

Anatomy of the Stomach, its Structure and Features

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Annotation: The article describes the concept of the gastrointestinal tract, its features, vital functions, and anatomical structure. According to the written article, a conclusion is given based on the facts studied.

Keywords: Stomach, digestive tract, esophagus, duodenum, stomach body, stomach floor, antrum, stomach wall, gastrectomy.

Internet sources describe the concept of a stomach as follows:

The stomach (Latin *ventriculus*) is the part of the digestive tract following the esophagus and preceding the duodenum.

During examination, the position, size, shape of the stomach depends on the patient's position, the filling of the stomach, as well as on the condition of the surrounding organs — liver, spleen, intestines. The stomach is 5/6 magnitude to the left of the median line and only the pyloric part lies to the right.

The upper part of the stomach, being a continuation of the esophagus, is tightly fixed by connective tissue cords to the diaphragm. The entrance to the stomach (*cardia*) is located 3 cm from the place of attachment to the sternum of the VII left rib cartilage or at the level of the X-XI thoracic vertebra from behind.¹

Anatomically, the stomach is divided into four parts:

- **cardiac** (Latin *pars cardiaca*) adjacent to the esophagus;
- **pyloric or pyloric** (Latin *pars pylorica*) adjacent to the duodenum;
- **the body of the stomach** (Latin *corpus ventriculi*), located between the cardiac and pyloric parts;
- **the bottom of the stomach** (lat. *fundus ventriculi*), located above and to the left of the cardiac part.

In the pyloric department, the gatekeeper's cave (lat. *antrum pyloricum*) is distinguished, the synonyms *antrum* or *anturm* and the gatekeeper's canal (Lat. *canalis pyloricus*).

The following anatomical structures are also distinguished in the stomach:

¹ <https://www.gastroscan.ru/handbook/117/633>

- the front wall of the stomach (Lat. paries anterior);
- the back wall of the stomach (lat. paries posterior);
- small curvature of the stomach (lat. curvatura ventriculi minor);
- large curvature of the stomach (lat. curvatura ventriculi major).²

The stomach is separated from the esophagus by the lower esophageal sphincter and from the duodenum by the pyloric sphincter.

The shape of the stomach depends on the position of the body, the fullness of food, and the functional state of the person. With an average filling, the length of the stomach is 14-30 cm, width 10-16 cm, length of small curvature 10.5 cm, large curvature 32-64 cm, wall thickness in the cardiac department 2-3 mm (up to 6 mm), in the antrum 3-4 mm (up to 8 mm). Stomach capacity from 1.5 to 2.5 liters (male stomach is larger than female). The weight of the stomach of a "conditional person" (with a body weight of 70 kg) is normally 150 g.³

The stomach wall consists of four main layers (listed starting from the inner surface of the wall to the outer):

- the mucous membrane is covered with a single-layer cylindrical epithelium
- submucosal base
- the muscle layer, consisting of three sublayers of smooth muscles:
 - the inner sublayer of oblique muscles
 - the middle sublayer of the circular muscles
 - the outer sublayer of the longitudinal muscles
- serous membrane.

The stomach performs the following functions²:

- Deposit and mechanical processing. The food is in the stomach for several hours, swells and liquefies.
- Partial digestion (chemical processing) of food. It is carried out thanks to gastric juice, which is produced by special cells located in the mucous membrane. On average, a person releases about 2-2.5 liters of juice per day. It has an acidic reaction (pH 1.5-1.8), consists of water, hydrochloric acid, mucus and enzymes.
- Portioned evacuation of a food lump into the small intestine. It happens about every 20 seconds. A slow gradual passage is necessary to neutralize the acidic contents with alkaline juice of the pancreas — until the food lump reaches the delicate mucous membrane of the small intestine.
- Secretion of biologically active compounds: serotonin, histamine, motilin, gastrin, substance P, ghrelin (hunger hormone).
- Absorption of certain substances: water (partially), amino acids, a small part of ethanol from alcoholic beverages, caffeine, medicines (aspirin), a small proportion of water-soluble vitamins.
- Neutralization and/or destruction of pathogenic microorganisms (immunological protection).
- Isolation of Castle factor, which is necessary for the absorption of vitamin B12 from foods.⁴

² <https://www.gastroscan.ru/handbook/117/633>

³ <https://www.gastroscan.ru/handbook/117/633>

⁴ <https://www.gastroscan.ru/handbook/117/633>

Can a person live without a stomach?

Complete gastric removal (gastrectomy) is performed for malignant tumors, severe injuries, and extensive wounds³. After surgery, a person lives on and can even eat naturally.

This is made possible by creating a special pathway for the continuous passage of food between the esophagus and intestines. Subsequently, a special treatment and diet are selected for a person to prevent possible complications.

Patients with severe obesity often undergo surgery to reduce the volume of the stomach (gastric bypass surgery). Surgical intervention has risks (complications and death). The indications are determined by the doctor during a personal consultation and examination.

After surgery, patients still need to follow a diet and physical activity regime. Gastric bypass surgery is not a safe alternative to lifestyle changes, but only partially facilitates the weight loss process.

The most common diseases of the gastrointestinal tract:

- Gastritis.
- Peptic ulcer of the stomach and 12p of the intestine.
- Acute and chronic cholecystitis.
- Acute and chronic pancreatitis.
- Acute and chronic hepatitis.
- Gastrointestinal bacteria.
- Oncological diseases, etc..⁵

From the studies, there are 5 factors about the stomach:

1. Stretching the stomach from overeating is an anti—scientific myth.
2. Belching is a natural process by which the stomach gets rid of excess air that is swallowed when eating.
3. The stomach produces hydrochloric acid in a concentration capable of dissolving muscles, bones and some metals.
4. When we blush, our stomach also turns red due to the influence of the sympathetic nervous system.
5. *Thoughts about the taste and smell of food stimulate the production of gastric juice.*⁶

Conclusion⁷

The stomach is an important organ of the human body that performs many functions. For its proper operation, it is necessary to adjust not only nutrition, but also to monitor the state of health and psyche in general. Many serious diseases and their complications can be avoided if you seek medical help in a timely manner and undergo general preventive examinations every year.

List of used literature:

1. Трухан Д. И., Викторова И. А. Внутренние болезни. Гастроэнтерология : учебное пособие для студентов медицинских вузов. — СПб. : СпецЛит, 2013. — 367 с. — ISBN 978-5-299-00530-1

⁵ <https://medportal.ru/enc/gastroenterology/ulcer/zheludok/>

⁶ <https://medportal.ru/enc/gastroenterology/ulcer/zheludok/>

⁷ <https://medportal.ru/enc/gastroenterology/ulcer/zheludok/>

2. Р.Н.Кадыров., Ф.А.Хаджибаев., Б.А.Юлдашев. Неотложная эндоскопия при кровотечениях из варикозно-расширенных вен пищевода. Ташкент: «IJOD-PRINT», 2022. – 208 с.
Internet sites:
3. <https://medportal.ru/enc/gastroenterology/ulcer/zheludok/>
4. <https://www.gastroscan.ru/handbook/117/633>