



جامعة الدُّنْعَاءُ

ANATOMY

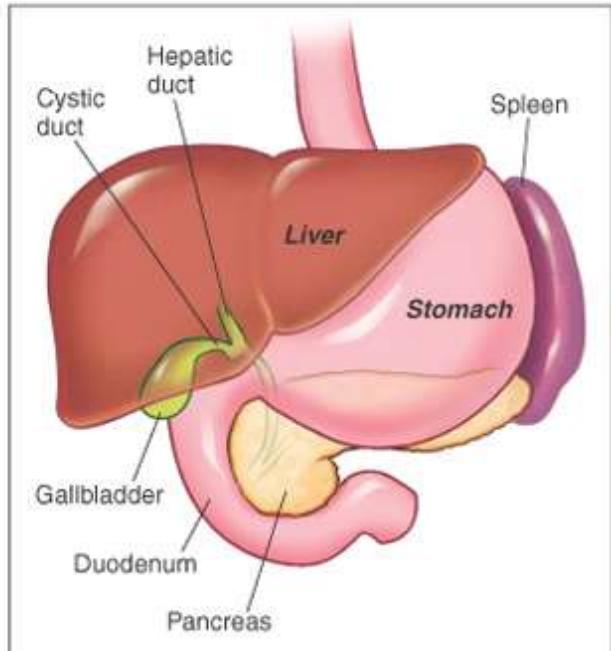
MORPHINE ACADEMY

MORPHINE
ACADEMY

The Digestive System

انتهوا التسجيل والآن تدرسو
عنوان ترتيبوا الأفكار ته
٩Dec ٢٠١٩
التاريخها من شوي البحق

هذا الشابر غلبني أكثر من الـ Bones ، ربجور ٥٤ درجة
أخذ مجيء ٩ ساعات ،
لكن دراسته سهلة إن شاء الله



Definitions

S organs like several organs in body mainly go to Dig. sys. like absorption & digestion, like the ¹ ingestion function.

The Digestive System:

Is the system of the body formed of all the organs responsible for the ingestion, digestion, and absorption of food. It includes the *alimentary canal and the accessory glands*.

الخط السادس Dig. sys. لقسم المقصوم :

① Alimentary Canal

② Accessory Glands

1

The Alimentary Canal:

Is a long continuous tube that extends from the mouth to the anus. It includes: the *mouth*, *parts of the pharynx*, *the esophagus*, *the stomach*, *the small intestine*, and *the large intestine*. The Gastrointestinal Tract (GIT) includes the stomach and intestines only. *Dig. sys.* Alim. *المرئ، المريء، المعدة، الأمعاء الدقيقة، الأمعاء大 intestine*

② The Accessory Glands

The Abdominal Cavity

Borders:

1. **Anterior:** The anterior abdominal wall.

2. **Posterior:** Posterior abdominal wall.

3. **Superior:** The diaphragm. (الحجاب الحاجز)

4. **Inferior:** The pelvic brim. *Abdominal cavity*

Borders of Abdominal cavity
 anterior abdominal wall (Anterior part ①)

posterior abdominal wall (posterior ②)

diaphragm (superior ③)

pelvic brim (Inferior ④)

عین مونت مجاہد
ماہیتیں وہ
نیکیتیں رج نہ رہا
pelvic brim ہے

Below the pelvic brim the cavity is called the **pelvic cavity**. The abdominal and pelvic cavities are continuous with each and together form the abdominopelvic cavity.

