

**Prof Martin Knight**

BEng, MSc, PhD, FHEA

School of Engineering and Materials Science  
Queen Mary University of London  
Mile End Road  
London E1 4NS

tel: +44 (0)20 7882 8868

email: m.m.knight@qmul.ac.uk web: www.sems.qmul.ac.uk/m.m.knight

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**2025****Engineering growth factor gradients to drive spatiotemporal tissue patterning in organ-on-a-chip systems.**Hopkins T, Midha S, Grossemey S, Screen HRC, Wann AKT and Knight MM. *J Tissue Eng* vol. 16,.**2024****Nonlinear StressInduced Transformations in Collagen Fibrillar Organization, Disorder and Strain Mechanisms in the BoneCartilage Unit.**Badar W, Inamdar SR, Fratzl P, Snow T, Terrill NJ, Knight MM and Gupta HS. *Advanced Science* e2407649-e2407649.Wiley.**Air Pollution and Osteoporosis.**Allen O, Knight MM and Verbruggen SW. *Current Osteoporosis Reports.Springer Science and Business Media Llc.***A SelfAssembled 3D Model Demonstrates How Stiffness Educates Tumor Cell Phenotypes and Therapy Resistance in Pancreatic Cancer.**Liu Y, Okesola BO, de la Peña DO, Li W, Lin M, Trabulo S, Tatari M, Lawlor RT, Scarpa A, Wang W, Knight M, Loessner D, Heeschen C, Mata A and Pearce OMT. *Advanced Healthcare Materials* vol. 13, (17).Wiley.**2023****A Novel Primary CiliumMediated Mechanism Through which Osteocytes Regulate Metastatic Behavior of Both Breast and Prostate Cancer Cells.**Verbruggen SW, Nolan J, Duffy MP, Pearce OMT, Jacobs CR and Knight MM. *Advanced Science* vol. 11, (2) 2305842-2305842. Wiley.**Human vascularised synovium-on-a-chip: a mechanically stimulated, microfluidic model to investigate synovial inflammation and monocyte recruitment.**Thompson CL, Hopkins T, Bevan C, Screen HRC, Wright KT and Knight MM. *Biomedical Materials* vol. 18, (6).Iop Publishing.**Organ-on-a-Chip and Microfluidic Platforms for Oncology in the UK.**Nolan J, Pearce OMT, Screen HRC, Knight MM and Verbruggen SW. *Cancers* vol. 15, (3).Mdpi.**2022****Techniques for Visualization and Quantification of Primary Cilia in Chondrocytes.**Meng H, Thompson CL, Coveney CR, Wann AK and Knight MM. *Cartilage Tissue Engineering* 157-176. Springer Nature.**YAP activation inhibits inflammatory signalling and cartilage breakdown associated with reduced primary cilia expression.**Meng H, Fu S, Ferreira MB, Hou Y, Pearce OM, Gavara N and Knight MM. *Osteoarthritis and Cartilage* vol. 31, (5) 600-612.Elsevier.

**Mechanostimulation of breast myoepithelial cells induces functional changes associated with DCIS progression to invasion.**

Hayward M-K, Allen MD, Gomm JJ, Goulding I, Thompson CL, Knight MM, Marshall JF and Jones JL. *Npj Breast Cancer* vol. 8, (1).Springer Nature.

**Collagen pre-strain discontinuity at the boneCartilage interface.**

Badar W, Ali H, Brooker ON, Newham E, Snow T, Terrill NJ, Tozzi G, Fratzl P, Knight MM and Gupta HS. *Plos One* vol. 17, (9).Public Library of Science (Plos).

**Oscillations of the circadian clock protein, BMAL-1, align to daily cycles of mechanical stimuli: a novel means to integrate biological time within predictive in vitro model systems.**

Heywood HK, Gardner L, Knight MM and Lee DA. *In Vitro Models 1-8*.Springer Nature.

## 2021

**Reversible changes in the 3D collagen fibril architecture during cyclic loading of healthy and degraded cartilage.**

Inamdar SR, Prévost S, Terrill NJ, Knight MM and Gupta HS. *Acta Biomaterialia* vol. 136, 314-326.Elsevier.

**Mechanical Stimulation Modulates Osteocyte Regulation of Cancer Cell Phenotype.**

Verbruggen SW, Thompson CL, Duffy MP, Lunetto S, Nolan J, Pearce OMT, Jacobs CR and Knight MM. *Cancers* vol. 13, (12).Mdpi.

**A human multi-cellular model shows how platelets drive production of diseased extracellular matrix and tissue invasion.**

Malacrida B, Nichols S, Maniati E, Jones R, Delanie-Smith R, Roozitalab R, Tyler EJ, Thomas M, Boot G, Mackerodt J, Lockley M, Knight MM, Balkwill FR and Pearce OMT. *Isience* vol. 24, (6).Elsevier.

