# Carlijn Bouten

## List of Publications by Year
## in descending order

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264
papers

13,088
citations

28274
55
h-index

30922
102
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281
all docs

281
docs citations

281
times ranked

13698
citing authors

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Experimental investigation of collagen waviness and orientation in the arterial adventitia using confocal laser scanning microscopy. Biomechanics and Modeling in Mechanobiology, 2012, 11, 461-473. | 2.8 | 845 |
| 2 | A triaxial accelerometer and portable data processing unit for the assessment of daily physical activity. IEEE Transactions on Biomedical Engineering, 1997, 44, 136-147. | 4.2 | 713 |
| 3 | Design of scaffolds for blood vessel tissue engineering using a multi-layering electrospinning technique. Acta Biomaterialia, 2005, 1, 575-582. | 8.3 | 406 |
| 4 | The etiology of pressure ulcers: Skin deep or muscle bound?. Archives of Physical Medicine and Rehabilitation, 2003, 84, 616-619. | 0.9 | 348 |
| 5 | Decreased mechanical stiffness in LMNAâˆ’/âˆ’ cells is caused by defective nucleo-cytoskeletal integrity: implications for the development of laminopathies. Human Molecular Genetics, 2004, 13, 2567-2580. | 2.9 | 316 |
| 6 | Genesis and growth of extracellular-vesicle-derived microcalcification inÂatherosclerotic plaques. Nature Materials, 2016, 15, 335-343. | 27.5 | 298 |
| 7 | Extracellular Vesicles: Potential Roles in Regenerative Medicine. Frontiers in Immunology, 2014, 5, 608. | 4.8 | 263 |
| 8 | Substrates for cardiovascular tissue engineering. Advanced Drug Delivery Reviews, 2011, 63, 221-241. | 13.7 | 235 |
| 9 | Daily energy expenditure through the human life course. Science, 2021, 373, 808-812. | 12.6 | 234 |
| 10 | Fibrin as a cell carrier in cardiovascular tissue engineering applications. Biomaterials, 2005, 26, 3113-3121. | 11.4 | 232 |
| 11 | In situ heart valve tissue engineering using a bioresorbable elastomeric implant â€“ From material design to 12 months follow-up in sheep. Biomaterials, 2017, 125, 101-117. | 11.4 | 231 |
| 12 | Daily physical activity assessment: comparison between movement registration and doubly labeled water. Journal of Applied Physiology, 1996, 81, 1019-1026. | 2.5 | 188 |
| 13 | Tissue Engineering of Human Heart Valve Leaflets: A Novel Bioreactor for a Strain-Based Conditioning Approach. Annals of Biomedical Engineering, 2005, 33, 1778-1788. | 2.5 | 187 |
| 14 | Biomaterial-driven in situ cardiovascular tissue engineeringâ€”a multi-disciplinary perspective. Npj Regenerative Medicine, 2017, 2, 18. | 5.2 | 181 |
| 15 | Tailoring Fiber Diameter in Electrospun Poly(É›-Caprolactone) Scaffolds for Optimal Cellular Infiltration in Cardiovascular Tissue Engineering. Tissue Engineering - Part A, 2009, 15, 437-444. | 3.1 | 165 |
| 16 | The Role of Collagen Cross-Links in Biomechanical Behavior of Human Aortic Heart Valve Leafletsâ€”Relevance for Tissue Engineering. Tissue Engineering, 2007, 13, 1501-1511. | 4.6 | 158 |
| 17 | A computational model for collagen fibre remodelling in the arterial wall. Journal of Theoretical Biology, 2004, 226, 53-64. | 1.7 | 154 |
| 18 | Can Loaded Interface Characteristics Influence Strain Distributions in Muscle Adjacent to Bony Prominences?. Computer Methods in Biomechanics and Biomedical Engineering, 2003, 6, 171-180. | 1.6 | 153 |

