

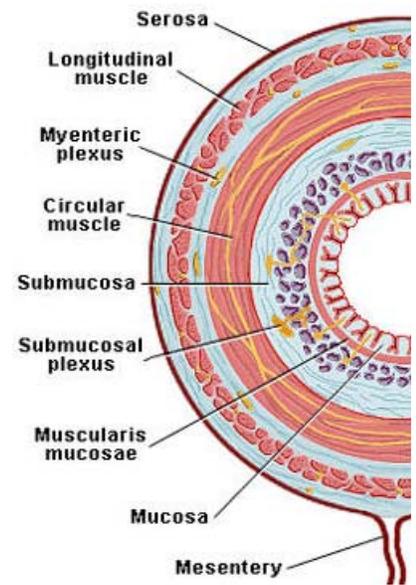
INTESTINES

revised 31 March 2016

Martini 4th: pp884-890, 5th: 847-887, 7th: , 8th: 898, 10th: 901-908

FOUR layers of generalized GI tract (p 885)

- serosa** serous membrane, [if lacking serosa, adventitia present]
- 1) **muscularis externa** circular and longitudinal muscle, myenteric plexus controls peristalsis
- 2) (stimulated by parasympathetic, inhibited by sympathetic)
- 3) **submucosa** large blood vessels, lymphatics, some exocrine glands
- 4) **mucosa** mucous membrane, lamina propria, simple columnar epithelium
(can contain mucous glands (duodenum only), lymph nodes (ileum only))
- mesenteries** sandwich of peritoneum. folds of mesentery: lesser and greater **omentum**



SMALL INTESTINE: 3-5 m long. (p 905) Draw diagram of proximal digestion, distal absorption.)

lacteal lymphatic vessels drain lymph from villi, contain **chylomicrons** (juice, little, unit).

microvilli (brush border) line, yield surface area of tennis court for small intestine. (pp 115-116)

Duodenum: (2 + 10) curves around head of pancreas, acid neutralized here, mix in digestive enz.

908

Brunner's glands: submucosal mucous glands, rich in HCO_3^- , diagnostic of duodenum.

ampulla of Vater (combined bile and pancreatic ducts) empties through the **duodenal papilla**, controlled: sphincter of Oddi, retroperitoneal

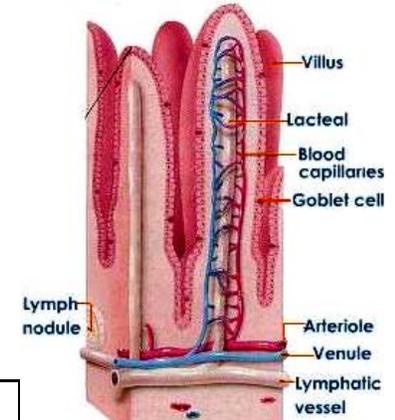
Jejunum: (empty) suspended by mesentery, 1.5 m long, digestion and absorption occur

Ileum (means twisted) last 2 m, primarily absorption

ileocecal valve, flap

plicae circulares: [folds, circular shelf-like folds carrying intestinal villi]

Peyer's Patches: lymphatic tissue embedded in wall, diagnostic of ileum



PHYSIOLOGY OF DIGESTION: page 923:

food stuff	first site	agents	products
carbohydrate	mouth	amylase	maltose
protein	stomach	pepsin & HCl	peptides
fats	duodenum	lipase & bile salts	fatty acids & glycerol

COLON: (p 918) functions to resorb water.

Entrance through ileocecal valve (no villi or plicae circulares)

taenia coli (ribbon) longitudinal smooth muscle is in *three strips*

haustra (draw up) tania draw up wall to form pockets

PORTIONS: **cecum** blind end, **vermiform appendix** attached

ascending colon **hepatic flexure** (gas pains here and in splenic flexure)

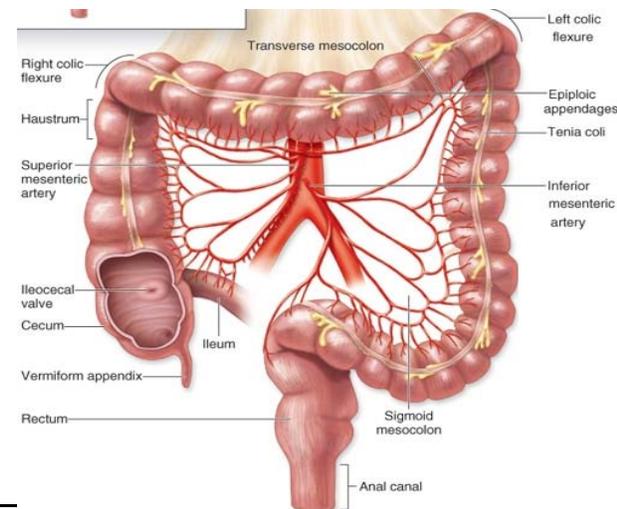
transverse colon **splenic flexure**

descending colon

sigmoid colon

rectum lined with stratified squamous

anus double sphincters, inside smooth, outside skeletal muscle



“Need to go?” Inner sphincter dilates. Can recontract, urge subsides

gastrocolic reflex: stomach full, inner sphincter dilates. Sympathetic NS: open sphincters.

Hormonal regulation: (p. 915-916)

gastrin	distention of stomach, vagus	stomach wall	release gastric
secretin	acid in duodenum	duodenum	release pancreatic chyme
cholecystokinin	fatty acids in duodenum	duodenum	1) slow peristalsis 2) contract gall bladder 3) suppress appetite

