

Vascular Model Repository

Specifications Document



0138_H_AO_H

Legacy Name: KDR10_aorta

Model added: 8 May 2023

Species	Human
Anatomy	Aorta
Disease	Healthy
Procedure	None

Clinical Significance and Background

Aorta

The largest blood vessel and the primary artery of the human body, the aorta is responsible for carrying oxygenated blood pumped from the heart to the rest of the body. The aorta is divided into four sections: the ascending aorta, the aortic arch, the thoracic aorta, and the abdominal aorta.

The ascending aorta starts at the left ventricle of the heart where at the root, it supplies blood to the heart muscle through the coronary arteries. From the aortic root, the ascending aorta continues to rise until it reaches the aortic arch.

The aortic arch loops over the bifurcation of the pulmonary trunk and has three major artery branches leaving through the top: the brachiocephalic trunk, the left common carotid artery, and the left subclavian artery. The brachiocephalic trunk sends blood to the right side of the brain and right arm/neck/chest while the left common carotid artery sends blood to the left side of the brain and the left subclavian artery sends blood to the left arm/neck/chest.

After the aortic arch, the aorta begins to descend to the abdomen. The section of the descending aorta that starts after the aortic arch and ends at the diaphragm is called the thoracic aorta, and it supplies blood to the chest and spinal cord.

The last section of the aorta, the abdominal aorta, starts at the diaphragm and ends just above the pelvis. This section is responsible for supplying blood to the stomach, kidneys, liver, and intestines. Past the abdominal aorta, the artery branches into two separate iliac arteries, one for each leg, and both iliac arteries are responsible for supplying oxygenated blood to the legs and lower half of the body.

Clinical Data

General Patient Data

Age (yrs)	3.5
Sex	Male

Specific Patient Data

BSA (m ²)	0.66
Cardiac Output (l/min)	2.31
Presssure sys/dias (mmHg)	82/39

Notes

Created from the same medical images of model 0138_H_CORO_KD in the VMR, but the coronary arteries were removed and the aorta model was resegmented. See below for information on the image data.

Image Modality: MR

Image Type: VTI

Image Source: The Hospital for Sick Kids (SickKids)

Publications

There are no publications associated with the featured model.

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AND/OR

N.M. Wilson, A.K. Ortiz, and A.B. Johnson, "The Vascular Model Repository: A Public Resource of Medical Imaging Data and Blood Flow Simulation Results," J. Med. Devices 7(4), 040923 (Dec 05, 2013) doi:10.1115/1.4025983.

AND/OR

Reference the official website for this data: www.vascularmodel.com

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