

# Vascular Model Repository

## Specifications Document



0038\_H\_ABAO\_AAA

Legacy Name: 0146\_1001

Model added: 27 Dec 2021

|                  |                           |
|------------------|---------------------------|
| <b>Species</b>   | Human                     |
| <b>Anatomy</b>   | Abdominal Aorta           |
| <b>Disease</b>   | Abdominal Aortic Aneurysm |
| <b>Procedure</b> | None                      |

# Clinical Significance and Background

## Abdominal Aorta

The largest blood vessel and the primary artery of the human body, the aorta, carries 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 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, which is responsible for supplying oxygenated blood to the legs and lower half of the body.

Each iliac artery, in turn, proceeds to branch into the external and internal iliac arteries, the former of which then becomes the main femoral artery. The femoral arteries are a major component in supplying oxygenated blood to the legs and lower body.

## Abdominal Aortic Aneurysm

Abdominal Aortic Aneurysm (AAA) is when swelling (aneurysm) occurs in the last section of the aorta (abdominal aorta). This swelling can occur when the walls of the aorta weaken and while exact causes are not easily determined, smoking and high blood pressure are two common factors thought to contribute to aneurysm development. While usually harmless, a large AAA can turn deadly if there is a rupture in the vessel wall and internal bleeding occurs.

# Clinical Data

## General Patient Data

|           |      |
|-----------|------|
| Age (yrs) | 70   |
| Sex       | Male |

## Specific Patient Data

|               |       |
|---------------|-------|
| Height (m)    | 1.78  |
| Weight (kg)   | 106.1 |
| P sys SP cuff | 138   |

|                        |    |
|------------------------|----|
| P sys DP cuff          | 80 |
| Heart Rate (beats/min) | 68 |

## Notes

See below for information on the image data.

**Image Modality:** CT

**Image Type:** VTI

**Image Source:** MARQ

**Image Manufacturer:** SIEMENS

## Publications

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

Ana K Ortiz, Ali A Aleiou, John F LaDisa, Nathan M Wilson (2013) A Sampling of Patients with Abdominal Aortic Aneurysms from a Public Repository of Image-based Computational Models and Subject-specific Blood Flow Simulation Results, BMES Midwest Biomedical Engineering Career Conference

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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](http://www.vascularmodel.com)

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