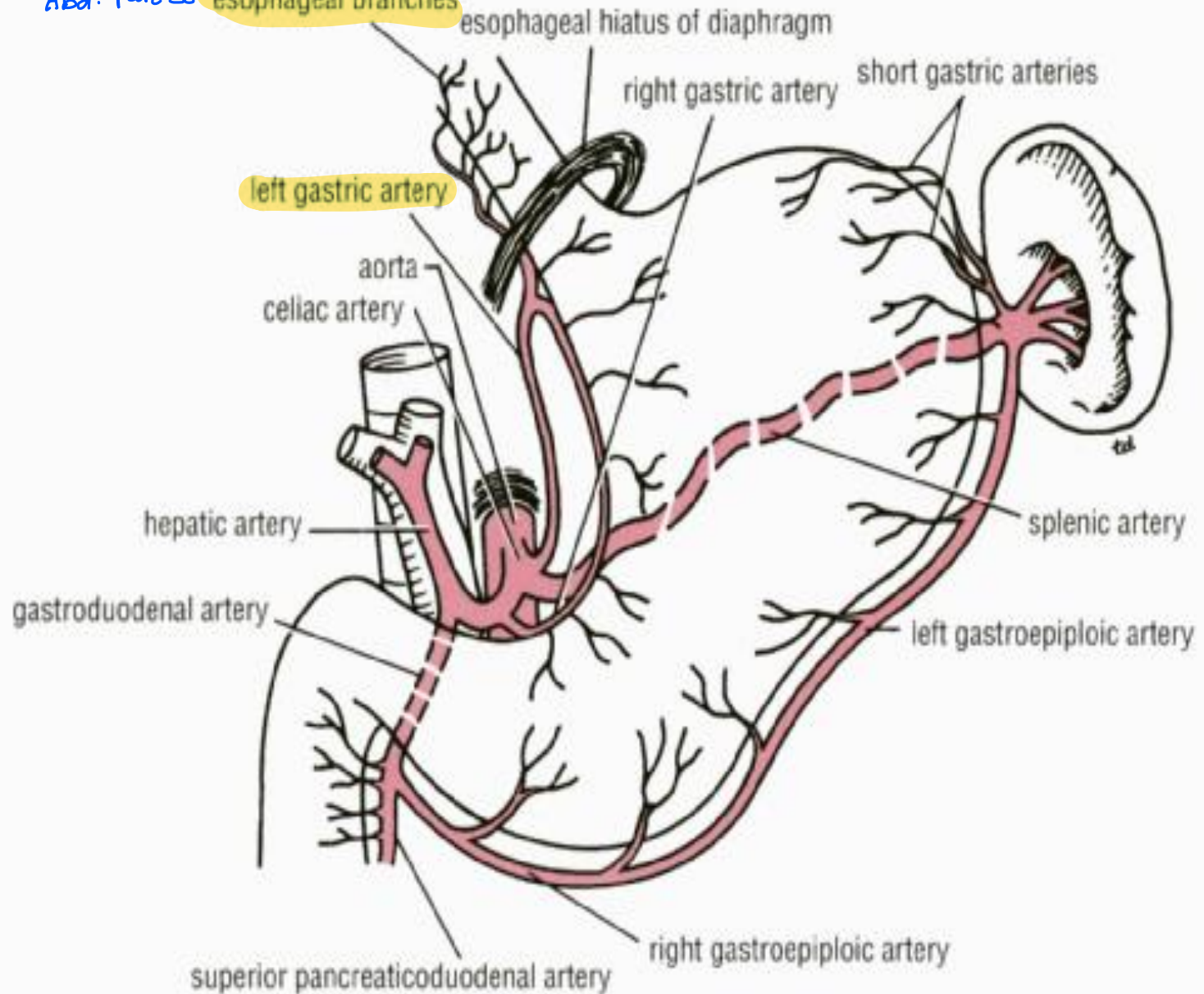
Anterior LT and posterior RT **Nerves** (Vagi) and sympathetic branches of the thoracic part of the sympathetic trunk supply the esophagus.