**Modelling TGFR and Hh pathway regulation of prognostic matrisome molecules in ovarian cancer.**

Delaine-Smith RM, Maniati E, Malacrida B, Nichols S, Roozitalab R, Jones RR, Lecker LSM, Pearce OMT, Knight MM and Balkwill FR. *Isience* vol. 24, (6).Elsevier.

**Polycystin-2 is required for chondrocyte mechanotransduction and traffics to the primary cilium in response to mechanical stimulation.**

Thompson C, Mcfie M, Chapple J, BEALES P and Knight M. *International Journal of Molecular Sciences*.Mdpi Ag.

**Sub-toxic levels of cobalt ions impair mechanotransduction via HDAC6-dependent primary cilia shortening.**

Wu H, Wang Z, Liu S, Meng H, Liu S, Shelton JC, Thompson CL, Fu S and Knight MM. *Biochem Biophys Res Commun*.

**Corrigendum: Mechanical Stimulation: A Crucial Element of Organ-on-Chip Models.**

Thompson CL, Fu S, Heywood HK, Knight MM and Thorpe SD. *Frontiers in Bioengineering and Biotechnology* vol. 9,.Frontiers.

**Modelling TGFR and Hh pathway regulation of prognostic matrisome molecules in ovarian cancer.**

Delaine-Smith R, Maniati E, Malacrida B, Nichols S, Roozitalab R, Jones R, Lecker L, Pearce O, Knight M and Balkwill F. *Biorxiv.Org*.Balkwill F.

**Activation of TRPV4 by mechanical, osmotic or pharmaceutical stimulation is anti-inflammatory blocking IL-1 mediated articular cartilage matrix destruction.**

Fu S, Meng H, Inamdar S, Das B, Gupta H, Wang W, Thompson C and Knight M. *Osteoarthritis and Cartilage*.Block JA. Elsevier.

## 2020

**Mechanical Stimulation: A Crucial Element of Organ-on-Chip Models.**

Thompson CL, Fu S, Heywood HK, Knight MM and Thorpe SD. *Frontiers in Bioengineering and Biotechnology* vol. 8,.Frontiers Media Sa.

**Solution-Processed Epitaxial Growth of Arbitrary Surface Nanopatterns on Hybrid Perovskite Monocrystalline Thin Films.**

Zhang J, Guo Q, Li X, Li C, Wu K, Abrahams I, Yan H, Knight MM, Humphreys CJ and Su L. *Acs Nano*.American Chemical Society.

**Nanoscale mapping reveals functional differences in ion channels populating the membrane of primary cilia.**  
Torres-Pérez JV, Naeem H, Thompson CL, Knight MM and Novak P. *Cellular Physiology and Biochemistry* vol. 54, (1) 15-26.

## 2019

**Sub-toxic levels of Co<sup>2+</sup> are anti-inflammatory and protect cartilage from degradation caused by IL-1.**  
Fu S, Meng H, Freer F, Kwon J, Shelton JC and Knight MM. *Clinical Biomechanics* vol. 79, Elsevier.

**Ciliary exclusion of Polycystin-2 promotes kidney cystogenesis in an autosomal dominant polycystic kidney disease model.**  
Walker RV, Keynton JL, Grimes DT, Sreekumar V, Williams DJ, Esapa C, Wu D, Knight MM and Norris DP. *Nature Communications* vol. 10, (1).Springer Nature.

**Proteoglycan degradation mimics static compression by altering the natural gradients in fibrillar organisation in cartilage.**  
Inamdar SR, Barbieri E, Terrill NJ, Knight MM and Gupta HS. *Acta Biomaterialia* vol. 97, 437-450.Elsevier.

**Transglutaminase-2 Mediates the Biomechanical Properties of the Colorectal Cancer Tissue Microenvironment that Contribute to Disease Progression.**  
Delaine-Smith R, Wright N, Hanley C, Hanwell R, Bhome R, Bullock M, Drifka C, Eliceiri K, Thomas G, Knight M, Mirnezami A and Peake N. *Cancers.Mdpi* Ag.

**Mechanical loading inhibits cartilage inflammatory signalling via an HDAC6 and IFT-dependent mechanism regulating primary cilia elongation.**  
Fu S, Thompson CL, Ali A, Wang W, Chapple JP, Mitchison HM, Beales PL, Wann AKT and Knight MM. *Osteoarthritis and Cartilage* vol. 27, (7) 1064-1074.Elsevier.

**An in vitro investigation of the inflammatory response to the strain amplitudes which occur during high frequency oscillation ventilation and conventional mechanical ventilation.**  
Harris C, THORPE SD, Rushwan S, Wang W, THOMPSON C, Peacock J, KNIGHT M, Gooptu B and Greenough A. *Journal of Biomechanics*.Elsevier.

