

Publications bioMMeda 2020

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- **Lydia Aslanidou, Mauro Ferraro, Goran Lovric, Matthew R. Bersi, Jay D. Humphrey, Patrick Segers, Bram Trachet and Nikos Stergiopoulos:** Co-localization of microstructural damage and excessive mechanical strain at aortic branches in angiotensin-II-infused mice. BIOMECHANICS AND MODELING IN MECHANOBIOLOGY. 19(1). p.81-97.
- **Vasiliki Bikia, Stamatia Pagoulatou, Bram Trachet, Dimitrios Soulis, Athanase Protogerou, Theodore Papaioannou and Nikos Stergiopoulos:** Noninvasive cardiac output and central systolic pressure from cuff-pressure and pulse wave velocity. IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS. 24(7). p.1968-1981.
- **Annette Caenen, Anna E. Knight, Ned C. Rouze, Nick B. Bottenus, Patrick Segers and Kathryn R. Nightingale:** Analysis of multiple shear wave modes in a nonlinear soft solid : experiments and finite element simulations with a tilted acoustic radiation force. JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS. 107.
- **Shengda Chen, Candra Ratna Sari, Hao Gao, Yang Lei, Patrick Segers, Matthieu De Beule, Guixue Wang and Xingshuang Ma:** Mechanical and morphometric study of mitral valve chordae tendineae and related papillary muscle. JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS. 111.
- **Tim De Pauw, Alain Kalmar, Dirk Van de Putte, Cyriel Mabilde, Bart Blanckaert, Lieven Maene, Mauranne Lievens, Anne-Sophie Van Haver, Kevin Bauwens, Yves Van Nieuwenhove, et al.:** A novel hybrid 3D endoscope zooming and repositioning system : design and feasibility study. INTERNATIONAL JOURNAL OF MEDICAL ROBOTICS AND COMPUTER ASSISTED SURGERY. 16(1).
- **Ward De Spiegelaere, Lisa Caboor, Matthias Van Impe, Matthieu Boone, Julie De Backer, Patrick Segers and Patrick Sips:** Corrosion casting of the cardiovascular structure in adult zebrafish for analysis by scanning electron microscopy and X-ray microtomography. ANATOMIA HISTOLOGIA EMBRYOLOGIA. 49(5). p.635-642.
- **Lana B. H. Keijzer, Annette Caenen, Jason Voorneveld, Mihai Strachinaru, Daniel J. Bowen, Jens van de Wouw, Oana Sorop, Daphne Merkus, Dirk J. Duncker, Antonius F. W. van der Steen, et al.:** A direct comparison of natural and acoustic-radiation-force-induced cardiac mechanical waves. SCIENTIFIC REPORTS. 10.
- **Lana B.H. Keijzer, Mihai Strachinaru, Dan J. Bowen, Annette Caenen, Antonius F.W. Van der Steen, Martin D. Verweij, Nico De Jong, Johan G. Bosch and Hendrik J. Vos:** Parasternal versus apical view in cardiac natural mechanical wave speed measurements. IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL. 67(8). p.1590-1602.
- **Andreas Krämer, An Ghysels, Eric Wang, Richard M. Venable, Jeffery B. Klauda, Bernard R. Brooks and Richard W. Pastor:**

- Membrane permeability of small molecules from unbiased molecular dynamics simulations. *JOURNAL OF CHEMICAL PHYSICS*. 153(12).
- **Yanlu Li, Louise Marais, Hakim Khettab, Zhiheng Quan, Soren Aasmul, Rob Leinders, Ralf Schüler, Padraic E. Morrissey, Stephen Greenwald, Patrick Segers, et al.:** Silicon photonics-based laser Doppler vibrometer array for carotid-femoral pulse wave velocity (PWV) measurement. *BIOMEDICAL OPTICS EXPRESS*. 11(7). p.3913-3926.
 - **Viviana Mancini, Aslak W. Bergersen, Kristian Valen-Sendstad and Patrick Segers:** Computed poststenotic flow instabilities correlate phenotypically with vibrations measured using laser Doppler vibrometry : perspectives for a promising in vivo device for early detection of moderate and severe carotid stenosis. *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*. 142(9).
 - **Brett A. Meyers, Craig J. Goergen, Patrick Segers and Pavlos P. Vlachos:** Colour-Doppler echocardiography flow field velocity reconstruction using a streamfunction–vorticity formulation. *JOURNAL OF THE ROYAL SOCIETY INTERFACE*. 17(173).
 - **Joseph Panzer, Filip De Somer, Patrick Segers, Daniël De Wolf and Thierry Bové:** Effect of aortic stiffness versus stenosis on ventriculo-arterial interaction in an experimental model of coarctation repair. *EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY*. 58(6). p.1206-1215
 - **N. Pomella, Ernst Rietzschel, Patrick Segers and Ashraf W. Khir:** Implications of changing the asymptotic diastolic pressure in the reservoir-wave model on wave intensity parameters: a parametric study. *ARTERY RESEARCH*. 26(4). p.228-235.
 - **Mohammad Rahimi Gorji, Leen Van de Sande, Charlotte Debbaut, Ghader Ghorbaniasl, Helena Braet, Sarah Cosyns, Katrien Remaut, Wouter Willaert and Wim Ceelen:** Intraperitoneal aerosolized drug delivery : technology, recent developments, and future outlook. *ADVANCED DRUG DELIVERY REVIEWS*. 160. p.105-114.
 - **Patrick Segers, Ernst Rietzschel and Julio A. Chirinos:** How to measure arterial stiffness in humans. *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY*. 40(5). p.1034-1043
 - **Felke Steijns, Máté István Tóth, Anthony Demolder, Lars Emil Larsen, Jana Desloovere, Marjolijn Renard, Robrecht Raedt, Patrick Segers, Julie De Backer and Patrick Sips:** Ambulatory electrocardiographic monitoring and ectopic beat detection in conscious mice. *SENSORS*. 20(14).
 - **Michael Stouthandel, Charlotte Debbaut, Jurgen Deviche, Bart Truyens, Liv Veldeman and Tom Van Hoof:** Using the venous angle as a pressure reservoir to retrogradely fill the subclavian lymphatic trunk with contrast agent for lymphatic mapping. *ANNALS OF ANATOMY-ANATOMISCHER ANZEIGER*. 232.
 - **Michael Stouthandel, Christian Vanhove, Wouter Devriendt, Sander De Bock, Charlotte Debbaut, Carl Vangestel and Tom Van Hoof:** Biomechanical comparison of Thiel embalmed and fresh frozen nerve tissue. *ANATOMICAL SCIENCE INTERNATIONAL*. 95(3). p.390-407.