| # | ARTICLE | IF | CITATIONS |
|---|---|---|---|
| 19 | Strain-dependent modulation of macrophage polarization within scaffolds. Biomaterials, 2014, 35, 4919-4928. | 11.4 | 150 |
| 20 | Passive transverse mechanical properties of skeletal muscle under in vivo compression. Journal of Biomechanics, 2001, 34, 1365-1368. | 2.1 | 149 |
| 21 | Fluorescently labeled collagen binding proteins allow specific visualization of collagen in tissues and live cell culture. Analytical Biochemistry, 2006, 350, 177-185. | 2.4 | 143 |
| 22 | The Relative Contributions of Compression and Hypoxia to Development of Muscle Tissue Damage: An In Vitro Study. Annals of Biomedical Engineering, 2007, 35, 273-284. | 2.5 | 138 |
| 23 | Autologous Human Tissue-Engineered Heart Valves: Prospects for Systemic Application. Circulation, 2006, 114, I-152-I-158. | 1.6 | 130 |
| 24 | Tissue engineering of heart valves: advances and current challenges. Expert Review of Medical Devices, 2009, 6, 259-275. | 2.8 | 126 |
| 25 | A Structural Constitutive Model For Collagenous Cardiovascular Tissues Incorporating the Angular Fiber Distribution. Journal of Biomechanical Engineering, 2005, 127, 494-503. | 1.3 | 124 |
| 26 | Predicting Local Cell Deformations in Engineered Tissue Constructs: A Multilevel Finite Element Approach. Journal of Biomechanical Engineering, 2002, 124, 198-207. | 1.3 | 116 |
| 27 | Effects of placement and orientation of body-fixed accelerometers on the assessment of energy expenditure during walking. Medical and Biological Engineering and Computing, 1997, 35, 50-56. | 2.8 | 115 |
| 28 | Remodelling of the angular collagen fiber distribution in cardiovascular tissues. Biomechanics and Modeling in Mechanobiology, 2008, 7, 93-103. | 2.8 | 108 |
| 29 | Compression Induced Cell Damage in Engineered Muscle Tissue: An In Vitro Model to Study Pressure Ulcer Aetiology. Annals of Biomedical Engineering, 2003, 31, 1357-1364. | 2.5 | 106 |
| 30 | Mechanical and failure properties of single attached cells under compression. Journal of Biomechanics, 2005, 38, 1685-1693. | 2.1 | 97 |
| 31 | Early in-situ cellularization of a supramolecular vascular graft is modified by synthetic stromal cell-derived factor-1Î± derived peptides. Biomaterials, 2016, 76, 187-195. | 11.4 | 95 |
| 32 | The Relevance of Large Strains in Functional Tissue Engineering of Heart Valves. Thoracic and Cardiovascular Surgeon, 2003, 51, 78-83. | 1.0 | 93 |
| 33 | Compressive Deformation and Damage of Muscle Cell Subpopulations in a Model System. Annals of Biomedical Engineering, 2001, 29, 153-163. | 2.5 | 92 |
| 34 | <i>In Situ</i> Tissue Engineering of Functional Small-Diameter Blood Vessels by Host Circulating Cells Only. Tissue Engineering - Part A, 2015, 21, 2583-2594. | 3.1 | 92 |
| 35 | Temporal differences in the influence of ischemic factors and deformation on the metabolism of engineered skeletal muscle. Journal of Applied Physiology, 2007, 103, 464-473. | 2.5 | 91 |
| 36 | Remodelling of continuously distributed collagen fibres in soft connective tissues. Journal of Biomechanics, 2003, 36, 1151-1158. | 2.1 | 90 |