**Oncometabolite induced primary cilia loss in pheochromocytoma.**  
O Toole SM, Watson DS, Novoselova TV, Romano LEL, King PJ, Bradshaw TY, Thompson CL, Knight MM, Sharp TV, Barnes MR, Srirangalingam U, Drake WM and Chapple JP. *Endocrine-Related Cancer* vol. 26, (1) 165-180.

## 2018

**Mechanical loading induces primary cilia disassembly in tendon cells via TGF and HDAC6.**  
Rowson DT, Shelton JC, Screen HRC and Knight MM. *Scientific Reports* vol. 8, (1).Springer Nature.

**Cobalt ions stimulate a fibrotic response through matrix remodelling, fibroblast contraction and release of pro-fibrotic signals from macrophages.**  
Xu J, Nyga A, Li W, Zhang X, Gavara N, Knight MM and Shelton JC. *European Cells and Materials* vol. 36, 142-155.

**Tissue stiffening promotes keratinocyte proliferation through activation of epidermal growth factor signaling.**  
Kenny FN, Drymoussi Z, Delaine-Smith R, Kao AP, Laly AC, Knight MM, Philpott MP and Connelly JT. *Journal of Cell Science* vol. 131, (10) 215780-215780.

**Cobalt (II) ions and nanoparticles induce macrophage retention by ROS-mediated down-regulation of RhoA expression.**  
Xu J, Yang J, Nyga A, Ehteramyman M, Moraga A, Wu Y, Zeng L, Knight MM and Shelton JC. *Acta Biomater* vol. 72, 434-446.

## 2017

**Deconstruction of a metastatic tumor microenvironment reveals a common matrix response in human cancers.**  
Pearce OMT, Delaine-Smith R, Maniati E, Nichols S, Wang J, Bhm S, Rajeeve V, Ullah D, Chakravarty P, Jones RR, Montfort A, Dowe T, Gribben J, Jones JL, Kocher HM, Serody JS, Vincent BG, Connelly J, Brenton JD, Chelala C, Cutillas PR, Lockley M, Bessant C, Knight M and Balkwill FR. *Cancer Discov*.

**Chondrocyte expansion is associated with loss of primary cilia and disrupted hedgehog signalling.**

Thompson CL, Plant JC, Wann AK, Bishop CL, Novak P, Mitchison HM, Beales PL, Chapple JP and Knight MM. *Eur Cell Mater* vol. 34, 128-141.

**The Secret Life of Collagen: Temporal Changes in Nanoscale Fibrillar Pre-Strain and Molecular Organization During Physiological Loading of Cartilage.**

Inamdar SR, Knight DP, Terrill NJ, Karunaratne A, Cacho-Nerin F, Knight MM and Gupta HS. *Acs Nano*.

**Topography of calcium phosphate ceramics regulates primary cilia length and TGF receptor recruitment associated with osteogenesis.**

Zhang J, Dalbay MT, Luo X, Vrij E, Barbieri D, Moroni L, de Bruijn JD, van Blitterswijk CA, Chapple JP, Knight MM and Yuan H. *Acta Biomater* vol. 57, 487-497.

**Smoothed antagonists reverse homogenistic acid-induced alterations of Hedgehog signaling and primary cilium length in alkaptonuria.**

Gambassi S, Geminiani M, Thorpe SD, Bernardini G, Millucci L, Braconi D, Orlandini M, Thompson CL, Petricci E, Manetti F, Taddei M, Knight MM and Santucci A. *Journal of Cellular Physiology* vol. 232, (11) 3103-3111. Wiley.

**Reduced Primary Cilia Length and Altered Arl13b Expression Are Associated with Deregulated Chondrocyte Hedgehog Signalling in Alkaptonuria.**

THORPE SD, Gambassi S, Thompson CL, Chandrakumar C, Santucci A and Knight MM. *Journal of Cellular Physiology*. John Wiley & Sons Inc.

## 2016

**Experimental validation of a flat punch indentation methodology calibrated against unconfined compression tests for determination of soft tissue biomechanics.**

Delaine-Smith RM, Burney S, Balkwill FR and Knight MM. *Journal of The Mechanical Behavior of Biomedical Materials* vol. 60, 401-415. Elsevier.

**Chondrocyte dedifferentiation increases cell stiffness by strengthening membrane-actin adhesion.**

Sliogeryte K, Botto L, Lee DA and Knight MM. *Osteoarthritis and Cartilage* vol. 24, (5) 912-920. Elsevier.

**Zonal variation in primary cilia elongation correlates with localized biomechanical degradation in stress deprived tendon.**

Rowson D, Knight MM and Screen HRC. *J Orthop Res* vol. 34, (12) 2146-2153.

