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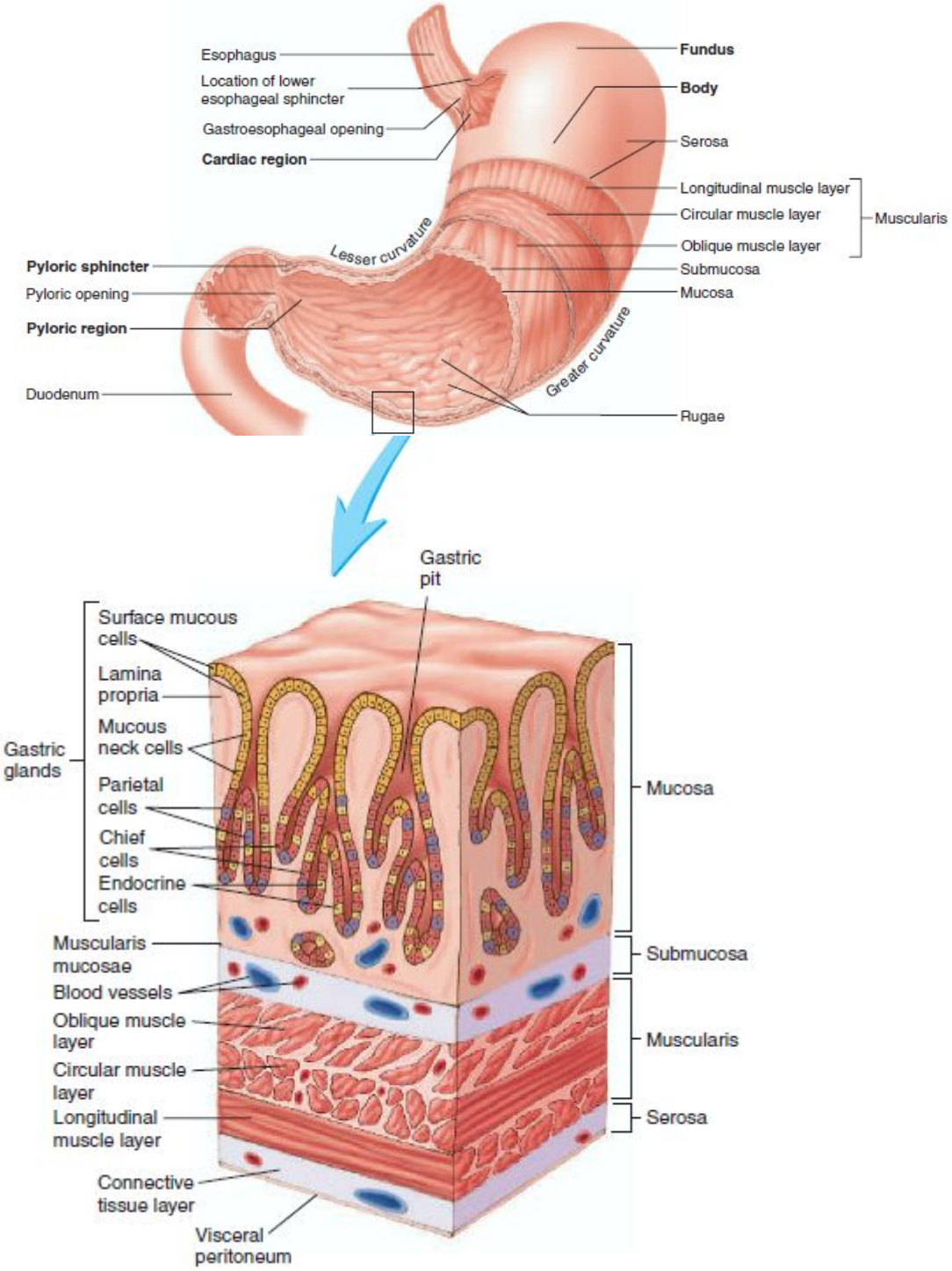
Secretions of the Stomach Part-||



Anatomy and Histology of the Stomach

The **serosa,** or visceral peritoneum, is the outermost layer of the stomach. It consists of an inner layer of connective tissue and an outer layer of simple squamous epithelium. The **muscularis** of the stomach consists of three layers: an outer longitudinal layer, middle circular layer, and an inner oblique layer. In some areas of the stomach, such as in the fundus, the three layers blend with one another and cannot be separated. Deep to the muscular layer are the submucosa and the mucosa, which are thrown into large folds called **rugae** when the stomach is empty. These folds allow the mucosa and submucosa to stretch, and the folds disappear as the stomach volume increases as it is filled. The stomach is lined with simple columnar epithelium. The epithelium forms numerous tubelike **gastric pits,** which are the openings for the **gastric glands**. The epithelial cells of the stomach are of five types. The first type, **surface mucous cells,** which produce mucus, is on the surface and lines the gastric pit. The remaining four cell types are in the gastric glands. They are **mucous neck cells,** which **produce mucus**; **parietal** (oxyntic) **cells,** which **produce hydrochloric** acid and intrinsic factor; **chief** (zymogenic) **cells,** which **produce pepsinogen**; and **endocrine cells,** which produce regulatory hormones. The mucous neck cells are located near the openings of the glands; whereas the parietal, chief, and endocrine cells are interspersed in the deeper parts of the glands. Chief cells within the gastric glands secrete **pepsinogen** (pep-sin_o ⏐-jen). Pepsinogen is packaged in **zymogen** (zı ⏐-mo ⏐-jen; related to enzymes) **granules,** which are released by exocytosis when pepsinogen secretion is stimulated. Once pepsinogen enters the lumen of the stomach, hydrochloric acid and previously formed pepsin molecules convert it to **pepsin. Pepsin** exhibits **optimum enzymatic activity at a pH of 3 or less**. Pepsin catalyzes the cleavage of some covalent bonds in proteins, thus breaking them into smaller peptide chains.