| # | ARTICLE | IF | CITATIONS |
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| 37 | Computational Analyses of Mechanically Induced Collagen Fiber Remodeling in the Aortic Heart Valve. Journal of Biomechanical Engineering, 2003, 125, 549-557. | 1.3 | 89 |
| 38 | High resolution imaging of collagen organisation and synthesis using a versatile collagen specific probe. Journal of Structural Biology, 2007, 159, 392-399. | 2.8 | 89 |
| 39 | Macrophage-Driven Biomaterial Degradation Depends on Scaffold Microarchitecture. Frontiers in Bioengineering and Biotechnology, 2019, 7, 87. | 4.1 | 89 |
| 40 | A biomimetic microfluidic model to study signalling between endothelial and vascular smooth muscle cells under hemodynamic conditions. Lab on A Chip, 2018, 18, 1607-1620. | 6.0 | 88 |
| 41 | Selective regulation of Notch ligands during angiogenesis is mediated by vimentin. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E4574-E4581. | 7.1 | 86 |
| 42 | Colorful Protein-Based Fluorescent Probes for Collagen Imaging. PLoS ONE, 2014, 9, e114983. | 2.5 | 86 |
| 43 | Modeling the mechanics of tissue-engineered human heart valve leaflets. Journal of Biomechanics, 2007, 40, 325-334. | 2.1 | 84 |
| 44 | Engineering a 3D-Bioprinted Model of Human Heart Valve Disease Using Nanoindentation-Based Biomechanics. Nanomaterials, 2018, 8, 296. | 4.1 | 81 |
| 45 | Modeling collagen remodeling. Journal of Biomechanics, 2010, 43, 166-175. | 2.1 | 75 |
| 46 | Improved Prediction of the Collagen Fiber Architecture in the Aortic Heart Valve. Journal of Biomechanical Engineering, 2005, 127, 329-336. | 1.3 | 72 |
| 47 | Heading in the Right Direction: Understanding Cellular Orientation Responses to Complex Biophysical Environments. Cellular and Molecular Bioengineering, 2016, 9, 12-37. | 2.1 | 71 |
| 48 | Effect of Strain Magnitude on the Tissue Properties of Engineered Cardiovascular Constructs. Annals of Biomedical Engineering, 2008, 36, 244-253. | 2.5 | 68 |
| 49 | Hydrolytic and oxidative degradation of electrospun supramolecular biomaterials: In vitro degradation pathways. Acta Biomaterialia, 2015, 27, 21-31. | 8.3 | 68 |
| 50 | Quantification of the Temporal Evolution of Collagen Orientation in Mechanically Conditioned Engineered Cardiovascular Tissues. Annals of Biomedical Engineering, 2009, 37, 1263-1272. | 2.5 | 67 |
| 51 | Modulation of macrophage phenotype and protein secretion via heparin-IL-4 functionalized supramolecular elastomers. Acta Biomaterialia, 2018, 71, 247-260. | 8.3 | 65 |
| 52 | Annexin A1â€“dependent tethering promotes extracellular vesicle aggregation revealed with singleâ€“extracellular vesicle analysis. Science Advances, 2020, 6, . | 10.3 | 65 |
| 53 | How to Make a Heart Valve: From Embryonic Development to Bioengineering of Living Valve Substitutes. Cold Spring Harbor Perspectives in Medicine, 2014, 4, a013912-a013912. | 6.2 | 63 |
| 54 | Cellâ€Perceived Substrate Curvature Dynamically Coordinates the Direction, Speed, and Persistence of Stromal Cell Migration. Advanced Biology, 2019, 3, e1900080. | 3.0 | 63 |

