

## المحاضرة 5 / تشريح / قسم الأجهزة الطبية / تكملة الجهاز الهضمي

أ . د . خيرى عبدالله داود

### Lecture five / Anatomy and physiology

#### Digestive system . part two

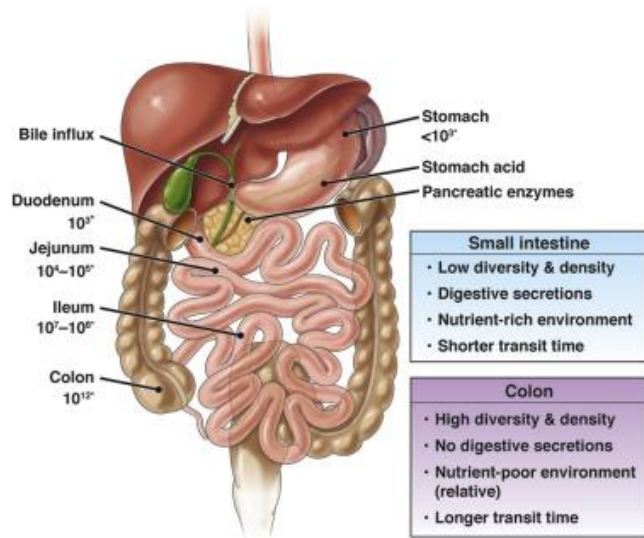
#### Intestine : small intestine ( part of GIT ) .

##### Structures :

- 1 - Small intestine are divided ; duodenum , Jejunum , Ileum .
- 2 - Length of small intestine 3 – 10 m , while its width 3-4 cm .
- 3 - Wall of small intestine lined by mucous membrane .
- 4 – Mucous membrane have villi and microvilli , therefore its area about 30 sq. m .
- 5 – Mesentery is a membrane , part of peritoneum , arteries , veins , lymph vessels and nerve are travel within mesentery .

##### Functions :

- 1 - Digestion : digestion of stomach chym is completed in duodenum by bile and pancreatic juice ( trypsin , lipase and carbohydrase ) .
- 2 – Absorption : occur by villi and microvilli .
- 3 – Immunological functions : small intestine supports immune system by the presence of gut flora and Peyer's patches ( lymph nodes ) .



**Large Intestine : parts of large intestine :**

- 1 - Cecum and appendix
- 2 – Ascending colon
- 3 - Transvers colon
- 4 - Descending colon
- 5 - Sigmoid colon
- 6 - Rectum

Length of large intestine about 1.5 m .

Colon connect small intestine with rectum .

Colon lined by mucous membrane .

This membrane is invaginated forming crypts of colon

**Functions of colon :**

Absorption of remaining nutrient , water and vitamins , these vitamins produced by bacteria present in colon

**Appendix : ( Vestigial organ )**

**1 – Appendix is located at the junction of small intestine with colon .**

**2 – Appendix have blind end , its length 4 inches .**

**3 – Appendix have plenty of lymphocytes (immunological cells)**

**Rectum : Final portion of large intestine , connect sigmoid colon with anal canal , its length 10 – 15 cm .**

**Liver : it is the largest gland In human body , its color reddish brown , 1.5 kg I weight .**

**Gross Anatomy : 1 - liver located In the right upper quadrant of abdominal cavity below diaphragm .**

**2 – Liver divided into two lobes ( right lobe and left lobe ) when viewed above , but if viewed below , there are two lobes between the left and right lobes .**

**3 – Hilum or hilus of the liver ; it is a region of entrance blood vessels , nerve and bile duct .**

**4 – Liver receive blood from hepatic portal vein and hepatic arteries .**

**Microscopic Anatomy : 1 – Each liver lobe is made up of hepatic lobules , hexagonal in shape 7 mm in length .**

**2 - At the center of lobule , central vein , hepatocytes ( liver cells ) radiating from the vein to the periphery of lobule .**

3 – There are some cell phagocytic cells (Kupffer's cells ) present between hepatocytes .

## Functions of the liver :

1 – Bile production , produced by hepatocytes and collected by bile ducts and stored in gall bladder .

2 – Proteins synthesis in liver cells (Albumin and globulin).

3 – liver store carbohydrate as glycogen .

4 – liver cells produce heparin .

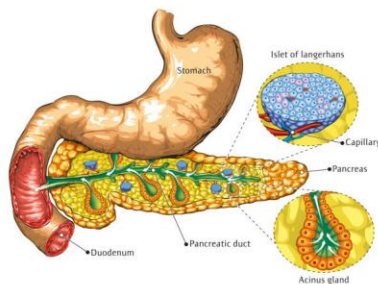
**Gall bladder** : it is small hollow organ , pear in shape , it lies below the liver . bile store in gall bladder before release into the duodenum to digest fat . .

