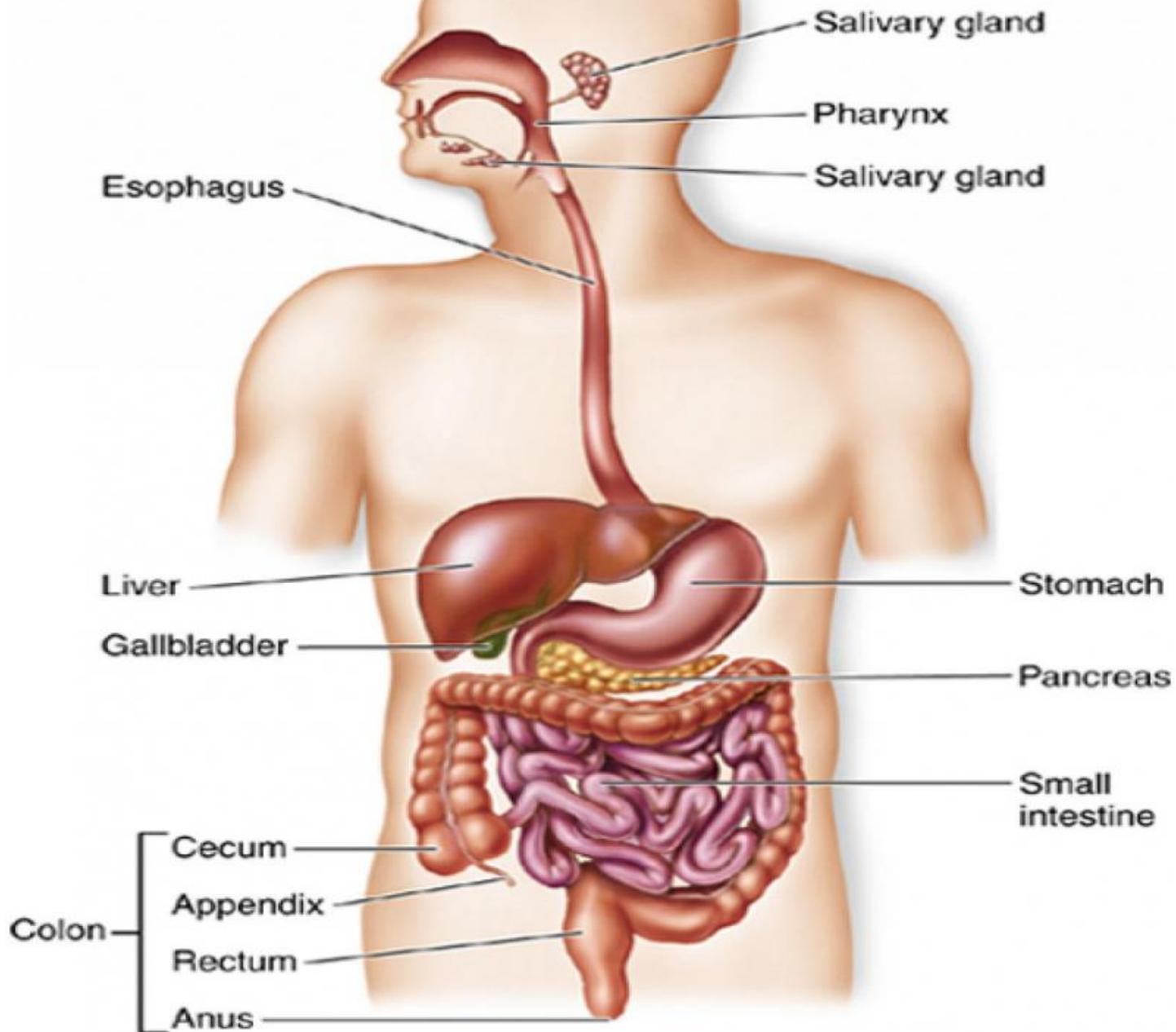


# **GASTROINTESTINAL TRACT (GIT)**

**2**



## **Small intestine**

- 1. Duodenum**
- 2. Jejunum**
- 3. ileum**

## **Accessory organs**

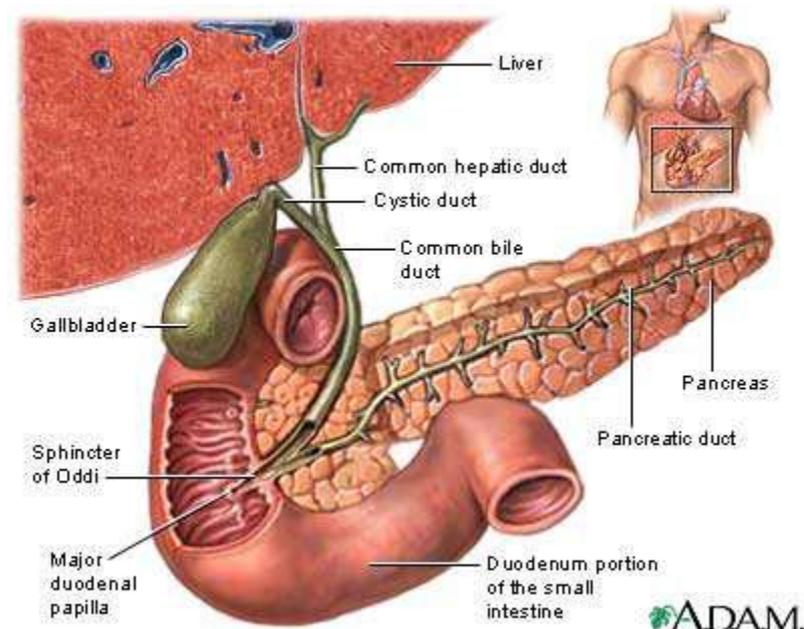