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| 55 | Vimentin regulates Notch signaling strength and arterial remodeling in response to hemodynamic stress. Scientific Reports, 2019, 9, 12415. | 3.3 | 62 |
| 56 | A standard calculation methodology for human doubly labeled water studies. Cell Reports Medicine, 2021, 2, 100203. | 6.5 | 62 |
| 57 | Mechanical characterization of anisotropic planar biological soft tissues using finite indentation: Experimental feasibility. Journal of Biomechanics, 2008, 41, 422-429. | 2.1 | 59 |
| 58 | Soft substrates normalize nuclear morphology and prevent nuclear rupture in fibroblasts from a laminopathy patient with compound heterozygous LMNA mutations. Nucleus, 2013, 4, 61-73. | 2.2 | 58 |
| 59 | Discoidin Domain Receptor-1 Regulates Calcific Extracellular Vesicle Release in Vascular Smooth Muscle Cell Fibrocalcific Response via Transforming Growth Factor-Î² Signaling. Arteriosclerosis, Thrombosis, and Vascular Biology, 2016, 36, 525-533. | 2.4 | 58 |
| 60 | Microfabricated tuneable and transferable porous PDMS membranes for Organs-on-Chips. Scientific Reports, 2018, 8, 13524. | 3.3 | 58 |
| 61 | Intermittent Straining Accelerates the Development of Tissue Properties in Engineered Heart Valve Tissue. Tissue Engineering - Part A, 2009, 15, 999-1008. | 3.1 | 56 |
| 62 | Quantification and localisation of damage in rat muscles after controlled loading; a new approach to study the aetiology of pressure sores. Medical Engineering and Physics, 2001, 23, 195-200. | 1.7 | 54 |
| 63 | Computational model predicts cell orientation in response to a range of mechanical stimuli. Biomechanics and Modeling in Mechanobiology, 2014, 13, 227-236. | 2.8 | 54 |
| 64 | Mesoscale substrate curvature overrules nanoscale contact guidance to direct bone marrow stromal cell migration. Journal of the Royal Society Interface, 2018, 15, 20180162. | 3.4 | 53 |
| 65 | Mechanosensitivity of Jaggedâ€"Notch signaling can induce a switch-type behavior in vascular homeostasis. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E3682-E3691. | 7.1 | 51 |
| 66 | Polymerâ€based Scaffold Designs For In Situ Vascular Tissue Engineering: Controlling Recruitment and Differentiation Behavior of Endothelial Colony Forming Cells. Macromolecular Bioscience, 2012, 12, 577-590. | 4.1 | 50 |
| 67 | Strain-induced Collagen Organization at the Micro-level in Fibrin-based Engineered Tissue Constructs. Annals of Biomedical Engineering, 2013, 41, 763-774. | 2.5 | 50 |
| 68 | Cellular Geometry Sensing at Different Length Scales and its Implications for Scaffold Design. Materials, 2020, 13, 963. | 2.9 | 50 |
| 69 | Viscoelastic Properties of Single Attached Cells Under Compression. Journal of Biomechanical Engineering, 2005, 127, 237-243. | 1.3 | 49 |
| 70 | Differential Response of Endothelial and Endothelial Colony Forming Cells on Electrospun Scaffolds with Distinct Microfiber Diameters. Biomacromolecules, 2014, 15, 821-829. | 5.4 | 49 |
| 71 | Decoupling the Effect of Shear Stress and Stretch on Tissue Growth and Remodeling in a Vascular Graft. Tissue Engineering - Part C: Methods, 2018, 24, 418-429. | 2.1 | 48 |
| 72 | Entropic Forces Drive Cellular Contact Guidance. Biophysical Journal, 2019, 116, 1994-2008. | 0.5 | 48 |