**IFT88 influences chondrocyte actin organization and biomechanics.**

KNIGHT MM, wang W, wang Z, wann A, thompson C and hassen A. *Osteoarthritis and Cartilage*.

**Lithium chloride modulates chondrocyte primary cilia and inhibits Hedgehog signaling.**

Thompson CL, Wiles A, Poole CA and Knight MM. *Faseb Journal* vol. 30, (2) 716-726.

**Differential effects of LifeAct-GFP and actin-GFP on cell mechanics assessed using micropipette aspiration.**

Sliogeryte K, Thorpe SD, Wang Z, Thompson CL, Gavara N and Knight MM. *Journal of Biomechanics* vol. 49, (2) 310-317. Elsevier.

**Physiology of urethral flow.**

Knight M, Buchholz N and Bourdounis A. *Handbook of Urinary Stents: Basic Science and Clinical Applications* 219-219. Jaypee Brothers Medical Publishing.

## 2015

**Hedgehog signalling does not stimulate cartilage catabolism and is inhibited by Interleukin-1.**

Thompson CL, Patel R, Kelly T-AN, Wann AKT, Hung CT, Chapple JP and Knight MM. *Arthritis Research & Therapy* vol. 17, (1).

**Cytokine preconditioning of engineered cartilage provides protection against interleukin-1 insult.**

Tan AR, VandenBerg CD, Attur M, Abramson SB, Knight MM, Bulinski JC, Ateshian GA, Cook JL and Hung CT. *Arthritis Res Ther* vol. 17, 361-361.

**Lithium chloride modulates chondrocyte primary cilia and inhibits Hedgehog signaling.**

Thompson CL, Poole CA and Knight MM. *The FASEB Journal* vol. 100, (4) A39-A40. Federation of American Society of Experimental Biology.

**FINITE ELEMENT ANALYSIS OF MECHANICAL DEFORMATION OF CHONDROCYTE TO 2D SUBSTRATE AND 3D SCAFFOLD.**

CHEN J, BADER DL, LEE DA and KNIGHT MM. *Journal of Mechanics in Medicine and Biology* vol. 15, (05). World Scientific Publishing.

**Lithium chloride prevents interleukin- 1 induced cartilage degradation and loss of mechanical properties.**

KNIGHT MM, Thompson CL, Yasmin H, Varone A, Wiles A and Poole CA. *Journal of Orthopaedic Research*. Wiley: 12 Months.

**Adipogenic Differentiation of hMSCs is Mediated by Recruitment of IGF1r Onto the Primary Cilium Associated With Cilia Elongation.**

Dalbay MT, Thorpe SD, Connelly JT, Chapple JP and Knight MM. *Stem Cells* vol. 33, (6) 1952-1961. Oxford University Press (Oup).

## 2014

**Stem cell differentiation increases membrane-actin adhesion regulating cell blebability, migration and mechanics.**

Sliogeryte K, Thorpe SD, Lee DA, Botto L and Knight MM. *Scientific Reports* vol. 4, (1). Springer Nature.

**The rate of hypo-osmotic challenge influences regulatory volume decrease (RVD) and mechanical properties of articular chondrocytes.**

Wang Z, Irianto J, Kazun S, Wang W and Knight MM. *Osteoarthritis and Cartilage* vol. 23, (2) 289-299. Elsevier.

**89Primary Cilia In Tenocytes From The Inter-fascicular Matrix And The Fascicular Matrix.**

Rowson D, Knight M and Screen H. *British Journal of Sports Medicine* vol. 48, (Suppl 2) a58-a59. Bmj.

**The primary cilium influences interleukin-1-induced NFB signalling by regulating IKK activity.**

Wann AKT, Chapple JP and Knight MM. *Cell Signal* vol. 26, (8) 1735-1742.

**Quantification of chromatin condensation level by image processing.**

Irianto J, Lee DA and Knight MM. *Med Eng Phys* vol. 36, (3) 412-417.

**Primary cilia disassembly down-regulates mechanosensitive hedgehog signalling: a feedback mechanism controlling ADAMTS-5 expression in chondrocytes.**

Thompson CL, Chapple JP and Knight MM. *Osteoarthritis Cartilage* vol. 22, (3) 490-498.

**Depletion of chondrocyte primary cilia reduces the compressive modulus of articular cartilage.**

Irianto J, Ramaswamy G, Serra R and Knight MM. *J Biomech* vol. 47, (2) 579-582.

**In vitro encrustation of a semi-permanent polymer-covered nitinol ureter stent: an artificial urine model.**

Shaheen T, Edirisinghe T, Gabriel M, Bourdounis A, Buchholz N and Knight M. *Urolithiasis* vol. 42, (3) 203-207.