- 1. Liver**
- 2. Gallbladder**
- 3. Pancreas**

# DUODENUM

It is ~10-12 inch long

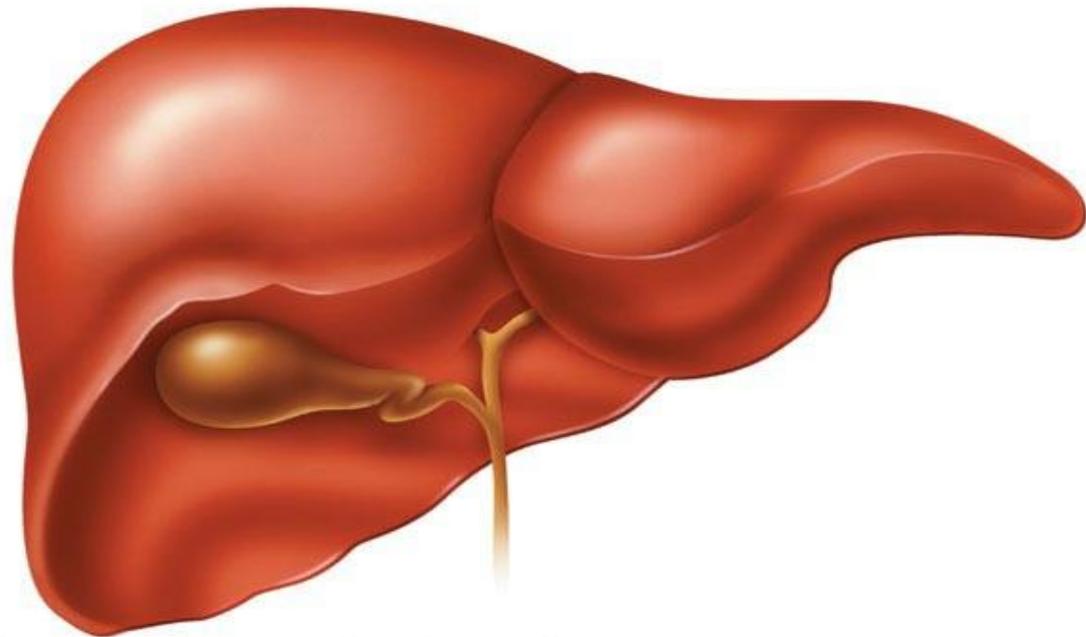
The majority of **chemical digestion** occurs in the **duodenum**.

