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Lecture Date: Monday, September 10, 2007

Announcements:

- There are two NS 116 Sections (8 and 11) that are still open but Just the Facts says they are full. You must add these manually with Add/Drop forms. See Joy Swanson for the approval signature.

I. Entering the Holy Sanctuary (continued)

A. Clarification from the last lecture: The osmotic pressure due to food in the stomach causes water and electrolytes from the blood to enter the stomach. Thus, purging stomach contents causes a subsequent loss of electrolytes.

B. Into the Intestine

1. The duodenum is the upper part of the small intestine that is directly connected to the stomach. The pylorus is the upper limit of the duodenum.
2. The duodenum responds to stretching, like the rest of the GI tract.
 - (i) Food getting dumped into the small intestine will elicit several hormonal responses.
 - (a) Stretching causes release of secretin from secretin containing cells.
 - (b) Stretching also causes the release of cholecystokinin from CCK containing cells.
 - (c) Stretching also causes the release of gastric inhibitory hormone from GIP containing cells. It is the "master shut-off" hormone.

C. Secretin

1. The major action of secretin is on the pancreas. It circulates in the blood and targets the pancreas.
 - (i) The exocrine function of the pancreas is to release digestive enzymes into the intestine.
 - (a) Secretin stimulates the pancreas to secrete bicarbonate and water. The bicarbonate acts to neutralize acids entering the duodenum from the stomach.
 - (ii) The endocrine function of the pancreas is to release hormones like insulin and glucagon.

D. CCK

1. CCK is released by stretching, but the most potent stimulant for the secretion of CCK is fatty acid.
2. Fatty acid cleavage from triglycerides starts with lingual lipase and then gastric lipase.