**Pancreas** : it is an organ for digestive system and endocrine system ( as exocrine gland and endocrine gland ) .

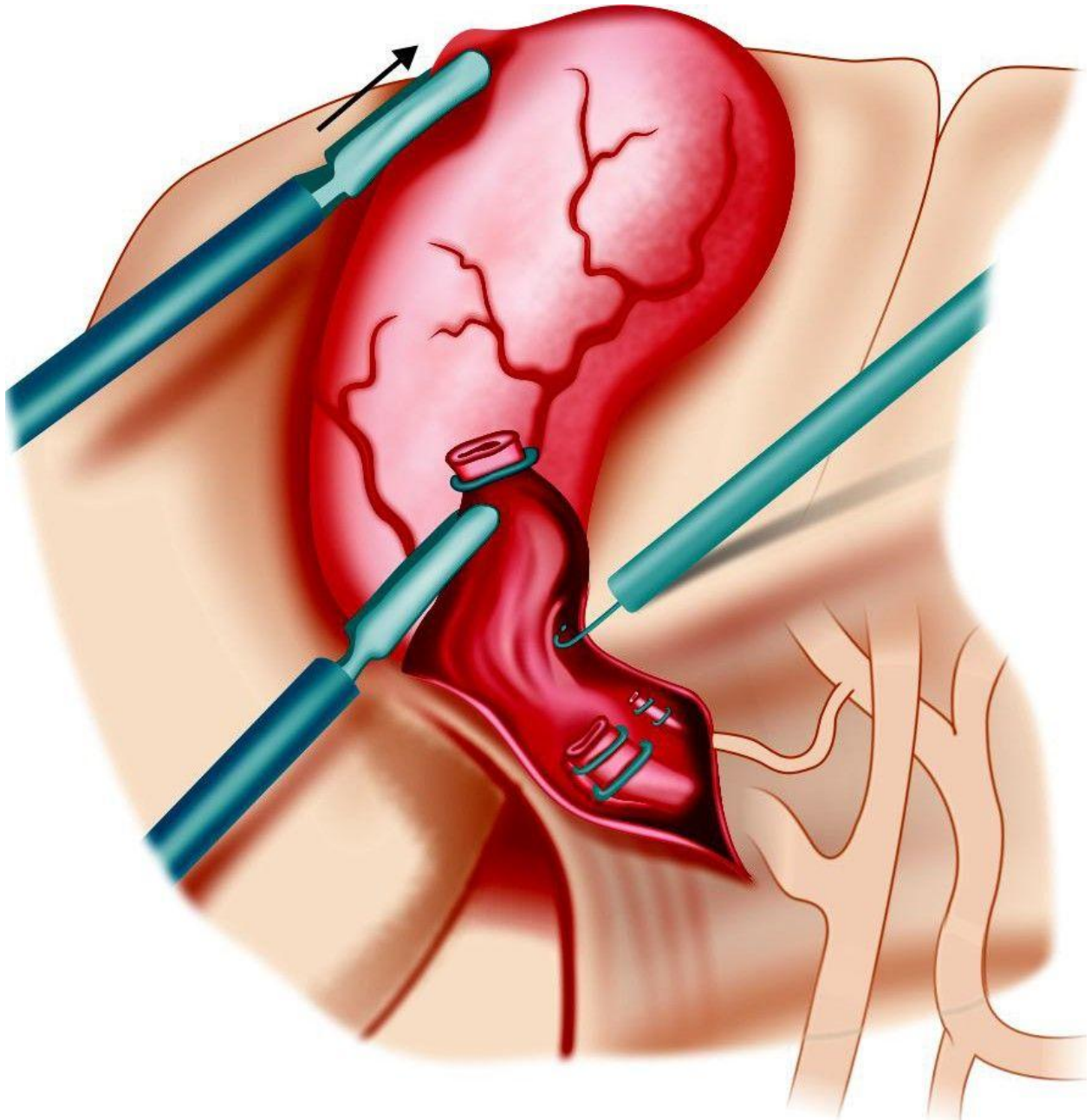
1 - Pancreas secrete enzymes into the duodenum , Lipase digest fat , protease digest proteins , Amylase digest carbohydrates .

2 – Pancreas Produce Insulin , hormone control the level of glucose in the blood .

This Image Stomach and Pancreas



**Laparoscopy of gall bladder / operation with aid of a camera for diagnosis and therapeutic .**



**Tumor of Stomach**

TAKORONI  
Name:

Sex:      Age:

D.O.B.:

26/09/2009

10:32:03

CVP:4

Gr:H      Hi:4

Media:      ■■■■

Physician:

Comment:

ICON

**Ulcer of Stomach**





**Stones of gall bladder**