This section also contains an opening from **the bile duct** and **pancreatic duct** through which bile and pancreatic enzymes enter the small intestine.



# Galbladder

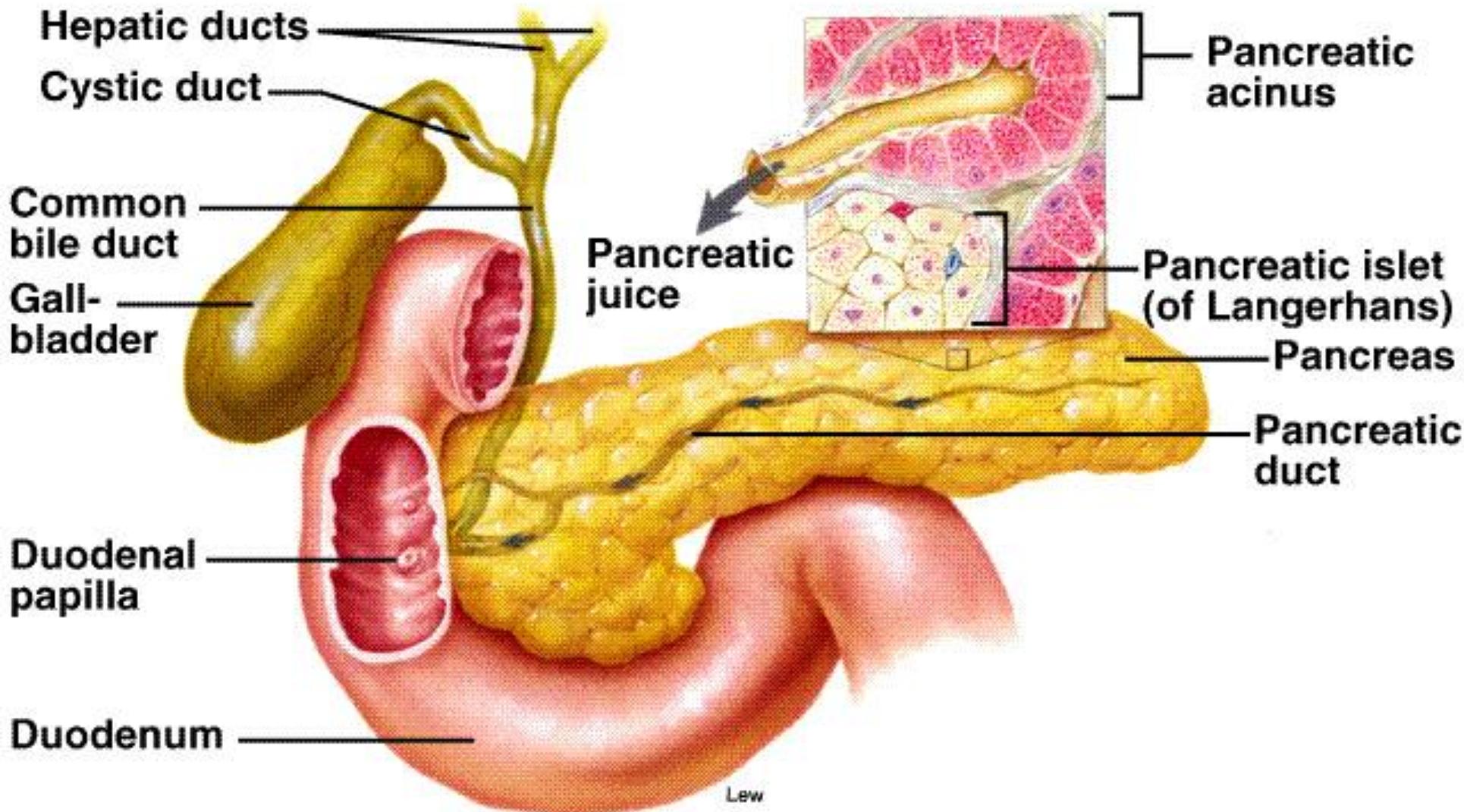
- 1.Stores bile
- 2.concentrates bile
- 3.Excretes bile into the duodenum



