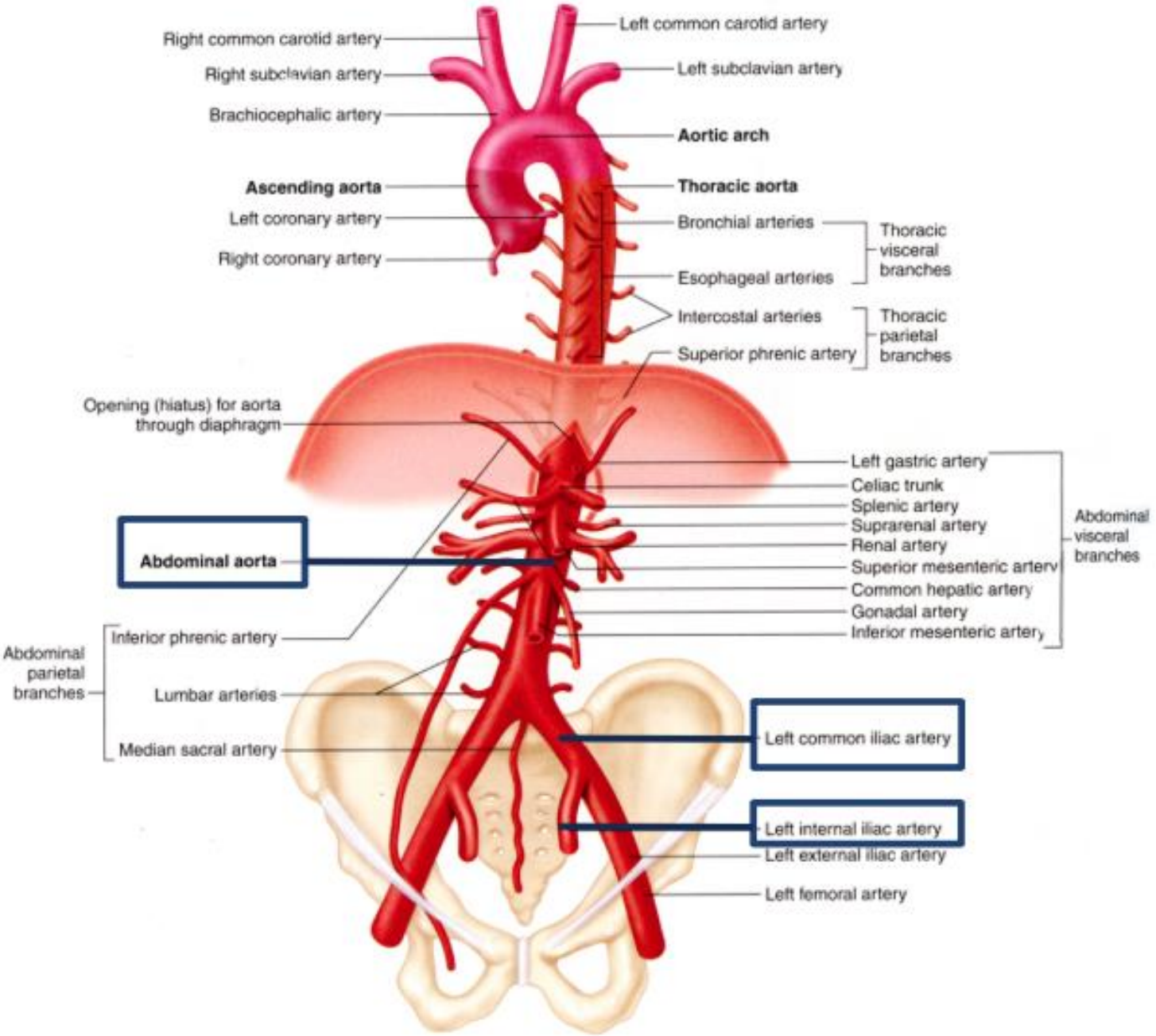
