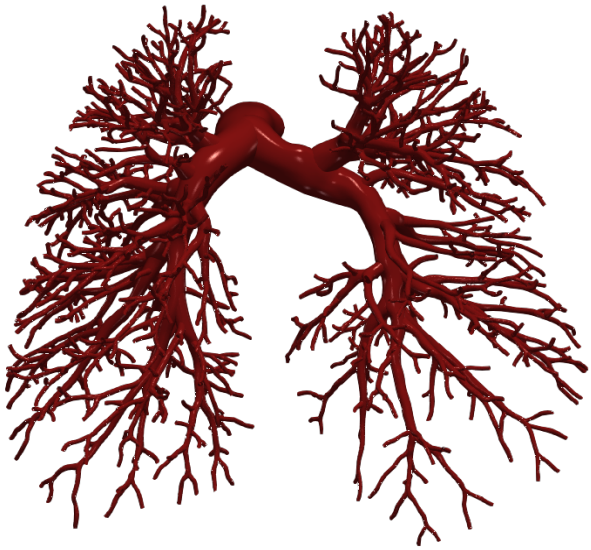
# Vascular Model Repository Specifications Document



# 0111_H_PULM_H

Legacy Name: SU0273

Model added: 21 Jul 2022

| | |
|---|---|
| **Species** | Human |
| **Anatomy** | Pulmonary |
| **Disease** | Healthy |
| **Procedure** | None |

# Clinical Significance and Background

## Pulmonary

Pulmonary circulation involves blood flowing from the right ventricle of the heart into the pulmonary arteries. From the pulmonary arteries, the blood then reaches the lungs, performs a gas exchange, and then continues to the pulmonary veins which then lead to the left atrium of the heart.

By definition, an artery is a blood vessel that carries blood away from the heart. This usually means arteries carry oxygenated blood to the rest of the body, but since the pulmonary arteries are transporting blood from the right side of the heart to the lungs to perform respiration, that makes the pulmonary arteries the only arteries in the body that carry deoxygenated blood. Similarly, the pulmonary veins, which carry blood that has been freshly oxygenated from the lungs back to the heart, are the only veins that carry oxygenated blood.

# Clinical Data

## General Patient Data

| | |
|---|---|
| Age (yrs) | 1.67 |
| Sex | Male |

## Specific Patient Data

| | |
|---|---|
| Weight (kg) | 11.4 |
| Height (cm) | 81 |

# Notes

Model vtp file only contains a truncated version of the left pulmonary artery. The path and segmentation files are detailed versions of the anatomy. There is a fully detailed mesh vtp file of the anatomy called "walls_combined". \nSee paper for more details. See below for information on the image data.

**Image Modality:** CT

**Image Type:** VTI

**Image Source:** Lucille Packard Children's Hospital

## Publications

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

Dong, M., Yang, W., Tamaresis, J. S., Chan, F. P., Zucker, E. J., Kumar, S., ... & Feinstein, J. A. (2020). Integrative Cardiovascular Physiology and Pathophysiology: Image-based scaling laws for somatic growth and pulmonary artery morphometry from infancy to adulthood. American Journal of Physiology-Heart and Circulatory Physiology, 319(2), H432. http://www.doi.org/10.1152/ajpheart.00123.2020

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