3.5 Macronutrient Digestion Review

The following figures review the digestion of the different macronutrients.

**Carbohydrate Digestion**

Salivary amylase minor amount of starch digestion

Brush border disaccharidases cleave disaccharides to monosaccharides

Salivary amylase inactivated by stomach acid

Pancreatic α-amylase secreted from pancreas into duodenum in response to CCK (duodenum), major site of digestion

Figure 3.51 Review of carbohydrate digestion

**Protein Digestion**

Proteases are activated by enteropeptidase or trypsin, major site of digestion

Brush border peptidases cleave to individual amino acids or small peptides

Gastrin stimulates HCl and pepsinogen secretion. HCl activates pepsin which begins digesting polypeptides

Proteases are released from pancreas response to CCK (duodenum)

Figure 3.52 Review of protein digestion
Lipid Digestion

- Lingual Lipase released, minor amount of digestion in stomach
- CCK (duodenum) stimulates gall bladder contraction, bile release into duodenum
- Gastrin stimulates gastric lipase release, cleaves sn-3 FAs

Liver produces bile, sends to gall bladder in response to secretin (duodenum)
Pancreatic lipase (sn-3 & sn-1) & procolipase (trypsin cleaves) are released from pancreas in response to CCK (duodenum), major site of digestion

Figure 3.53 Review of triglyceride digestion

Cholesterol Ester and Phospholipid Digestion

- Cholesterol esterase cleaves FA from cholesterol esters and phospholipase A₂, cleaves the C2 FA from phospholipids
- Cholesterol esterase and phospholipase A₂ are released from pancreas in response to CCK (duodenum)

Figure 3.54 Review of cholesterol ester and phospholipid digestion
After digestion we are left with the products below that are ready for uptake into the enterocyte.

References & Links