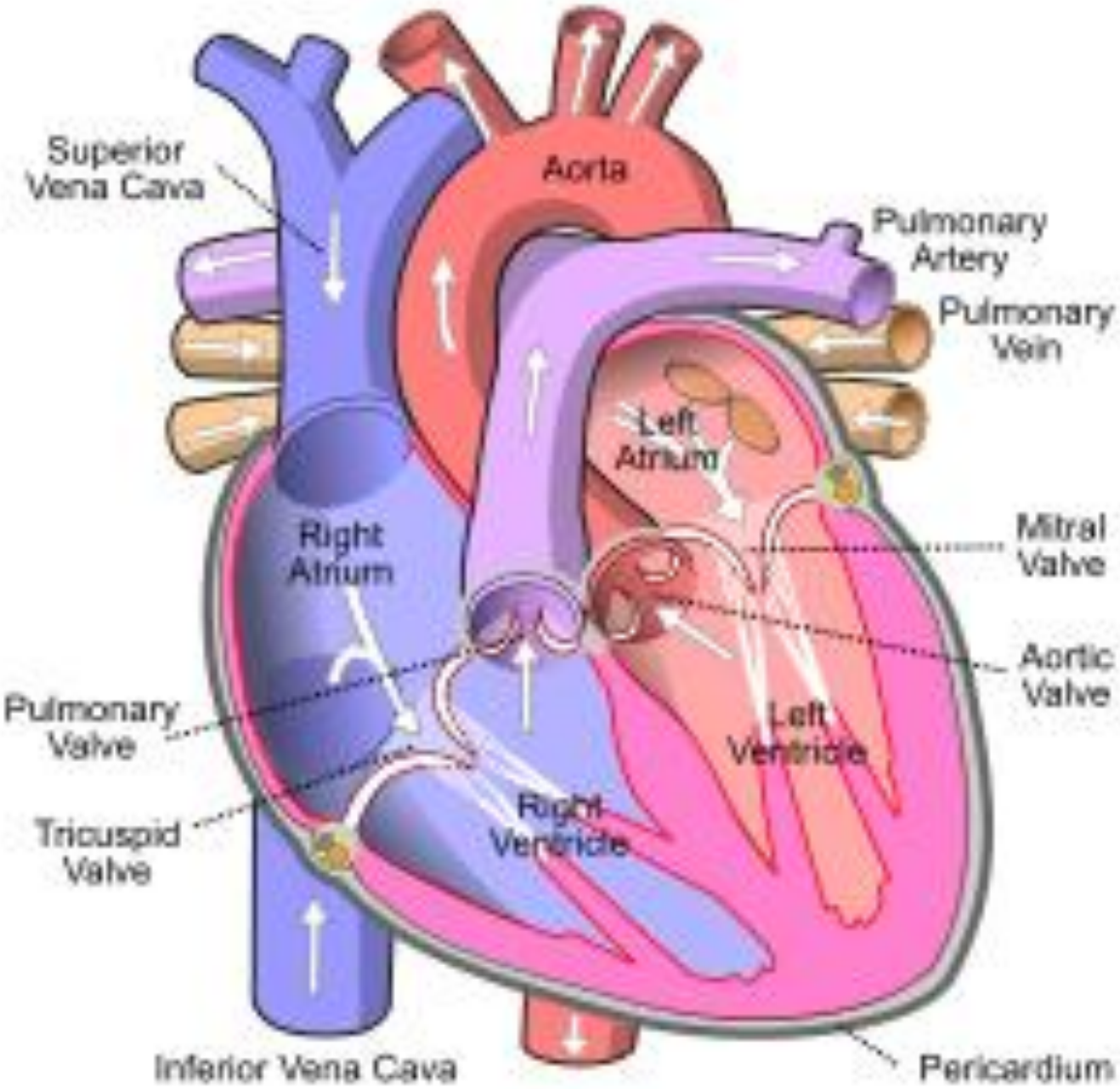
AORTA