- **Lucas Van Bortel, Patrick Segers and Tine De Backer:** Misconceptions about arterial stiffness may lead to erroneous conclusions. AMERICAN JOURNAL OF HYPERTENSION. 33(5). p.402-404.
- **Caroline Van daele, Julio Chirinos Medina, Tim De Meyer, Marc De Buyzere, Michel Langlois, Sofie Bekaert, Patrick Segers, Thierry Gillebert and Ernst Rietzschel:** Muscle strength is a major determinant of the blood pressure response to isometric stress testing : the Asklepios population study. JOURNAL OF HYPERTENSION. 38(2). p.224-234.
- **Leen Van de Sande, Mohammad Rahimi Gorji, Silvia Giordano, Enrico Davoli, Cristina Matteo, Sonke Detlefsen, Katharina D'Herde, Helena Braet, Molood Shariati, Katrien Remaut, et al.:** Electrostatic intraperitoneal aerosol delivery of nanoparticles : proof of concept and preclinical validation. ADVANCED HEALTHCARE MATERIALS. 9(16).
- **Jason Voorneveld, Hicham Saaid, Christiaan Schinkel, Nikola Radeljic, Boris Lippe, Frank J.H. Gijzen, Antonius F.W. van der Steen, Nico de Jong, Tom Claessens, Hendrik J. Vos, et al.:** 4-D echo-particle image velocimetry in a left ventricular phantom. ULTRASOUND IN MEDICINE & BIOLOGY. 46(3). p.805-817.

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- **Alberico Sabbadini, Annette Caenen, Hendrik Vos, Nico de Jong and Martin D. Verweij:** Numerical model of Lamb wave propagation in the tapered septal wall of the heart. 178th Meeting of the Acoustical Society of America, Proceedings. In Proceedings of Meetings on Acoustics 39.

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- **Ghazal Adeli Koudehi, Carlos Alejandro Silvera Delgado, Matthias Van Impe, Pieter Cornillie, Christophe Casteleyn, Christian Vanhove, Charlotte Debbaut and Patrick Segers:** Modelling lymph propulsion in a 3D reconstructed murine collecting vessel. 19th National Day on Biomedical Engineering, Abstracts.
- **Ghazal Adeli Koudehi, Matthias Van Impe, Pieter Cornillie, Christophe Casteleyn, Christian Vanhove, Charlotte Debbaut and Patrick Segers:** Modelling lymph propulsion in a series of contracting lymphangions : from idealized 2D to reconstructed 3D. 2020 Summer Biomechanics, Bioengineering and Biotransport Conference: proceedings book.
- **Amith Balusubramanya, Joris Degroote, Lise Gheysen, Nele Famaey and Patrick Segers:** CFD study of type-B aortic dissections with flap motion : proof of concept of overset meshing. 19th National Day on Biomedical Engineering, Abstracts.
- **S. Bezy, J. Duchenne, M. Orlowska, L. Wouters, Annette Caenen, L. B. H. Keijzer, M. Cvijic, J. D'hooge and J.-U. Voigt:** The behaviour of

natural shear waves under different loading conditions. EUROPEAN HEART JOURNAL. 41(Suppl. 2). p.127-127.