# Pancreas

- 1.** *It is an endocrine gland because it secretes Insulin hormone - converts excess glucose into glycogen for storage.*
- 2.** *It is also an exocrine gland because it secretes pancreatic juice in the duodenum to digest fats, carbohydrates and proteins*

# Pancreatic Juice and Bile are Secreted Into the Duodenum



<b>Enzyme</b>	<b>Site of action</b>	<b>Substrate digested</b>	<b>End products</b>
Amylase	- mouth - duodenum	starch	- maltose - glucose
Protease	- stomach - duodenum	protein	- amino acids
Lipase	- duodenum	fat	- fatty acids - glycerol

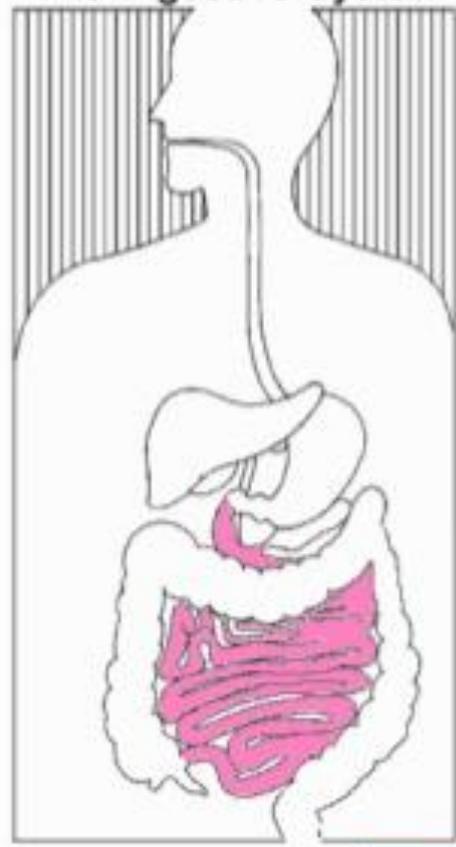
# SMALL INTESTINE

Small intestines are roughly **7** meters long

Lining of intestine walls has finger-like projections called **villi**, to increase surface area.

The villi are covered in **microvilli** which further increases surface area for absorption.

