Key to the “Written” Part of the Digestive System Test Review 2014

* 4 functions: ingestion, digestion, absorption, excretion
* Homeostasis: provides blood with nutrients
* 2 divisions: alimentary canal & accessory organs
* 4 tissue layers:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Mucosa | Submucosa | Muscularis externa | Serosa |
| Location | Inner layer | Second layer out | Third layer out | Outside layer |
| Structure | Simple columnar epithelium | Soft connective tissue | Smooth muscle | Single layer of cells |
| Function | Produce mucous | Blood & nerve supply | Move food through tract (peristalsis) | Wrapping & produce fluids |

* Peristalsis: waves of smooth muscle contraction in the muscularis externa that moves food through the alimentary canal
* Digestion begins in the mouth (oral cavity) with amylase breaking down carbohydrates
* Oral cavity: carbohydrate digestion (chemical digestion), mastication (mechanical digestion)
* Pharynx, glottis, epiglottis, esophagus:
* Regions of stomach:

esophagus

cardiac

sphincter

fundus

body

greater

curvature

lesser

curvature

pylorus

* Acid reflux: weak cardiac sphincter at top end of stomach allows gastric juices to enter and “burn” esophagus. Treated with proton-pump inhibitor (PPI) drugs such as Prilosec.
* Gastric juice breaks food down into “chyme” and is made of many chemicals, including HCl (activates enzymes), pepsin (protein digestion), and rennin (milk digestion)
* Vomit: one way that the body gets rid of things of which it doesn’t approve.
	+ Nausea 🡪 retching 🡪 expulsive
	+ Gag reflex
* Hunger: decreased blood sugar levels 🡪 increased production of certain hormones 🡪

 hormones cause stomach to contract and “growl”

* Satiation: stretch receptors in stomach & blood chemistry tell hypothalamus to stop eating
* Bariatric Surgery: limit food quantity consumed (gastric band, gastric bypass, stapling)
* Regions of small intestine:
	+ Duodenum – where bolus pH is neutralized and accessory organs empty their products
	+ Jejunum – the majority of the s.i. where digestion is completed and nutrients are absorbed
	+ Ileum – the final absorption of nutrients before bolus enters large intestine
* Hernia: when abdominal wall muscles rupture and part of small intestine pokes through
* Regions of large intestine: cecum, appendix, colon, rectum, anal canal
* Constipation: feces spend too much time in rectum so too much water is extracted
* Diarrhea: pretty much the opposite of constipation
* Accessory organs: liver, gall bladder, pancreas, salivary glands, teeth
* Salivary glands: sticks food together and begins carbohydrate digestion
* Liver: makes bile (which emulsifies fats)
* Gall bladder: stores and concentrated bile
* Gall bladder empties its bile through a tube (bile duct) into the first part of the small intestine (duodenum)
* Disorders:
* Pancreas: insulin and digestive enzymes
* Main difference between vitamins and minerals: vitamins are organic, minerals are inorganic (what does this mean?)
* Kilocalories (“calories”): 1 calorie will raise the temperature of 1 g water by 1 degree Celsius
* BMR: the number of calories needed to keep a resting individual alive for 24 hours.