Resource Summary Report

Generated by PRECISE-TBI on Aug 1, 2026

Vascular Modeling Toolkit

RRID:SCR_001893
Type: Tool

Proper Citation

Vascular Modeling Toolkit (RRID:SCR_001893)

Resource Information

URL: http://www.vmtk.org/

Proper Citation: Vascular Modeling Toolkit (RRID:SCR_001893)

Description: Software collection of libraries and tools for 3D reconstruction, geometric analysis, mesh generation and surface data analysis for image-based modeling of blood vessels.

Abbreviations: vmtk

Synonyms: vmtk - the Vascular Modeling Toolkit

Resource Type: software resource, software application, software toolkit

Defining Citation: PMID:19002516, PMID:19447701, DOI:10.1109/TMI.2009.2021652

Keywords: 3d reconstruction, geometric analysis, mesh generation, surface data analysis, image-based modeling, blood vessel, reconstruction, 3d

Availability: Free, Available for download, Freely available

Resource Name: Vascular Modeling Toolkit

Resource ID: SCR_001893

Alternate IDs: nlx_155869, OMICS_13947

Alternate URLs: https://sources.debian.org/src/vmtk/

Record Creation Time: 20220129T080210+0000

Record Last Update: 20260801T042510+0000

Ratings and Alerts

No rating or validation information has been found for Vascular Modeling Toolkit.

No alerts have been found for Vascular Modeling Toolkit.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 85 mentions in open access literature.

Listed below are recent publications. The full list is available at PRECISE-TBI .

Lee CM, et al. (2025) Physiologic model of the cerebrovascular system using supply and demand between arteries and tissues. Scientific reports, 15(1), 27785.

Renzi F, et al. (2025) Accurate Reconstruction of Right Heart Shape and Motion From Cine-MRI for Image-Driven Computational Hemodynamics. International journal for numerical methods in biomedical engineering, 41(1), e3891.

Chen KW, et al. (2025) Usefulness of preprocedural 3-dimensional computed tomography planning in assisting one-stage pulmonary veins isolation with concomitant left atrial appendage occlusion procedure: A pilot study. International journal of cardiology. Heart & vasculature, 56, 101594.

Jiang P, et al. (2025) Hemodynamics of distal cerebral arteries are associated with functional outcomes in symptomatic ischemic stroke in middle cerebral artery territory: A four-dimensional flow cardiovascular magnetic resonance study. Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance, 27(1), 101857.

Gottfried Minkenberg J, et al. (2025) Accurate full-scale patient-specific Circle of Willis models including aneurysms: A novel manufacturing approach. PloS one, 20(7), e0328300.

S??nchez-Posada J, et al. (2025) morphoHeart: A quantitative tool for integrated 3D morphometric analyses of heart and ECM during embryonic development. PLoS biology, 23(1), e3002995.

Jiang J, et al. (2025) Improving rupture status prediction for intracranial aneurysms using wall shear stress informatics. Acta neurochirurgica, 167(1), 15.

Lyu Z, et al. (2025) Correlations between hemodynamics and radiomic features in thrombosed intracranial aneurysms. Neuroradiology, 67(9), 2447.

Lyu Z, et al. (2025) Hemodynamic analysis of thrombosed intracranial aneurysms: a comparative correlation study. Neurosurgical review, 48(1), 417.

Swiatek VM, et al. (2025) Predictive modeling and machine learning show poor performance of clinical, morphological, and hemodynamic parameters for small intracranial aneurysm rupture. Scientific reports, 15(1), 24051.

Thompson EW, et al. (2025) Pulmonary Artery Shear Stress and Oscillatory Shear Index are Associated with Right Ventricular Remodeling in Repaired Tetralogy of Fallot. Annals of biomedical engineering, 53(9), 2206.

Piersanti R, et al. (2025) Defining myocardial fiber bundle architecture in atrial digital twins. Computers in biology and medicine, 188, 109774.

Sokolow R, et al. (2025) Reduced order computational fluid dynamic simulations in the thoracic aorta are associated with disease recorded in a medical biobank. Scientific reports, 15(1), 39203.

Hou L, et al. (2025) Semicircular canal morphology in Rodentia and its relationship to locomotion. Journal of anatomy, 247(5), 953.

Robbi E, et al. (2025) Automatic CTA analysis for blood vessels and aneurysm features extraction in EVAR planning. Scientific reports, 15(1), 16431.

Bartolo MA, et al. (2024) Computational framework for the generation of one-dimensional vascular models accounting for uncertainty in networks extracted from medical images. ArXiv.

Green L, et al. (2024) Myocardial biomechanical effects of fetal aortic valvuloplasty. Biomechanics and modeling in mechanobiology, 23(5), 1433.

Lee JV, et al. (2024) Validating a Curvature-Based Marker of Cervical Carotid Tortuosity for Risk Assessment in Heritable Aortopathies. Journal of the American Heart Association, 13(13), e035171.

Song M, et al. (2024) Intracranial aneurysm CTA images and 3D models dataset with clinical morphological and hemodynamic data. Scientific data, 11(1), 1213.

Domanin DA, et al. (2024) Persistence diagrams for exploring the shape variability of abdominal aortic aneurysms. Scientific reports, 14(1), 28132.