The Digestive System

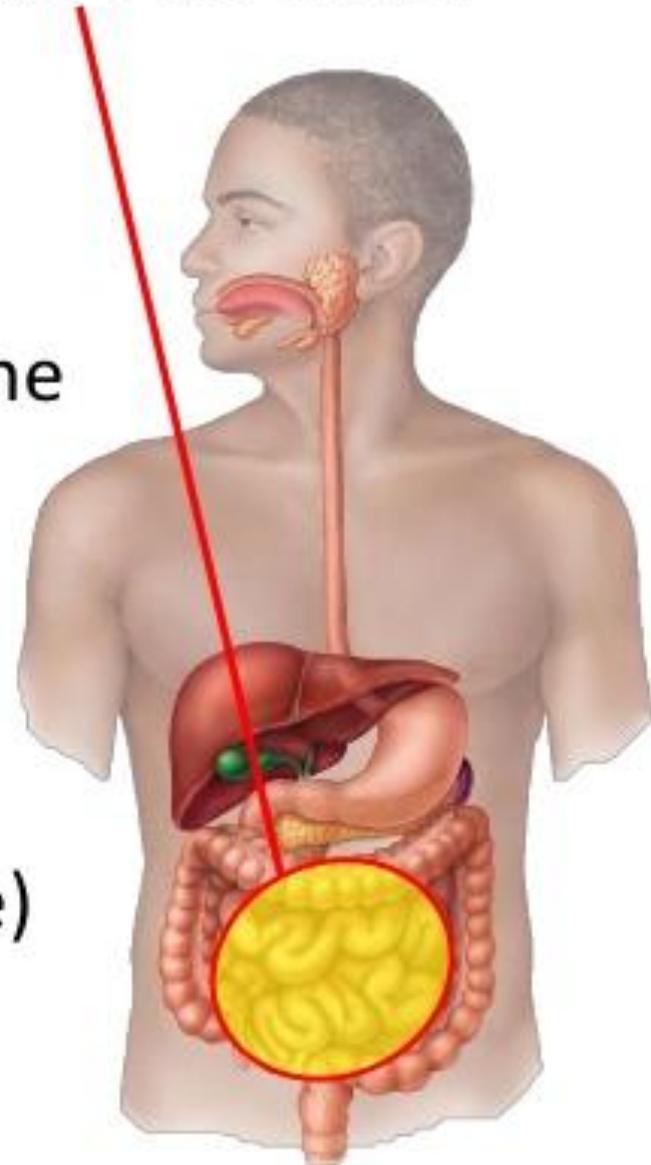


# Digestion in the **SMALL INTESTINE**

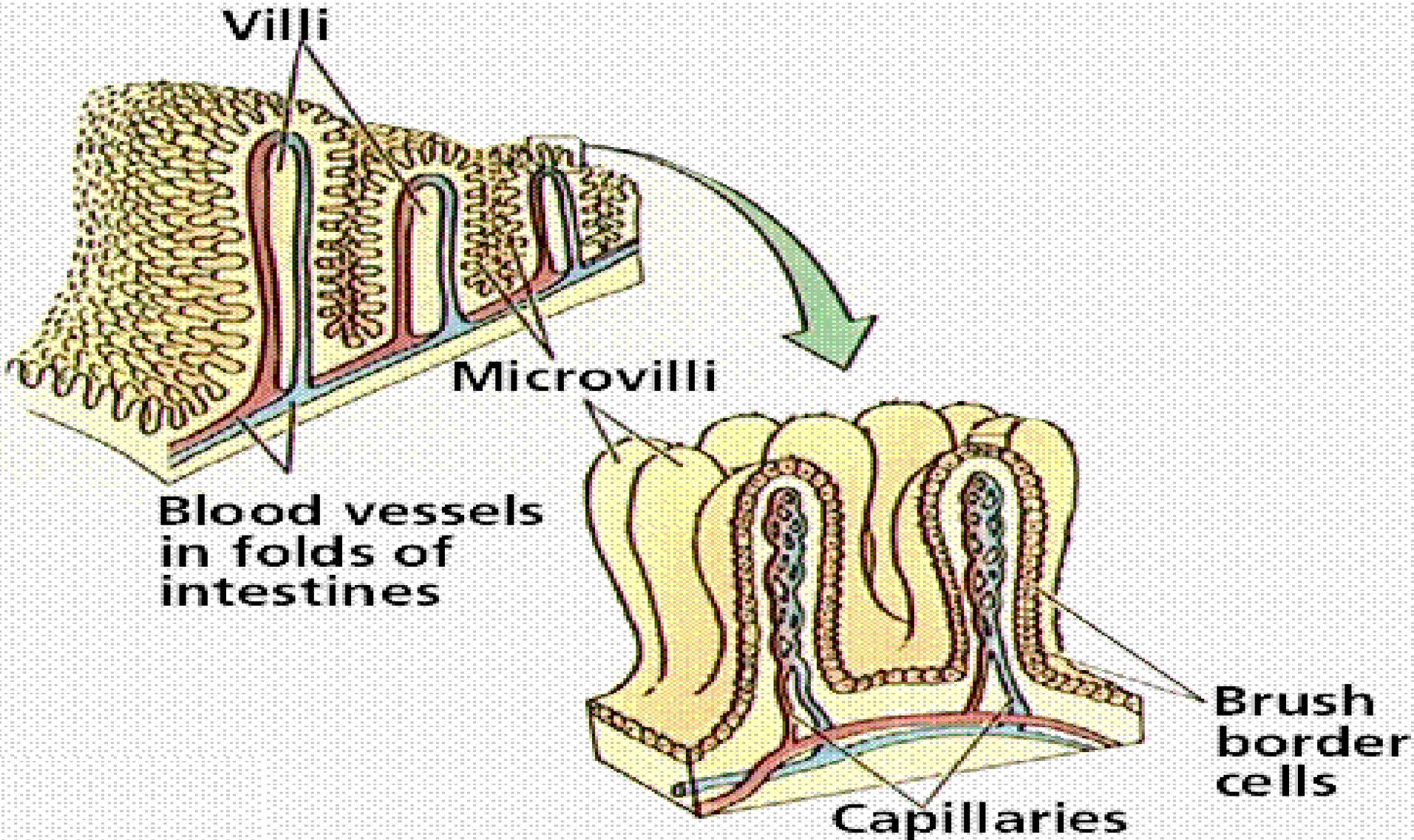
## Chemical Digestion

Digestive juices are secreted into the small intestines to complete the process of digestion