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|---|---|---|---|
| 73 | Age-Dependent Changes in Geometry, Tissue Composition and Mechanical Properties of Fetal to Adult Cryopreserved Human Heart Valves. PLoS ONE, 2016, 11, e0149020. | 2.5 | 48 |
| 74 | Stress related collagen ultrastructure in human aortic valvesâ€"implications for tissue engineering. Journal of Biomechanics, 2008, 41, 2612-2617. | 2.1 | 47 |
| 75 | A comparative analysis of the collagen architecture in the carotid artery: Second harmonic generation versus diffusion tensor imaging. Biochemical and Biophysical Research Communications, 2012, 426, 54-58. | 2.1 | 47 |
| 76 | Development of Nonâ€Cell Adhesive Vascular Grafts Using Supramolecular Building Blocks. Macromolecular Bioscience, 2016, 16, 350-362. | 4.1 | 47 |
| 77 | Age-dependent changes of stress and strain in the human heart valve and their relation with collagen remodeling. Acta Biomaterialia, 2016, 29, 161-169. | 8.3 | 47 |
| 78 | Matrix production and remodeling capacity of cardiomyocyte progenitor cells during in vitro differentiation. Journal of Molecular and Cellular Cardiology, 2012, 53, 497-508. | 1.9 | 45 |
| 79 | Can We Grow Valves Inside the Heart? Perspective on Material-based In Situ Heart Valve Tissue Engineering. Frontiers in Cardiovascular Medicine, 2018, 5, 54. | 2.4 | 45 |
| 80 | Hemodynamic loads distinctively impact the secretory profile of biomaterial-activated macrophages â€" implications for<i>in situ</i>vascular tissue engineering. Biomaterials Science, 2020, 8, 132-147. | 5.4 | 45 |
| 81 | Physical activity assessment: Comparison between movement registration and doubly labeled water method. European Journal of Nutrition, 1997, 36, 263-267. | 4.6 | 44 |
| 82 | Cytokine and chemokine release upon prolonged mechanical loading of the epidermis. Experimental Dermatology, 2007, 16, 567-573. | 2.9 | 44 |
| 83 | The Influence of Serum-Free Culture Conditions on Skeletal Muscle Differentiation in a Tissue-Engineered Model. Tissue Engineering - Part A, 2008, 14, 161-171. | 3.1 | 44 |
| 84 | The influence of matrix (an)isotropy on cardiomyocyte contraction in engineered cardiac microtissues. Integrative Biology (United Kingdom), 2014, 6, 422-429. | 1.3 | 44 |
| 85 | Monitoring the biomechanical response of individual cells under compression: A new compression device. Medical and Biological Engineering and Computing, 2003, 41, 498-503. | 2.8 | 43 |
| 86 | A Theoretical Analysis of Damage Evolution in Skeletal Muscle Tissue With Reference to Pressure Ulcer Development. Journal of Biomechanical Engineering, 2003, 125, 902-909. | 1.3 | 43 |
| 87 | Layer-specific cell differentiation in bi-layered vascular grafts under flow perfusion. Biofabrication, 2020, 12, 015009. | 7.1 | 43 |
| 88 | Inertial Shear Forces and the Use of Centrifuges in Gravity Research. What is the Proper Control?. Journal of Biomechanical Engineering, 2003, 125, 342-346. | 1.3 | 42 |
| 89 | Hypoxia Induces Near-Native Mechanical Properties in Engineered Heart Valve Tissue. Circulation, 2009, 119, 290-297. | 1.6 | 42 |
| 90 | Vascular Mechanobiology: Towards Control of In Situ Regeneration. Cells, 2017, 6, 19. | 4.1 | 42 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Body mass index and daily physical activity in anorexia nervosa. Medicine and Science in Sports and Exercise, 1996, 28, 967-973. | 0.4 | 42 |
| 92 | Tissue engineering meets immunoengineering: Prospective on personalized in situ tissue engineering strategies. Current Opinion in Biomedical Engineering, 2018, 6, 17-26. | 3.4 | 41 |
| 93 | Aerobic Work Capacity in Elite Wheelchair Athletes. American Journal of Physical Medicine and Rehabilitation, 2002, 81, 261-271. | 1.4 | 40 |
| 94 | Finite Element Model of Mechanically Induced Collagen Fiber Synthesis and Degradation in the Aortic Valve. Annals of Biomedical Engineering, 2003, 31, 1040-1053. | 2.5 | 40 |
| 95 | Combining tissue repair and tissue engineering; bioactivating implantable cell-free vascular scaffolds. Heart, 2014, 100, 1825-1830. | 2.9 | 39 |
| 96 | Cardiac Progenitor Cells and the Interplay with Their Microenvironment. Stem Cells International, 2017, 2017, 1-20. | 2.5 | 39 |
| 97 | Monitoring Local Cell Viability in Engineered Tissues: A Fast, Quantitative, and Nondestructive Approach. Tissue Engineering, 2003, 9, 269-281. | 4.6 | 38 |
| 98 | Mimicking Cardiac Fibrosis in a Dish: Fibroblast Density Rather than Collagen Density Weakens Cardiomyocyte Function. Journal of Cardiovascular Translational Research, 2017, 10, 116-127. | 2.4 | 38 |
| 99 | InÂSitu Remodeling Overrules Bioinspired Scaffold Architecture of Supramolecular Elastomeric Tissue-Engineered Heart Valves. JACC Basic To Translational Science, 2020, 5, 1187-1206. | 4.1 | 38 |
| 100 | Mechanical Characterization of Anisotropic Planar Biological Soft Tissues Using Large Indentation: A Computational Feasibility Study. Journal of Biomechanical Engineering, 2005, 128, 428. | 1.3 | 36 |
| 101 | Tissue-Engineered Heart Valves Develop Native-like Collagen Fiber Architecture. Tissue Engineering - Part A, 2010, 16, 1527-1537. | 3.1 | 36 |
| 102 | Synergistic protein secretion by mesenchymal stromal cells seeded in 3D scaffolds and circulating leukocytes in physiological flow. Biomaterials, 2014, 35, 9100-9113. | 11.4 | 36 |
| 103 | Robust Generation of Quiescent Porcine Valvular Interstitial Cell Cultures. Journal of the American Heart Association, 2017, 6, . | 3.7 | 36 |
| 104 | Cellular Contact Guidance Emerges from Gap Avoidance. Cell Reports Physical Science, 2020, 1, 100055. | 5.6 | 36 |
| 105 | In vitro models to study compressive strain-induced muscle cell damage. Biorheology, 2003, 40, 383-8. | 0.4 | 36 |
| 106 | Quantifying pressure sore-related muscle damage using high-resolution MRI. Journal of Applied Physiology, 2003, 95, 2235-2240. | 2.5 | 35 |
| 107 | The Patterning and Alignment of Muscle Cells Using the Selective Adhesion of Poly(oligoethylene) Tj ETQq1 1 0.784314 rgBT /Overlock<br>2324-2329. | 21.0 | 35 |
| 108 | Shear flow affects selective monocyte recruitment into <scp>MCP</scp>â€•1â€•loaded scaffolds. Journal of Cellular and Molecular Medicine, 2014, 18, 2176-2188. | 3.6 | 35 |