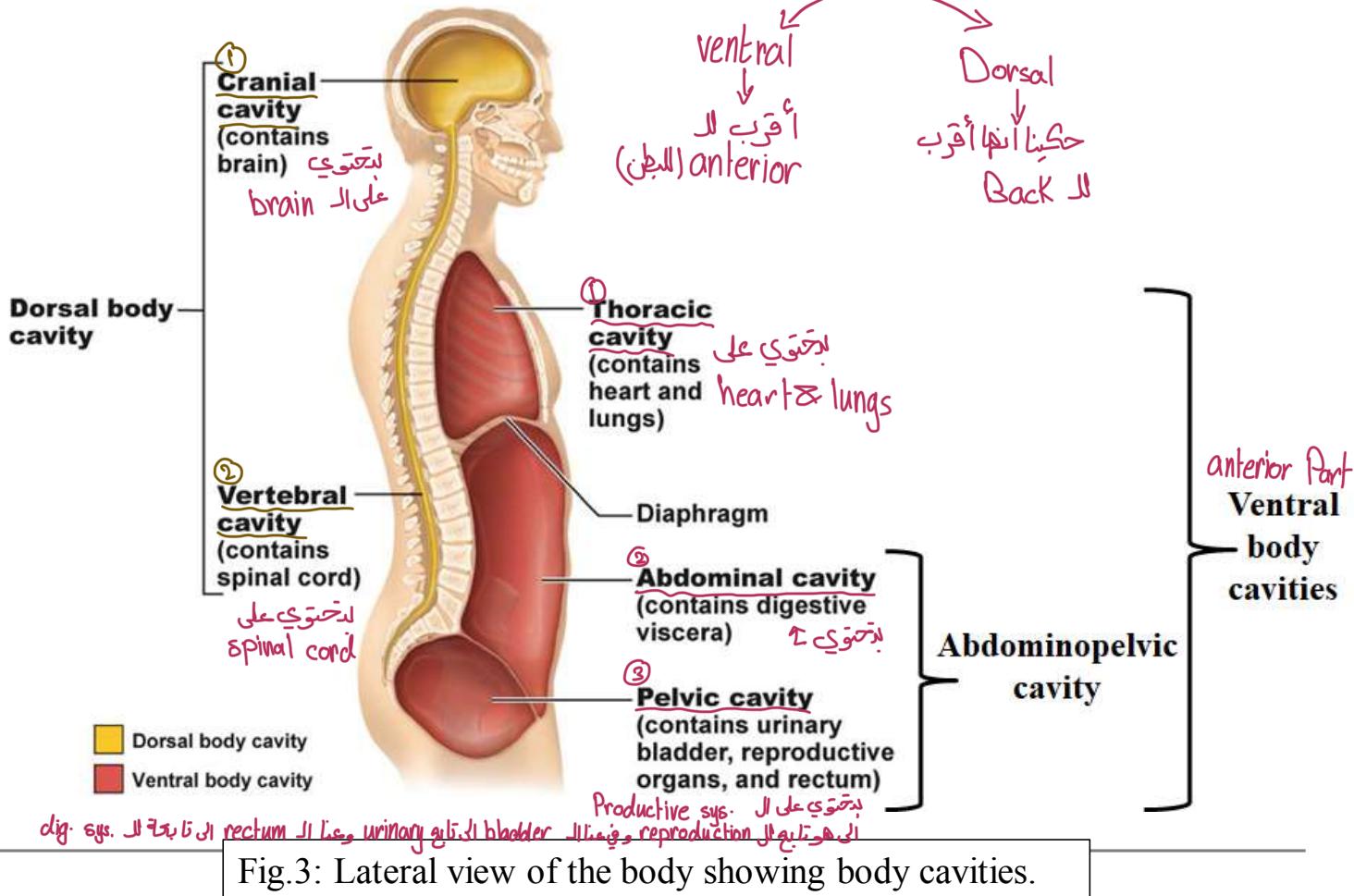
ال pelvic brim لشکن انجوئی عنانے physiological barrier، ما فی عنانے ایسی بھمل بین ال

ال pelvic، لہو wall وہ membrane وہ tissue وہ لالی، فقط ہو خطا

، خط تیلی، بخواہی هامن زی حد بھمل بین abdominal وہ pelvic Imaginary

abdominopelvic cavity (pelvic abdominal) فی ناس بخت وهم جزو واحد فنسنوسوہم

Body cavities:



Peritoneum

هو يُعتبر أكبر سيروس بالجسم serous memb.

- Largest serous membrane of the body.
- Divided into: م分成 8 قسم

- Parietal peritoneum – lines wall of cavity. هو يغطي الجدار، أو يغطي mainly wall، بعمدتها lining abdominal cavity من الداخل
- Visceral peritoneum – covers some organs (= Serosa). غطي الأعضاء organs
- Space between is called the peritoneal cavity and contains the peritoneal fluid. فباتالي تكون بين ① و ② space وهي ال بسوها peritoneal space و ②+① ملئان بـ peritoneal fluid بسوها

فأصل إعلان



جاء من Stomach و هي تُدعى Gastric

(Gastrointestinal Tract) تُدعى

small intestine جاء من

(GI sys.) Dig. sys. بـ

فباتالي ينبع GI و هون انته ما حكى عن طبل الـ sys Dig. هي انته استحدثت الـ Tongue و الـ accessory glands و استحدثت الـ Esophagus و الـ large intestine و الـ sys Dig.

طبعاً من يستخدم مهبط الـ GI ولكن اذا ما نفع رقيقين فهو ما شغل طبل الـ sys Dig. small intestine + stomach



The Tongue

هو عبارة عن mainly

muscles متحركة من الـ muscles

muscos membrane

- Skeletal muscles covered by mucous membrane.