## 2013

**Correction: Super-Resolution Imaging Strategies for Cell Biologists Using a Spinning Disk Microscope.**

Hosny NA, Song M, Connelly JT, Ameer-Beg S, Knight MM and Wheeler AP. *Plos One* vol. 8, (12). Public Library of Science (Plos).

**Surface topography regulates wnt signaling through control of primary cilia structure in mesenchymal stem cells.**

McMurray RJ, Wann AKT, Thompson CL, Connelly JT and Knight MM. *Sci Rep* vol. 3,.

**Interleukin-1 sequesters hypoxia inducible factor 2 to the primary cilium.**

Wann AK, Thompson CL, Chapple JP and Knight MM. *Cilia* vol. 2, (1).

**Stent encrustation in feline and human artificial urine: does the low molecular weight composition account for the difference?.**

Shafat M, Rajakumar K, Syme H, Buchholz N and Knight MM. *Urolithiasis* vol. 41, (6) 481-486.

**Osmotic challenge drives rapid and reversible chromatin condensation in chondrocytes.**

Irianto J, Swift J, Martins RP, McPhail GD, Knight MM, Discher DE and Lee DA. *Biophys J* vol. 104, (4) 759-769.

**Super-resolution imaging strategies for cell biologists using a spinning disk microscope.**

Hosny NA, Song M, Connelly JT, Ameer-Beg S, Knight MM and Wheeler AP. *Plos One* vol. 8, (10).

**Bardet-Biedl syndrome proteins control the cilia length through regulation of actin polymerization.**

Hernandez-Hernandez V, Pravincumar P, Diaz-Font A, May-Simera H, Jenkins D, Knight M and Beales PL. *Human Molecular Genetics* vol. 22, (19) 3858-3868.

**2012**

**Heat shock induces rapid resorption of primary cilia.**

Prodromou NV, Thompson CL, Osborn DPS, Cogger KF, Ashworth R, Knight MM, Beales PL and Chapple JP. *Development* vol. 139, (24) e2408-e2408. *The Company of Biologists*.

**Heat shock induces rapid resorption of primary cilia.**

Prodromou NV, Thompson CL, Osborn DPS, Cogger KF, Ashworth R, Knight MM, Beales PL and Chapple JP. *Journal of Cell Science* vol. 125, (18) 4297-4305.

**Heat-shock induces rapid resorption of primary cilia.**

Thompson C, Prodromou N, Osborn D, Ashworth R, Knight M, Beales P and Chapple J. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**Mechanical strain disrupts primary cilia structure and modulates hedgehog signalling in adult chondrocytes.**

Thompson C, Chapple J and Knight M. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**Topographical regulation of primary cilia orientation and length in mesenchymal stem cells.**

McMurray R and Knight M. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**A role for IFT88/the primary cilium in the inflammatory response to interleukin-1.**

Wann A and Knight M. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**The primary cilium conducts chondrocyte mechanotransduction.**

Wann A, Zuo N, Haycraft C, Jensen C, Poole C, McGlashan S and Knight M. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**Bardet-Biedl syndrome proteins control cilia length through regulation of actin polymerisation.**

Hernandez V, Pravincumar P, Diaz-Font A, May-Simera H, Jenkins D, Knight M and Beales P. *Cilia* vol. 1, (Suppl 1). *Springer Nature*.

**The Shape of the Urine Stream - From Biophysics to Diagnostics.**

Wheeler APS, Morad S, Buchholz N and Knight MM. *Plos One* vol. 7, (10).

**Cell mechanics, structure, and function are regulated by the stiffness of the three-dimensional microenvironment.**

Chen J, Irianto J, Inamdar S, Pravincumar P, Lee DA, Bader DL and Knight MM. *Biophys J* vol. 103, (6) 1188-1197.

**Viscoelastic Cell Mechanics and Actin Remodelling Are Dependent on the Rate of Applied Pressure.**

Pravincumar P, Bader DL and Knight MM. *Plos One* vol. 7, (9).

**Primary cilia elongation in response to interleukin-1 mediates the inflammatory response.**

Wann AKT and Knight MM. *Cellular and Molecular Life Sciences* vol. 69, (17) 2967-2977.

**Dynamic compressive strain influences chondrogenic gene expression in human periosteal cells: a case study.**

Bonzani IC, Campbell JJ, Knight MM, Williams A, Lee DA, Bader DL and Stevens MM. *J Mech Behav Biomed Mater* vol. 11, 72-81.

**PRESSURE RATE SENSITIVE VISCOELASTIC CELL DEFORMATION INVOLVES ACTIN REMODELLING.**

Pravincumar P, Bader D and Knight M. *Journal of Biomechanics* vol. 45, Elsevier.

