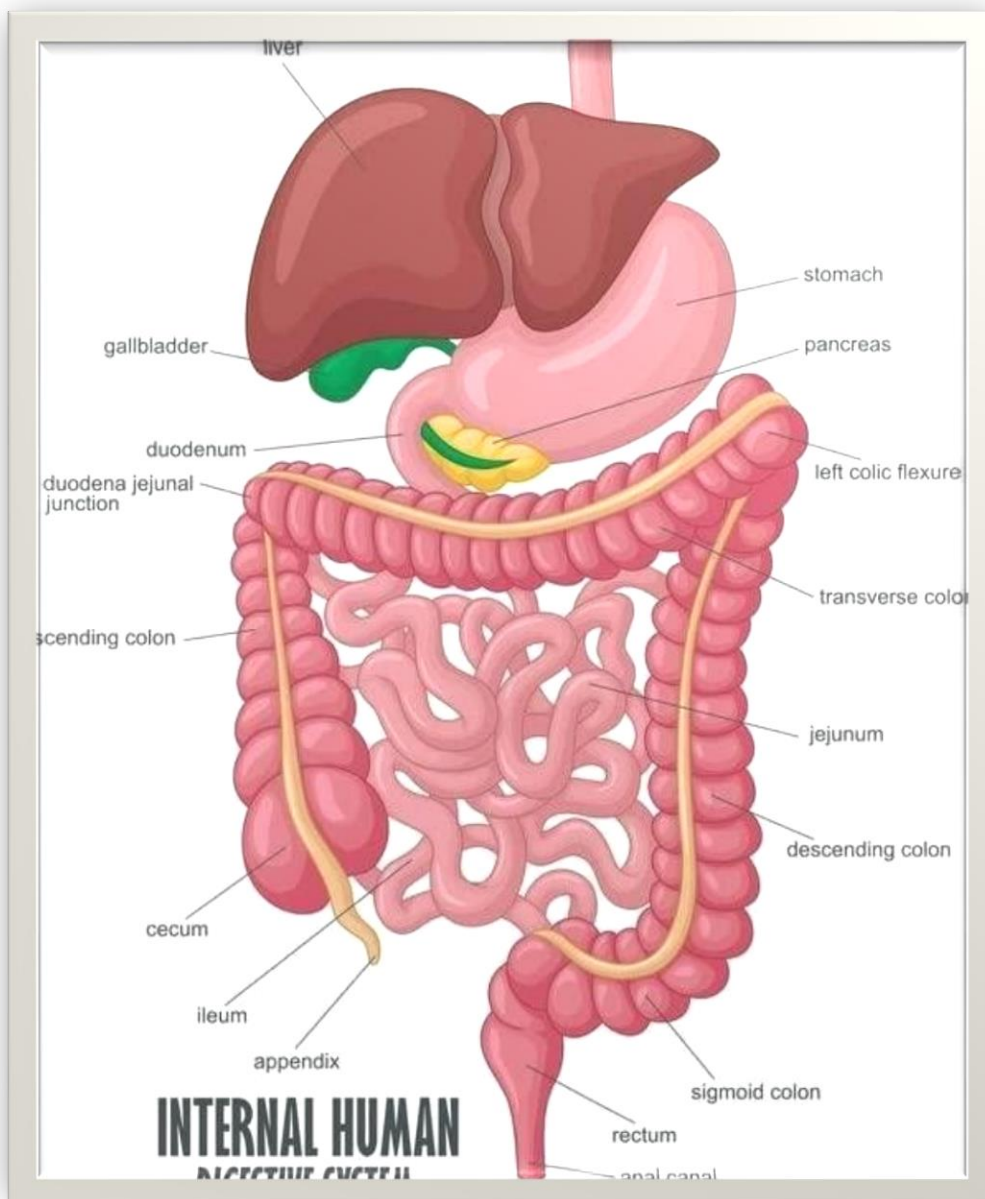


## Lecture 9 / Part Two of Digestive system and diseases of alimentary canal .

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### Intestine :





Digested food converted to Chyme , moved down slowly by peristaltic movement to the intestinal tract

Length of intestinal tract about 30 feet .

