Hemodynamics and Mechanobiology of Aortic Valve In

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Citation Report

#	Article	IF	Citations
1	Computational assessment of bicuspid aortic valve wall-shear stress: implications for calcific aortic valve disease. Biomechanics and Modeling in Mechanobiology, 2012, 11, 1085-1096.	1.4	109
2	Ex Vivo Evidence for the Contribution of Hemodynamic Shear Stress Abnormalities to the Early Pathogenesis of Calcific Bicuspid Aortic Valve Disease. PLoS ONE, 2012, 7, e48843.	1.1	77
3	Effect of asymmetry on hemodynamics in fluid-structure interaction model of congenital bicuspid aortic valves. , 2012, 2012, 637-40.		6
4	Heart Valve Development, Maintenance, and Disease. Current Topics in Developmental Biology, 2012, 100, 203-232.	1.0	72
5	Aortic Valve: Mechanical Environment and Mechanobiology. Annals of Biomedical Engineering, 2013, 41, 1331-1346.	1.3	91
6	Biomedical Modeling: The Role of Transport and Mechanics. Bulletin of Mathematical Biology, 2013, 75, 1233-1237.	0.9	0
7	Fully coupled fluidâ€“structure interaction model of congenital bicuspid aortic valves: effect of asymmetry on hemodynamics. Medical and Biological Engineering and Computing, 2013, 51, 839-848.	1.6	47
8	Determination of local and global elastic moduli of valve interstitial cells cultured on soft substrates. Journal of Biomechanics, 2013, 46, 1967-1971.	0.9	50
9	Noggin attenuates the osteogenic activation of human valve interstitial cells in aortic valve sclerosis. Cardiovascular Research, 2013, 98, 402-410.	1.8	44
10	Biomechanical factors in the biology of aortic wall and aortic valve diseases. Cardiovascular Research, 2013, 99, 232-241.	1.8	195
11	In Vitro Comparison of Novel Polyurethane Aortic Valves and Homografts After Seeding and Conditioning. ASAIO Journal, 2013, 59, 309-316.	0.9	15
12	Cross Talk between NOTCH Signaling and Biomechanics in Human Aortic Valve Disease Pathogenesis. Journal of Cardiovascular Development and Disease, 2014, 1, 237-256.	0.8	10
13	Cardiac valve cells and their microenvironmentâ€”insights from in vitro studies. Nature Reviews Cardiology, 2014, 11, 715-727.	6.1	80
14	Architectural Trends in the Human Normal and Bicuspid Aortic Valve Leaflet and Its Relevance to Valve Disease. Annals of Biomedical Engineering, 2014, 42, 986-998.	1.3	36
15	Accurate Assessment of Aortic Stenosis. Circulation, 2014, 129, 244-253.	1.6	130
16	Reversal of myofibroblastic activation by polyunsaturated fatty acids in valvular interstitial cells from aortic valves. Role of RhoA/G-actin/MRTF signalling. Journal of Molecular and Cellular Cardiology, 2014, 74, 127-138.	0.9	23
17	Vector flow imaging of the ascending aorta. , 2015, , .		0
18	The pathology and pathobiology of bicuspid aortic valve: State of the art and novel research perspectives. Journal of Pathology: Clinical Research, 2015, 1, 195-206.	1.3	55

#	Article	IF	Citations
19	Culturing Mouse Cardiac Valves in the Miniature Tissue Culture System. Journal of Visualized Experiments, 2015, , e52750.	0.2	5
20	Current progress in tissue engineering of heart valves: multiscale problems, multiscale solutions. Expert Opinion on Biological Therapy, 2015, 15, 1155-1172.	1.4	139
21	Progressive aortic valve calcification: Three-dimensional visualization and biomechanical analysis. Journal of Biomechanics, 2015, 48, 489-497.	0.9	39
22	Exercise stress testing enhances blood coagulation and impairs fibrinolysis in asymptomatic aortic valve stenosis. Journal of Cardiology, 2015, 65, 501-507.	0.8	4
23	Coronary Flow Impacts Aortic Leaflet Mechanics and Aortic Sinus Hemodynamics. Annals of Biomedical Engineering, 2015, 43, 2231-2241.	1.3	40
24	Reciprocal interactions between mitral valve endothelial and interstitial cells reduce endothelial-to-mesenchymal transition and myofibroblastic activation. Journal of Molecular and Cellular Cardiology, 2015, 80, 175-185.	0.9	55
