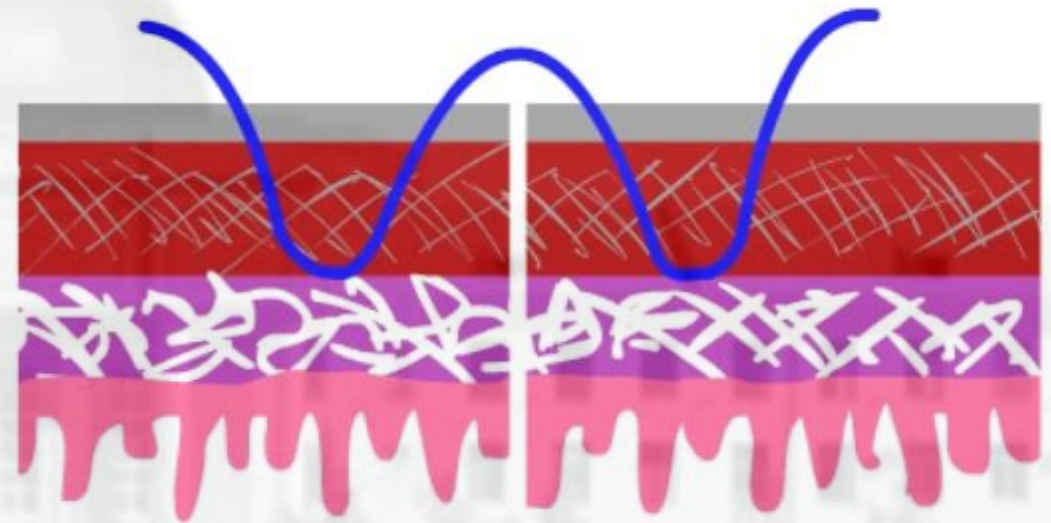


Federal State Budgetary Educational Institution of Higher Education «Prof. V.F. Voino-Yasenetsky Krasnoyarsk State Medical University» of the Ministry of Healthcare of the Russian Federation department of Operative Surgery and Topographic Anatomy; head Doctor of Medical Sciences, Associate Professor of Russkikh A.N.

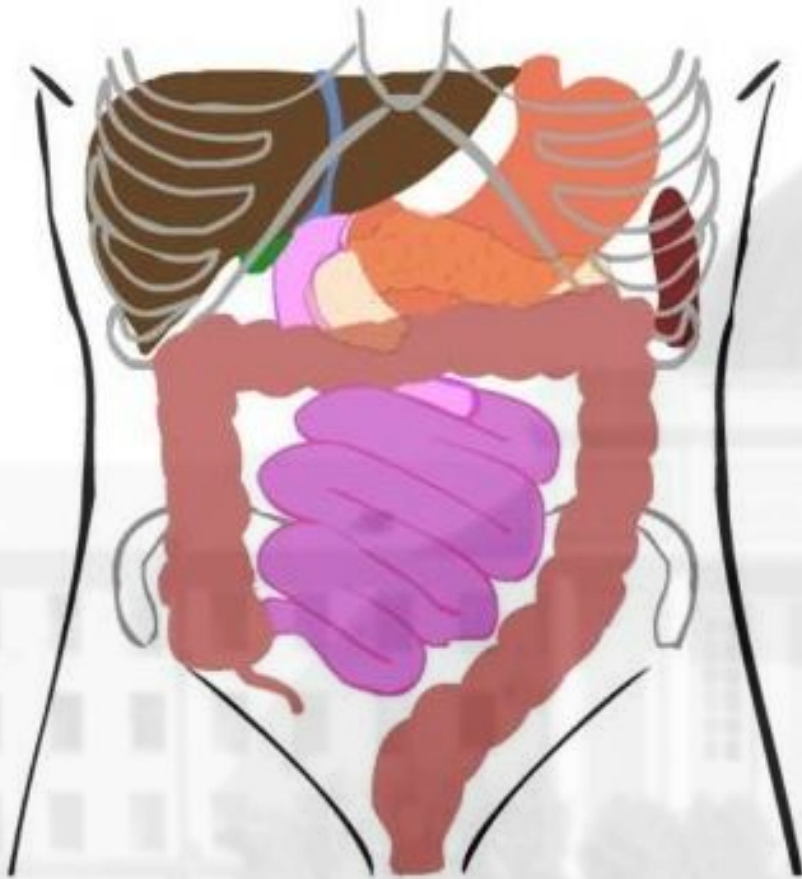
Surgical anatomy and
operative surgery of
abdominal organs.
Intestinal sutures.



lecture plan:

1. Abdominal floor. Projection of internal organs on the anterior abdominal wall.
2. Sinuses, bags, channels, and pits of the abdominal cavity. Practical significance.
3. Ways of spreading purulent exudate in the abdominal cavity.
4. Features of intestinal blood supply and venous outflow.
5. History of bowel surgery.
6. Classification of intestinal sutures.
7. The technique of applying intestinal sutures.
8. Requirements for intestinal sutures.
9. Features of operations on the intestine. Types of intestinal anastomoses.
10. Appendectomy. Types of treatment of the vermiform process.

The abdominal cavity is conditionally divided by the transverse colon and its mesentery into two floors: upper and lower.



UPPER FLOOR:

Liver

Stomach

Spleen

Pancreas

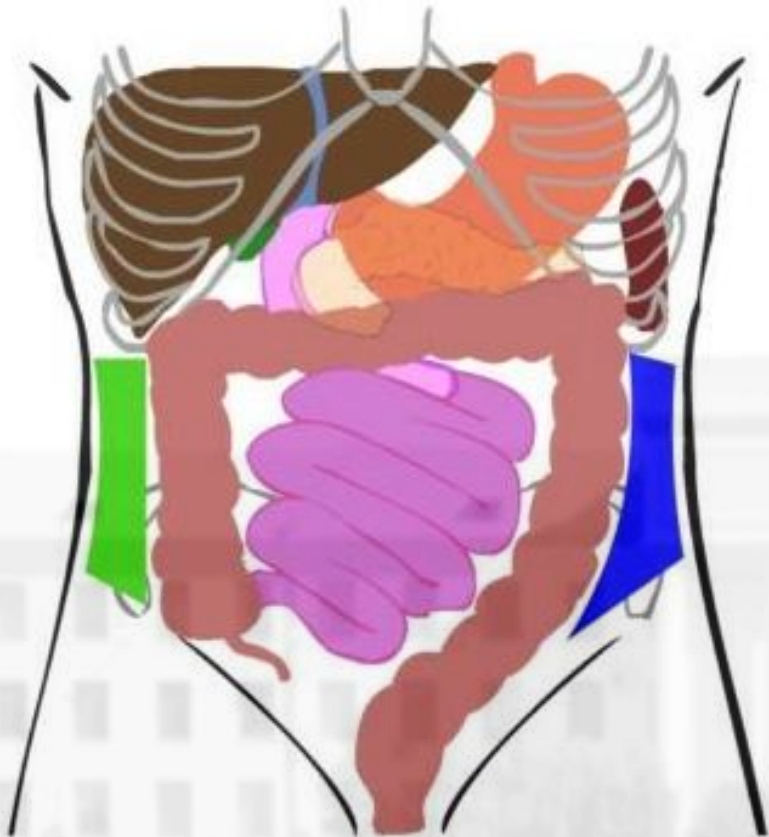
Upper half of the WPC

LOWER FLOOR:

Colon Small intestine

The lower half of the WPC

There are two lateral channels in the abdominal cavity:



The LEFT

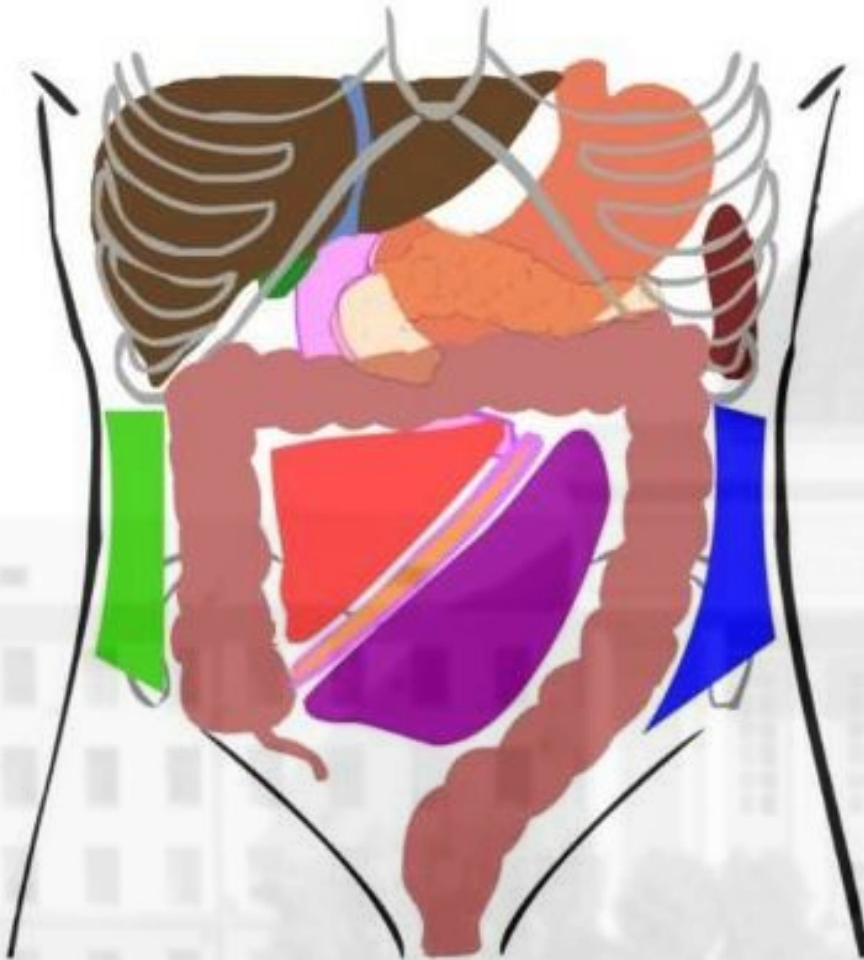
One is bounded from the inside by the descending and sigmoid colon, and from the outside by the anterolateral abdominal wall.



The RIGHT

One is bounded from the inside by the blind and ascending intestine and from the outside by the anterolateral abdominal wall.

There are two mesenteric sinuses (sinuses) in the abdominal cavity:



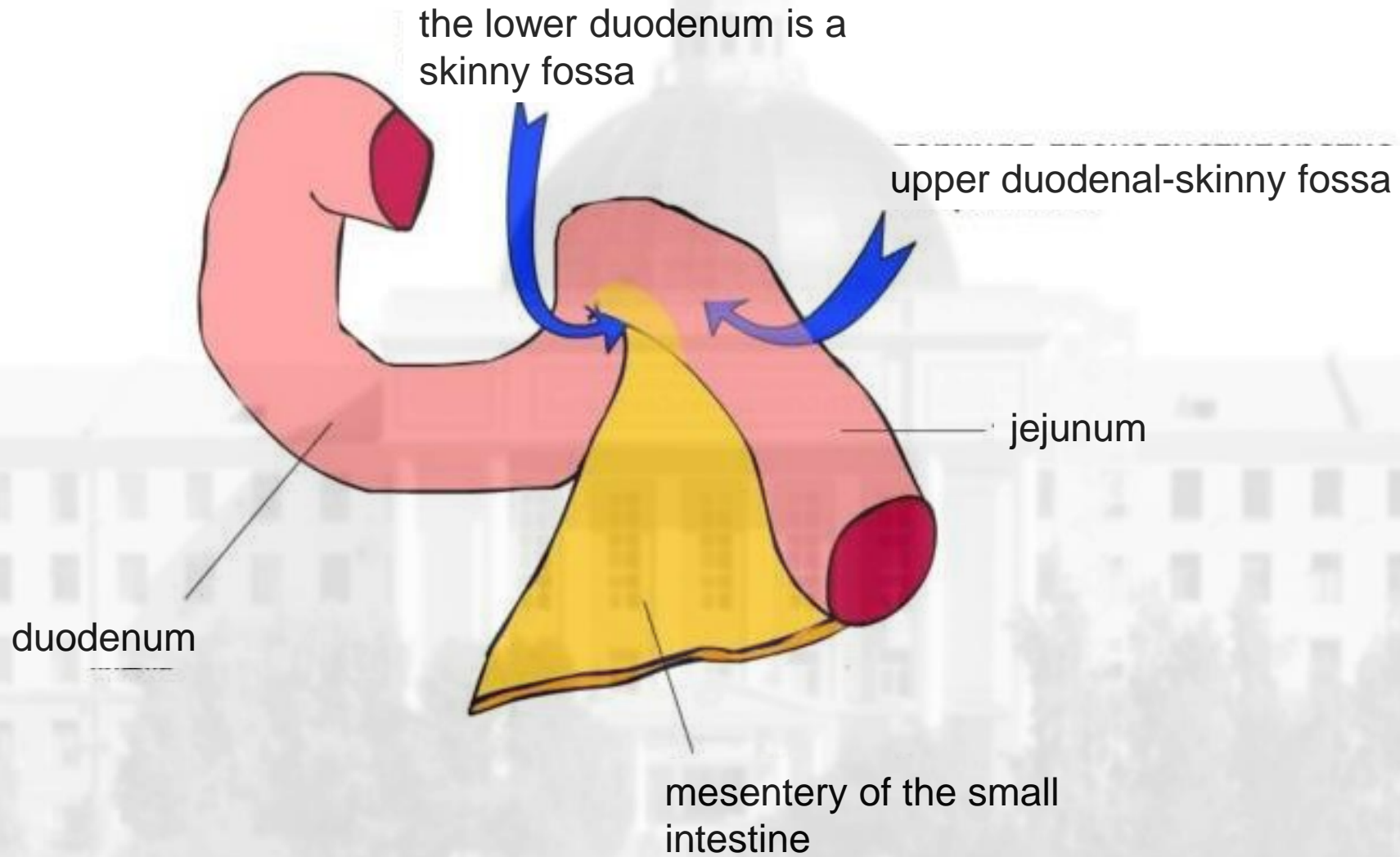
LEFT:

bounded on the right by the mesentery of the small intestine, on the left by the descending and sigmoid colon.