Parts of esophagus

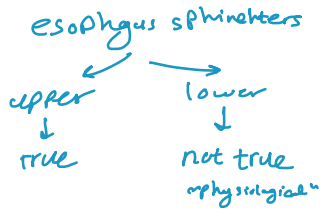


Abd. Part II esophageal branches



ESOPHAGUS

- The *veins* drain into the left Gastric vein, a tributary of the portal vein.
- The lymph vessels follow the arteries into the left gastric nodes.
- Anterior and posterior gastric nerves (vagi) and sympathetic branches of the thoracic part of the sympathetic trunk supply the esophagus.



GASTROESOPHAGEAL SPHINCTER

- upper and lower esophageal sphincters of esophagus
Both sphincters are closed at rest.
(Rt crus of diaphragm) T10 is LES and C7 is UES

- muscle not hypertrophied → not a true sphincter ← LES
- anatomical vs physiological S
- esophagus, stomach in Acute angle ①
- interabdominal P → e.g. use sling action of Rt crus ②
- sling action of Rt crus ③

- **No anatomic sphincter** exists at the lower end of the esophagus.
- However, the circular layer of smooth muscle in this region serves as a **physiologic sphincter**.
- As the food descends through the esophagus, relaxation of the muscle at the lower end occurs ahead of the peristaltic wave so that the food enters the stomach.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

NARROW AREAS OF THE ESOPHAGEAL LUMEN



The esophagus is narrowed at four sites: **7-9-11-15 inch** from incisor teeth.

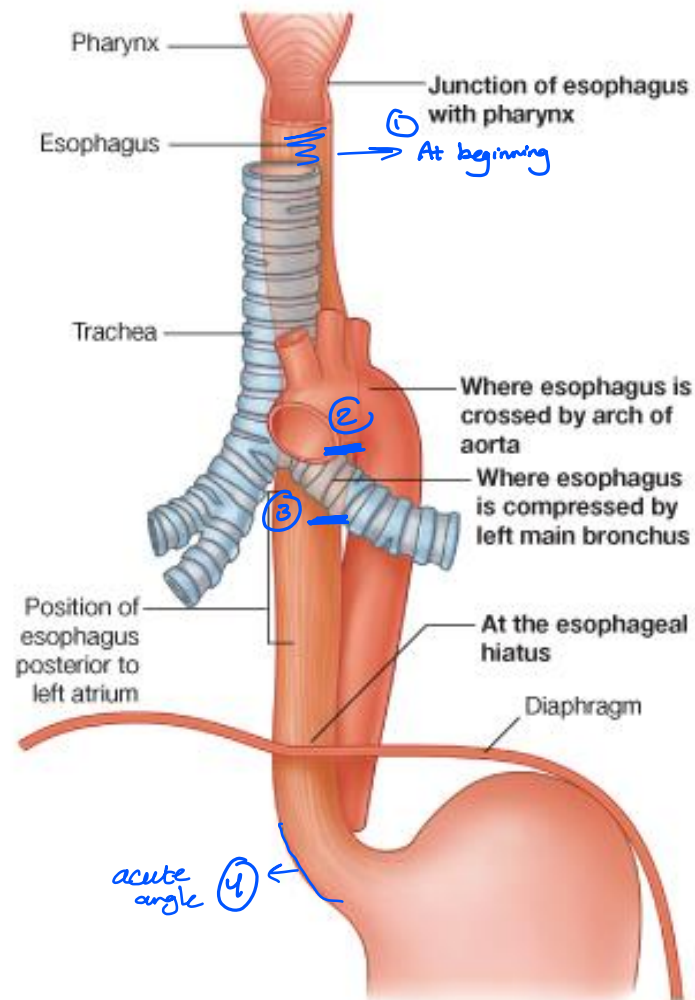
7 inch → 15 cm from teeth
At the beginning, behind the cricoid cartilage of the larynx.