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

1 - Small intestine are divided ; duodenum , Jejunum , Ileum .

2 - Length of small intestine 3 – 10 m depend on tall and age of person , while its width 3-4 cm .

3 – Mucosa is very wide ( columnar epithelial cells ) have villi and microvilli , therefore its area about 30 sq. m .

4 – Mesentery is a membrane , part of peritoneum , arteries , veins , lymph vessels and nerve are travel within mesentery .

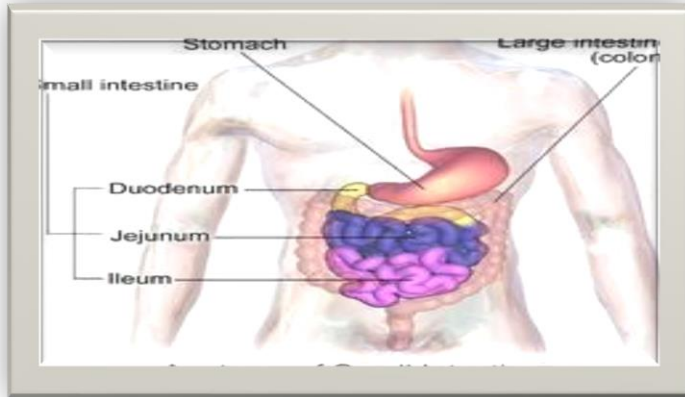
## **Functions :**

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 ) located in the wall of small :**



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

- |                               |                             |
|-------------------------------|-----------------------------|
| <b>1 - Cecum and appendix</b> | <b>2 – Ascending colon</b>  |
| <b>3 - Transvers colon</b>    | <b>4 - Descending colon</b> |
| <b>5 - Sigmoid colon</b>      | <b>6 - Rectum</b>           |

- Length of large intestine about 1.5 m .
- Colon connect small intestine with rectum .
- Colon lined by mucous membrane( simple columnar epithelial tissue ) .
  - \* This membrane is invaginated forming crypts of colon

**Functions of colon :** Absorption of remaining nutrient , water and some vitamins .

## **Appendix : ( Vestigial organ )**

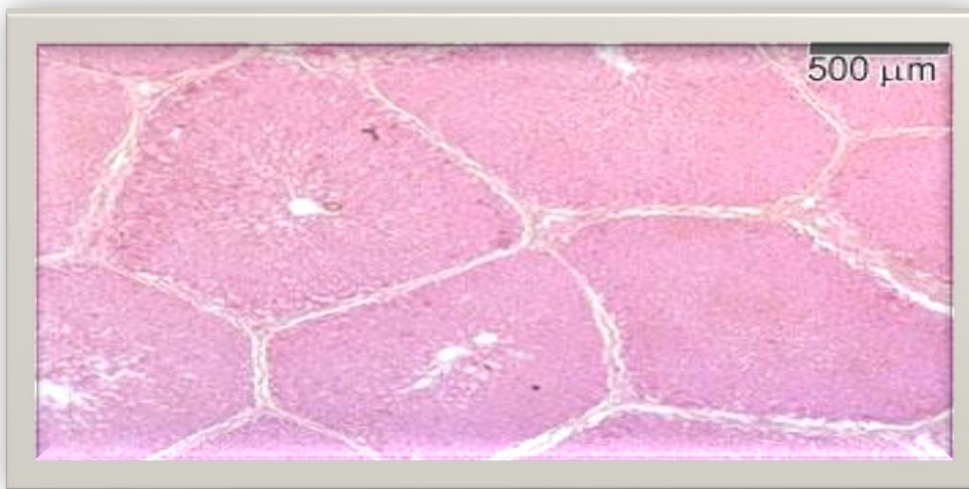
1 – Appendix is located at the junction of small intestine with colon . Appendicitis ; inflammation of appendix

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 weight .