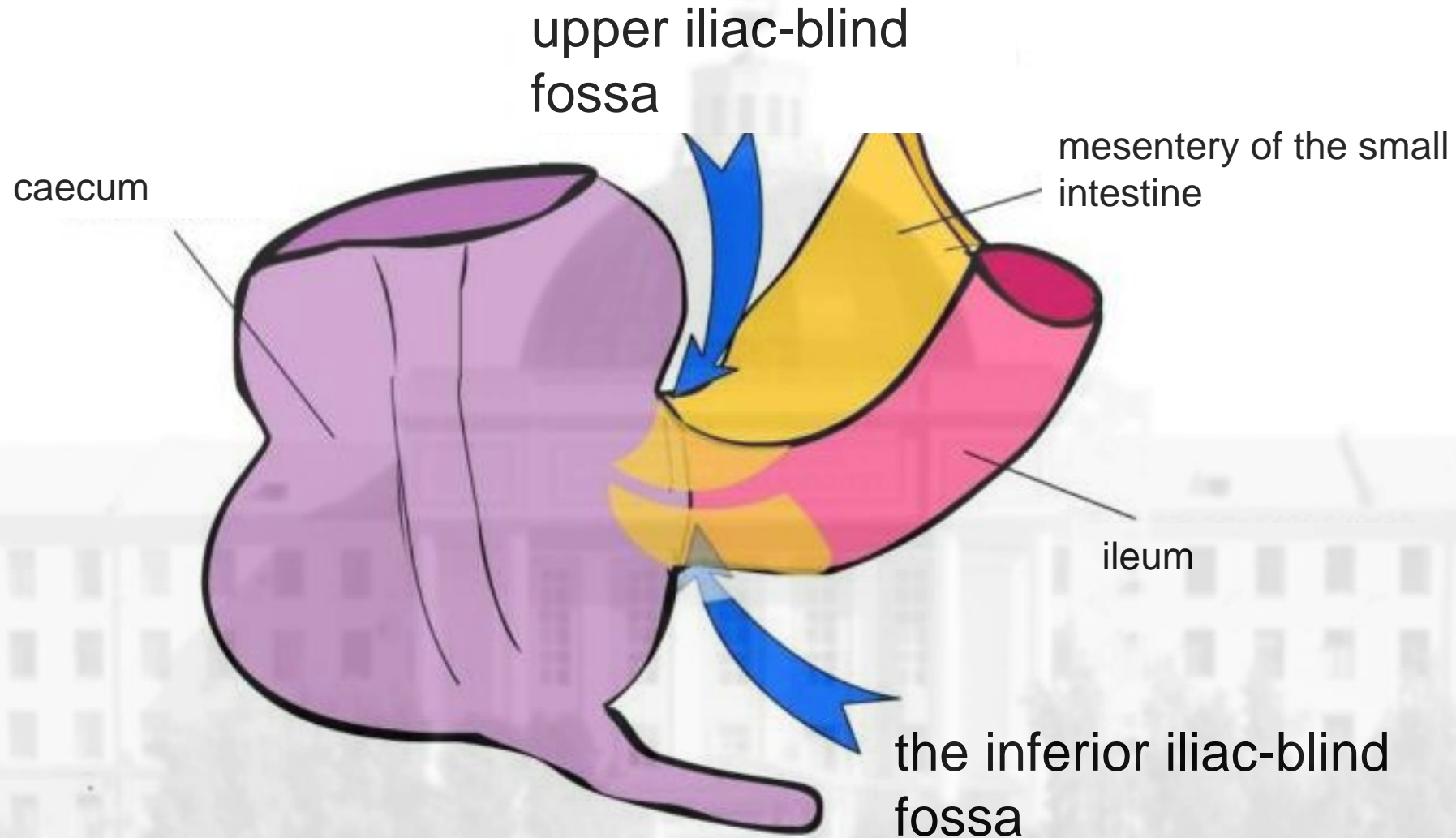
RIGHT:

bounded on the left by the mesentery of the small intestine, on the right, by the ascending intestine, on top by the transverse colon.

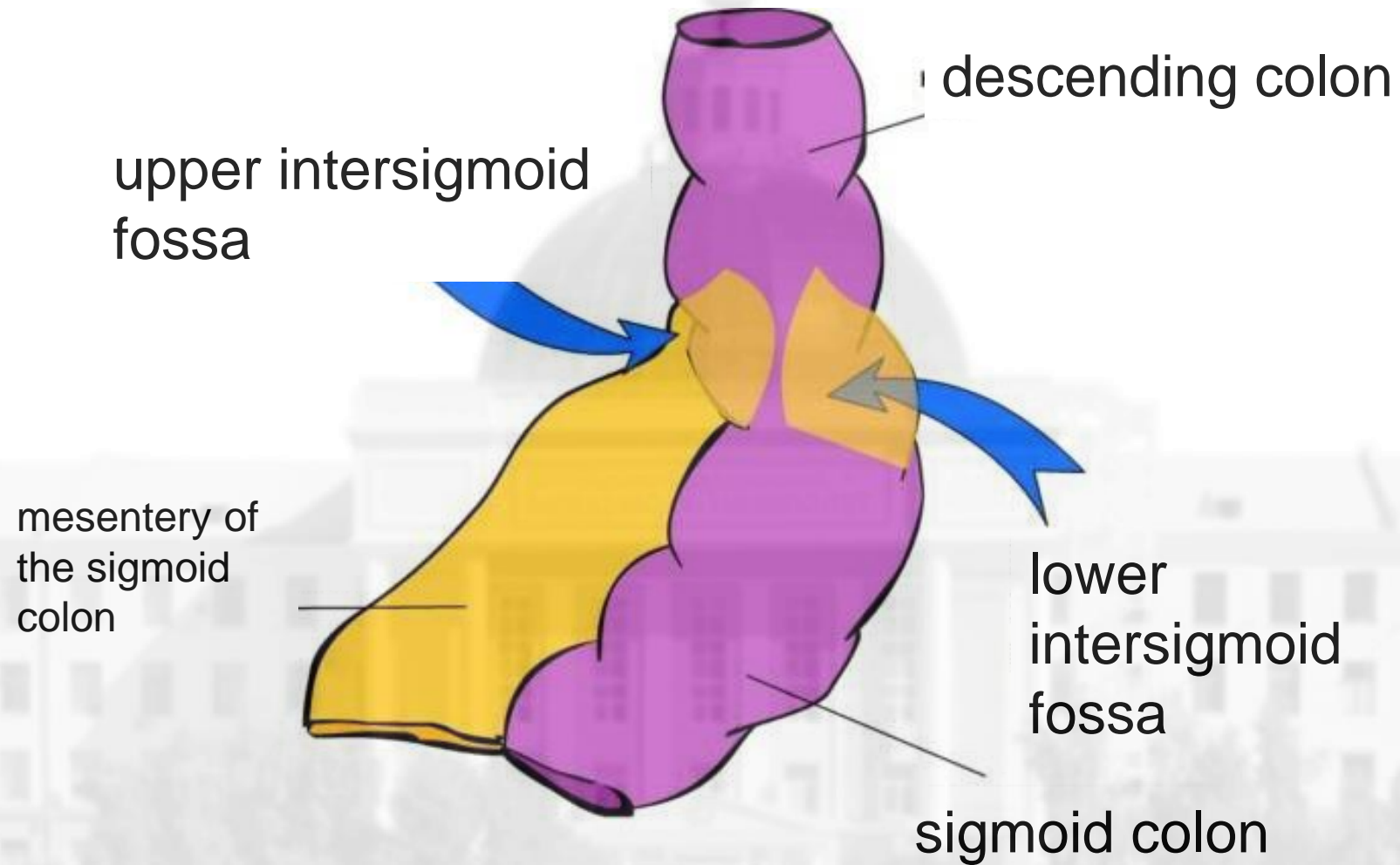
Pits (pockets) of the posterior abdominal wall:



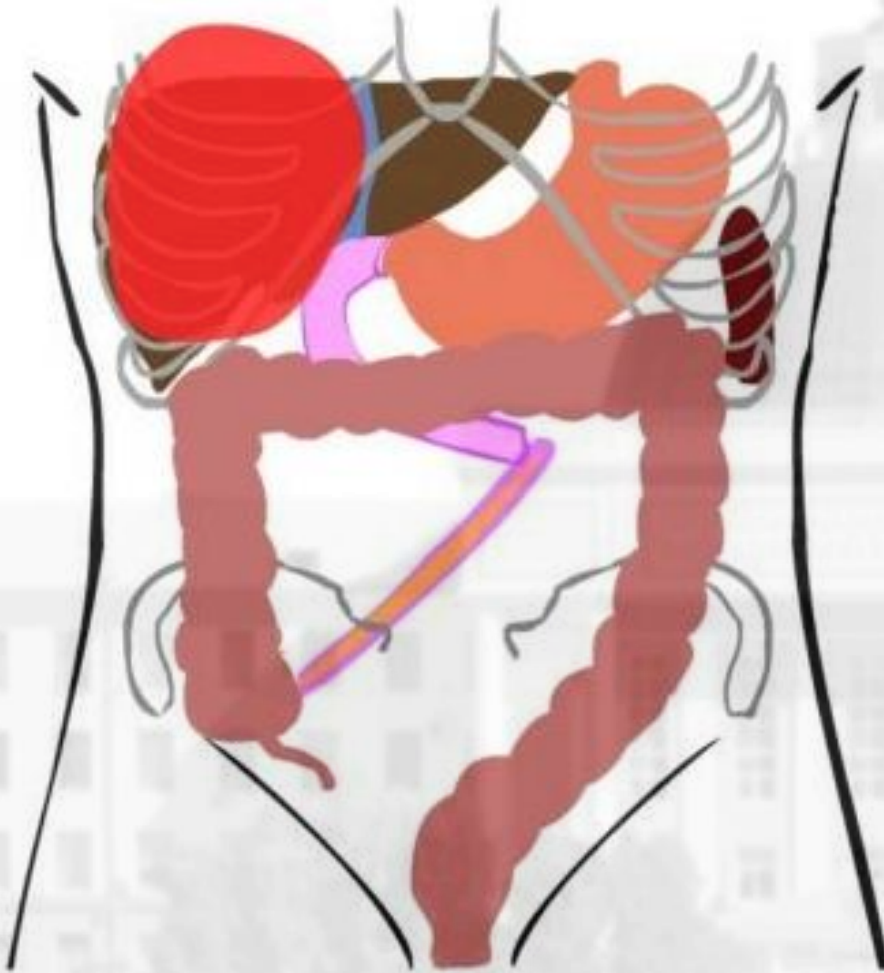
Pits (pockets) of the posterior abdominal wall:



Pits (pockets) of the posterior abdominal wall:



Abdominal Bags (bursa):



Liver bag.

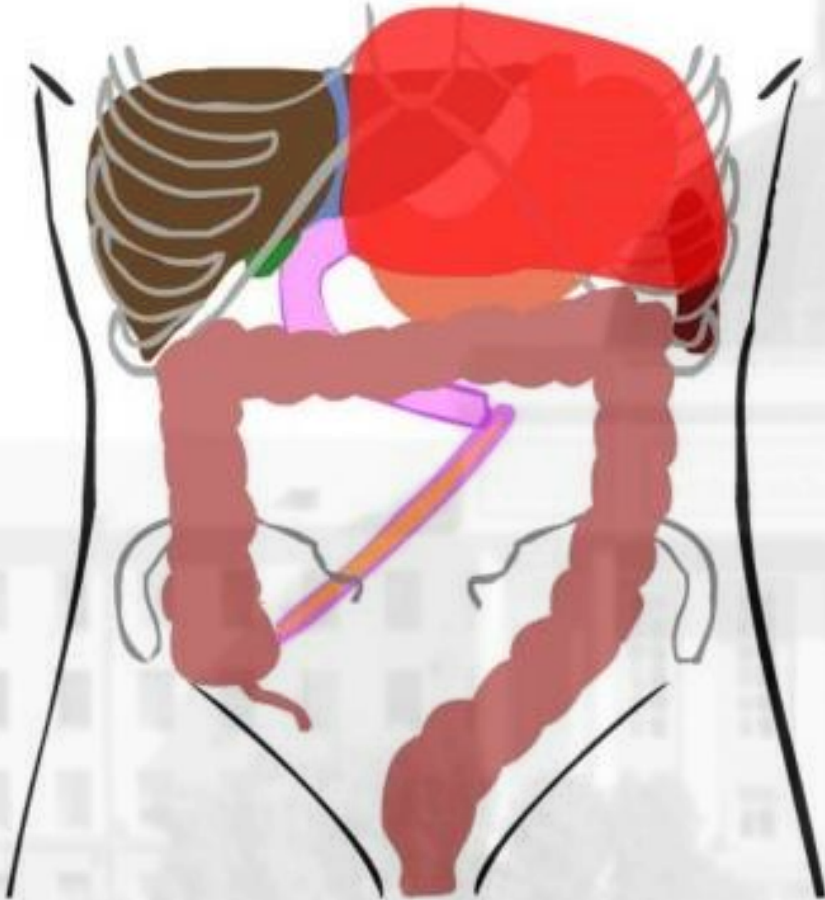
The borders:

From above and in front, the diaphragm and the anterior abdominal wall

From below, the diaphragmatic surface of the liver

Medially (separated from the pancreatic sac) - ligaments of the liver (round, sickle-shaped, coronal, 3x-carbon)

Abdominal Bags (bursa):



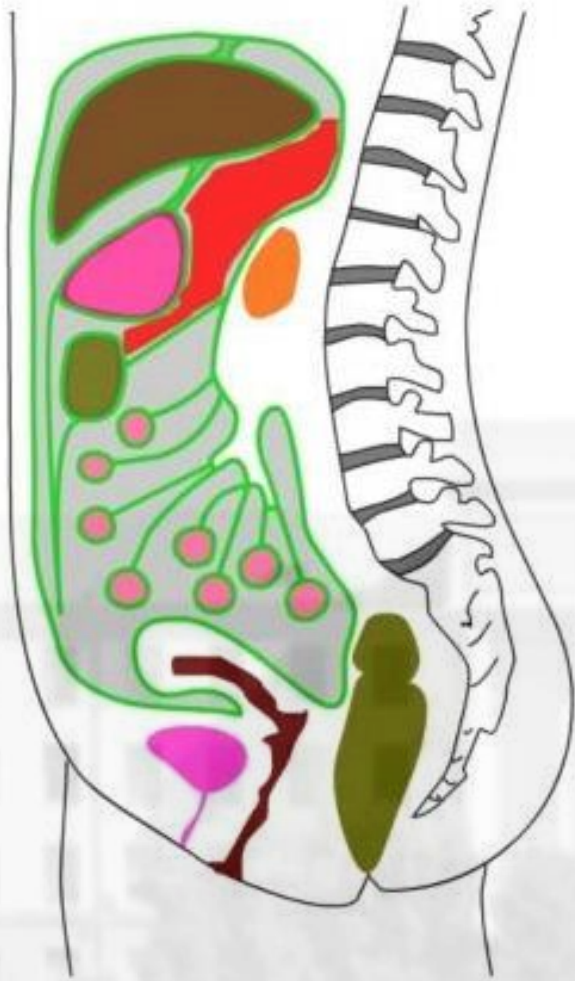
The pre-gastric bag.

Limited by:

Anterior – anterior abdominal wall and diaphragm; Behind - the front wall of the stomach and the left lobe of the liver Medial - ligaments of the liver

Lateral - costal part of the diaphragm, spleen.

Abdominal Bags (bursa):



The borders:

Anterior - small omentum, posterior surface of the stomach, gastrointestinal transverse ligament;

