Xiaoyu Luo

List of Publications by Year
in descending order

145 papers	3,393 citations	126907 33 h-index	175258 52 g-index
149 all docs	149 docs citations	149 times ranked	2615 citing authors

#	Article	IF	Citations
1	SIMULATING THE FLUID DYNAMICS OF NATURAL AND PROSTHETIC HEART VALVES USING THE IMMERSED BOUNDARY METHOD. International Journal of Applied Mechanics, 2009, 01, 137-177.	2.2	146
2	A numerical simulation of unsteady flow in a two-dimensional collapsible channel. Journal of Fluid Mechanics, 1996, 314, 191-225.	3.4	135
3	Modelling Flow and Oscillations in Collapsible Tubes. Theoretical and Computational Fluid Dynamics, 1998, 10, 277-294.	2.2	122
4	A nonlinear anisotropic model for porcine aortic heart valves. Journal of Biomechanics, 2001, 34, 1279-1289.	2.1	103
5	Hybrid finite difference/finite element immersed boundary method. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e2888.	2.1	97
6	Structureâ€based finite strain modelling of the human left ventricle in diastole. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 83-103.	2.1	95
7	A Numerical Simulation of Steady Flow in a 2-D Collapsible Channel. Journal of Fluids and Structures, 1995, 9, 149-174.	3.4	89
8	The effects of wall inertia on flow in a two-dimensional collapsible channel. Journal of Fluid Mechanics, 1998, 363, 253-280.	3.4	87
9	Verification of cardiac mechanics software: benchmark problems and solutions for testing active and passive material behaviour. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150641.	2.1	80
10	Parameter estimation in a Holzapfelâ€“Ogden law for healthy myocardium. Journal of Engineering Mathematics, 2015, 95, 231-248.	1.2	80
11	LES modelling of flow in a simple airway model. Medical Engineering and Physics, 2004, 26, 403-413.	1.7	75
12	Three-dimensional collapse and steady flow in thick-walled flexible tubes. Journal of Fluids and Structures, 2005, 20, 817-835.	3.4	73
13	Erosion of biofilm-bound fluvial sediments. Nature Geoscience, 2013, 6, 770-774.	12.9	65
14	A modified Holzapfel-Ogden law for a residually stressed finite strain model of the human left ventricle in diastole. Biomechanics and Modeling in Mechanobiology, 2014, 13, 99-113.	2.8	62
15	Multiple solutions and flow limitation in collapsible channel flows. Journal of Fluid Mechanics, 2000, 420, 301-324.	3.4	61
16	A coupled mitral valveâ€"left ventricle model with fluidâ€“structure interaction. Medical Engineering and Physics, 2017, 47, 128-136.	1.7	55
17	A patient-specific lumped-parameter model of coronary circulation. Scientific Reports, 2018, 8, 874.	3.3	54
18	Dynamic modelling of prosthetic chorded mitral valves using the immersed boundary method. Journal of Biomechanics, 2007, 40, 613-626.	2.1	52