- i) **Bile** (liver)
- ii) **Pancreatic juice** (pancreas)
- iii) **Intestinal juice** (small intestine)



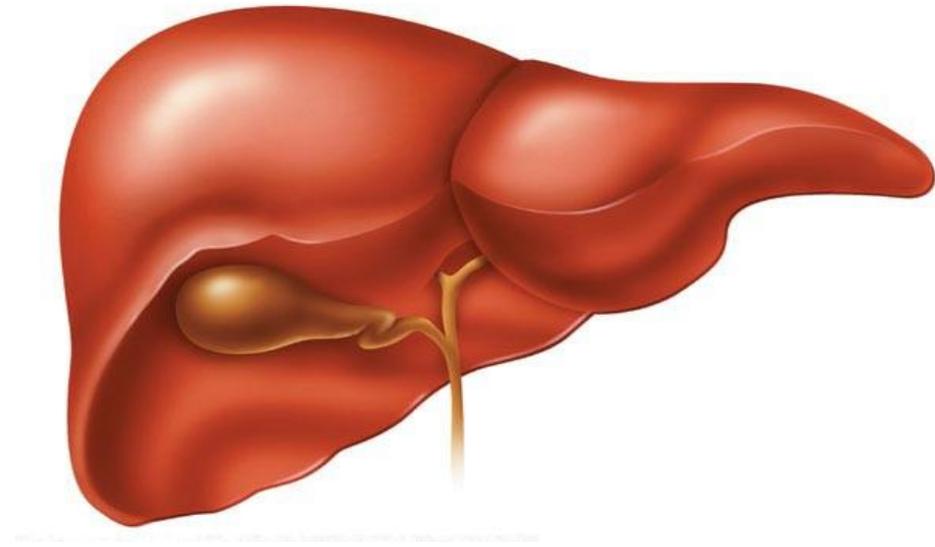
# Absorption



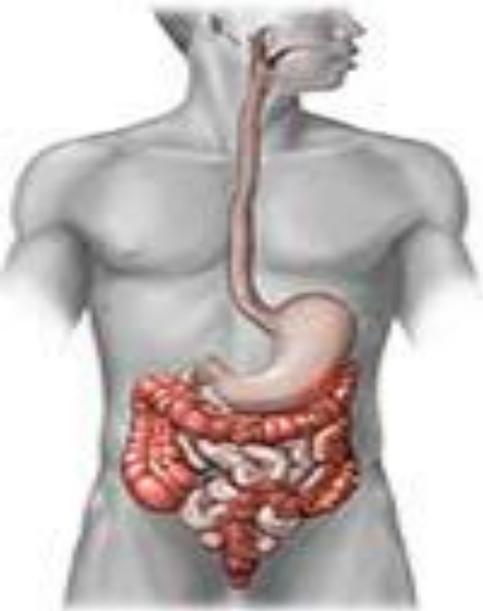
# LIVER FUNCTIONS

**It is the 2nd largest organ in the