25	Numerical Methods for Fluidâ€“Structure Interaction Models of Aortic Valves. Archives of Computational Methods in Engineering, 2015, 22, 595-620.	6.0	69
26	Mathematical modeling of aortic valve dynamics during systole. Journal of Theoretical Biology, 2015, 365, 280-288.	0.8	17
27	Mechanobiology in Cardiovascular Disease Management: Potential Strategies and Current Needs. Frontiers in Bioengineering and Biotechnology, 2016, 4, 79.	2.0	9
28	Is Transcatheter Aortic Valve Implantation of Living Tissueâ€Engineered Valves Feasible? An In Vitro Evaluation Utilizing a Decellularized and Reseeded Biohybrid Valve. Artificial Organs, 2016, 40, 727-737.	1.0	8
29	RNA expression profile of calcified bicuspid, tricuspid, and normal human aortic valves by RNA sequencing. Physiological Genomics, 2016, 48, 749-761.	1.0	52
31	Critical Role of Coaptive Strain in Aortic Valve Leaflet Homeostasis: Use of a Novel Flow Culture Bioreactor to Explore Heart Valve Mechanobiology. Journal of the American Heart Association, 2016, 5, .	1.6	6
32	Spatial expression of components of a calcitonin receptor-like receptor (CRL) signalling system (CRL,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf heart valves. Cell and Tissue Research, 2016, 366, 587-599.	1.5	2
33	Heart Valve Mechanobiology in Development and Disease. , 2016, , 255-276.		4
34	Valve interstitial cell contractile strength and metabolic state are dependent on its shape. Integrative Biology (United Kingdom), 2016, 8, 1079-1089.	0.6	32
35	The presence of fructosamine in human aortic valves is associated with valve stiffness. Journal of Clinical Pathology, 2016, 69, 772-776.	1.0	5
36	Three-dimensional macro-scale assessment of regional and temporal wall shear stress characteristics on aortic valve leaflets. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 603-613.	0.9	34
37	Systolic hypertension and progression of aortic valve calcification in patients with aortic stenosis: results from the PROGRESSA study. European Heart Journal Cardiovascular Imaging, 2017, 18, 70-78.	0.5	63

#	Article	IF	Citations
38	Computational comparison of regional stress and deformation characteristics in tricuspid and bicuspid aortic valve leaflets. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e02798.	1.0	59
39	A survey of membrane receptor regulation in valvular interstitial cells cultured under mechanical stresses. Experimental Cell Research, 2017, 351, 150-156.	1.2	5
40	Fabrication of a matrigelâ€"collagen semi-interpenetrating scaffold for use in dynamic valve interstitial cell culture. Biomedical Materials (Bristol), 2017, 12, 045013.	1.7	22
41	Phenotype Transformation of Aortic Valve Interstitial Cells Due to Applied Shear Stresses Within a Microfluidic Chip. Annals of Biomedical Engineering, 2017, 45, 2269-2280.	1.3	21
42	Assessment of calcified aortic valve leaflet deformations and blood flow dynamics using fluid-structure interaction modeling. Informatics in Medicine Unlocked, 2017, 9, 191-199.	1.9	41
43	A strain-based finite element model for calcification progression in aortic valves. Journal of Biomechanics, 2017, 65, 216-220.	0.9	23
44	A study of extracellular matrix remodeling in aortic heart valves using a novel biaxial stretch bioreactor. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 75, 351-358.	1.5	9
45	The roles of inflammatory mediators and immunocytes in tendinopathy. Journal of Orthopaedic Translation, 2018, 14, 23-33.	1.9	64
46	Relationship Between Proximal Aorta Morphology and Progression Rate of Aortic Stenosis. Journal of the American Society of Echocardiography, 2018, 31, 561-569.e1.	1.2	7
47	The Contribution of Whole Blood Viscosity to the Process of Aortic Valve Sclerosis. Medical Principles and Practice, 2018, 27, 173-178.	1.1	10