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19	Snoring source identification and snoring noise prediction. Journal of Biomechanics, 2007, 40, 861-870.	2.1	52
20	Blood flow and damage by the roller pumps during cardiopulmonary bypass. Journal of Fluids and Structures, 2005, 20, 129-140.	3.4	51
21	Quasiâ€static imageâ€based immersed boundaryâ€finite element model of left ventricle under diastolic loading. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 1199-1222.	2.1	51
22	Effect of tube spacing on the vortex shedding characteristics of laminar flow past an inline tube array: A numerical study. Computers and Fluids, 2009, 38, 950-964.	2.5	50
23	Changes and classification in myocardial contractile function in the left ventricle following acute myocardial infarction. Journal of the Royal Society Interface, 2017, 14, 20170203.	3.4	50
24	Image-based fluidâ€“structure interaction model of the human mitral valve. Computers and Fluids, 2013, 71, 417-425.	2.5	47
25	Dynamic finite-strain modelling of the human left ventricle in health and disease using an immersed boundary-finite element method. IMA Journal of Applied Mathematics, 2014, 79, 978-1010.	1.6	46
26	The cascade structure of linear instability in collapsible channel flows. Journal of Fluid Mechanics, 2008, 600, 45-76.	3.4	45
27	Asymmetric bifurcations of thick-walled circular cylindrical elastic tubes under axial loading and external pressure. International Journal of Solids and Structures, 2008, 45, 3410-3429.	2.7	44
28	Study of cardiovascular function using a coupled left ventricle and systemic circulation model. Journal of Biomechanics, 2016, 49, 2445-2454.	2.1	43
29	Rationale and design of the Medical Research Council's Precision Medicine with Zibotentan in Microvascular Angina (PRIZE) trial. American Heart Journal, 2020, 229, 70-80.	2.7	40
30	Advances in computational modelling for personalised medicine after myocardial infarction. Heart, 2018, 104, 550-557.	2.9	39
31	The flow of bile in the human cystic duct. Journal of Biomechanics, 2004, 37, 1913-1922.	2.1	38
32	Analysis of a coupled fluidâ€structure interaction model of the left atrium and mitral valve. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3254.	2.1	38
33	Investigation of the optimal collagen fibre orientation in human iliac arteries. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 52, 108-119.	3.1	37
34	On the mechanical behavior of the human biliary system. World Journal of Gastroenterology, 2007, 13, 1384.	3.3	35
35	Effect of ventricle motion on the dynamic behaviour of chorded mitral valves. Journal of Fluids and Structures, 2008, 24, 58-74.	3.4	32
36	On the AIC-based model reduction for the general Holzapfelâ€“Ogden myocardial constitutive law. Biomechanics and Modeling in Mechanobiology, 2019, 18, 1213-1232.	2.8	32

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37	Geometrical Stress-Reducing Factors in the Anisotropic Porcine Heart Valves. Journal of Biomechanical Engineering, 2003, 125, 735-744.	1.3	31
38	Nonlinear axisymmetric deformations of an elastic tube under external pressure. European Journal of Mechanics, A/Solids, 2010, 29, 216-229.	3.7	31
39	Left ventricular strain and its pattern estimated from cine CMR and validation with DENSE. Physics in Medicine and Biology, 2014, 59, 3637-3656.	3.0	31
40	Theoretical and Numerical Analysis of Mechanical Behaviors of a Metamaterial-Based Shape Memory Polymer Stent. Polymers, 2020, 12, 1784.	4.5	31
41	Modelling mitral valvular dynamicsâ€"current trend and future directions. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e2858.	2.1	30
42	A fluidâ€"beam model for flow in a collapsible channel. Journal of Fluids and Structures, 2003, 17, 125-146.	3.4	29
43	Three-dimensional non-linear buckling of thick-walled elastic tubes under pressure. International Journal of Non-Linear Mechanics, 2013, 48, 1-14.	2.6	28
44	Propagation of dissection in a residually-stressed artery model. Biomechanics and Modeling in Mechanobiology, 2017, 16, 139-149.	2.8	28
45	Non-Newtonian Bile Flow in Elastic Cystic Duct: One- and Three-Dimensional Modeling. Annals of Biomedical Engineering, 2008, 36, 1893-1908.	2.5	26
46	Modelling volumetric growth in a thick walled fibre reinforced artery. Journal of the Mechanics and Physics of Solids, 2014, 73, 134-150.	4.8	26
47	A finite strain nonlinear human mitral valve model with fluidâ€structure interaction. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 1597-1613.	2.1	25
48	Modelling peeling- and pressure-driven propagation of arterial dissection. Journal of Engineering Mathematics, 2018, 109, 227-238.	1.2	25
49	A generalised structure tensor model for the mixed invariant <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" id="mml59" display="inline" overflow="scroll" altimg="si59.gif"><mml:msub><mml:mrow><mml:mi>I</mml:mi></mml:mrow><mml:mrow><mml:mn>8</mml:mn></mml:mrow></m International Journal of Non-Linear Mechanics, 2018, 107, 137-148.	2.6	25
50	A Novel Method for Estimating Myocardial Strain: Assessment of Deformation Tracking Against Reference Magnetic Resonance Methods in Healthy Volunteers. Scientific Reports, 2016, 6, 38774.	3.3	24
51	Numerical Simulation of Particle Dispersion in a Spatially Developing Mixing Layer. Theoretical and Computational Fluid Dynamics, 2002, 15, 403-420.	2.2	22
52	One-Dimensional Models of the Human Biliary System. Journal of Biomechanical Engineering, 2007, 129, 164-173.	1.3	22
53	Estimating prognosis in patients with acute myocardial infarction using personalized computational heart models. Scientific Reports, 2017, 7, 13527.	3.3	22
54	Gaussian process emulation to accelerate parameter estimation in a mechanical model of the left ventricle: a critical step towards clinical end-user relevance. Journal of the Royal Society Interface, 2019, 16, 20190114.	3.4	22

