Digestive tract

Abdominal viscera and digestive tract

- Abdominal viscera comprise majority of the alimentary system
 - Terminal oesophagus, stomach, pancreas, spleen, liver, gallbladder, kidneys, suprarenal glands
- Liver, stomach and spleen almost fill the domes of the diaphragm, and receive some protection from the lower thoracic cage
- Falciform ligament divides liver into right and left lobes
- Greater omentum conceals most of the small intestine
- Gallbladder projects inferior of the sharp border of the liver
- Food passes from the mouth and pharynx, to the oesophagus and stomach, where it mixes with gastric secretions
- Digestion mostly occurs in the stomach and duodenum
- Peristalsis begins in the middle of the stomach and moves toward the pylorus; mixes masticated food with digestive juices and empties into duodenum
- Absorption occurs in the small intestine, which comprises the uk duodenum, jejunum, and ilium
- Stomach is continuous with the duodenum water receives openings of ducts from the pancreas and liter is the store of ducts from the pancreas and liter is the store of the s
- Peristalsis occurs in jejupunnand lium
- Large intestine complises
 - Appendix
 - Colon (ascending, transverse, descending and sigmoid)
 - o Rectum
 - Anal canal
- Most reabsorption of water occurs in the ascending colon
- Faeces form in the descending and sigmoid colon and accumulate in the rectum before defecation
- GI tract comprises the oesophagus, stomach, small and large intestines
- Arterial supply from the abdominal aorta
 - Major branches are coeliac trunk and superior and inferior mesenteric arteries
- Superior mesenteric and splenic veins unite to form the hepatic portal vein (main channel of the portal venous system)
 - Drains from abdominal alimentary tract, pancreas, spleen and most of the gallbladder, and carries to the liver



Taken from Moore et al, Clinically Oriented Anatomy, Seventh Edition



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Relations of the stomach

- Covered by visceral peritoneum
- Two layers of the lesser omentum extend around the stomach and leave the greater surface as the greater omentum
- Anterior relation to the diaphragm, left lobe of liver, anterior abdominal wall
- Posterior relation to the omental bursa and the pancreas
- Inferolateral relation to the transverse colon

Nerve supply

- Parasympathetic supply from the anterior (left vagus) and posterior (right vagus) vagal trunks and their branches; enter abdomen via oesophageal hiatus
- Sympathetic nerve supply from T6-9 passes to the coeliac plexus via greater splanchnic nerve

Small intestine

- Comprises duodenum, jejunum, and ilium
- Primary site for nutrient absorption
- Extends from pylorus to the ileocecal junction (joins the cecum)

<u>Duodenum</u>

- First, shortest, widest and most fixed part
- C-shaped course around the head of the pancreas
- Begins at pylorus and ends at the duodenojejunal flexure (L2 level)
 Flexure/junction is an acute angle
- Most of the duodenum is fixed by peritoneum to structure on the posterior abdominal wall; considered partially retrependented
- 4 parts of the duodenum
 - Superior/first part: short al Nedateral tel Voody
 - Descending/record part: longer closed along right sideL1-L3
 Inferi Phild part: medium cosses L3

P Ascending/f phase 1. short, begins left of L3 and rises to superior border of L2

• The ampulla is the first 2cm of the superior part of the duodenum; has a mesentery and is mobile; remainder of duodenum has no mesentery and is immobile (retroperitoneal)

Superior part

- Ascends from pylorus
- Overlapped by liver and gallbladder
- Covered by peritoneum on anterior surface and posterior ampulla
- Hepatoduodenal ligament attaches superiorly and greater omentum inferiorly
- Relationships
 - Level: anterolateral to L1
 - Anterior: peritoneum, gallbladder, liver
 - Posterior: bile duct, gastroduodenal artery, hepatic portal vein, IVC



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Rectum and anal canal

Rectum

- Rectum is the pelvic part of the digestive tract, continuous proximally with the sigmoid colon and distally with the anal canal
- Rectosigmoid junction is at L3 level
- Tenai coli spread to form continuous langtici sal layer of smooth muscle, and omental appendices are discontinued
- Follows the curve of the Stochum and coecyx, Priming the sacral flexure
- Ends antercentrator to the tip of the Obccyx, prior to the anorectal merue of the anal song Occurs as gut perforates pelvic diaphragm)
- 800 anorectal flexure is important for continence; maintained during resting state by tone of the puborectalis muscle
- Three sharp lateral flexures superior, inferior and intermediate, formed in relation to three internal infoldings (transverse rectal folds), which overlie thickened muscle of the rectal wall
- Ampulla of the rectum is the dilated terminal part; supported by levator ani and the anococcygeal ligament
 - Holds accumulating faecal mass until defaecation; relaxes to accommodate increasing amounts
- Peritoneum coverage
 - Superior 1/3: anterior and lateral covered
 - Middle 1/3: anterior only
 - o Inferior 1/3: no coverage (subperitoneal)
- In both sexes, lateral reflection of peritoneum from the superior 1/3 of the rectum form pararectal fossae, allowing distension as it fills
- Also recto-uterine pouch in females and recto-vesical pouch in males