Maneuvers food for chewing and forces food back for swallowing.

- Contains Lingual glands which secrete lipase.

- Dorsal surface has 3 types of projections called lingual papillae: Filiform, Fungiform,

and Vallate. The vallate type is the least numerous but it's the largest and contains most of the taste buds (for the **sense of taste**). Fungiform papillae also has taste buds. Filiform papillae has no taste buds but assist in moving food around the mouth.

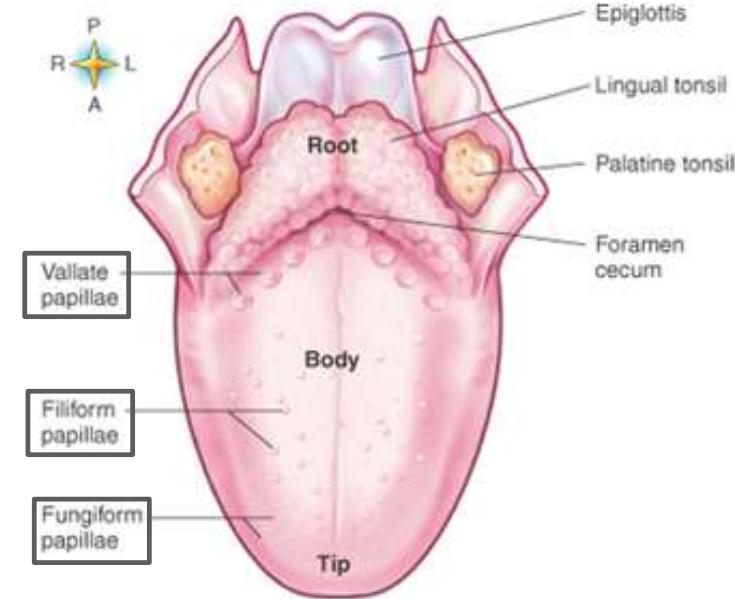


Fig.6: The tongue.

الـ Vallate

يحتوى على أقل من Fungiform

Filiform

ومن

لهم بالجمع
هم اكبر
والكل نوع
يعتني على
tast buds

The Salivary Glands

- Salivary glands release saliva into the mouth:

- Ordinarily, just enough is secreted to **keep mouth and pharynx moist and clean.**
- When food enters mouth, secretion increases to **lubricate mouth, dissolve food, and begin chemical digestion.**

- There are 3 pairs of major salivary glands. The ducts of these glands into the mouth.

هي اكبر وحده

1. **Parotid:** The largest. Located anterior and inferior to the ear. : 3 types lie

ف بالذاتي ينبع على زاوية الماندible **secretion** من **Parotid** glands

لـ **Parotid** glands الـ **secretion** الـ **saliva** في **Parotid** glands

لـ **Parotid** glands الـ **secretion** الـ **saliva** في **Parotid** glands

ف بالذاتي ينبع على زاوية الماندible **secretion** من **Submandibular** glands

لـ **Submandibular** glands الـ **secretion** الـ **saliva** في **Submandibular** glands

ف بالذاتي ينبع على زاوية الماندible **secretion** من **Sublingual** glands

لـ **Sublingual** glands الـ **secretion** الـ **saliva** في **Sublingual** glands

ف بالذاتي ينبع على زاوية الماندible **secretion** من **Sublingual** glands

لـ **Sublingual** glands الـ **secretion** الـ **saliva** في **Sublingual** glands