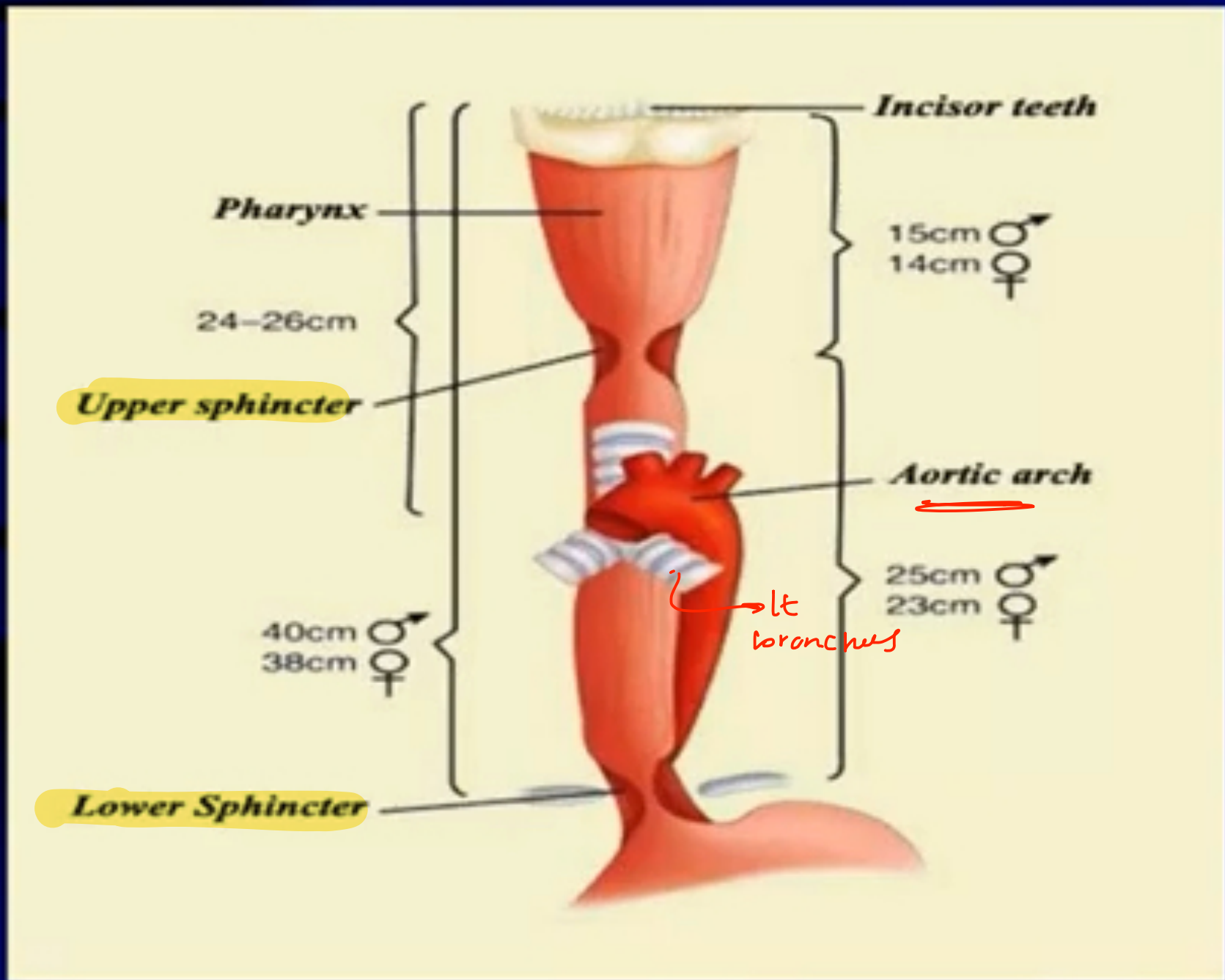
9 inch
Where it is crossed by arch of aorta in superior mediastinum.

