

* Large Arteries of the Thorax

[1] Aorta :

It's the main arterial trunk that delivers oxygenated blood from the left ventricle of the heart to the tissues of the body. It is divided for descriptive purposes into the following parts :

- . Ascending aorta
- . Arch of the aorta
- . Descending thoracic aorta
- . Abdominal aorta

Ascending Aorta : It begins at the base of the left ventricle and runs upward and forward to become continuous with the arch of the aorta at the level of the sternal angle.

Branches : the right coronary artery
the left coronary artery

Arch of the Aorta : It's a continuation of the ascending aorta. It lies behind the manubrium sterni and arches upward, backward, and to the left in front of the trachea. It then passes downward to the left of the trachea and at the level of the sternal angle, becomes continuous with the descending aorta.

Branches : the brachiocephalic artery, it divides into the **right subclavian** and **right common carotid** arteries.

The left common carotid artery

The left subclavian artery, it arches over the apex of left lung.

Descending Thoracic Aorta : it lies in the posterior mediastinum and begins as a continuation of the arch of the aorta {opposite the sternal angle }. It runs downward and at the level of **T12** , it passes through the aortic opening in the midline and becomes continuous with abdominal aorta.

Branches : Posterior intercostals arteries.

Subcostal arteries

Pericardial, esophageal, and bronchial arteries.

[2] Pulmonary Trunk :

It conveys deoxygenated blood from the right ventricle of the heart to the lungs by dividing into right and left pulmonary arteries.

Branches : the right pulmonary artery, runs to the right to enter the root of the right lung.

The left pulmonary artery, runs to the left to enter the root of the left lung.

The ligamentum arteriosum is a fibrous band that connects the bifurcation of the pulmonary trunk to the lower concave surface of the aortic arch { it's the remnant of the fetal ductus arteriosus }.

* Large Veins of the Thorax

[1] Brachiocephalic Veins :

. The right brachiocephalic vein is formed at the root of the neck by the union of the **right subclavian** and the **right internal jugular** veins.

. The left brachiocephalic vein has a similar origin by union of the **left subclavian** and the **left internal jugular** veins. It joins the right brachiocephalic vein to form the *superior vena cava*.

[2] Superior Vena Cava :

It contains all the venous blood from the head and neck and both upper limbs and is formed by the union of the two brachiocephalic veins. It passes downward to end in the right atrium of the heart. The vena azygos joins the posterior aspect of the superior vena cava just before it enters the pericardium.

[3] Azygos Veins:

They consist of :

- the main azygos vein
- the inferior hemiazygos vein
- the superior hemiazygos vein

They drain blood from the posterior parts of the intercostals spaces, the posterior abdominal wall, the pericardium, the diaphragm, the bronchi, and the esophagus.

[4] Inferior Vena Cava :

It pierces the diaphragm (opposite the **T8**) and almost immediately enters the lowest part of the right atrium of the heart.

[5] Pulmonary Veins :

Two pulmonary veins leave each lung carrying oxygenated blood to the left atrium of the heart.

*** Esophagus ***

It's a tubular structure about (25 cm) long that is continuous above with the laryngeal part of the pharynx (opposite **C6**). It passes through the diaphragm at the level of **T10** to join the stomach in the abdomen { the esop-hagus descends for about 1.3 cm }.

*** Esophageal Constrictions**

The esophagus has three anatomic & physiologic constrictions :

1. Cervical constriction : where the pharynx joins the upper end.
2. Bronchoaortic constriction : where the aortic arch & left bronchus
Cross it's anterior surface.
3. Diaphragmatic constriction : where the esophagus passes through
The diaphragm into the stomach.

{ Therefore, the esophagus is divided into upper, middle & lower thirds. }