48	Deficiency of Natriuretic Peptide Receptor 2 Promotes Bicuspid Aortic Valves, Aortic Valve Disease, Left Ventricular Dysfunction, and Ascending Aortic Dilatations in Mice. Circulation Research, 2018, 122, 405-416.	2.0	42
49	Off-the-shelf tissue engineered heart valves for<i>in situ</i>regeneration: current state, challenges and future directions. Expert Review of Medical Devices, 2018, 15, 35-45.	1.4	30
50	Flowâ€"Structure Interaction Simulations of the Aortic Heart Valve at Physiologic Conditions: The Role of Tissue Constitutive Model. Journal of Biomechanical Engineering, 2018, 140, .	0.6	19
51	Fluidâ€"Structure Interaction Models of Bicuspid Aortic Valves: The Effects of Nonfused Cusp Angles. Journal of Biomechanical Engineering, 2018, 140, .	0.6	27
52	Molecular and Cellular Developments in Heart Valve Development and Disease. , 2018, , 207-239.		0
53	Calcific Aortic Valve Disease: Pathobiology, Basic Mechanisms, and Clinical Strategies. , 2018, , 153-179.		1
54	Biomechanics and Modeling of Tissue-Engineered Heart Valves. , 2018, , 413-446.		1
55	The effect of heparin hydrogel embedding on glutaraldehyde fixed bovine pericardial tissues: Mechanical behavior and anticalcification potential. Journal of Materials Science: Materials in Medicine, 2018, 29, 175.	1.7	8

#	Article	IF	Citations
56	The Genetic Regulation of Aortic Valve Development and Calcific Disease. Frontiers in Cardiovascular Medicine, 2018, 5, 162.	1.1	25
57	Role of TGF-Î²1 Signaling in Heart Valve Calcification Induced by Abnormal Mechanical Stimulation in a Tissue Engineering Model. Current Medical Science, 2018, 38, 765-775.	0.7	8
58	Deletion of calponin 2 attenuates the development of calcific aortic valve disease in ApoEâˆ’/âˆ’ mice. Journal of Molecular and Cellular Cardiology, 2018, 121, 233-241.	0.9	19
59	miR-214 is Stretch-Sensitive in Aortic Valve and Inhibits Aortic Valve Calcification. Annals of Biomedical Engineering, 2019, 47, 1106-1115.	1.3	12
60	Spatiotemporal Complexity of the Aortic Sinus Vortex as a Function of Leaflet Calcification. Annals of Biomedical Engineering, 2019, 47, 1116-1128.	1.3	20
61	Adaptation of a Mice Doppler Echocardiography Platform to Measure Cardiac Flow Velocities for Embryonic Chicken and Adult Zebrafish. Frontiers in Bioengineering and Biotechnology, 2019, 7, 96.	2.0	24
62	Adaptive immune cells in calcific aortic valve disease. American Journal of Physiology - Heart and Circulatory Physiology, 2019, 317, H141-H155.	1.5	47
63	Shortâ€term LPS induces aortic valve thickening in ApoE*3Leiden mice. European Journal of Clinical Investigation, 2019, 49, e13121.	1.7	7
64	Collagen type I and hyaluronic acid based hybrid scaffolds for heart valve tissue engineering. Biopolymers, 2019, 110, e23278.	1.2	19
65	Quest for cardiovascular interventions: precise modeling and 3D printing of heart valves. Journal of Biological Engineering, 2019, 13, 12.	2.0	22
66	Disturbed Flow Increases UBE2C (Ubiquitin E2 Ligase C) via Loss of miR-483-3p, Inducing Aortic Valve Calcification by the pVHL (von Hippel-Lindau Protein) and HIF-1Î± (Hypoxia-Inducible Factor-1Î±) Pathway in Endothelial Cells. Arteriosclerosis, Thrombosis, and Vascular Biology, 2019, 39, 467-481.	1.1	54
67	Dynamic measurement of centering forces on transvalvular cannulas. Artificial Organs, 2020, 44, E150-E160.	1.0	2
68	Cardiovascular Mechanics and Disease. , 2020, , 23-45.		1
69	Materials and manufacturing perspectives in engineering heart valves: a review. Materials Today Bio, 2020, 5, 100038.	2.6	59
70	Trilayered tissue structure with leaflet-like orientations developed through <i>in vivo</i> tissue engineering. Biomedical Materials (Bristol), 2020, 15, 015004.	1.7	18
71	Geometry influences inflammatory host cell response and remodeling in tissue-engineered heart valves in-vivo. Scientific Reports, 2020, 10, 19882.	1.6	22
72	Tissue engineered heart valves for transcatheter aortic valve implantation: current state, challenges, and future developments. Expert Review of Cardiovascular Therapy, 2020, 18, 681-696.	0.6	12