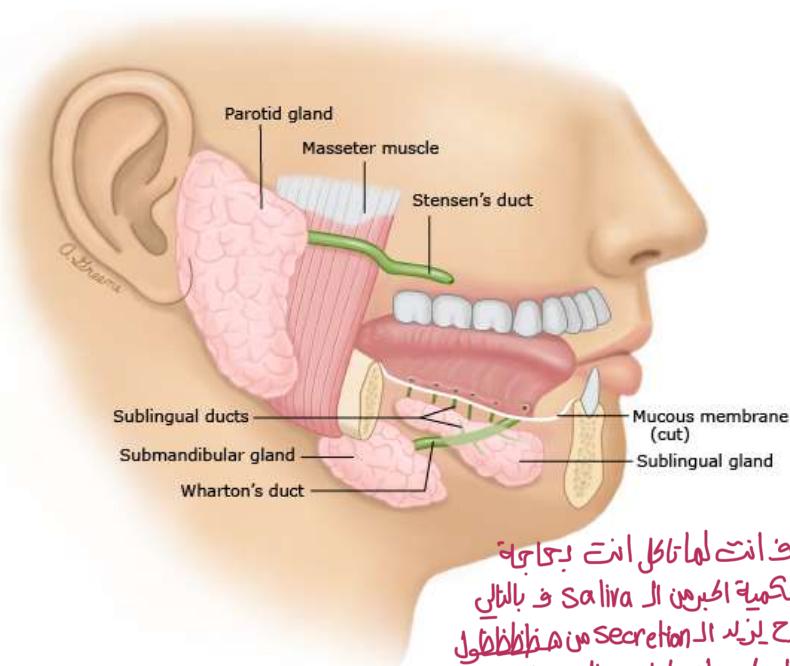


Fig.8: The major salivary glands.

The Esophagus

- A long muscular tube
- Course:

- ❑ Begins in the neck at the level of C6

vertebra.

الحَمْبَةُ الْمُوَارِدُ = ① رَحْ يَحْوِنْ نَازِلٌ مِنْ قَوْمِ الْأَرْجُوْنِ

- Runs down posterior to the trachea

- Enters the superior mediastinum, and

then passes into the posterior

mediastinum where it runs anterior to the vertebral column and posterior to

the vertebral column and posterior to the heart. A very small amount of fat is also found in the mesentery.

Passes through the **esophageal hiatus**

of the diaphragm (**T10 vertebra**) to

enter the abdomen. diaphragm → diaphragm

Enters the stomach at the cardia

Enters the stomach at the cardia.

esophageal

الجعور (stomach) في الماء (stomach) في الماء

muscular canal من فتحة عضدية
stomach إلى فتحة pharynx

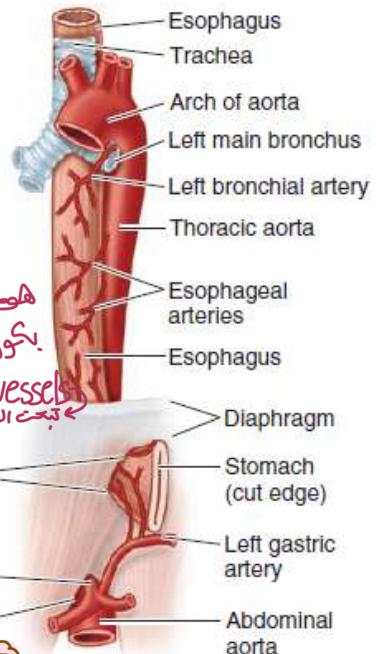


Fig.9: Course of the esophagus in the thorax.

الرئام اليماني والمعوي esoph. stomach and cardiac sphincter ← 8 days

ينسمون بممطاح انو واحد صارعده Heartburn (الحرقة) طبع ليه بسموها لدنه الحرقة تكون
أقرب عال Heart ، لدنه لما ترتفع الموجة رح تتدلى ال upper part أو ال lower part لل esophagus
فالتالي رح تكون أقرب عال Heart وبالتالي رح تحس الحرقة انها بال Heart

The Stomach

أداً متخرّن لما هاتمنا البطن و 11 12 13 Pelvis حسناً 11 جسناً رئاهم

Epigastric ② Right hypo ③ left hypocondriac

stomach الـ A J-shaped dilation of the alimentary tract located inferior to the diaphragm in the left hypochondriac and epigastric regions and even the umbilical region when it's distended.

الـ **The stomach churns and breaks down food and it mixes the food with its digestive secretions converting it into the semisolid chyme.** The stomach also acts as a reservoir for the food.

الـ The wall of an empty stomach shows several folds called **rugae**. These increase surface area.

Mucosa – gastric glands:

تحت المعدة stomach بـ تـ خـ لـ الـ أـ طـ لـ وـ تـ فـ زـ الـ كـ حـ اـ رـ

وـ تـ حـ لـ فـ تـ هـ اـ قـ رـ كـ مـ عـ

stomach 1) 3 types of exocrine cells – ① mucous cells (mucus), parietal cells (HCl and intrinsic factor), and ② chief cells (pepsinogen) 2 types of cells (and gastric lipase).

المعدة تـ حـ لـ على folds بـ تـ حـ لـ area وـ تـ حـ لـ هـ اـ لـ الـ وـ تـ حـ لـ الـ اـ طـ لـ وـ تـ حـ لـ الـ كـ حـ اـ رـ

□ Endocrine cells \rightarrow G cells \rightarrow secrete gastrin.

The muscularis of the stomach is formed of 3 layers.