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55	A One-Dimensional Hemodynamic Model of the Coronary Arterial Tree. Frontiers in Physiology, 2019, 10, 853.	2.8	22
56	Computational analysis of the flow of bile in human cystic duct. Medical Engineering and Physics, 2012, 34, 1177-1183.	1.7	21
57	Sensitivity of unsteady collapsible channel flows to modelling assumptions. Communications in Numerical Methods in Engineering, 2009, 25, 483-504.	1.3	20
58	Stability and energy budget of pressure-driven collapsible channel flows. Journal of Fluid Mechanics, 2012, 705, 348-370.	3.4	20
59	Effect of myofibre architecture on ventricular pump function by using a neonatal porcine heart model: from DT-MRI to rule-based methods. Royal Society Open Science, 2020, 7, 191655.	2.4	20
60	Effects of LES subâ€grid flow structure on particle deposition in a plane channel with a ribbed wall. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 999-1015.	2.1	19
61	An Invariant-Based Damage Model for Human and Animal Skins. Annals of Biomedical Engineering, 2016, 44, 3109-3122.	2.5	19
62	Investigation of the functional three-dimensional anatomy of the human cystic duct: A single helix?. Clinical Anatomy, 2006, 19, 528-534.	2.7	18
63	Effects of flow vortex on a chorded mitral valve in the left ventricle. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 381-404.	2.1	17
64	Nonlinear numerical model with contact for Stockbridge vibration damper and experimental validation. JVC/Journal of Vibration and Control, 2016, 22, 1217-1227.	2.6	17
65	Correlation of Mechanical Factors and Gallbladder Pain. Computational and Mathematical Methods in Medicine, 2008, 9, 27-45.	1.3	16
66	Anisotropic behaviour of human gallbladder walls. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 20, 363-375.	3.1	16
67	On the chordae structure and dynamic behaviour of the mitral valve. IMA Journal of Applied Mathematics, 2018, 83, 1066-1091.	1.6	16
68	Fast Parameter Inference in a Biomechanical Model of the Left Ventricle by Using Statistical Emulation. Journal of the Royal Statistical Society Series C: Applied Statistics, 2019, 68, 1555-1576.	1.0	16
69	Effect of bending rigidity in a dynamic model of a polyurethane prosthetic mitral valve. Biomechanics and Modeling in Mechanobiology, 2012, 11, 815-827.	2.8	15
70	Coupled agentâ€based and hyperelastic modelling of the left ventricle postâ€myocardial infarction. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3155.	2.1	15
71	Modelling of fibre dispersion and its effects on cardiac mechanics from diastole to systole. Journal of Engineering Mathematics, 2021, 128, 1.	1.2	14
72	On the initial configurations of collapsible channel flow. Computers and Structures, 2007, 85, 977-987.	4.4	13