73	Biomaterials in Valvular Heart Diseases. Frontiers in Bioengineering and Biotechnology, 2020, 8, 529244.	2.0	20

#	ARTICLE	IF	CITATIONS
74	Impact of Aortoseptal Angle Abnormalities and Discrete Subaortic Stenosis on Left-Ventricular Outflow Tract Hemodynamics: Preliminary Computational Assessment. Frontiers in Bioengineering and Biotechnology, 2020, 8, 114.	2.0	17
75	Mechanisms of heart valve development and disease. Development (Cambridge), 2020, 147, .	1.2	46
76	A multilayered valve leaflet promotes cell-laden collagen type I production and aortic valve hemodynamics. Biomaterials, 2020, 240, 119838.	5.7	21
77	Molecular mechanisms involved in high glucoseâ€induced valve calcification in a 3D valve model with human valvular cells. Journal of Cellular and Molecular Medicine, 2020, 24, 6350-6361.	1.6	30
78	Side-dependent effect in the response of valve endothelial cells to bidirectional shear stress. International Journal of Cardiology, 2021, 323, 220-228.	0.8	6
79	Three-Dimensional Computational Modeling of an Extra-Descending Aortic Assist Device Using Fluid-Structure Interaction. Irbm, 2021, 42, 35-47.	3.7	2
80	Computational Assessment of Valvular Dysfunction in Discrete Subaortic Stenosis: A Parametric Study. Cardiovascular Engineering and Technology, 2021, 12, 559.	0.7	6
81	Heart Valve Bioengineering. Reference Series in Biomedical Engineering, 2021, , 23-80.	0.1	0
82	Transcatheter Heart Valve Downstream Fluid Dynamics in an Accelerated Evaluation Environment. Annals of Biomedical Engineering, 2021, 49, 2170-2182.	1.3	4
83	The focal mechanical properties of normal and diseased porcine aortic valve tissue measured by a novel microindentation device. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 115, 104245.	1.5	0
84	Air pollution and human health risks: mechanisms and clinical manifestations of cardiovascular and respiratory diseases. Toxin Reviews, 2022, 41, 606-617.	1.5	23
85	Changing epidemiology of calcific aortic valve disease: 30-year trends of incidence, prevalence, and deaths across 204 countries and territories. Aging, 2021, 13, 12710-12732.	1.4	32
86	Fluid Flow Characteristics of Healthy and Calcified Aortic Valves Using Three-Dimensional Lagrangian Coherent Structures Analysis. Fluids, 2021, 6, 203.	0.8	14
87	Computational Analysis of Wall Shear Stress Patterns on Calcified and Bicuspid Aortic Valves: Focus on Radial and Coaptation Patterns. Fluids, 2021, 6, 287.	0.8	11
88	Aortic valve disease in diabetes: Molecular mechanisms and novel therapies. Journal of Cellular and Molecular Medicine, 2021, 25, 9483-9495.	1.6	8
89	Developing a Clinically Relevant Tissue Engineered Heart Valveâ€"A Review of Current Approaches. Advanced Healthcare Materials, 2017, 6, 1700918.	3.9	27
90	Oxidative Stress in Cardiac Valve Development. Oxidative Stress in Applied Basic Research and Clinical Practice, 2017, , 1-18.	0.4	2
91	Mechanical and Matrix Regulation of Valvular Fibrosis. , 2015, , 23-53.		3

#	ARTICLE	IF	CITATIONS
92	Interdisciplinary approaches to advanced cardiovascular tissue engineering: ECM-based biomaterials, 3D bioprinting, and its assessment. Progress in Biomedical Engineering, 2020, 2, 042003.	2.8	11
93	Defining the Role of Fluid Shear Stress in the Expression of Early Signaling Markers for Calcific Aortic Valve Disease. PLoS ONE, 2013, 8, e84433.	1.1	71
94	Oscillatory fluid-induced mechanobiology in heart valves with parallels to the vasculature. Vascular Biology (Bristol, England), 2020, 2, R59-R71.	1.2	9
95	Cellular Mechanisms of Valvular Thickening in Early and Intermediate Calcific Aortic Valve Disease. Current Cardiology Reviews, 2018, 14, 264-271.	0.6	21
96	4D flow imaging with MRI. Cardiovascular Diagnosis and Therapy, 2014, 4, 173-92.	0.7	227
