22.6A: Gross Anatomy of the Stomach

The stomach is divided into four sections, each of which has different cells and functions.

Learning Objectives

• Describe the gross anatomy of the stomach

Key Points

• The stomach is divided into four sections: the cardiac region, the fundus, the body, and the pylorus or atrium.
• The stomach is lined by a mucous membrane that contains glands (with chief cells) that secrete gastric juices.
• Two smooth muscle valves, or sphincters, keep the contents of the stomach contained: the cardiac or esophageal sphincter and the pyloric sphincter.
• The arteries supplying the stomach are the left gastric, the right gastric, and the right gastroepiploic branches of the hepatic, and the left gastroepiploic and short gastric branches of the lineal.
• Lymphatics consist of a superficial and a deep set, and pass to the lymph glands found along the two curvatures of the organ.
• The nerves are the terminal branches of the right and left urethra and other parts; the former are distributed upon the back, and the latter upon the front, part of the organ.

Key Terms

• chief cell: A cell located in the stomach and parathyroid gland that secretes precursor enzymes.
• pylorus: The opening in a vertebrate, including humans, at the lower end of the stomach that opens into the
duodenum.

- **sphincter**: A ringlike band of muscle that surrounds a bodily opening and constricts and relaxes as required for normal physiological functioning.

The stomach is a thick, walled organ that lies between the esophagus and the first part of the small intestine (the duodenum). It is on the left side of the abdominal cavity, the fundus of the stomach lying against the diaphragm. Lying beneath the stomach is the pancreas. The greater omentum hangs from the greater curvature.

![Diagram of the stomach showing sections and parts](https://med.libretexts.org/Bookshelves/Anatomy_and_Physiology/Book%3A_Anatomy_and_Physiology_(Boundless)/22%3A_...)

**Sections of the stomach**: This diagram of the stomach shows the cardiac region, fundus, body, and pylorus.

A mucous membrane lines the stomach that contains the glands (with chief cells) that secrete gastric juices. Up to three quarts of this digestive fluid is produced daily. The gastric glands begin secreting before food enters the stomach due to the parasympathetic impulses of the vagus nerve, that also make the stomach a storage vat for that acid.

The stomach is divided into four sections, each of which has different cells and functions. The sections are:

1. The cardiac region, where the contents of the esophagus empty into the stomach.
2. The fundus, which is formed by the upper curvature of the organ.
3. The body, the main central region.
4. The pylorus or atrium, the lower section of the organ that facilitates the emptying of the contents into the small intestine.

Two smooth muscle valves, or sphincters, keep the contents of the stomach contained. They are the:

1. Cardiac or esophageal sphincter that divides the tract above.
2. Pyloric sphincter or pyloric orifice that divides the stomach from the small intestine.

The arteries that supply the stomach are the left gastric, the right gastric, and right gastroepiploic branches of the hepati, and the left gastroepiploic and short gastric branches of the lineal. They supply the muscular coat, ramify in the submucous coat, and are finally distributed to the mucous membrane.

The arteries break up at the base of the gastric tubules into a plexus of fine capillaries that run upward between the
tubules. They anatomize with each other and end in a plexus of larger capillaries that surround the mouths of the tubes and also form hexagonal meshes around the ducts.

From these the veins arise, and pursue a straight course downward, between the tubules, to the submucous tissue; they end in the lineal and superior mesenteric veins or directly in the portal vein.

The lymphatics are numerous. They consist of a superficial and a deep set, and pass to the lymph glands found along the two curvatures of the organ.

The nerves are the terminal branches of the right and left urethra and other parts, the former being distributed upon the back, and the latter upon the front part of the organ. A great number of branches from the celiac plexus of the sympathetic are also distributed to it.

Nerve plexuses are found in the submucous coat and between the layers of the muscular coat as in the intestine. Fibrils are distributed from these plexuses to the muscular tissue and the mucous membrane.