كل ما كان بـ طـ يـ مـ حـ نـ اـ لـ الـ اـ خـ لـ طـ حـ لـ بـ الـ مـ حـ دـ

أـ وـ تـ حـ لـ عـ اـ لـ فـ الـ اـ خـ لـ (جـ يـ رـ مـ الـ مـ حـ دـ عـ اـ لـ الـ اـ خـ لـ طـ حـ لـ بـ الـ مـ حـ دـ)

small intestine

absorption

﴿هُنَّ رَاحِلَةٌ لِّكُلِّ أُنْسٍاءٍ إِلَيْهِ مَا وَسَعَتْ بِالسَّلْكِ يَدِهِ إِلَيْهِ بَلَى﴾

Anatomy of the stomach

- The stomach can be divided into 4 regions:

1) **The Cardia** – the part that surrounds the opening of the esophagus.

2) **The Fundus** – Usually filled with gas

3) **The Body** – The main part of the stomach

4) **The Pyloric region** – The distal part of the stomach. Ends at the pylorus which opens into the duodenum and possesses the pyloric sphincter (a thickening in the muscularis layer)

The longer left border of the stomach is called the **greater curvature**. The shorter right border is called the **lesser curvature**.

- At the junction between the esophagus and the stomach, there's an angle called the **cardiac angle**.

الطبخ ينبع من الماء أو الفم إلى الماء أو الفم (بسم الله الرحمن الرحيم)

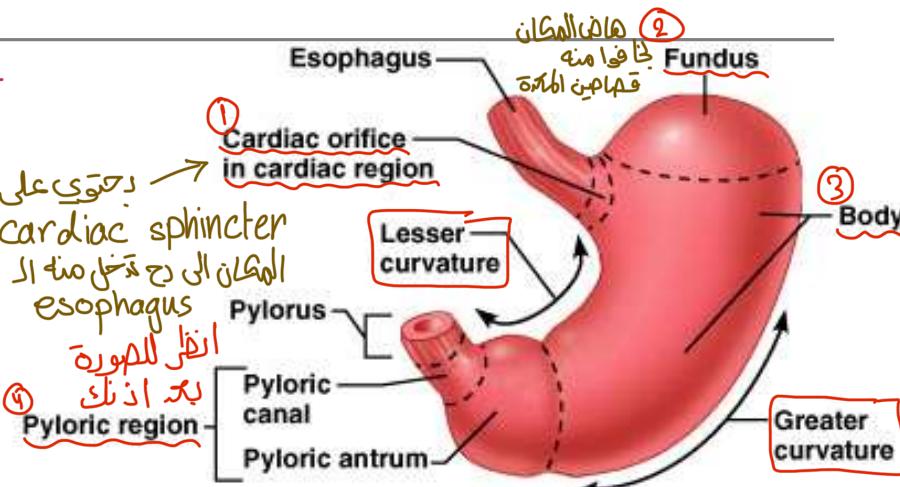


Fig.13: Anatomical features of the stomach.

الطبخ ينبع من الماء أو الفم إلى الماء أو الفم (بسم الله الرحمن الرحيم)

The Small Intestine

هي عبارة عن 3 parts

الجهاز

C-shape

- It's a long coiled tube formed of 3 parts – duodenum, jejunum, and ileum.

أول جزء يجي بعد المعدة \rightarrow pyloric sphincter
آخر جزء إلى jejunum \rightarrow ileum \rightarrow ileocecal valve
أطيل جزء \rightarrow ileum

وهي المسئولة عن الـ absorption

عن الـ absorption

absorption

Its function is the digestion of food particles delivered from the stomach and the subsequent absorption of nutrients.

هي المسئولة عن الـ absorption \rightarrow mainly digestion

الـ small int. \rightarrow عن الـ absorption

* في عصارة المعدة داخل المعدة من بجايا عصارة تزيد على surface area rugae

small int.

Its wall is characterized by the presence of folds called the plicae circulares.

الـ mucous glands توجد في duodenum submucosa

ولكن توجد في ileum هي جزء من الـ lymphatic sys.

patches \rightarrow lymphatic nodules

The submucosa of the duodenum features numerous mucous glands. The submucosa of the ileum features numerous large lymphatic nodules called Payer's patches.

الـ mucous glands

ج) ينبع لها الـ *head* تبع المذكر ماض

- The duodenum is a C-shaped tube connecting the stomach with jejunum.