body**

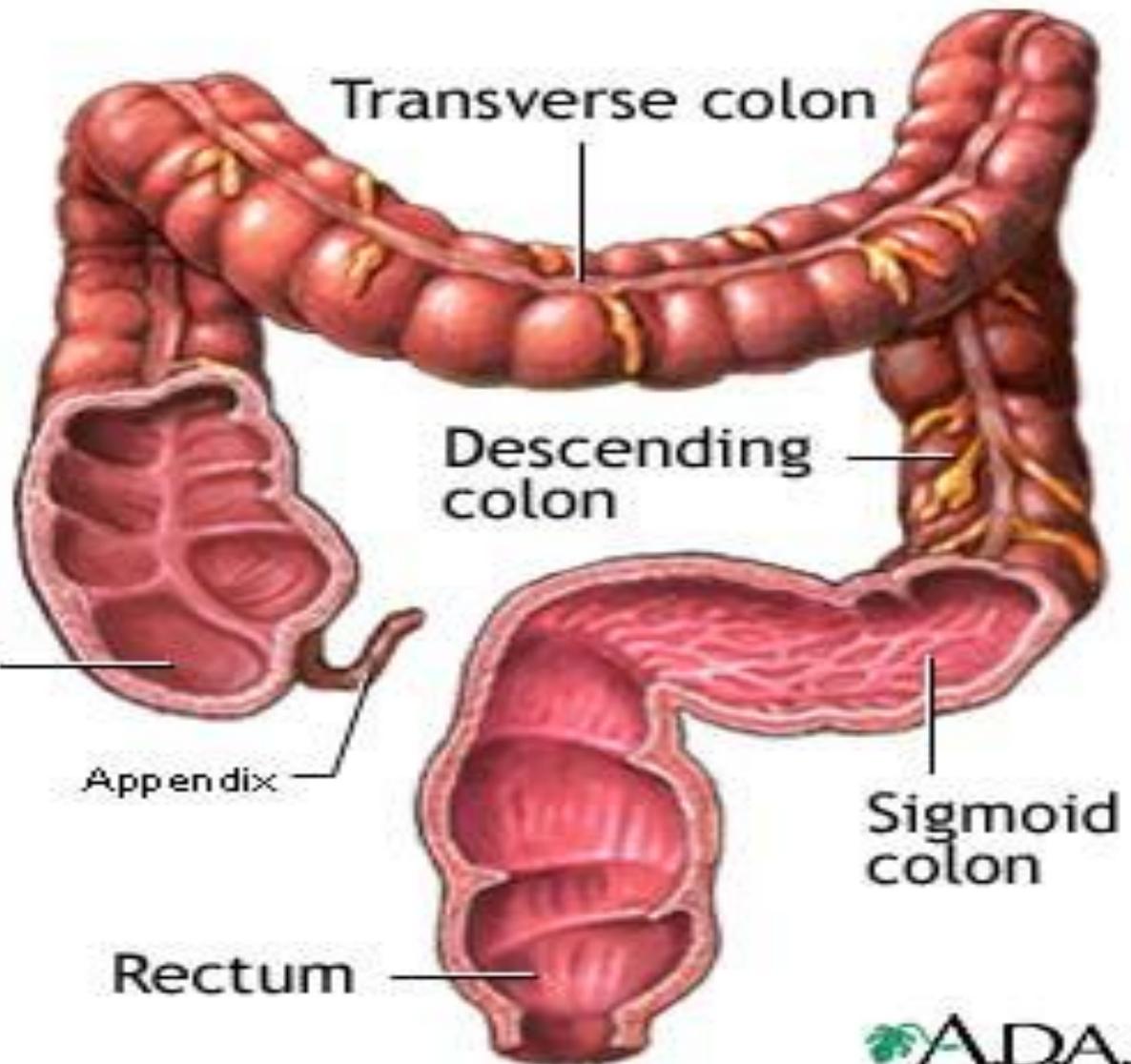
- 1.** Regulation of blood **glucose** concentration by converting excess glucose into glycogen
- 2.** Production of **bile**
- 3.** **Iron** storage
- 4.** **Protein** synthesis e.g. albumin, globulin and fibrinogen