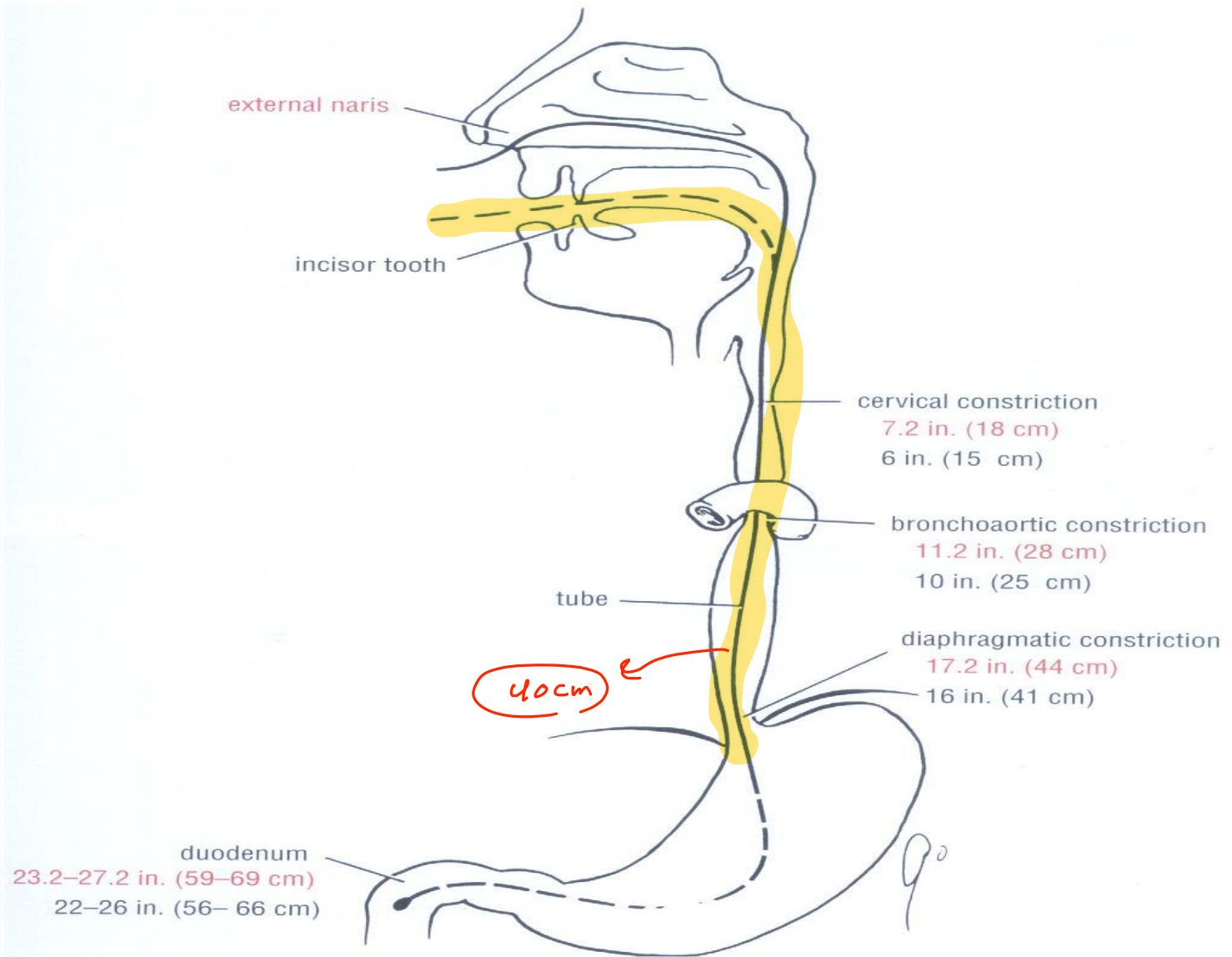
11 inch
Where the left bronchus in posterior mediastinum cross the front of the esophagus.

15 inch End
Where the esophagus enters the stomach. 38-40 cm from incisor of teeth

These three sites may offer resistance to the passage of a tube down the esophagus into the stomach.







معطاش حرقة في esophagus و sphincter. lower. من احيى يرضي .

← باتاي تجل dysphagia (صعوبة في البلع) **ACHALASIA OF THE CARDIA** → means: Aprestalsis of the body of esophagus and Failure of LES relaxation.



- The cause of Achalasia is unknown, but it is associated with a degeneration of the parasympathetic plexus (**Auerbach's plexus**) in the wall of the esophagus.
- The primary site of the disorder may be in the Innervation of the cardio esophageal sphincter by the Vagus nerves.
- **Dysphagia** (difficulty in swallowing) and **Regurgitation** are common symptoms that are later accompanied by proximal dilatation and distal narrowing of the esophagus.

Achalasia and Mega esophagus

في عدم حركة

Definition: Apresalsis of muscles of body of esophagus
and failure of relaxation of lower esophageal sphincter.