Right common carotid artery
Left common carotid artery
Right subclavian artery
Left subclavian artery
Brachiocephalic artery
Aortic arch
Ascending aorta
Thoracic aorta
Left coronary artery
Bronchial arteries
Thoracic visceral branches
Right coronary artery
Esophageal arteries
Intercostal arteries
Thoracic parietal branches
Superior phrenic artery
Opening (hiatus) for aorta through diaphragm
Left gastric artery
Celiac trunk
Splenic artery
Suprarenal artery
Renal artery
Abdominal visceral branches
Abdominal aorta
Superior mesenteric artery
Common hepatic artery
Gonadal artery
Inferior mesenteric artery
Inferior phrenic artery
Abdominal parietal branches
Lumbar arteries
Left common iliac artery
Median sacral artery
Left internal iliac artery
Left external iliac artery
Left femoral artery

- The aorta is the largest artery in the body, initially being an inch wide in diameter. It receives the cardiac output from the left ventricle and supplies the body with oxygenated blood via the systemic circulation.
- The aorta can be divided into four sections:

1. **ascending aorta**,
2. **aortic arch**,
3. **thoracic (descending) aorta**
4. **abdominal aorta.**

It terminates at the level of L4 by bifurcating into the left and right common iliac arteries.

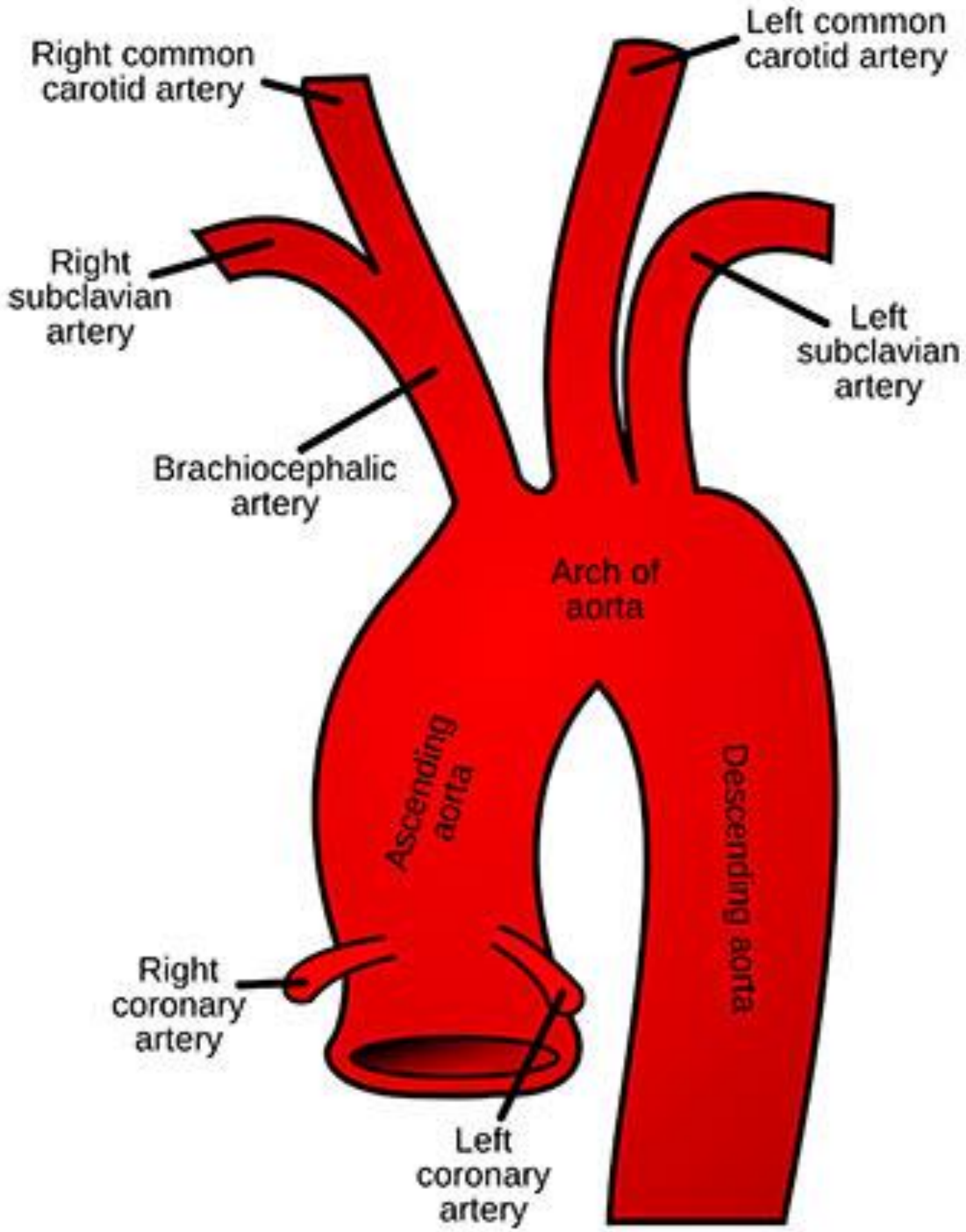

Superior Vena Cava
Aorta
Pulmonary Artery
Pulmonary Vein
Left Atrium
Right Atrium
Mitral Valve
Aortic Valve
Pulmonary Valve
Left Ventricle
Tricuspid Valve
Right Ventricle
Inferior Vena Cava
Pericardium

Ascending Aorta

- arises from the **aortic orifice** from the left ventricle and ascends to become the aortic arch. It is 2 inches long in length and travels with the pulmonary trunk in the pericardial sheath.

Branches

- **left and right coronary arteries-** _that supply the myocardium.


Right common carotid artery
Left common carotid artery
Right subclavian artery
Left subclavian artery
Brachiocephalic artery
Arch of aorta
Ascending aorta
Descending aorta
Right coronary artery
Left coronary artery

Aortic Arch

- Continuation of the ascending aorta and begins at the level of the sternal angle. It arches superiorly, posteriorly and to the left before moving inferiorly.
- The aortic arch ends at the level of the T4 vertebra. The arch is connected to the pulmonary trunk by the **ligamentum arteriosum**.

