

THE ABDOMEN

The abdomen can be defined as the region of the trunk that lies between the diaphragm above and the inlet of the pelvis below.

The abdominal walls are lined by a fascial envelope and the parietal peritoneum.

- **Muscles of the Anterior Abdominal Wall**

The muscles consist of three broad thin sheets that are aponeurotic in front; from exterior to interior they are:

1. External oblique
2. Internal oblique
3. Transversus

On either side of the midline anteriorly is, in addition, a wide vertical ms. Called the Rectus abdominis. As the aponeuroses of the three sheets pass forward, they enclose the rectus abdominis to form the rectus sheath.

- **General Arrangement of the Abdominal Viscera**

- Liver
- Gallbladder
- Esophagus
- Stomach
- Small Intestine
- Large Intestine
- Pancreas
- Spleen
- Kidneys
- Suprarenal Glands

Liver:

It's a large organ that occupies the upper part of the abdominal cavity. It lies almost entirely under cover of the ribs and costal cartilages and extends across the epigastric region.

The liver may be divided into a *large right lobe* and a *small left lobe* (by the attachment of the peritoneum of the **falciform ligament**).

The Rt. Lobe is further divided into a **quadrate lobe** and a **caudate lobe** by the presence of the gallbladder.

Gallbladder:

It's a pear-shaped sac that is adherent to the undersurface of the *right lobe* of the liver; its blind end, or **fundus**, projects below the inferior border of the liver.

Esophagus:

It's a tubular structure that joins the pharynx to the stomach. It is deeply placed, lying behind the *left lobe* of the liver.

Stomach:

It's a dilated part of the alimentary canal between the esophagus and the small intestine. It occupies the left upper quadrant, epigastric, and umbilical regions, and much of it lies under cover of the ribs.

It is roughly **J- shaped** and has *two openings*, the cardiac and pyloric orifices, *two curvatures*, the greater and lesser curvatures; and *two surfaces*, an anterior and a posterior surface.

The **cardiac orifice** is where the esophagus enters the stomach. A physiologic mechanism exists that prevents regurgitation of stomach contents into the esophagus.

The **pyloric orifice** is formed by the *pyloric canal* and the *pyloric sphincter* which controls the rate of discharge of stomach contents into the duodenum.

Small Intestine:

It is divided into three regions: *duodenum*, *jejunum* and *ileum*.

The **duodenum** is the first part of the small intestine. It is a C- shaped tube that extends from the stomach around the head of the pancreas to join the jejunum.

The **jejunum** and **ileum** together measure about (6 cm) long. The jejunum begins at the duodenojejunal junction and the ileum ends at the ileocecal junction.

Large Intestine:

It is divided into the: cecum, appendix, ascending colon, transverse colon, descending colon, sigmoid colon, rectum and anal colon.

The large intestine arches around and encloses the coil of the small intestine and tends to be more fixed than the small intestine.

Pancreas:

It is a soft, lobulated organ that stretches obliquely across the posterior abdominal wall in the epigastric region. It is situated behind the stomach and extends from the duodenum to the spleen.

The pancreas is divided into: a head, neck, body and tail.

Spleen:

It is a soft mass of *lymphatic tissue* that occupies the left upper part of the abdomen between the stomach and the diaphragm. It lies along axis of the 10th left rib.

Kidneys:

They are two reddish brown organs situated high up on the posterior abdominal wall, one on each side of the vertebral column.

The left kidney lies slightly higher than the right (because the left lobe of the liver is smaller than the right).

Each kidney gives rise to a **ureter** that runs vertically downward to the **urinary bladder**, located within the pelvis. The waste products leave the kidney as **urine** which leaves the body in the **urethra**.

Suprarenal Glands:

They are two yellowish organs that lie on the upper poles of the kidneys on the posterior abdominal wall.

• *Peritoneum:*

It is the thin serous membrane lining the walls of the abdominal and pelvic cavities and clothing the abdominal and pelvic viscera. The peritoneum can be regarded as a balloon into which organs are pressed from outside.

The **parietal peritoneum** *lines the walls* of the abdominal and pelvic cavities and the **visceral peritoneum** *covers the organs*. The *potential space* between the parietal and visceral layers is called the **peritoneal cavity**.

In males, this is a closed cavity but in females, communication with the exterior occurs through the uterine tubes, the uterus and the vagina.

The peritoneal cavity is the greatest cavity in the body; it can be divided into two parts: the **greater sac** and the **lesser sac**.

- Arteries on the posterior abdominal wall.

Aorta:

It enters the abdomen through the aortic opening of the diaphragm in front of the **T₁₂**.

It divides into the *two* **common iliac arteries**. Each artery divides into the **external** and **internal iliac arteries**.