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73	Modelling of tear propagation and arrest in fibre-reinforced soft tissue subject to internal pressure. Journal of Engineering Mathematics, 2015, 95, 249-265.	1.2	13
74	Modelling floppy iris syndrome and the impact of pupil size and ring devices on iris displacement. Eye, 2020, 34, 2227-2234.	2.1	13
75	A Mechanical Model for CCK-Induced Acalculous Gallbladder Pain. Annals of Biomedical Engineering, 2011, 39, 786-800.	2.5	12
76	Modelling and simulation of the expansion of a shape memory polymer stent. Engineering Computations, 2019, 36, 2726-2746.	1.4	12
77	Constricted channel flow with different cross-section shapes. European Journal of Mechanics, B/Fluids, 2017, 63, 1-8.	2.5	11
78	PRESSURE DRIVEN STEADY FLOW IN CONSTRICTED CHANNELS OF DIFFERENT CROSS-SECTION SHAPES. International Journal of Applied Mechanics, 2013, 05, 1350002.	2.2	10
79	Neural network-based left ventricle geometry prediction from CMR images with application in biomechanics. Artificial Intelligence in Medicine, 2021, 119, 102140.	6.5	10
80	Multi-scale modelling of the human left ventricle. Scientia Sinica: Physica, Mechanica Et Astronomica, 2015, 45, 024702-024702.	0.4	10
81	Visualization of mixing of flow in circular tubes with segmental baffles. Journal of Visualization, 2005, 8, 89-89.	1.8	9
82	Mathematical and computer simulation modelling of intracameral forces causing pupil block due to air bubble use in Descemet's Stripping Endothelial Keratoplasty: the mechanics of iris buckling. Clinical and Experimental Ophthalmology, 2012, 40, 182-186.	2.6	9
83	A mathematical model for active contraction in healthy and failing myocytes and left ventricles. PLoS ONE, 2017, 12, e0174834.	2.5	9
84	Some Effects of Different Constitutive Laws on FSI Simulation for the Mitral Valve. Scientific Reports, 2019, 9, 12753.	3.3	9
85	FLOW STRUCTURE IN CIRCULAR TUBES WITH SEGMENTAL BAFFLES. Journal of Flow Visualization and Image Processing, 2005, 12, 301-311.	0.5	9
86	Experimental validation of quasi-one-dimensional and two-dimensional steady glottal flow models. Medical and Biological Engineering and Computing, 2010, 48, 903-910.	2.8	8
87	Experimental Investigation of the Flow of Bile in Patient Specific Cystic Duct Models. Journal of Biomechanical Engineering, 2010, 132, 041003.	1.3	8
88	A numerical study of a heart phantom model. International Journal of Computer Mathematics, 2014, 91, 1535-1551.	1.8	7
89	A Mathematical Model on the Feedback Between Wall Shear Stress and Intimal Hyperplasia. International Journal of Applied Mechanics, 2016, 08, 1640011.	2.2	7
90	Three-dimensional flows in a hyperelastic vessel under external pressure. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1187-1207.	2.8	7