① مدخل من البنكرياس  tube with \Rightarrow بحون المها

② المدخل الماني الشوكي  common bile duct \Rightarrow T

- The concavity of the C is directed to the left and is occupied by the head of the pancreas.
- The duodenum receives the duct of the pancreas and the bile duct.
- The jejunum is located most of the abdomen. Most absorption takes place here.
- The ileum is located mostly in the lower abdomen. This opening into the cecum. This opening is called **Payer's patches**.

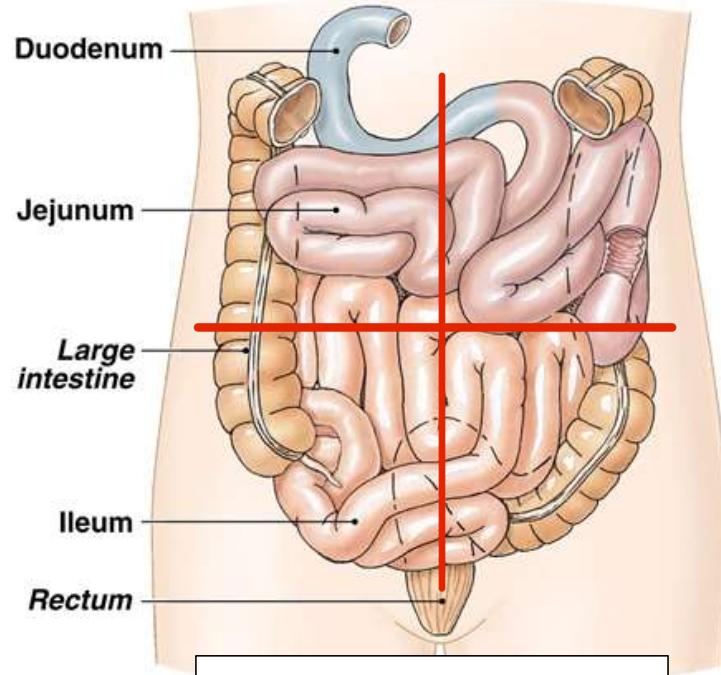


Fig. 14: The small intestine.

ileocecal junction (at cecum & ileum junction)

The Large Intestine

آخْرَجُونَ الْأَغْذِيَةَ

vitamin K Water and food Function: 1) absorption 2) blood clotting 3) bone formation