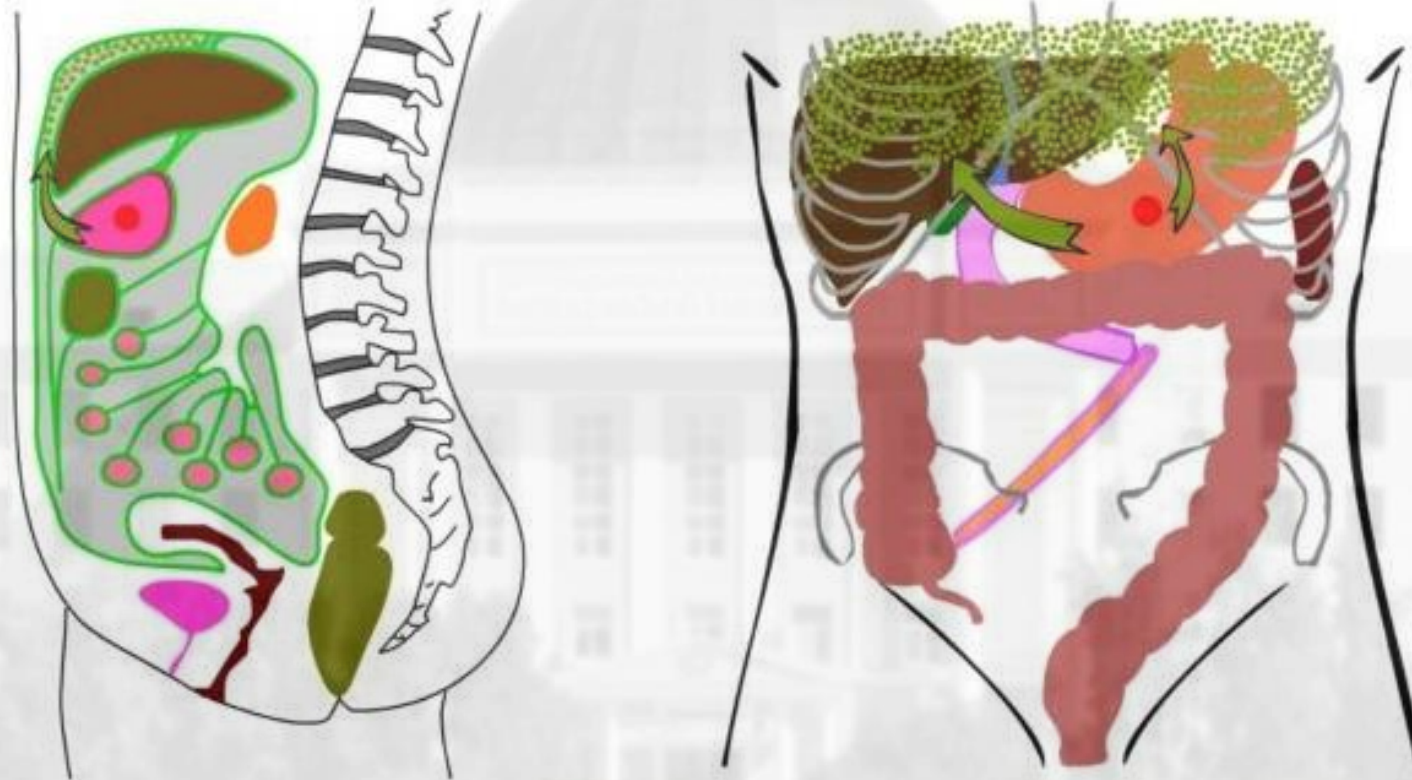
The lower - transverse colon and its mesentery; The posterior is the parietal leaf of the peritoneum, covering the pancreas and large vessels;

Upper - left and caudate lobes of the liver
The left and right are transitional folds of the peritoneum.

Ways of spreading purulent contents in the abdominal cavity.

Stomach injury:

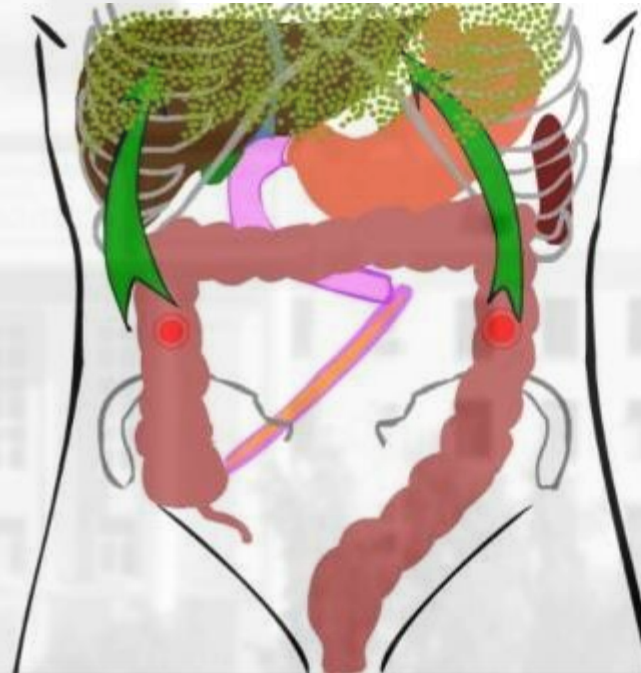
1. Into the cavity of the small and large gland
2. 2. Through the right and left lateral channels into the pelvic cavity
3. 3. Into the subdiaphragmatic space (pre-pancreatic and hepatic bags)



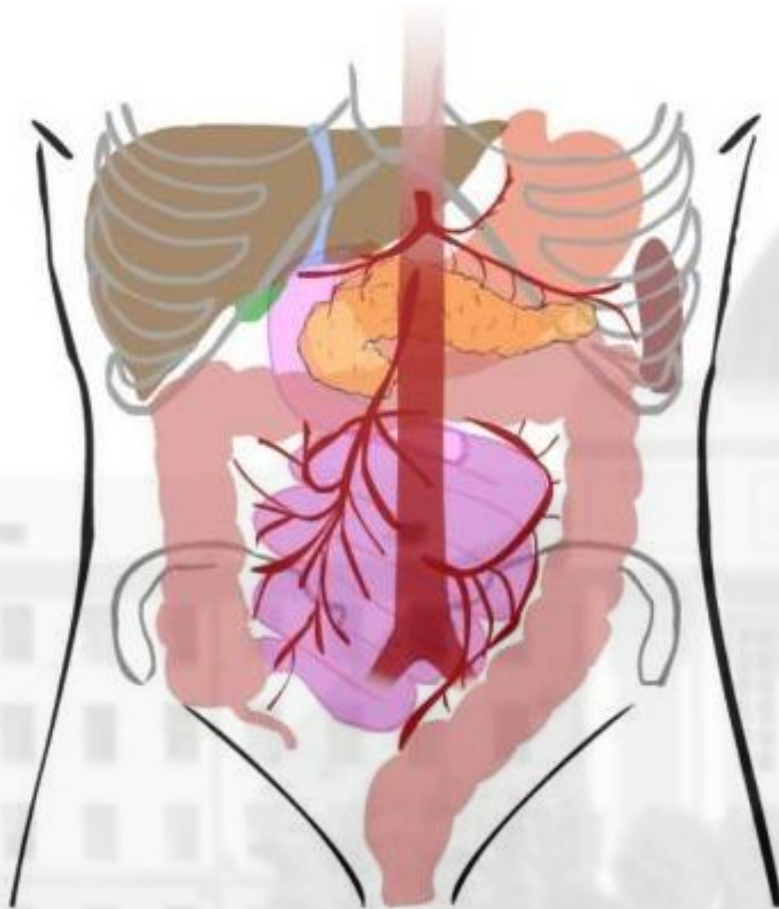
Ways of spreading purulent contents in the abdominal cavity.

Trauma of the ascending and descending intestines:

1. Into the mesenteric sinuses
2. 2. Into retroperitoneal tissue
3. 3. Into the pelvic cavity
4. 4. Into the subdiaphragmatic space



Blood supply to the abdominal organs.



The womb trunk:

- liver and gallbladder;
- stomach;
- spleen;
- pancreas;
- the upper half of the WPC.