- **Tim Bomberna, Chris Verslype, Geert Maleux and Charlotte Debbaut:** Computational fluid dynamics as a tool for patient-specific injection planning of transarterial therapies for hepatocellular carcinoma. OncoDot.1 symposium, Abstracts.
- **Tim Bomberna, Ghazal Adeli Koudehi, Geert Maleux and Charlotte Debbaut:** Locoregional drug delivery for liver cancer: the impact of tumor burden on the particle distribution in a patient-specific liver. VPH2020, Book of Abstracts. p.623-624.
- **Tim Bomberna, Ghazal Adeli Koudehi, Patrick Segers and Charlotte Debbaut:** Targeted drug delivery for liver cancer: modelling the impact of cancer burden on the particle distribution. Belgian Association for Cancer Research, Annual meeting, Abstracts.
- **Tim Bomberna, Ghazal Adeli Koudehi, Patrick Segers and Charlotte Debbaut:** Targeted drug delivery for liver cancer : can we steer microparticles towards tumor tissue? BACR Annual Meeting 2020, Abstracts.
- **Annette Caenen, Anna E. Knight, Ned C. Rouze, Nick B. Bottenus, Patrick Segers and Kathryn R. Nightingale:** Shear wave elastography : a non-invasive alternative for multi-axial mechanical testing? Proof of concept in a nonlinear tissue-mimicking phantom. 2020 Summer Biomechanics, Bioengineering and Biotransport Conference : proceedings book.
- **Annette Caenen:** Shear wave imaging: what are we looking at? Meeting on Myocardial Function Imaging 2020, Abstracts.
- **Daimé Campos Arias, Marc De Buyzere, Julio A. Chirinos, Ernst Rietzschel and Patrick Segers:** Ten years of ageing in the middle-aged does not increase input impedance or wave reflection: insights from the Asklepios study. ARTERY RESEARCH. 26(Suppl. 1). p.S5-S6.
- **Daimé Campos Arias, Marc De Buyzere, Julio Chirinos Medina, Ernst Rietzschel and Patrick Segers:** Effective impact of one decade of ageing on arterial system properties: what cross-sectional studies don't tell. 2020 Summer Biomechanics, Bioengineering and Biotransport Conference, SB3C 2020: Proceedings Book. p.754-755.
- **Samaneh Davoudi and An Ghysels:** Assessing counting method efficacy in cell membrane permeability calculations. 19th National Day on Biomedical Engineering, Abstracts.
- **Lise Gheysen, Joris Degroote, Nele Famaey and Patrick Segers:** Assessing modeling assumptions in structural analysis of type B aortic dissections: a study in idealized models. VPH2020, Book of Abstracts. p.196-197.
- **Mohammad Rahimi Gorji, Leen Van de Sande, Charlotte Debbaut, Ghader Ghorbaniasl, Wouter Willaert, Sarah Cosyns and Wim Ceelen:** Effects of electrostatic precipitation on IP drug distribution and tissue penetration of nanoparticles. First ISSPP Webinar on Peritoneal Metastasis and translational research, Abstracts.
- **Mohammad Rahimi Gorji, Charlotte Debbaut, Wouter Willaert, Patrick Segers, Ghader Ghorbaniasl and Wim Ceelen:** A numerical

simulation of pressurized intraperitoneal aerosol chemotherapy (PIPAC): validation part. Belgian Association for Cancer Research, Annual meeting, Abstracts.

- **Hooman Salavati, Wim Ceelen and Charlotte Debbaut:** Numerical modeling of interstitial fluid pressure in solid tumors : the importance of the lymphatic system. 19th National Day on Biomedical Engineering, Abstracts.
- **Hooman Salavati, Necla Kurt Yusuf, Charlotte Debbaut and Wim Ceelen:** In-vitro quantification of mechanical properties of peritoneal metastases. First ISSPP Webinar on Peritoneal Metastasis and translational research, Abstracts.
- **Lisse Vera, Zoé Neuckermans, Glenn Van Steenkiste, Patrick Segers, Koen Chiersand Gunther van Loon:** Ex-vivo inflation-extension tests show that age affects biomechanical properties of the equine arterial wall. Proceedings of the 13th ECEIM Congress.

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- Francisco Javier Londoño Hoyos: Non-invasive assessment of intraventricular and arterial haemodynamics: tools to guide diagnosis and therapy in patients with heart failure with preserved ejection fraction
- Viviana Mancini: A combined experimental and computational study on the feasibility of carotid stenosis detection by means of laser doppler vibrometry.

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- **Anna E. Knight, Courtney A. Trutna, Ned C. Rouze, Lisa D. Hobson-Webb, Mark L. Palmeri, Annette Caenen and Kathryn R. Nightingale:** Demonstration of complex shear wave patterns in skeletal muscle in vivo using 3D SWEI. Proceedings of the 2020 IEEE International Ultrasonics Symposium (IUS). In IEEE International Ultrasonics Symposium.

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- **Ashraf W Khir and Patrick Segers:** Physiological fluid mechanics: A special Issue with a taster of forefront research. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine. p.1183-1186.
- **Nicola Pomella, Ernst Rietzschel, Patrick Segers and Ashraf William Khir:** Impact of varying diastolic pressure fitting technique for the reservoir-wave model on wave intensity analysis. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine. p.1300-1311.