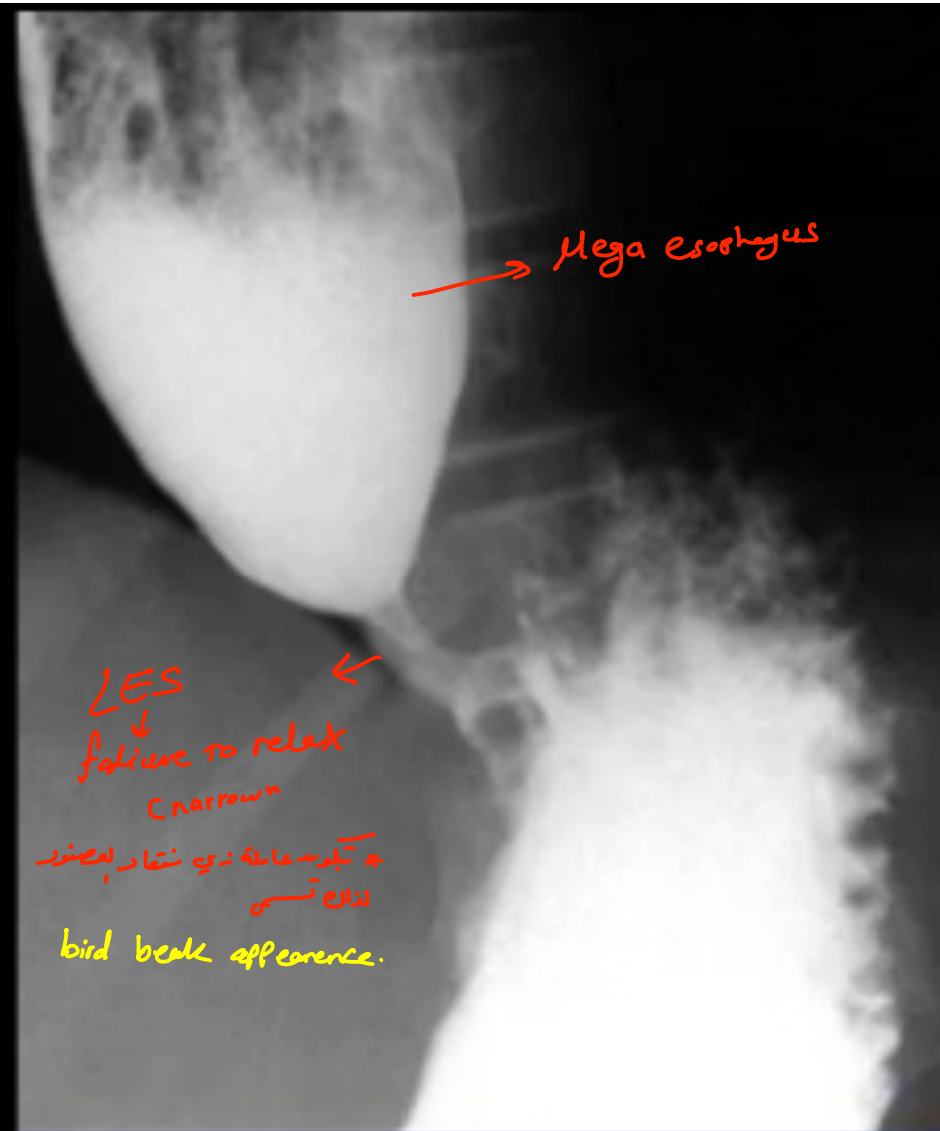
- Food fails to pass from the esophagus into the stomach.

Causes: Damage of the Myenteric plexus in the lower two thirds of the esophagus.

- Muscles remains spastically contracted
- Loss receptive relaxation" of the G.E sphincter.
- Dysphagia (difficulty in swallowing) and Regurgitation are common symptoms that are later accompanied by proximal dilatation and distal narrowing of the esophagus.

في نقطة منه - اخفي يصل للمعدة

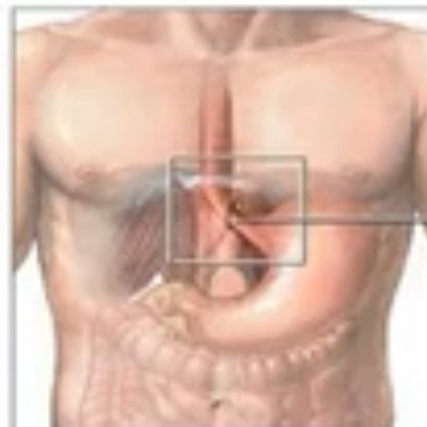
بالتالي موسع في esophagus (Mega esophagus)



LES
↓
failure to relax
narrow
به سبب عدم شل شدن شفتار و باریک شدن
آن است
bird beak appearance.