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|---|---|---|---|
| 109 | Modulation of collagen fiber orientation by strain-controlled enzymatic degradation. Acta Biomaterialia, 2016, 35, 118-126. | 8.3 | 35 |
| 110 | Influence of substrate stiffness on circulating progenitor cell fate. Journal of Biomechanics, 2012, 45, 736-744. | 2.1 | 34 |
| 111 | In situheart valve tissue engineering: simple devices, smart materials, complex knowledge. Expert Review of Medical Devices, 2012, 9, 453-455. | 2.8 | 34 |
| 112 | <i>In Vivo</i> Collagen Remodeling in the Vascular Wall of Decellularized Stented Tissue-Engineered Heart Valves. Tissue Engineering - Part A, 2015, 21, 2206-2215. | 3.1 | 33 |
| 113 | The Evolution of Collagen Fiber Orientation in Engineered Cardiovascular Tissues Visualized by Diffusion Tensor Imaging. PLoS ONE, 2015, 10, e0127847. | 2.5 | 33 |
| 114 | Failure of decellularized porcine small intestinal submucosa as a heart valved conduit. Journal of Thoracic and Cardiovascular Surgery, 2020, 160, e201-e215. | 0.8 | 33 |
| 115 | Controlling matrix formation and cross-linking by hypoxia in cardiovascular tissue engineering. Journal of Applied Physiology, 2010, 109, 1483-1491. | 2.5 | 32 |
| 116 | Differential Leaflet Remodeling of BoneÂMarrow Cell Pre-Seeded Versus Nonseeded Bioresorbable Transcatheter Pulmonary Valve Replacements. JACC Basic To Translational Science, 2020, 5, 15-31. | 4.1 | 32 |
| 117 | Effect of biomimetic conditions on mechanical and structural integrity of PGA/P4HB and electrospun PCL scaffolds. Journal of Materials Science: Materials in Medicine, 2008, 19, 1137-1144. | 3.6 | 31 |
| 118 | Translating Autologous Heart Valve Tissue Engineering from Bench to Bed. Tissue Engineering - Part B: Reviews, 2009, 15, 307-317. | 4.8 | 31 |
| 119 | Competition between cap and basal actin fiber orientation in cells subjected to contact guidance and cyclic strain. Scientific Reports, 2015, 5, 8752. | 3.3 | 31 |
| 120 | Anisotropic, Three-Dimensional Deformation of Single Attached Cells Under Compression. Annals of Biomedical Engineering, 2004, 32, 1443-1452. | 2.5 | 29 |
| 121 | Immuno-regenerative biomaterials for in situ cardiovascular tissue engineering â€" Do patient characteristics warrant precision engineering?. Advanced Drug Delivery Reviews, 2021, 178, 113960. | 13.7 | 29 |
| 122 | Energy expenditure and physical activity in subjects consuming full- or reduced-fat products aspart of their normal diet. British Journal of Nutrition, 1996, 76, 785-795. | 2.3 | 28 |
| 123 | Myocardial Disease and Long-Distance Space Travel: Solving the Radiation Problem. Frontiers in Cardiovascular Medicine, 2021, 8, 631985. | 2.4 | 28 |
| 124 | Current Challenges in Translating Tissue-Engineered Heart Valves. Current Treatment Options in Cardiovascular Medicine, 2017, 19, 71. | 0.9 | 27 |
| 125 | Anti-fibrotic Effects of Cardiac Progenitor Cells in a 3D-Model of Human Cardiac Fibrosis. Frontiers in Cardiovascular Medicine, 2019, 6, 52. | 2.4 | 27 |
| 126 | Review article: Tissue engineering of semilunar heart valves: current status and future developments. Journal of Heart Valve Disease, 2004, 13, 272-80. | 0.5 | 27 |