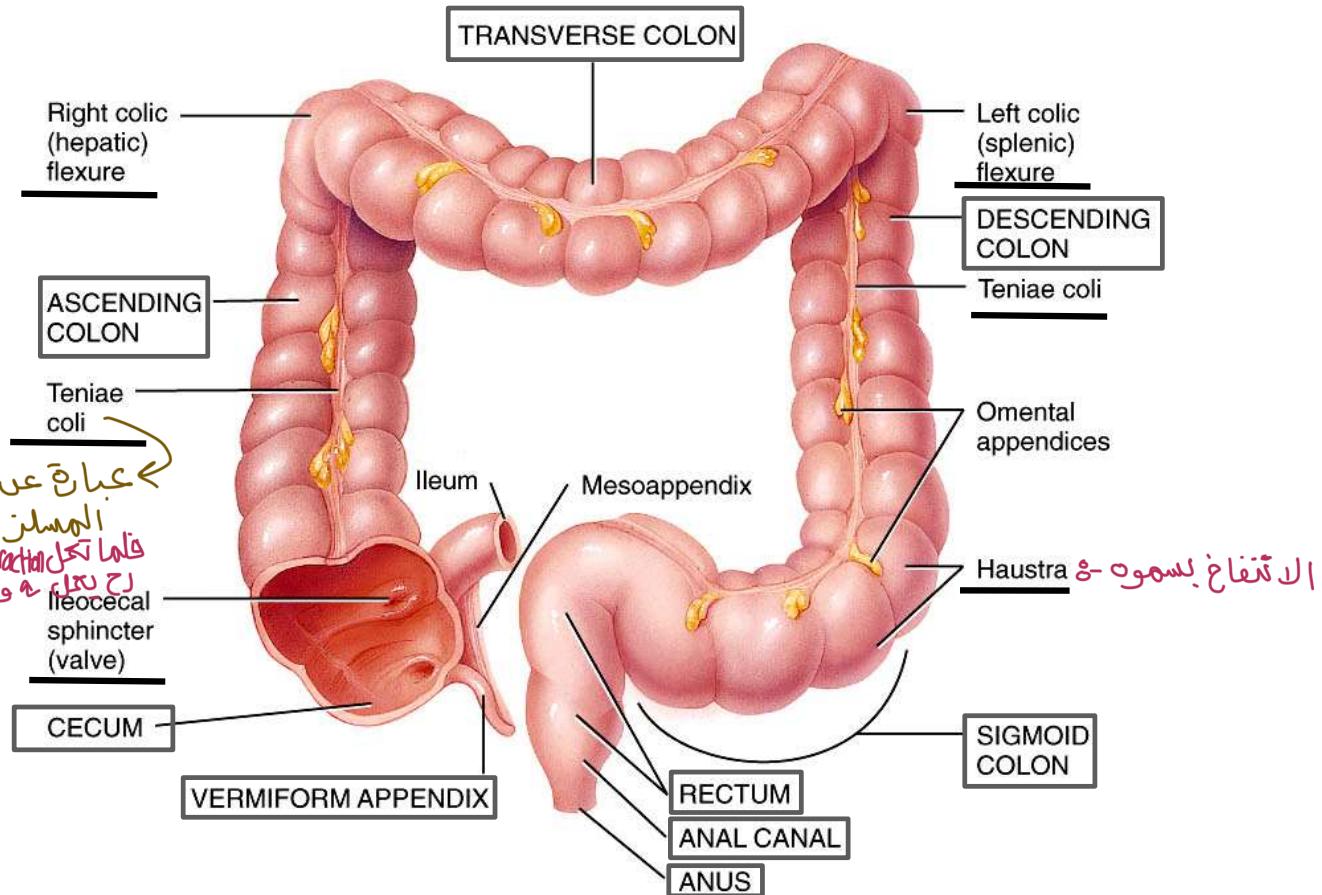


Fig.16: The large intestine.

The Liver and Gallbladder

er → يختبروا من الـ accessory glands \rightarrow حكينا الأظالم ما يهم \rightarrow غيّرهم، وأختنّ بساعدوها بـ absorption \rightarrow digestion عذاب يطير عليهم

- The **liver** is the largest internal organ and the heaviest gland in the body. جهاز الأمعاء الداعمة Glands
- It's located beneath the diaphragm in the right hypochondriac region and extends into the epigastric region.
- Anatomically, it's divided into right and left lobes. The right lobe also has the quadrate and caudate lobes.

■ *Functions of the liver:*

1 **Metabolism of carbohydrates, lipids and proteins.** ازالة سواد كل حاجة

2 **Detoxification.** بساعر بذخ فهم المحتوى

3 **Synthesis of bile and proteins.**

4 **Storage of glycogen, vitamins and minerals.**

5 **Activation of vitamin D.** → Kidney سلسلة

6 **Phagocytosis of RBCs.**

The Gallbladder

المراجع

الموعد

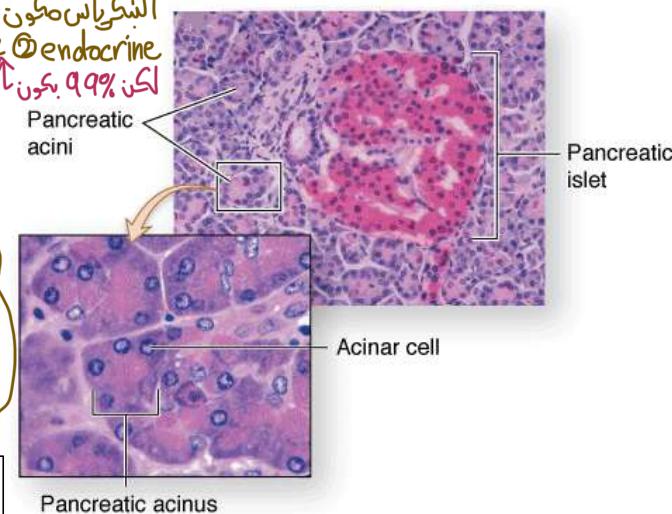
- The gallbladder is a pear-shaped organ situated on the under surface of the liver. **cystic duct** is neck **نطافه** **النطافه** **النطافه** **النطافه** **النطافه**
- It's composed of **3 parts**: a large fundus which protrudes ↑ from the anterior margin of the liver, a body, and a narrow neck (the last two are located under the liver). The neck opens into the cystic duct. **The cystic duct joins the common hepatic duct** to form the common bile duct. **نطافه** **نطافه** **نطافه** **نطافه** **نطافه**
- Function: storage and concentration of bile and the release of bile into the small intestine when needed.**

الأشخاص الباقيون عندهم التهاب بالمريء، من بين عذتهم إنهم ملتهبون لذا يكون داخل المريء

The Pancreas

- The pancreas is an elongated gland located posterior to the stomach. It has both exocrine and endocrine functions.
- It is formed of: head, neck, body, and tail.
- The **head** is the expanded right part of the pancreas. It's located in the concavity of the duodenum. The **neck** is a constricted region after the head. To its left, the **body** passes **upwards** and to the **left**. The **tail** is the left tapering end of the pancreas that's related to the spleen.
- Histology: 99% of cells are **exocrine acini** that secrete pancreatic juice (mixture of fluid and digestive enzymes). 1% of cells form the **endocrine pancreatic islets** (islets of Langerhans) that secrete hormones like glucagon, insulin and others.

