double bonds in unsaturated fatty acids are separated by three carbon atoms

the melting point of fatty acids depends on the fatty acid length and the double bond number

short fatty acids are absorbed in the stomach

medium fatty acids are absorbed in the stomach

long fatty acids are absorbed in the small intestine

emulsification is when two immiscible liquids mix by mechanical mechanism or chemical mechanism

emulsifiers are cholesterol derivatives

emulsifiers are amphipathic molecules

each lipase needs one colipase

inactive colipase secreted from the pancreas and activated in the small intestine by trypsin

CHOLESTERYL ESTER DEGRADATION:

cholesteryl ester (cholesterol esterase + bile salts) cholesterol + fatty acid

PHOSPHOLIPID DEGRADATION:

prophospholipase A2 (trypsin) phospholipase A2

phospholipid (phospholipase A2 + bile salts) lysophospholipid + fatty acid

lysophospholipid (lysophospholipase) glycerophosphoryl base + fatty acid

cholecystokinin is a peptide hormone

cholecystokinin released from the duodenum and jejunum

CHOLECYSTOKININ FUNCTIONS:

induces bile release from the gallbladder

induces enzyme release from the exocrine pancreatic cells

inhibits gastric motility

secretin is a peptide hormone

secretin released from the duodenum

SECRETIN FUNCTIONS:

induces hydrogen carbonate release from the pancreas

inhibits gastric motility

MIXED MICELLE COMPONENTS:

lipid digestion products

bile salts

vitamins

NPC1L1 transports cholesterol by endocytosis

short fatty acids move into the cells by diffusion

medium fatty acids move into the cells by diffusion

long fatty acids move into the cells by facilitated diffusion

reformation of complex lipids in the smooth endoplasmic reticulum that leads to chylomicron formation

gluten is composed of gliadin and glutenin

autoimmune response to gliadin leads to celiac disease

lipoproteins transport lipids in the blood

lipoprotein density decreases as lipid composition increases

LIVER:

apolipoprotein B gene transcription

apolipoprotein B100 translation

SMALL INTESTINE:

apolipoprotein B gene transcription

cytidine deaminase converts cytidine to uridine in apolipoprotein B mRNA

apolipoprotein B48 translation

CHYLOMICRON COMPONENTS:

triacylglycerols

cholesteryl esters

phospholipids

cholesterol

apolipoprotein B48

hydrolysis of triacylglycerols in lipoproteins by lipoprotein lipase to produce lipoprotein remnants