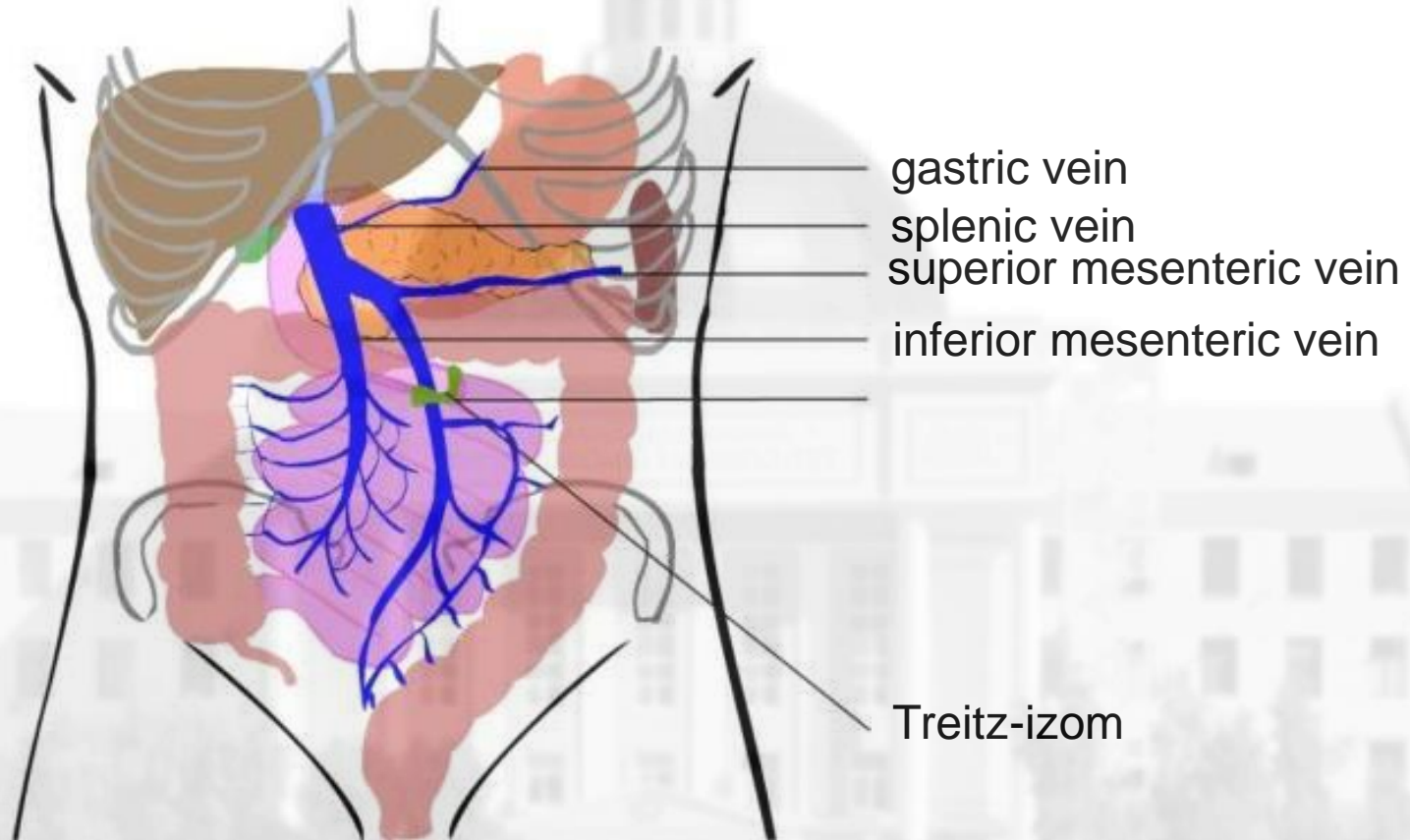
Superior mesenteric artery:

- pancreas;
- lower half of the WPC;
- the jejunum and ileum;
- caecum with a vermiform process;
- ascending colon;
- the right half of the transverse colon.

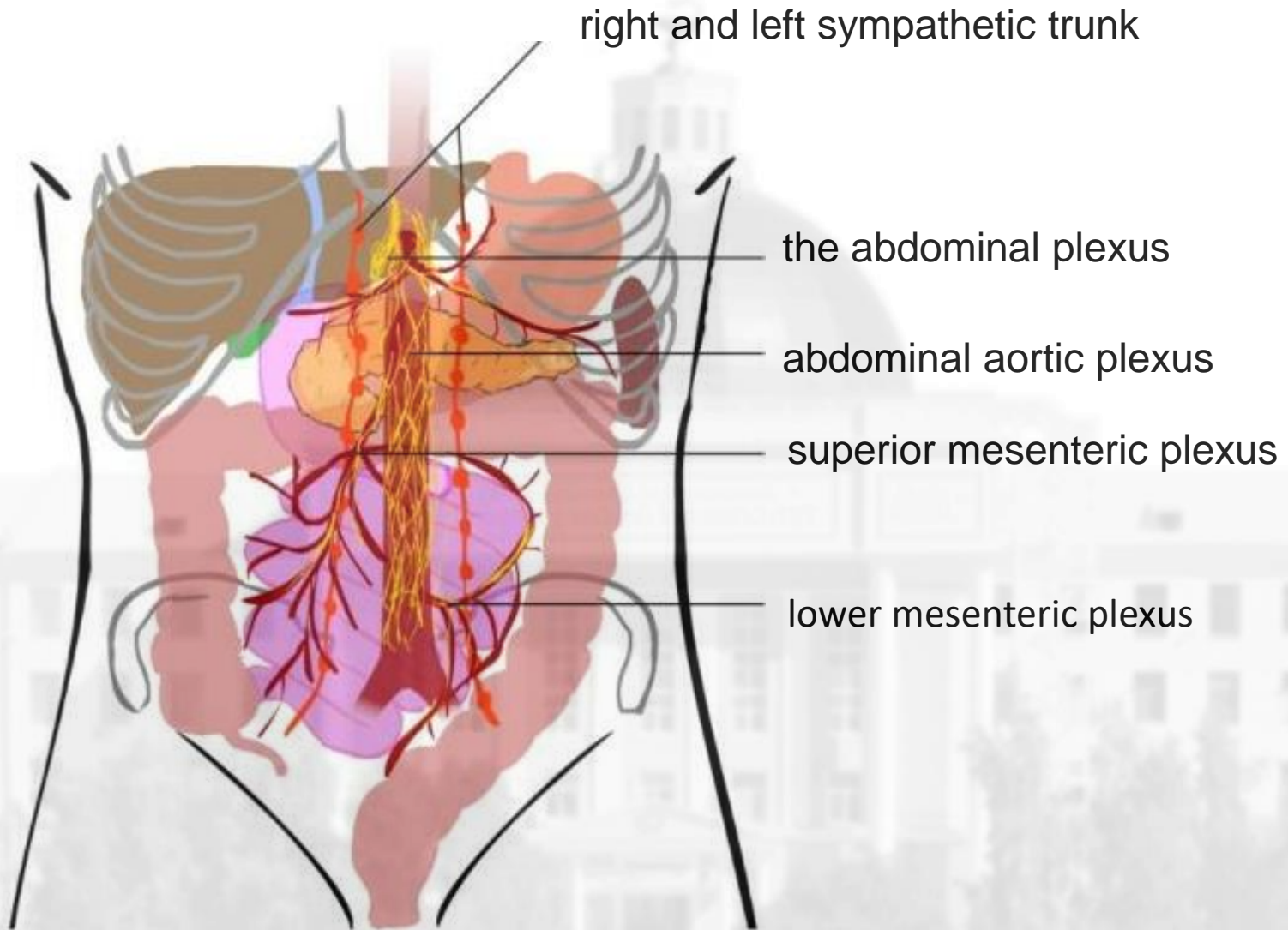
Inferior mesenteric artery:

- the left half of the transverse colon;
- descending colon;
- sigmoid colon;
- the ampoule of the rectum.

Venous outflow of abdominal organs:



Innervation of abdominal organs



Ancient India - the mandibles (chewing apparatus) of ants were used to stitch the intestine.

XIV century - the method of four masters (dried rings of rutabaga, potatoes, pumpkins, trachea of animals were used as prostheses).

XVI century - Paracelsus proposed a technique for applying a fecal fistula.

1707 - A dog during surgery for a strangulated hernia discovered a dead part of the intestine. He solemnly put down the scalpel and announced that he was stopping the operation.

Scarpa and Dupuytren refused the intestinal suture with good reason.

Reclu cited the following statistics at that time of the development of surgery: if you operate on the abdominal organs, the mortality rate is 100%, if you do not operate - 70%.

Cooper, Thompson, when applying a dirty intestinal suture, found that the latter was rejected into the lumen of the intestine.

The beginning of the XIX century - the French surgeon Bichat publishes a work in which he reveals the plastic properties of the peritoneum.

1826 - Lambert offers a gray-serous intestinal suture. Since that time, there has been an avalanche of proposed intestinal sutures.