Fig.20: Histology of the pancreas.



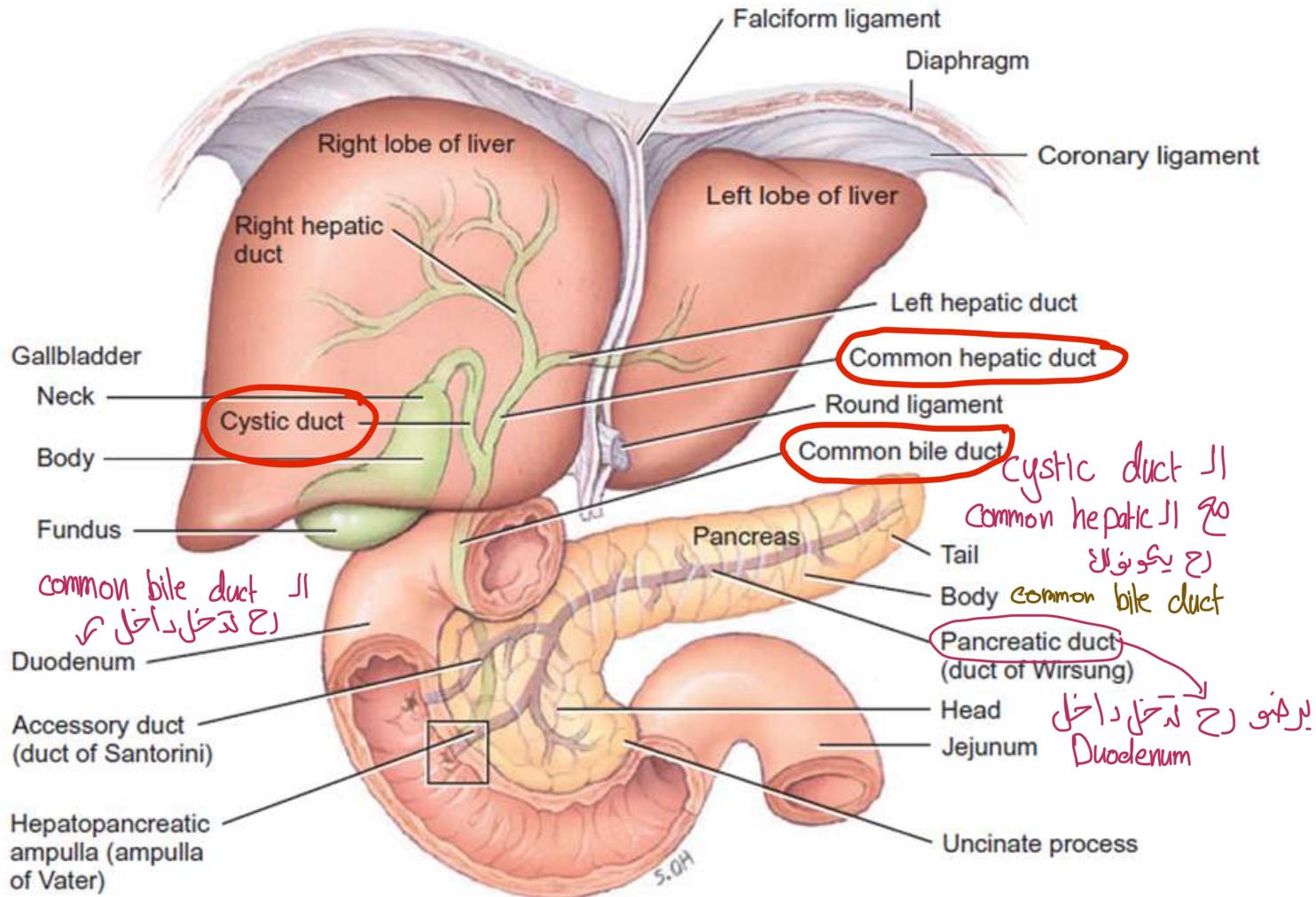


Fig.21: The pancreas.