**Primary cilia mediate mechanotransduction through control of ATP-induced Ca<sup>2+</sup> signaling in compressed chondrocytes.**

Wann AKT, Zuo N, Haycraft CJ, Jensen CG, Poole CA, McGlashan SR and Knight MM. *Faseb Journal* vol. 26, (4) 1663-1671.

**Improved outcome after peripheral nerve injury in mice with increased levels of endogenous Omega-3 polyunsaturated fatty acids.**

Gladman SJ, Huang W, Lim SN, Dyll SC, Boddy S, Kang JX, Knight MM, Priestley JV and Michael-Titus AT. *Journal of Neuroscience* vol. 32, (2) 563-571.

**Single photon counting fluorescence lifetime detection of pericellular oxygen concentrations.**

Hosny NA, Lee DA and Knight MM. *J Biomed Opt* vol. 17, (1).

**Gap junction permeability between tenocytes within tendon fascicles is suppressed by tensile loading.**

Maeda E, Ye S, Wang W, Bader DL, Knight MM and Lee DA. *Biomechanics and Modeling in Mechanobiology* vol. 11, (3-4) 439-447.

**The Role of the Primary Cilium in Chondrocyte Response to Mechanical Loading.**

Wann AKT, Thompson C and Knight MM. *Mechanically Gated Channels and Their Regulation* 405-426. Springer Nature.

## 2011

**Omega-3 fatty acids and acute neurological trauma: A perspective on clinical translation.**

Gladman S, Lim SN, Dyll S, Knight MM, Priestley JV and Michael-Titus AT. *Ocl - Oleagineux Corps Gras Lipides* vol. 18, (6) 317-323.

**E84 Can Shockwave lithotripsy remove encrustation from ureteric nitinol stents?.**

Gabriel CEL, Nedilko T, Paulose PA, Bach C, Buchholz N and Knight MM. *European Urology Open Science* vol. 10, (7).Elsevier.

**E70 The influence of extracorporeal shock wave lithotripsy on tissue viability around metallic ureteral stents.**

Edirisinghe TY, Knight MM, Buchholz N and Bach C. *European Urology Open Science* vol. 10, (7).Elsevier.

**E189 Does the composition of feline urine prevent calcium oxalate encrustation of urethral stents?.**

Shafat M, Nedilko T, Syme H, Buchholz N and Knight MM. *European Urology Open Science* vol. 10, (7) 517-518. Elsevier.

**E75 Comparison of encrustation rates between ureteric metal stents and Double J stents.**

Nedilko T, Paulose PA, Buchholz N and Knight MM. *European Urology Open Science* vol. 10, (7).Elsevier.

**Gap junction permeability between tenocytes within tendon fascicles is suppressed by tensile loading.**

Maeda E, Ye S, Wang W, Bader DL, Knight MM and Lee DA. *Biomechanics and Modeling in Mechanobiology* 1-9.

**Stem cell mechanobiology.**

Lee DA, Knight MM, Campbell JJ and Bader DL. *J Cell Biochem* vol. 112, (1) 1-9.

## 2010

**The effect of mechanical strain or hypoxia on cell death in subpopulations of rat dorsal root ganglion neurons in vitro.**

Gladman SJ, Ward RE, Michael-Titus AT, Knight MM and Priestley JV. *Neuroscience* vol. 171, (2) 577-587.

**The potential of pulsed low intensity ultrasound to stimulate chondrocytes matrix synthesis in agarose and monolayer cultures.**

Vaughan NM, Grainger J, Bader DL and Knight MM. *Medical and Biological Engineering and Computing* vol. 48, (12) 1215-1222.

**Eicosapentaenoic acid and docosahexaenoic acid reduce interleukin-1-mediated cartilage degradation.**

Wann AKT, Mistry J, Blain EJ, Michael-Titus AT and Knight MM. *Arthritis Research and Therapy* vol. 12, (6).

**Both superficial and deep zone articular chondrocyte subpopulations exhibit the crabtree effect but have different basal oxygen consumption rates.**

Heywood HK, Knight MM and Lee DA. *Journal of Cellular Physiology* vol. 223, (3) 630-639.

**Cyclic loading opens hemichannels to release ATP as part of a chondrocyte mechanotransduction pathway.**

Garcia M and Knight MM. *Journal of Orthopaedic Research* vol. 28, (4) 510-515.

**A compartment model to evaluate the permeability of gap junctions between tenocytes in tendon fascicles.**

Ye S, Maeda E, Knight M, Lee D, Bader D and Wang W. *Faseb Journal* vol. 24,.

**Measuring the biomechanical properties of cartilage cells.**

Bader DL and Knight MM.