THE LINING OF THE INTESTINE. BASIC PROPERTIES.



— Serous. High plastic properties, delineation of infection.

— Muscular. Blood supply, peristalsis, and nervous regulation.

— Submucosal. Strength, blood vessels, tightness.

— Mucosa. Tightness, physiology.

CLASSIFICATION OF INTESTINAL SUTURES.

By the number of captured layers: a combination of 4 layers.

By the number of rows:

- 1-row;
- - 2-row;
- - 3-row.

According to the material used:

- absorbable thread;
 - non-absorbable thread;
 - tantalum paper clips;
 - biological glue.
-
- **By continuity:**
 - nodal;
 - wrapped.

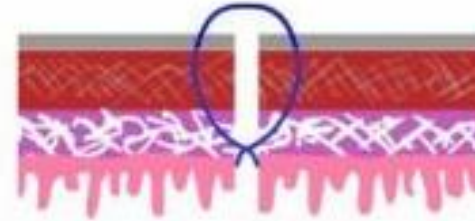
INTESTINAL SUTURE



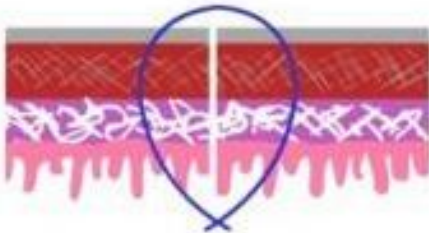
Single row intestinal sutures



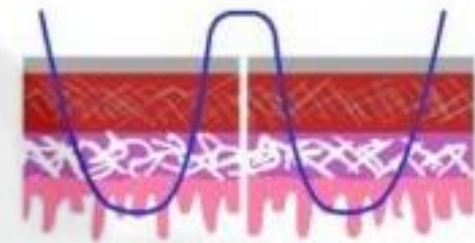
Lambert, 1826



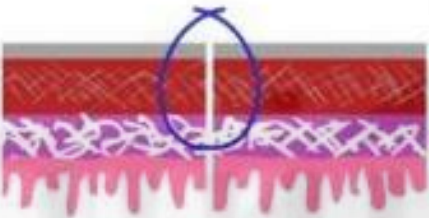
Mateshuk,
1945



Zheli



Jobert



Pirogov, 1849

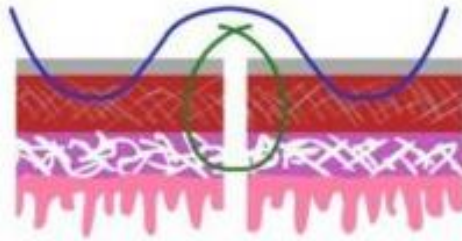


Schmiden

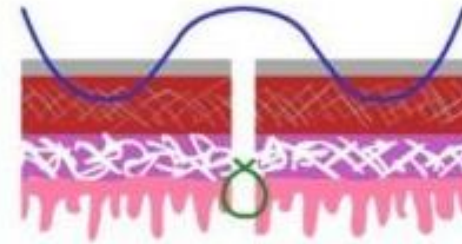


Bir, 1912

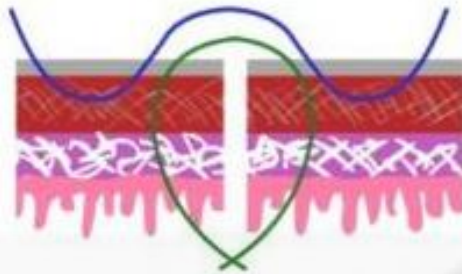
Double row intestinal sutures



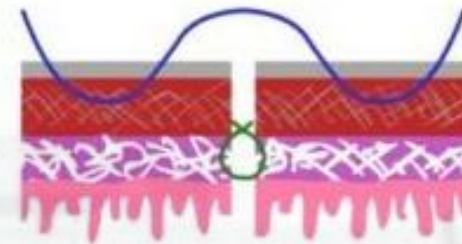
Pirogov-Cherni, 1880



Welfler, 1881

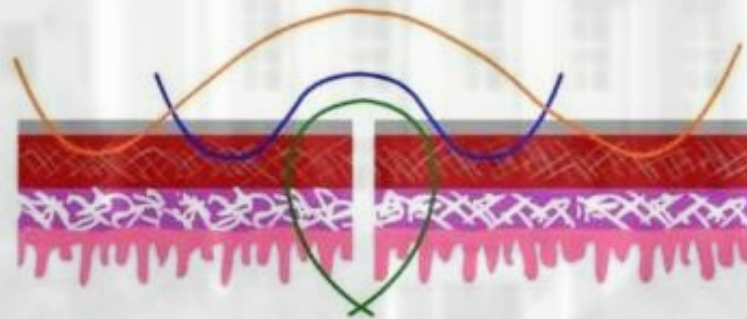


Albert, 1881



Kirpatovsky, 1955

Three-row intestinal sutures



REQUIREMENTS FOR INTESTINAL SUTURES

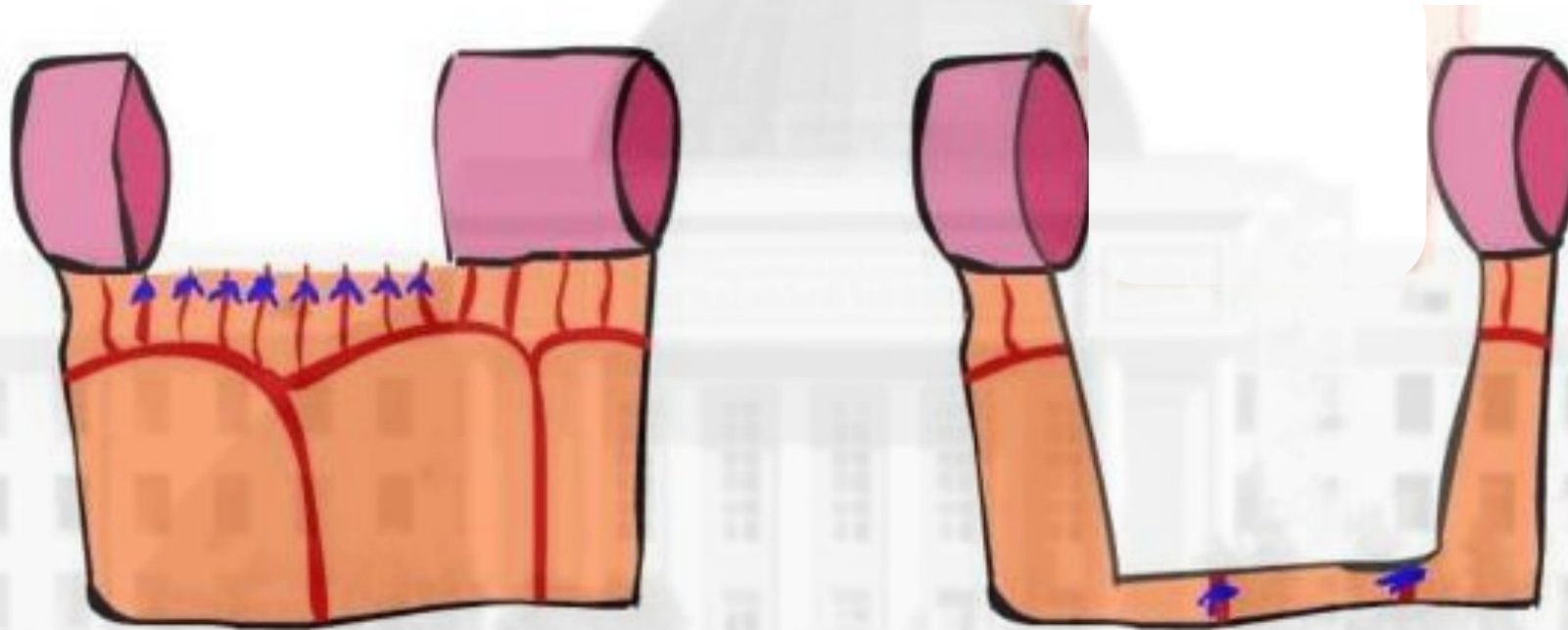
- 1. Tightness**
- 2. Mechanical strength**
- 3. Asepsis**
- 4. Hemostaticity**
- 5. Atraumatic**
- 6. Should not narrow the lumen of the intestine**
- 7. Double row (for general surgical practice)**
- 8. Adaptation**

