

Sources of triglycerides (TG)

1. **Fat (TG) comes from diet** insoluble in water (**hydrophobic**)

To transport TG in the blood need to combine with more **polar compounds** like **phospholipids, cholesterol** and **protein** to form **hydrophilic lipoprotein complex** called **chylomicron**.

2. **TG synthesis in the liver**

as complex lipoprotein called **very low density lipoprotein (VLDL)**.

3. **TG storage in adipose tissue**

hydrolysis to **FFA and glycerol** FFA in the blood is combined with **albumin**.

Digestion and Absorption

1. Mouth and Stomach:

Chemical digestion takes place as **lingual lipase**, an enzyme in saliva, begins to

1. emulsify fat.
2. moistens the food to make it easier to swallow.

PH range 2 – 7.5 and the optimum 4 – 4.5

When the food reaches stomach, the muscles begin to churn and move to further break it down. the food has become a semi-liquid substance referred to as chyme.

2. Small intestine

- a. It is the major site of digestion of fat .
- b. the important materials involved for digestion are
 1. **bile salts**
 2. **pancreatic lipase enzyme.**

Digestion in the small intestine

- a. chyme enters the duodenum -- the upper of small intestine
- b. hormones signal the gallbladder to contract –
- c. These contractions push bile into the bile duct, which connects the gallbladder to small intestine.

At the same time:

- d. the pancreas secretes bicarbonate ions HCO_3^- , which neutralize the pH of the chyme in the small intestine.
- e. fat and bile molecules are combined together formed micelles.
- f. lipase enzyme breaking down fat molecules into fatty acids and monoglycerides.
- g. After they pass through the small intestine, fatty acids are converted to triglycerides, which combine with cholesterol, phospholipids and protein to form a structure called a chylomicron. travel through the lymph vessels and eventually the blood stream.