Branches- three major branches

1. **Brachiocephalic trunk:** The first and largest branch that ascends laterally to split into the right common carotid and right subclavian arteries. These arteries supply the right side of the head and neck, and the right upper limb.

2. **Left common carotid artery:** Supplies the left side of the head and neck.
3. **Left subclavian artery:** Supplies the left upper limb.

Thoracic Aorta

- level extends-T4 to T12.
- Continuing from the aortic arch, it initially begins to the left of the vertebral column but approaches the midline as it descends. It leaves the thorax via the **aortic hiatus** in the diaphragm, and becomes the abdominal aorta.

Branches- In descending order:

1. **Bronchial arteries:** Paired, to supply bronchus and lung tissue and visceral pleura.

2. **Mediastinal arteries:** supply the lymph glands and loose areolar tissue in the posterior mediastinum.
3. **Oesophageal arteries:** Unpaired, supply the oesophagus.
4. **Pericardial arteries:** unpaired arteries, supply the dorsal portion of the pericardium.
5. **Superior phrenic arteries:** Paired, supply the superior portion of the diaphragm.
6. **Intercostal and subcostal arteries:** Small paired arteries that branch off throughout the length of the posterior thoracic aorta.

- The 9 pairs of intercostal arteries supply the intercostal spaces, with the exception of the first and second (they are supplied by a branch from the subclavian artery). The subcostal arteries supply the flat abdominal wall muscles.

Abdominal Aorta

Continuation of the thoracic aorta beginning at the level of the T12 vertebrae. It is approximately 13 cm long and ends at the level of the L4 vertebra. At this level, the aorta terminates by bifurcating into the **right and left common iliac arteries** that supply the lower body.

Branches-

Ventral side- 3

1. **Coeliac trunk-** at the level of **T12** and supplies the liver, stomach, abdominal oesophagus, spleen, the superior duodenum and the superior pancreas.
2. **Superior mesentric artery- lower level of L1,** supplies the distal duodenum, jejuno-ileum, ascending colon and part of the transverse colon.
3. **Inferior mesentric artery**- at the level of **L3**. It supplies the large intestine from the splenic flexure to the upper part of the rectum.

