

Identify stomach secretions. Pg892

- Once food enters the stomach, it becomes mixed with stomach secretions to form a semifluid material called **chyme**.
- Recall that the primary function of the stomach is storage and mixing of this chyme. Even though some digestion and absorption occur in the stomach, this is not its primary function.
- Secretions of the stomach include; (1) hydrochloric acid, (2) intrinsic factor, (3) mucus and (4) the digestive enzymes pepsinogen and gastric lipase.
- Hydrochloric acid is produced by parietal cells and the main function is to kill bacteria that are ingested.

List the sections of the small intestine and describe the characteristics which account for its large surface area. Pg 898

- The small intestine consists of 3 parts: (1) the duodenum, (2) jejunum and (3) the ileum.
- The small intestine is about 6m long (ranges from 4.6-9m).
- The small intestine is where the greatest amount of digestion and absorption of nutrients and water occurs.
- The duodenum is the shortest part of the small intestine, about 25 cm long. It has 3 modifications which increase its surface area around 600 times to allow for more digestion and absorption. These modifications include;
 1. A series of **circular folds**.
 2. Tiny fingerlike projections form **Villi** which are 0.5-1.5 mm in length.
 3. Most of the cells of the Villi have numerous cytoplasmic extensions called **Microvilli** which further increase the surface area.
- The jejunum and ileum are similar in structure to the duodenum however, as it progresses from the duodenum to the ileum, the diameter of the intestinal wall decreases together with the thickness of the intestinal wall together with the number of circular folds and villi.

List the major functions of the liver. Pg 901

The hepatocytes (liver cells) perform five (5) important functions;

1. Bile production for digestion and excretion
2. Storage of nutrients
3. Processing of nutrients
4. Detoxification, and
5. Synthesis of new molecules.

Describe the anatomy of the pancreas.

- The pancreas is a complex organ which is both endocrine and exocrine in function.
- It is located behind the stomach, with the head of the pancreas nestled within the curvature of the duodenum.
- The endocrine part of the pancreas consists of the pancreatic islets or islets of Langerhans. These islet cells produce the hormones insulin and glucagon, which are very important in controlling blood nutrient levels such as glucose and amino acids.
- The exocrine part of the pancreas is a compound **acinar gland**. **Acinar cells** within the *acini* produce digestive enzymes.