

# Gross Anatomy Study Guide: Artery and Nerve Supply for the Abdomen

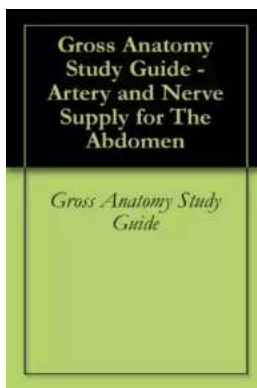
When it comes to studying anatomy, understanding the complex network of arteries and nerves is crucial. In this comprehensive study guide, we will delve into the intricate details of the artery and nerve supply in the abdomen region.

## Arterial Supply in the Abdomen

The arterial supply in the abdomen is provided by several major arteries that ensure proper blood circulation to vital organs and tissues. To grasp this supply system effectively, it is essential to explore the primary arteries individually:

### 1. Celiac Trunk

The celiac trunk, also known as the celiac artery, arises from the abdominal aorta just below the diaphragm. Its branches include:



## Gross Anatomy Study Guide - Artery and Nerve Supply for The Abdomen

by Michael J. Benning (Kindle Edition)

★★★★☆ 4.7 out of 5

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- **Left Gastric Artery:** Supplies blood to the lesser curvature of the stomach.
- **Hepatic Artery:** Provides oxygenated blood to the liver, gallbladder, and parts of the stomach.
- **Splenic Artery:** Supplies the spleen, stomach, and pancreas.

## 2. Superior Mesenteric Artery

The superior mesenteric artery originates from the abdominal aorta just below the celiac trunk. It supplies blood to various abdominal organs, including:

- **Jejunum and Ileum:** Major parts of the small intestine.
- **Ascending Colon:** The first part of the large intestine.
- **Transverse Colon:** The middle part of the large intestine.

## 3. Inferior Mesenteric Artery

The inferior mesenteric artery arises from the abdominal aorta superior to the bifurcation of the common iliac arteries. It supplies blood to the following structures:

- **Descending Colon:** The second part of the large intestine.
- **Sigmoid Colon:** The S-shaped part of the large intestine.
- **Rectum:** The final segment of the large intestine.

## Nerve Supply in the Abdomen

In addition to arterial supply, the abdomen also receives nerve supply from various sources. The abdominal wall, its muscles, and the viscera (internal organs) have distinct innervation patterns:

## 1. Thoracoabdominal Nerves

The thoracoabdominal nerves are derived from the lower thoracic spinal nerves and provide sensory innervation to the abdominal skin. These nerves include the:

- **T7:** Supplies the skin above the umbilicus (belly button).
- **T10:** Supplies the skin around the umbilicus (belly button).
- **T12:** Supplies the skin below the umbilicus (belly button).

## 2. Subcostal Nerve

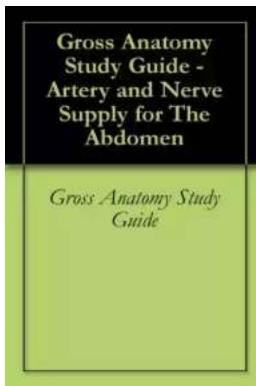
The subcostal nerve is the anterior ramus of the twelfth thoracic spinal nerve. It runs along the costal margin and supplies sensation to the skin over the lower abdomen.

## 3. Lumbar Nerves

The lumbar nerves, specifically L1-L3, contribute to the innervation of the abdominal wall muscles. These nerves include:

- **External Oblique Muscle:** Innervated by the iliohypogastric and ilioinguinal nerves (L1).
- **Internal Oblique and Transversus Abdominis Muscles:** Innervated by the subcostal (T12), iliohypogastric (L1), and ilioinguinal nerves (L1).
- **Rectus Abdominis Muscle:** Innervated by the thoracoabdominal nerves T7-T12.

Mastering the anatomy of artery and nerve supply in the abdomen is crucial for healthcare professionals, particularly surgeons, as it helps in diagnosing and treating various abdominal conditions efficiently. By understanding the intricate details provided in this comprehensive study guide, you will gain a solid foundation to excel in the field of gross anatomy.



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All you need to know about the nerve and artery supply for the abdomen for your Gross Anatomy Class. These are high yield and most tested concepts.

### CELIAC TRUNK

- 1.) Splenic  $\square$  L gastroepiploic and short gastrics (5)
- 2.) L. gastric
- 3.) common hepatic  $\square$  gastroduodenal which gives off r gastroepiploic and pancreaticoduodenal superior aa ... separately it gives off proper hepatic aa (in

hepatoduodenal ligament!) which gives off right gastric...proper splits into R and L hepatic, and cystic off of R hepatic (usually)

**\*\*Branches of the Aorta\*\***

1.) Unpaired Visceral

- celiac trunk
- superior mesenteric artery
- inferior mesenteric artery

2.) Paired Visceral

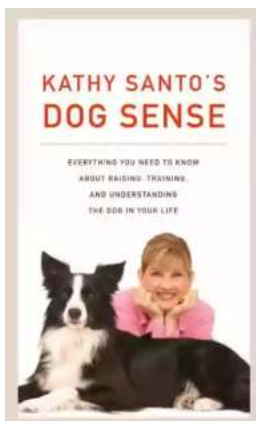
- renal
- suprarenal
- gonadal

3.) Unpaired Parietal

- median sacral

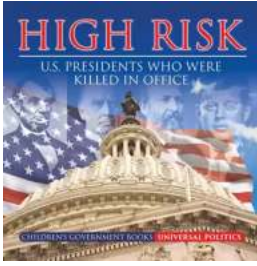
4.) Paired Parietal

- lumbar
- inferior phrenic
- subcostal



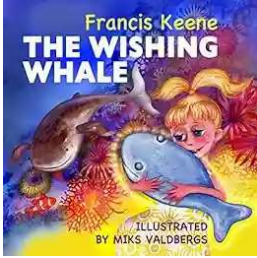
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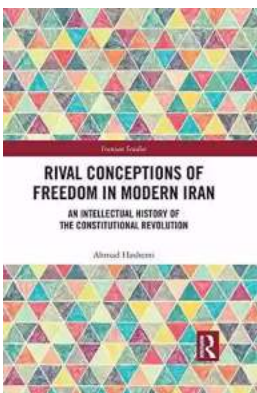
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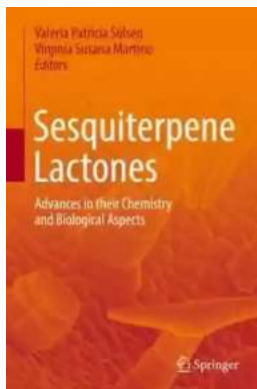
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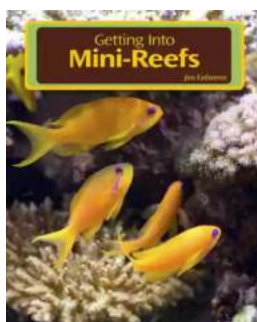
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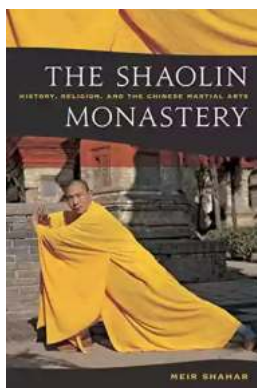
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