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91	Apparent growth tensor of left ventricular post myocardial infarction â€" In human first natural history study. Computers in Biology and Medicine, 2021, 129, 104168.	7.0	7
92	Fluidâ€"structure interaction in a fully coupled three-dimensional mitralâ€"atriumâ€"pulmonary model. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1267-1295.	2.8	7
93	VISUALIZATION EXPERIMENT OF FLOW STRUCTURES INSIDE TWO-DIMENSIONAL HUMAN BILIARY SYSTEM MODELS. Journal of Mechanics in Medicine and Biology, 2006, 06, 249-260.	0.7	6
94	A Quasi-Nonlinear Analysis of the Anisotropic Behaviour of Human Gallbladder Wall. Journal of Biomechanical Engineering, 2012, 134, 101009.	1.3	6
95	Optimum size of iridotomy in uveitis. Clinical and Experimental Ophthalmology, 2015, 43, 692-696.	2.6	6
96	A ghost structure finite difference method for a fractional FitzHugh-Nagumo monodomain model on moving irregular domain. Journal of Computational Physics, 2021, 428, 110081.	3.8	6
97	Simulation of fluid-structure interaction during the phaco-emulsification stage of cataract surgery. International Journal of Mechanical Sciences, 2022, 214, 106931.	6.7	6
98	Investigation of the Flow in a Compliant Idealised Human Cystic Duct. Journal of Biomechanical Science and Engineering, 2008, 3, 411-418.	0.3	5
99	BREAKING ANALYSIS OF ARTIFICIAL ELASTIC TUBES AND HUMAN ARTERY. International Journal of Applied Mechanics, 2013, 05, 1350024.	2.2	5
100	A poroelastic immersed finite element framework for modelling cardiac perfusion and fluidâ€"structure interaction. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3446.	2.1	5
101	The Comparison of Different Constitutive Laws and Fiber Architectures for the Aortic Valve on Fluidâ€"Structure Interaction Simulation. Frontiers in Physiology, 2021, 12, 682893.	2.8	5
102	Age Estimation Using Multi-Label Learning. Lecture Notes in Computer Science, 2011, , 221-228.	1.3	5
103	Cross-bridge apparent rate constants of human gallbladder smooth muscle. Journal of Muscle Research and Cell Motility, 2011, 32, 209-220.	2.0	4
104	Residual Stress Estimates from Multi-cut Opening Angles of the Left Ventricle. Cardiovascular Engineering and Technology, 2020, 11, 381-393.	1.6	4
105	A new active contraction model for the myocardium using a modified hill model. Computers in Biology and Medicine, 2022, 145, 105417.	7.0	4
106	Modelling Chorded Prosthetic Mitral Valves using the Immersed Boundary Method. , 2004, 2004, 3745-8.		3
107	An Arnoldi-Frontal Approach for the Stability Analysis of Flows in a Collapsible Channel. International Journal of Applied Mechanics, 2016, 08, 1650073.	2.2	3
108	A Double-Distribution-Function Lattice Boltzmann Method for Bed-Load Sediment Transport. International Journal of Applied Mechanics, 2017, 09, 1750013.	2.2	3

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109	Simulation of action potential propagation based on the ghost structure method. Scientific Reports, 2019, 9, 10927.	3.3	3
110	Analysis of Cardiac Amyloidosis Progression Using Model-Based Markers. Frontiers in Physiology, 2020, 11, 324.	2.8	3
111	Energetics of collapsible channel flow with a nonlinear fluid-beam model. Journal of Fluid Mechanics, 2021, 926, .	3.4	3
112	Volumetric growth of soft tissues evaluated in the current configuration. Biomechanics and Modeling in Mechanobiology, 2022, 21, 569-588.	2.8	3
113	Effects of dispersed fibres in myocardial mechanics, Part II: active response. Mathematical Biosciences and Engineering, 2022, 19, 4101-4119.	1.9	3
114	The influence of glottal cross-section shape on theoretical flow models. Journal of the Acoustical Society of America, 2013, 134, 909-912.	1.1	2
115	Fluid-Structure Interaction Model of Human Mitral Valve within Left Ventricle. Lecture Notes in Computer Science, 2015, , 330-337.	1.3	2
116	Modeling Floppy Iris Syndrome and the Impact of Phenylephrine on Iris Buckling. International Journal of Applied Mechanics, 2018, 10, 1850048.	2.2	2
117	Initial Experience with a Dynamic Imaging-Derived Immersed Boundary Model of Human Left Ventricle. Lecture Notes in Computer Science, 2013, , 11-18.	1.3	2
118	Effects of dispersed fibres in myocardial mechanics, Part I: passive response. Mathematical Biosciences and Engineering, 2022, 19, 3972-3993.	1.9	2
119	Estimations of Critical Clear Corneal Incisions Required for Lens Insertion in Cataract Surgery: A Mathematical Aspect. Frontiers in Physiology, 2022, 13, 834214.	2.8	2
120	Improving Cardio-Mechanic Inference by Combining in Vivo Strain Data with Ex Vivo Volumeâ€"Pressure Data. Journal of the Royal Statistical Society Series C: Applied Statistics, 2022, 71, 906-931.	1.0	2
121	Stability and Pressure Boundary Conditions in the Collapsible Channel Flows. , 2009, , .		1
122	A Pointwise Method for Identifying Biomechanical Heterogeneity of the Human Gallbladder. Frontiers in Physiology, 2017, 8, 176.	2.8	1
123	A para-universal relation for orthotropic materials. Mechanics Research Communications, 2019, 97, 46-51.	1.8	1
124	Multiple Steady and Oscillatory Solutions in a Collapsible Channel Flow. International Journal of Applied Mechanics, 2021, 13, .	2.2	1
125	Image-Derived Human Left Ventricular Modelling with Fluid-Structure Interaction. Lecture Notes in Computer Science, 2015, , 321-329.	1.3	1
126	Flow in Idealised Compliant Human Cystic Duct Models. , 2007, , 610-613.		1