**Mechanical loading modulates chondrocyte primary cilia incidence and length.**

McGlashan SR, Knight MM, Chowdhury TT, Joshi P, Jensen CG, Kennedy S and Poole CA. *Cell Biology International* vol. 34, (5) 441-446.

**4 Measuring the biomechanical properties of cartilage cells.**

Bader DL and Knight MM. *Regenerative Medicine and Biomaterials For The Repair of Connective Tissues* 106-136. Elsevier.

**Contributor contact details.**

Archer C, Ralphs J, Säämänen A-M, Arokoski JPA, Jurvelin JS, Kiviranta I, Hinz B, Hunziker EB, Bader DL, Knight MM, Dell'accio F, Vincent TL, Aigner T, Schmitz N, Sder S, McIlwraith CW, Hangody L, Kish G, Koreny T, Hangody LR, Mdis L, Brittberg M, Sato M, Andriamanalijaona R, Li H, Elisseeff JH, Trice ME, Benjamin M, Kjær M and Magnusson SP. *Regenerative Medicine and Biomaterials For The Repair of Connective Tissues* xiii-xvii. Elsevier.

**1P338 1J1450 Mechano-regulation of gap junction communications between tenocytes within isolated fascicles(Bioengineering,Oral Presentations,The 48th Annual Meeting of the Biophysical Society of Japan).**

Maeda E, Ye S, Knight M, Wang W, Bader D and Lee D. *Seibutsu Butsuri* vol. 50, (supplement2).Biophysical Society of Japan.

## 2009

**Articular chondrocytes express connexin 43 hemichannels and P2 receptors - A putative mechanoreceptor complex involving the primary cilium?.**

Knight MM, McGlashan SR, Garcia M, Jensen CG and Poole CA. *Journal of Anatomy* vol. 214, (2) 275-283.

## 2008

**Biomechanical analysis of structural deformation in living cells.**

Bader DL and Knight MM. *Medical and Biological Engineering and Computing* vol. 46, (10) 951-963.

**Mechanosensitive Purinergic Calcium Signalling in Articular Chondrocytes.**

Pinguan-Murphy B and Knight MM. *Mechanosensitive Ion Channels* 235-251. Springer Nature.

## 2007

**Loading alters actin dynamics and up-regulates cofilin gene expression in chondrocytes.**

Campbell JJ, Blain EJ, Chowdhury TT and Knight MM. *Biochemical and Biophysical Research Communications* vol. 361, (2) 329-334.

**Loading alters actin dynamics and up-regulates cofilin gene expression in chondrocytes.**

KNIGHT MM, Chowdhury TT, Campbell JJ and Blain EJ. *Biochemical and Biophysical Research Communications* vol. 361, (21) 329-334.

**An improved confocal FRAP technique for the measurement of long-term actin dynamics in individual stress fibers.**

Campbell JJ and Knight MM. *Microscopy Research and Technique* vol. 70, (12) 1034-1040.

## 2006

**Purinergic pathway suppresses the release of NO and stimulates proteoglycan synthesis in chondrocyte/agarose constructs subjected to dynamic compression.**

Chowdhury TT and Knight MM. *Journal of Cellular Physiology* vol. 209, (3) 845-853.

---

**Cyclic compression of chondrocytes modulates a purinergic calcium signalling pathway in a strain rate- and frequency-dependent manner.**

Pingguan-Murphy B, El-Azzeh M, Bader DL and Knight MM. *Journal of Cellular Physiology* vol. 209, (2) 389-397.

**Ultrastructure of insect and spider cocoon silks.**

Hakimi O, Knight DP, Knight MM, Grahn MF and Vadgama P. *Biomacromolecules* vol. 7, (10) 2901-2908.

**Mitochondrial dynamics in chondrocytes and their connection to the mechanical properties of the cytoplasm.**

Bomzon Z, Knight MM, Bader DL and Kimmel E. *Journal of Biomechanical Engineering* vol. 128, (5) 674-679.

**Intracellular mechanics and mechanotransduction associated with chondrocyte deformation during pipette aspiration.**

Ohashi T, Hagiwara M, Bader DL and Knight MM. *Biorheology* vol. 43, (3-4) 201-214.

**Chondrocyte deformation induces mitochondrial distortion and heterogeneous intracellular strain fields.**

Knight MM, Bomzon Z, Kimmel E, Sharma AM, Lee DA and Bader DL. *Biomech Model Mechan* vol. 5, (2-3) 180-191.

**Mechanical compression and hydrostatic pressure induce reversible changes in actin cytoskeletal organisation in chondrocytes in agarose.**

Knight MM, Toyoda T, Lee DA and Bader DL. *J Biomech* vol. 39, (8) 1547-1551.

**Chondrocyte Deformation and Mechanotransduction in Cartilage Model Systems(International Workshop 2).**

Bader DL, Lee DA and Knight MM. *The Proceedings of The Bioengineering Conference Annual Meeting of Bed/Jsme* vol. 2005.18, 2-3. Japan Society of Mechanical Engineers.