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|---|---|---|---|
| 127 | Evaluation of a Continuous Quantification Method of Apoptosis and Necrosis in Tissue Cultures. Cytotechnology, 2004, 46, 139-150. | 1.6 | 25 |
| 128 | Increased Cardiac Myocyte PDE5 Levels in Human and Murine Pressure Overload Hypertrophy Contribute to Adverse LV Remodeling. PLoS ONE, 2013, 8, e58841. | 2.5 | 25 |
| 129 | The degradation and performance of electrospun supramolecular vascular scaffolds examined upon in vitro enzymatic exposure. Acta Biomaterialia, 2019, 92, 48-59. | 8.3 | 25 |
| 130 | Cyclic Strain Affects Macrophage Cytokine Secretion and Extracellular Matrix Turnover in Electrospun Scaffolds. Tissue Engineering - Part A, 2019, 25, 1310-1325. | 3.1 | 25 |
| 131 | Behavior of CMPCs in unidirectional constrained and stress-free 3D hydrogels. Journal of Molecular and Cellular Cardiology, 2015, 87, 79-91. | 1.9 | 24 |
| 132 | Host Response and Neo-Tissue Development during Resorption of a Fast Degrading Supramolecular Electrospun Arterial Scaffold. Bioengineering, 2018, 5, 61. | 3.5 | 24 |
| 133 | Engineering Skeletal Muscle Tissues from Murine Myoblast Progenitor Cells and Application of Electrical Stimulation. Journal of Visualized Experiments, 2013, , e4267. | 0.3 | 23 |
| 134 | Shear stress induces expression, intracellular reorganization and enhanced Notch activation potential of Jagged1. Integrative Biology (United Kingdom), 2018, 10, 719-726. | 1.3 | 23 |
| 135 | An automated quantitative analysis of cell, nucleus and focal adhesion morphology. PLoS ONE, 2018, 13, e0195201. | 2.5 | 23 |
| 136 | Human In Vitro Model Mimicking Materialâ€Driven Vascular Regeneration Reveals How Cyclic Stretch and Shear Stress Differentially Modulate Inflammation and Matrix Deposition. Advanced Biology, 2020, 4, e1900249. | 3.0 | 23 |
| 137 | Bioprinting of kidney <i>in vitro</i> models: cells, biomaterials, and manufacturing techniques. Essays in Biochemistry, 2021, 65, 587-602. | 4.7 | 23 |
| 138 | What Is the Potential of Tissue-Engineered Pulmonary Valves in Children?. Annals of Thoracic Surgery, 2019, 107, 1845-1853. | 1.3 | 22 |
| 139 | Physical activity and fat-free mass during growth and in later life. American Journal of Clinical Nutrition, 2021, 114, 1583-1589. | 4.7 | 22 |
| 140 | Straining Modeâ€"Dependent Collagen Remodeling in Engineered Cardiovascular Tissue. Tissue Engineering - Part A, 2009, 15, 841-849. | 3.1 | 21 |
| 141 | Environmental regulation of valvulogenesis: implications for tissue engineering. European Journal of Cardio-thoracic Surgery, 2011, 39, 8-17. | 1.4 | 21 |
| 142 | Degree of Scaffold Degradation Influences Collagen (re)Orientation in Engineered Tissues. Tissue Engineering - Part A, 2014, 20, 1747-1757. | 3.1 | 21 |
| 143 | Cardiomyocyte progenitor cell mechanoresponse unrevealed: strain avoidance and mechanosome development. Integrative Biology (United Kingdom), 2016, 8, 991-1001. | 1.3 | 21 |
| 144 | <i>In Vitro</i>Methods to Model Cardiac Mechanobiology in Health and Disease. Tissue Engineering - Part C: Methods, 2021, 27, 139-151. | 2.1 | 21 |