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

**2 – Liver divided into two parts ( right lobe and left lobe ) from 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**

**Microscopically : 1 – Each liver lobe is made up of hepatic lobules , hexagonal in shape .**

**2 - At the center of lobule , central vein , hepatocytes ( liver cells ) and sinusoids radiating from central 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 and glycogen break down to glucose .**

**4 – liver cells produce heparin .**

**Liver cirrhosis : It histopathologic changes due to**

**Drinking alcohol for long period (example)., occur damage in liver tissues and infiltration of fibrous tissues between lobules , Chronic disease ., prevent liver from working normal , because decrease in number of liver cells (Hepatocytes) .**

**Ascites : It is accumulation of fluid in abdominal cavity , happen due to liver cirrhosis . treated by low salt diet .**

**Viral Hepatic Disease ( Hepatitis ):** It is infection cause liver inflammation :

**Hepatitis , A , B , C, D and E . / A and E , Viral hepatitis ( Acute hepatitis ) .**

**B , C, and D may be acute or chronic hepatitis .**

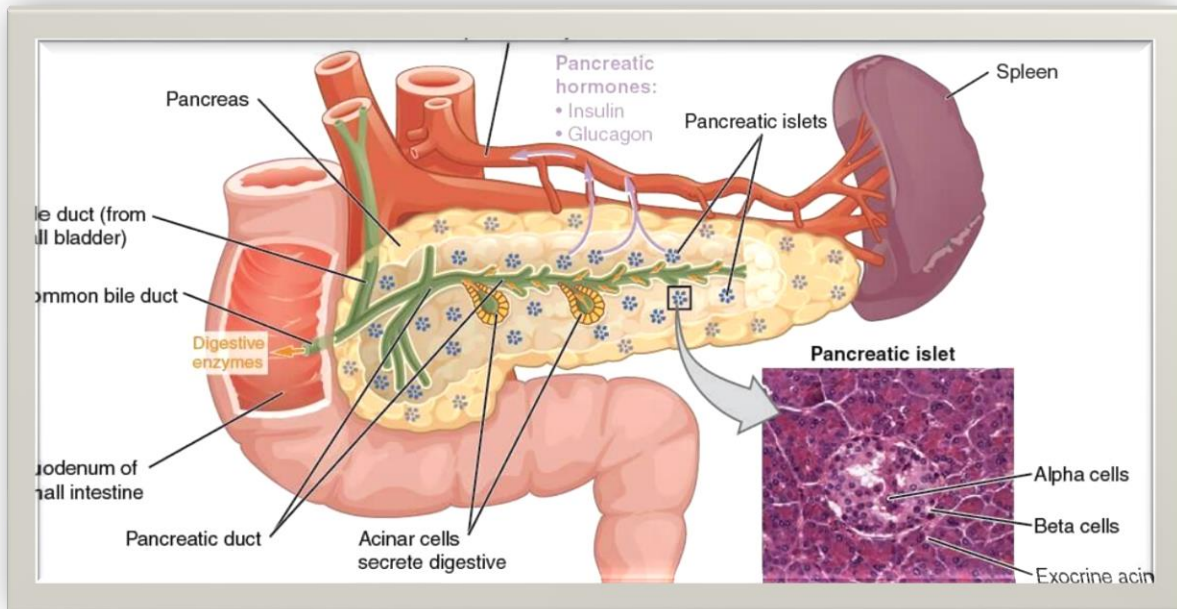
**Hepatic Abscess : Abscess is a cyst contain pus .**

**It is caused by pyogenic bacteria (Corynebacteria ) or by Ameba called Amebic abscess .**

**Gall bladder : it is small hollow organ , pear in shape , it lies below the liver . bile store and concentrated 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 ) .**

**Pancreas secrete enzymes into the duodenum through pancreatic duct ; Lipase digest fat , protease digest proteins , Amylase ( similar to that in saliva ) to digest carbohydrates**



**. Also bicarbonate is present to neutralize stomach acid .**

**Hemorrhoid : It is swollen of veins at the end of rectum , painless but tend to bleed after few days bleeding is stopped and fibrous tissue close the injury**

**Anal Fistula : It is abnormal passage way developed at the end of rectum from inside to outside .**