**Probing mechanical heterogeneity in chondrocytes using passive microtheology.**

Bomzon Z, Knight MM, Bader DL and Kimmel E. *Journal of Biomechanics* vol. 39, Elsevier.

## 2005

**Activation of chondrocytes calcium signalling by dynamic compression is independent of number of cycles.**

Pingguan-Murphy B, Lee DA, Bader DL and Knight MM. *Arch Biochem Biophys* vol. 444, (1) 45-51.

## 2004

**Confocal analysis of local and cellular strains in chondrocyte-agarose constructs subjected to mechanical shear.**

Sawae Y, Shelton JC, Bader DL and Knight MM. *Ann Biomed Eng* vol. 32, (6) 860-870.

**Mechanical loading of chondrocytes embedded in 3D constructs: in vitro methods for assessment of morphological and metabolic response to compressive strain.**

Lee DA and Knight MM. *Methods Mol Med* vol. 100, 307-324.

**Mechanical Loading of Chondrocytes Embedded in 3D Constructs.**

Lee DA and Knight MM. *Cartilage and Osteoarthritis* 307-324. Springer Nature.

**Increased presence of cells with multiple elongated processes in osteoarthritic femoral head cartilage.**

Holloway I, Kayser M, Lee DA, Bader DL, Bentley G and Knight MM. *Osteoarthritis Cartilage* vol. 12, (1) 17-24.

## 2003

**Live cell imaging using confocal microscopy induces intracellular calcium transients and cell death.**

Knight MM, Roberts SR, Lee DA and Bader DL. *Am J Physiol Cell Physiol* vol. 284, (4) C1083-C1089.

**Confocal Analysis of Local and Cellular Strains in Chondrocyte - Agarose Constructs Subjected to Shear.**

Bader DL, SHELTON JC, Knight MM and Sawae Y. *J Biochemical Engineering Asme*.

## 2002

**Cell and nucleus deformation in compressed chondrocyte-alginate constructs: temporal changes and calculation of cell modulus.**

Knight MM, van de Breevaart Bravenboer J, Lee DA, van Osch GJVM, Weinans H and Bader DL. *Biochim Biophys Acta* vol. 1570, (1) 1-8.

## 2001

**Chondrocyte deformation within mechanically and enzymatically extracted chondrons compressed in agarose.**  
Knight MM, Ross JM, Sherwin AF, Lee DA, Bader DL and Poole CA. *Biochim Biophys Acta* vol. 1526, (2) 141-146.

**Temporal changes in cytoskeletal organisation within isolated chondrocytes quantified using a novel image analysis technique.**

Knight MM, Idowu BD, Lee DA and Bader DL. *Med Biol Eng Comput* vol. 39, (3) 397-404.

**Mechanical compression influences intracellular Ca<sup>2+</sup> signaling in chondrocytes seeded in agarose constructs.**  
Roberts SR, Knight MM, Lee DA and Bader DL. *J Appl Physiol (1985)* vol. 90, (4) 1385-1391.

**Compressive deformation and damage of muscle cell subpopulations in a model system.**

Bouten CV, Knight MM, Lee DA and Bader DL. *Ann Biomed Eng* vol. 29, (2) 153-163.

## 2000

**Confocal analysis of cytoskeletal organisation within isolated chondrocyte sub-populations cultured in agarose.**  
Idowu BD, Knight MM, Bader DL and Lee DA. *Histochem J* vol. 32, (3) 165-174.

**Beta transition and stress-induced phase separation in the spinning of spider dragline silk.**

Knight DP, KNIGHT MM and Vollrath F. *International Journal of Biological Macromolecules* vol. 27, (3) 205-210.

**Chondrocyte deformation within compressed agarose constructs at the cellular and sub-cellular levels.**

Lee DA, Knight MM, Bolton JF, Idowu BD, Kayser MV and Bader DL. *J Biomech* vol. 33, (1) 81-95.

## 1998

**Response of chondrocyte subpopulations cultured within unloaded and loaded agarose.**

Lee DA, Noguchi T, Knight MM, O'Donnell L, Bentley G and Bader DL. *J Orthop Res* vol. 16, (6) 726-733.

**The influence of elaborated pericellular matrix on the deformation of isolated articular chondrocytes cultured in agarose.**

Knight MM, Lee DA and Bader DL. *Biochim Biophys Acta* vol. 1405, (1-3) 67-77.

**Measurement of the deformation of isolated chondrocytes in agarose subjected to cyclic compression.**

Knight MM, Ghori SA, Lee DA and Bader DL. *Med Eng Phys* vol. 20, (9) 684-688.