Esophagus and Stomach Questions

1. What is peristaltic movement and how does it function in the esophagus? Peristaltic movement is the moving of bolus (chewed food) by way of peristalsis. Peristalsis is involuntary movement of long, cylindrical muscles. Peristalsis moves as waves, so waves of force push the bolus down the esophagus into the stomach. The waves can be short and local, or long and span the whole organ.
2. Does any digestion of food occur in the esophagus? No, the esophagus sends chewed food, called a bolus, to the stomach for it to be digested. No digestion occurs inside.
3. What are the primary functions of the stomach? The stomach has three very important functions. 1) It mixes and stores food until it can be digested some more, 2) It secretes things (enzymes) that breaks down food into a more digestible state, 3) it sends food into the small intestine.
4. What is chyme and how does the stomach mix this material? Chyme is the pulpy acidic fluid which passes from the stomach to the small intestine, and it is consisted of gastric juices and partially digested food. The stomach mixes the material with the muscular contractions of the stomach walls help to mix the food and the digestive substances together to form chyme. Once particles are small enough, they pass through to the small intestine where the mixing continues.
5. What role does the stomach play in decontaminating the incoming food matter? The stomach’s role in denominating incoming food matter is releasing protease enzymes that kills the bacteria in the stomach tract.
6. What cells in the stomach function to form enzymes and acids? The Chief cells in the stomach function to produce two digestive enzymes: pepsinogen, and gastric lipase. The Parietal cells are the epithelial cells that secrete hydrochloric acid. Additionally, the enteroendocrine cells function to produce the hormone ghrelin, which is responsible for stimulating appetite.
7. Why doesn’t gastric juice digest the inside of the stomach? The stomach is lined with epithelial cells that produce mucus. The mucus forms a barrier between the stomach and the gastric juice which prevents it from being digested.
8. What are sphincters and how are they related to the stomach? A sphincter is a ring of muscle surrounding and serving to guard or close an opening or tube, such as the openings of the stomach. There are two sphincters in the stomach, the lower esophageal sphincter and the pyloric sphincter. The esophageal sphincter prevents acid and stomach contents from traveling backwards from the stomach. The pyloric sphincter acts as a valve to control the flow of partially digested food from the stomach to the small intestine.
9. What mechanical and chemical digestion occurs in the stomach? Mechanical digestion in the stomach consists of the stomach contracting and relaxing to help mix the food and digestive liquid together. This creates chyme. Chemical digestion is digesting something by using enzymes and chemicals to break it down. In the stomach, this includes enzymes like pepsin which breaks down proteins, and gastric lipases which breaks down triglycerides.