The descending thoracic aorta, which is located in the posterior mediastinum, is a continuation of the arch of the aorta. It begins at the lower border of the fourth thoracic vertebra and is initially situated to the left of the vertebral column. As it descends it moves towards the midline and is located anterior to the vertebral column at its termination at the level of the twelfth thoracic vertebra. It ends at the diaphragmatic aortic aperture, behind the median arcuate ligament, where it becomes the abdominal aorta. It lies anterior to the vertebral column and hemiazygos vein, and posterior to (from above down) the left lung root, left atrium, esophagus and diaphragm. To the right are the azygos vein and thoracic duct, right pleura and lung, and to the left the left pleura and lung.

As the thoracic aorta descends, it gives off several small visceral branches, to the pericardium, lungs, bronchi and esophagus, and parietal branches (posterior intercostal arteries) to the chest wall.