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127	Massive Dimensionality Reduction for the Left Ventricular Mesh. , 0, , .		1
128	Direct Learning Left Ventricular Meshes from CMR Images. , 0, , .		1
129	Call for Papers: Special Issue on â€˜Flow in Collapsible Tubes or Over Compliant Surfaces for Biomedical Applicationsâ€™Communications in Numerical Methods in Engineering (CNM). International Journal for Numerical and Analytical Methods in Geomechanics, 2008, 32, 217-217.	3.3	0
130	Call for Papers: Special Issue on â€˜Flow in Collapsible Tubes or Over Compliant Surfaces for Biomedical Applicationsâ€™Communications in Numerical Methods in Engineering (CNM). Numerical Linear Algebra With Applications, 2008, 15, 391-391.	1.6	0
131	Flow in collapsible tubes or over compliant surfaces for biomedical applications. Communications in Numerical Methods in Engineering, 2009, 25, 401-403.	1.3	0
132	CMRI based 3D left ventricle motion analysis on patients with acute myocardial infarction. , 2011, 2011, 6821-4.		0
133	22â€...Semi-Automatic OEDEMA Quantification from Direct T2 Map Cardiac MRI. Heart, 2012, 98, A7.2-A7.	2.9	0
134	18â€...Propagation of arterial dissection. Heart, 2015, 101, A6.3-A6.	2.9	0
135	17â€...Numerical study of imaged-based human mitral valve coupled with the left ventricle. Heart, 2015, 101, A6.2-A6.	2.9	0
136	17â€...A case-control study with computational modelling of acute left ventricular dysfunction. Heart, 2016, 102, A12.1-A12.	2.9	0
137	18â€...Cine-derived strain using the glasgowheart method. Heart, 2016, 102, A12.2-A13.	2.9	0
138	Pixel-tracking derived strain using the GlasgowHeart Method. Journal of Cardiovascular Magnetic Resonance, 2016, 18, P9.	3.3	0
139	An incremental deformation model of arterial dissection. Journal of Mathematical Biology, 2019, 78, 1277-1298.	1.9	0
140	Constitutive Modelling of Soft Biological Tissue from Ex Vivo to in Vivo: Myocardium as an Example. Springer Proceedings in Mathematics and Statistics, 2021, , 3-14.	0.2	0
141	IN-VITRO INVESTIGATION OF THE FUNCTIONS OF THE VALVES OF HEISTER(3D3 Biorheology &) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Science and Technology in Biomechanics, 2007, 2007.3, S234.	0.0	0
142	On the dynamic behaviour of chorded mitral valves. , 2007, , 311-311.		0
143	Influence of cross section shape on the outcome of a two-mass model. Proceedings of Meetings on Acoustics, 2013, , .	0.3	0
144	Statistical Emulation of Cardiac Mechanics: An Important Step towards a Clinical Decision Support System. , 0, , .		0

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145	3â€...Rationale and design of the Medical Research Council Precision medicine with Zibotentan in microvascular angina (PRIZE) trial MRI sub-study. , 2021, , .		0