FEATURES OF BOWEL SURGERY

Intestinal resection in:

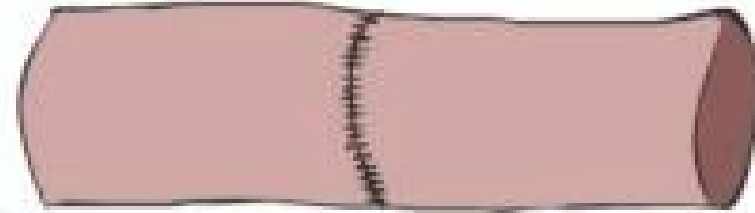
- wound of the intestine

- tumors of the intestine



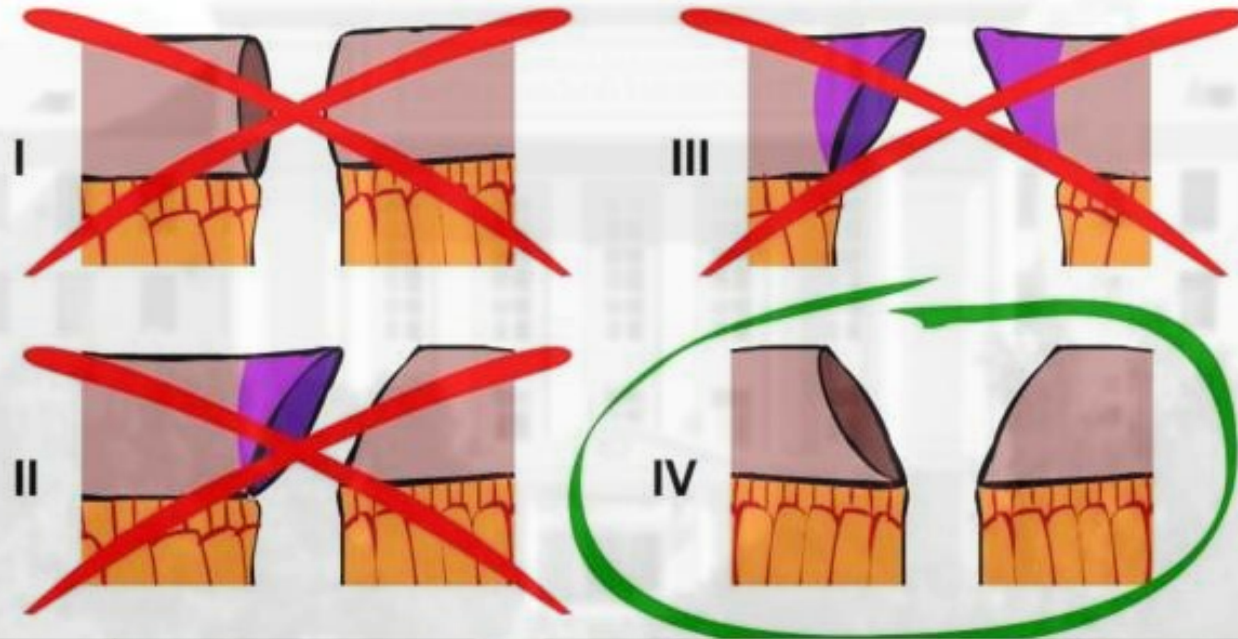
GUT CONNECTION METHODS

END-TO-END



Application is possible if the diameter of the intestinal lumen is more than 2 cm. Disadvantages: narrowing of the intestine.

PROPER TREATMENT OF THE EDGES OF THE INTESTINE:



GUT CONNECTION METHODS

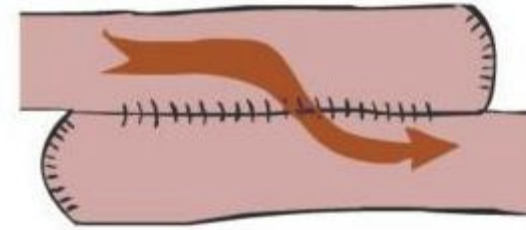
SIDE-TO-SIDE

DISADVANTAGES :

- blind pockets - stagnation - fecal stones - perforation; the number of intestinal sutures is three times greater than in end-to-end anastomosis.

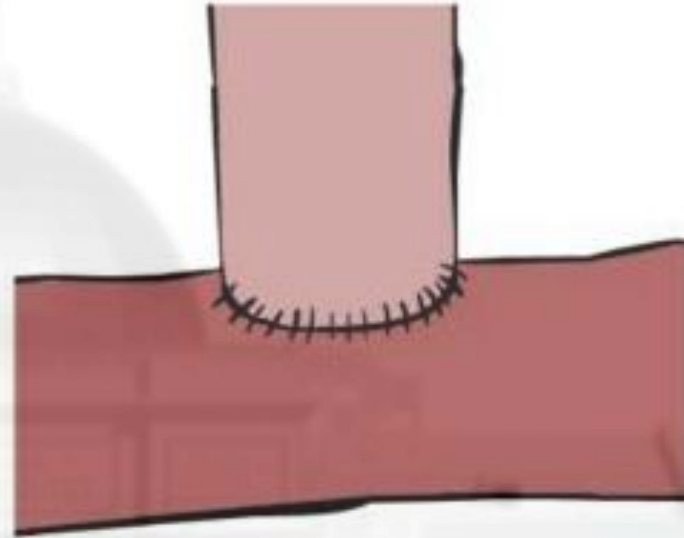
ADVANTAGES:

- large diameter of the intestinal lumen.



GUT CONNECTION METHODS

END-TO-SIDE



It is used for different diameters of intestinal loops.

APPENDECTOMY

For the first time, the description of the vermiform process is found in the works of Leonardo da Vinci, as well as Andreas Vesalius in the XVI century. Later, European doctors described cases of findings of an inflamed appendix at autopsies.

In the XIX century, British surgeons Bright and Addison described in detail the clinic of acute appendicitis and provided evidence of the existence of this disease.

The first reliable appendectomy was performed in 1735 in London by the royal surgeon, founder of St. George's Hospital, Claudius Amyand. He operated on an 11-year-old boy, who soon recovered.

In 1886, R. H. Fitz (1843-1913) introduced the term "appendicitis" and came to the conclusion that the best treatment for appendicitis is the removal of the appendix. The first operations to remove the appendix were carried out in 1888 in England and Germany.

In Russia, the first operation to remove the appendix was performed in 1888 by the doctor K. P. Dombrovsky in the Peter and Paul Hospital, then by A. A. Troyanov in the Obukhov Hospital of St. Petersburg, and they began to operate actively only in 1909 after the Congress of Russian Surgeons.

In 1961, in Antarctica, the appendectomy operation was performed by the surgeon L. I. Rogozov.



TYPES OF TREATMENT OF THE VERMIFORM PROCESS

- I. Ligature-invagination.
 1. Ligation and dissection of the mesentery of the vermiform process.
 2. Application of a pouch suture to the cecum around the base of the process.
 3. Ligation and cutting of the vermiform process at the base.
 4. Immersion of the stump of the vermiform process with a pouch seam.
 5. Applying a Z-shaped seam.



TYPES OF TREATMENT OF THE VERMIFORM PROCESS

II. Invagination.



The stump of the vermiform process is not bandaged and plunges into the pouch seam.

III. Ligature.



The stump of the vermiform process is bandaged and does not sink. It is more often used by children.

IV. Invagination without removal of the process.



The vermiform process is not removed, it sinks into the pouch seam.



THANK YOU FOR YOUR ATTENTION!