

Vascular Model Repository

Specifications Document



0094_0001

Species	Human
Anatomy	Aorta
Disease	Healthy
Procedure	-

Clinical Significance and Background

Aorta

The aorta is the main and largest artery in the human body, originating from the left ventricle of the heart and extending down to the abdomen, where it splits into two smaller arteries (the common iliac arteries). The aorta distributes oxygenated blood to all parts of the body through the systemic circulation.

The aortic arch loops over the left pulmonary artery and the bifurcation of the pulmonary trunk. In addition to these blood vessels, the aortic arch crosses the left main bronchus. The aortic arch has three major branches: from proximal to distal, they are the brachiocephalic trunk, the left common carotid artery, and the left subclavian artery. The brachiocephalic trunk supplies the right side of the head and neck as well as the right arm and chest wall, while the latter two together supply the left side of the same regions.

Clinical Data

General Patient Data

Age (yrs)	23
Sex	Male

Notes

See below for information on the image data and boundary conditions associated with the model.

Image Modality: MR

Image Type: DICOM

Image Source: TLAB

Image Manufacturer: GE MEDICAL SYSTEMS

Boundary Conditions: Refer to boundary conditions in the SimVascular file.

Publications

See the following publications which include the featured model for more details:

Jr. LaDisa, J. F., Dholakia, R. J., Figueroa, C. A., Vignon-Clementel, I. E., Chan, F. P., Samyn, M. M., ... & Feinstein, J. A. (2011). Computational simulations demonstrate altered wall shear stress in aortic coarctation patients treated by resection with end-to-end anastomosis. *Congenital heart disease*, 6(5), 432-443.
<http://www.doi.org/10.1111/j.1747-0803.2011.00553.x>

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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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