# LARG INTESTINE (COLON)



Ascending colon



Transverse colon

Descending colon

Appendix

Sigmoid colon

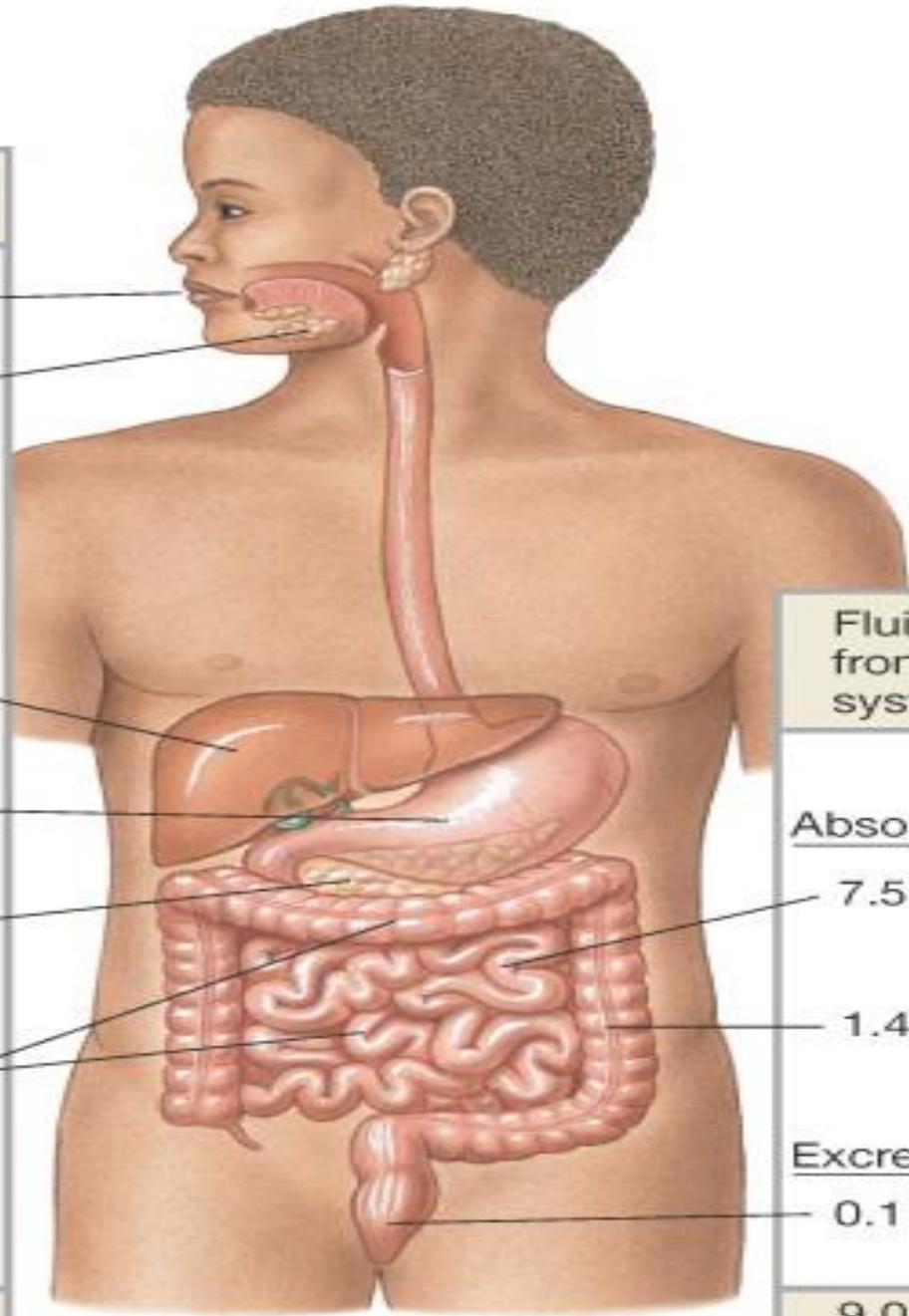
Rectum

# Functions of the Large Intestine

The **large intestine is the last part of the digestive system**

- 1.** Reabsorption of remaining water and electrolytes
- 2.** Production and absorption of Vitamins B and K
- 3.** Bacterial digest significant amounts of complex carbohydrate and proteins through fermentation.
- 4.** Elimination of faeces

Fluid input into digestive system	
2.0 L food and drink	
1.5 L saliva (salivary glands)	
0.5 L bile (liver)	
2.0 L gastric secretions	
1.5 L pancreatic secretions	
1.5 L intestinal secretions	
<b>9.0 L Total input into lumen</b>	



Fluid removed from digestive system	
<u>Absorption</u>	
7.5 L from small intestine	
1.4 L from large intestine	
<u>Excretion</u>	
0.1 L in feces	
<b>9.0 L removed from lumen</b>	