98	CALCIFICATION OF HEART AND VESSELS IN CHRONIC KIDNEY DISEASE: PROBLEMS OF ETIOLOGY AND PATHOGENESIS. Fiziolohichnyi Zhurnal (Kiev, Ukraine: 1994), 2017, 63, 80-93.	0.1	0
99	Mechanical Mediation of Signaling Pathways in Heart Valve Development and Disease. , 2018, , 241-262.		1
100	Haemodynamic Issues with Transcatheter Aortic Valve Implantation. , 2019, , 47-59.		0
101	Heart Valve Bioengineering. , 2020, , 1-59.		1
102	Differential proteome profile, biological pathways, and network relationships of osteogenic proteins in calcified human aortic valves. Heart and Vessels, 2021, , 1.	0.5	2
103	Bicuspid aortic valve: different clinical profiles for subjects with versus without repaired aortic coarctation. Open Heart, 2020, 7, e001429.	0.9	2
104	Evaluation of Whole Blood Viscosity in Patients with Aortic Sclerosis. The Journal of Tehran Heart Center, 2017, 12, 6-10.	0.3	3
105	Shear and endothelial induced late-stage calcific aortic valve disease-on-a-chip develops calcium phosphate mineralizations. Lab on A Chip, 2022, 22, 1374-1385.	3.1	6
106	Uncoupling the Vicious Cycle of Mechanical Stress and Inflammation in Calcific Aortic Valve Disease. Frontiers in Cardiovascular Medicine, 2022, 9, 783543.	1.1	18
107	Aortic valve cell microenvironment: Considerations for developing a valve-on-chip. Biophysics Reviews, 2021, 2, 041303.	1.0	1
113	Circulating Monocyte Subsets and Transcatheter Aortic Valve Replacement. International Journal of Molecular Sciences, 2022, 23, 5303.	1.8	4
114	The Haemodynamic and Pathophysiological Mechanisms of Calcific Aortic Valve Disease. Biomedicines, 2022, 10, 1317.	1.4	1
115	Valve Endothelial Cell Exposure to High Levels of Flow Oscillations Exacerbates Valve Interstitial Cell Calcification. Bioengineering, 2022, 9, 393.	1.6	2

#	ARTICLE	IF	CITATIONS
116	Outcome of humanitarian patients with late complete repair of tetralogy of Fallot: A 13-year long single-center experience. International Journal of Cardiology Congenital Heart Disease, 2022, , 100414.	0.2	0
117	Macrophage-extracellular matrix interactions: Perspectives for tissue engineered heart valve remodeling. Frontiers in Cardiovascular Medicine, 0, 9, .	1.1	6
118	Towards technically controlled bioreactor maturation of tissue-engineered heart valves. Biomedizinische Technik, 2022, 67, 461-470.	0.9	2
119	Atherogenic potential of microgravity hemodynamics in the carotid bifurcation: a numerical investigation. Npj Microgravity, 2022, 8, .	1.9	4
120	Trileaflet semilunar valve reconstruction: pulsatile <i>in vitro</i> evaluation. Interactive Cardiovascular and Thoracic Surgery, 2022, 35, .	0.5	2
121	Cellular Senescence, Aging and Non-Aging Processes in Calcified Aortic Valve Stenosis: From Bench-Side to Bedside. Cells, 2022, 11, 3389.	1.8	5
122	Single-cell RNA-sequencing analysis of aortic valve interstitial cells demonstrates the regulation of integrin signaling by nitric oxide. Frontiers in Cardiovascular Medicine, 0, 9, .	1.1	3
123	HIF1A inhibitor PX-478 reduces pathological stretch-induced calcification and collagen turnover in aortic valve. Frontiers in Cardiovascular Medicine, 0, 9, .	1.1	3
124	A Bayesian constitutive model selection framework for biaxial mechanical testing of planar soft tissues: Application to porcine aortic valves. Journal of the Mechanical Behavior of Biomedical Materials, 2023, 138, 105657.	1.5	3
125	An ultrasound-exclusive non-invasive computational diagnostic framework for personalized cardiology of aortic valve stenosis. Medical Image Analysis, 2023, 87, 102795.	7.0	5
126	Abnormal mechanical stress on bicuspid aortic valve induces valvular calcification and inhibits Notch1/NICD/Runx2 signal. PeerJ, 0, 11, e14950.	0.9	0
127	Trans-Aortic Flow Turbulence and Aortic Valve Inflammation: A Pilot Study Using Blood Speckle Imaging and ¹⁸F-Sodium Fluoride Positron Emission Tomography/Computed Tomography in Patients With Moderate Aortic Stenosis. Journal of Cardiovascular Imaging, 0, 31, .	0.2	1