Lateral branches-

1. Inferior phrenic arteries- supply inferior surface of diaphragm
2. Middle suprarenal arteries- suprarenal gland
3. Renal arteries- kidney
4. Testicular/ ovarian arteries

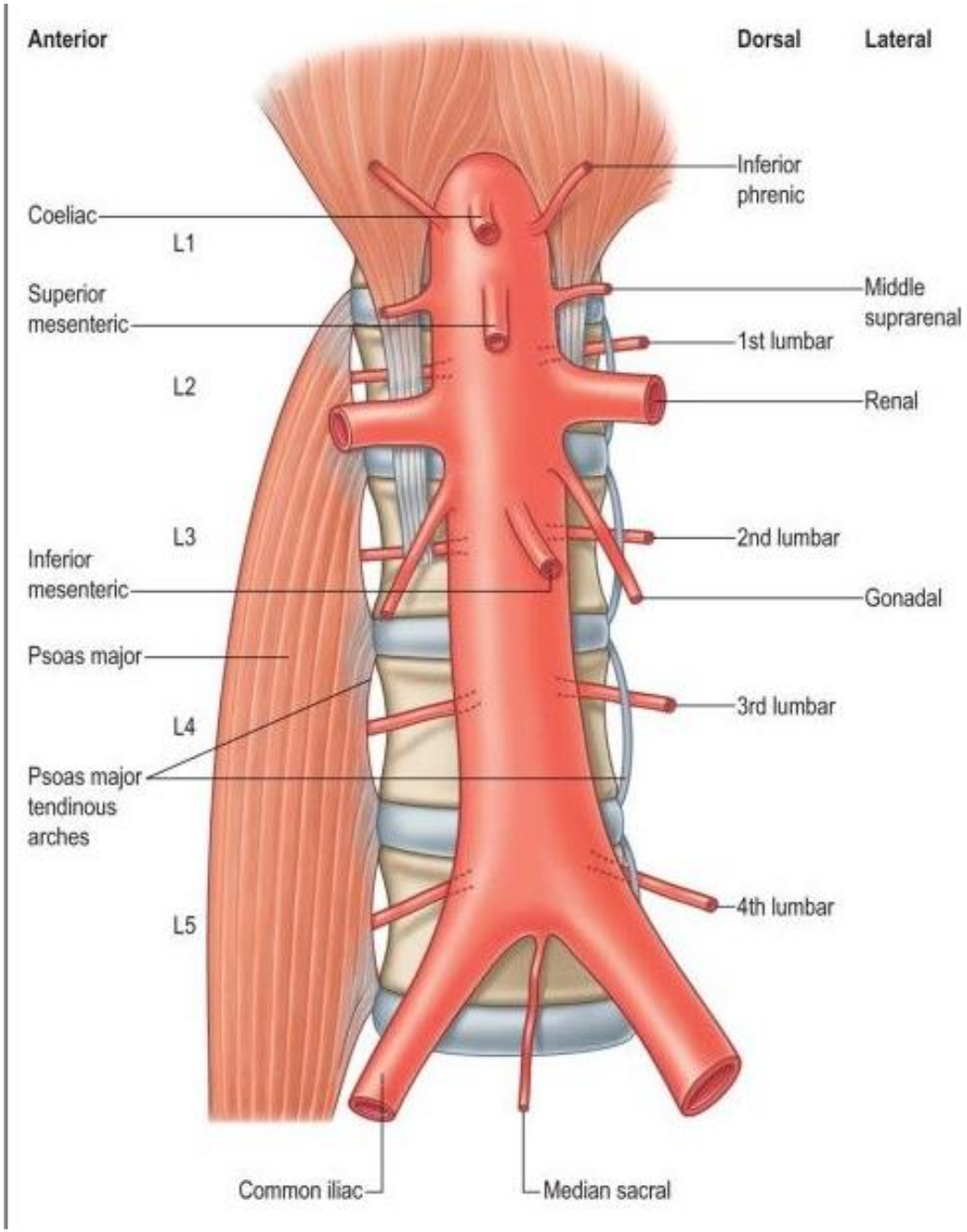
Dorsal branches-

1. Lumbar arteries- are four pairs, supply the abdominal wall and spinal cord.

2. Median sacral artery- unpaired, supply the coccyx, lumbar vertebrae and the sacrum

Terminal branches-

Two common iliac arteries


Anterior
Dorsal
Lateral
Inferior phrenic
Coeliac
L1
Superior mesenteric
Middle suprarenal
1st lumbar
L2
Renal
L3
2nd lumbar
Inferior mesenteric
Gonadal
Psoas major
3rd lumbar
L4
Psoas major tendinous arches
4th lumbar
L5
Common iliac
Median sacral