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|---|---|---|---|
| 145 | Mechanical Properties of Bioengineered Corneal Stroma. Advanced Healthcare Materials, 2021, 10, e2100972. | 7.6 | 21 |
| 146 | An in vitro Model System to Study the Damaging Effects of Prolonged Mechanical Loading of the Epidermis. Annals of Biomedical Engineering, 2006, 34, 506-514. | 2.5 | 20 |
| 147 | A Mesofluidics-Based Test Platform for Systematic Development of Scaffolds for<i>In Situ</i>Cardiovascular Tissue Engineering. Tissue Engineering - Part C: Methods, 2012, 18, 475-485. | 2.1 | 20 |
| 148 | Variation in tissue outcome of ovine and human engineered heart valve constructs: relevance for tissue engineering. Regenerative Medicine, 2012, 7, 59-70. | 1.7 | 20 |
| 149 | Conceptual model for early health technology assessment of current and novel heart valve interventions. Open Heart, 2016, 3, e000500. | 2.3 | 20 |
| 150 | Modelling The Combined Effects Of Collagen and Cyclic Strain On Cellular Orientation In Collagenous Tissues. Scientific Reports, 2018, 8, 8518. | 3.3 | 20 |
| 151 | Compression-induced damage in a muscle cell model in vitro. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2005, 219, 1-12. | 1.8 | 19 |
| 152 | Superior Tissue Evolution in Slow-Degrading Scaffolds for Valvular Tissue Engineering. Tissue Engineering - Part A, 2016, 22, 123-132. | 3.1 | 19 |
| 153 | Collagen Matrix Remodeling in Stented Pulmonary Arteries after Transapical Heart Valve Replacement. Cells Tissues Organs, 2016, 201, 159-169. | 2.3 | 18 |
| 154 | Supramolecular surface functionalization via catechols for the improvement of cellâ€“material interactions. Biomaterials Science, 2017, 5, 1541-1548. | 5.4 | 18 |
| 155 | Growth and remodeling play opposing roles during postnatal human heart valve development. Scientific Reports, 2018, 8, 1235. | 3.3 | 18 |
| 156 | Protein Micropatterning in 2.5D: An Approach to Investigate Cellular Responses in Multi-Cue Environments. ACS Applied Materials &amp; Interfaces, 2021, 13, 25589-25598. | 8.0 | 18 |
| 157 | Inflammatory and regenerative processes in bioresorbable synthetic pulmonary valves up to two years in sheepâ€“Spatiotemporal insights augmented by Raman microspectroscopy. Acta Biomaterialia, 2021, 135, 243-259. | 8.3 | 18 |
| 158 | Strain mediated enzymatic degradation of arterial tissue: Insights into the role of the non-collagenous tissue matrix and collagen crimp. Acta Biomaterialia, 2018, 77, 301-310. | 8.3 | 17 |
| 159 | Monocytic Cells Become Less Compressible but More Deformable upon Activation. PLoS ONE, 2014, 9, e92814. | 2.5 | 17 |
| 160 | Understanding strain-induced collagen matrix development in engineered cardiovascular tissues from gene expression profiles. Cell and Tissue Research, 2013, 352, 727-737. | 2.9 | 16 |
| 161 | Mechanical analysis of ovine and pediatric pulmonary artery for heart valve stent design. Journal of Biomechanics, 2013, 46, 2075-2081. | 2.1 | 16 |
| 162 | Pirfenidone Has Anti-fibrotic Effects in a Tissue-Engineered Model of Human Cardiac Fibrosis. Frontiers in Cardiovascular Medicine, 2022, 9, 854314. | 2.4 | 16 |

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| 163 | Functional peptide presentation on different hydrogen bonding biomaterials using supramolecular additives. Biomaterials, 2019, 224, 119466. | 11.4 | 15 |
| 164 | Integrative Multi-Omics Analysis in Calcific Aortic Valve Disease Reveals a Link to the Formation of Amyloid-Like Deposits. Cells, 2020, 9, 2164. | 4.1 | 15 |
| 165 | Matrix Production and Organization by Endothelial Colony Forming Cells in Mechanically Strained Engineered Tissue Constructs. PLoS ONE, 2013, 8, e73161. | 2.5 | 14 |
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