Lower esophageal sphincter fails to relax



Lower esophageal sphincter

- ① esophagus
- ② umbilicus
- ③ Rectum

BLEEDING ESOPHAGEAL VARICES

At the lower third of the esophagus is an important Portal-Systemic Venous

Anastomosis.

lower 1/3 of esophagus anastomosis

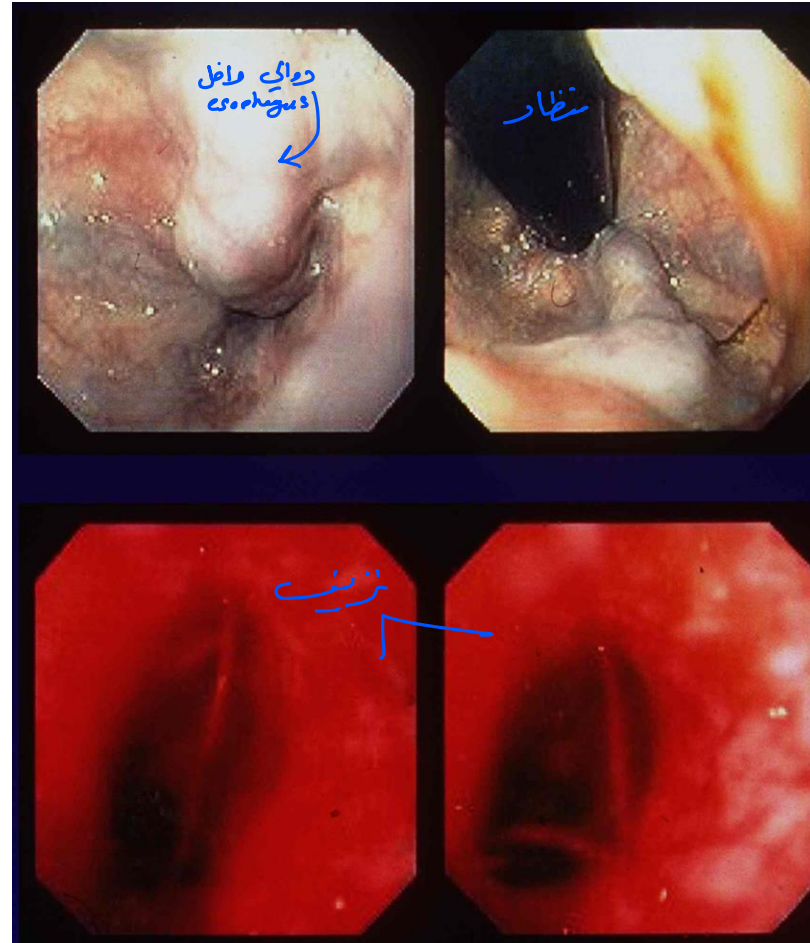
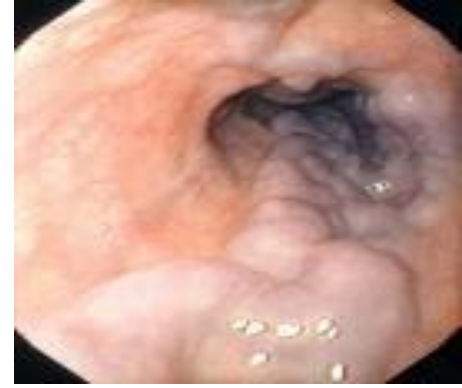
Here, the esophageal tributaries of the left gastric vein (which drains into the portal vein) Anastomose with the

Esophageal tributaries of the Azygos Veins (systemic veins).

Should the portal vein become obstructed, as, for example, in cirrhosis of the liver, portal hypertension develops, resulting in dilatation and varicosity of the portal-systemic anastomoses.

Varicose esophageal veins may rupture, causing severe vomiting of blood (Hematemesis).

portal hypertension *
OR
liver cirrhosis.



① Benign restriction
esophagus reflux نسيج

② malignant tumor in
esophagus

③ Achalasia of the cardia

ESOPHAGEAL STENOSIS

كصعيل dysphagia مقلد صرجه الى او ما تقري.

■ **Esophageal stenosis** is a narrowing of the lumen of the esophagus, which commonly occurs in the **lower part**.

■ It is treated by dilatation.

