Louis E Defrate

List of Publications by Year
in descending order

51 papers	1,449 citations	304602 22 h-index	345118 36 g-index
52 all docs	52 docs citations	52 times ranked	1229 citing authors

#	Article	IF	Citations
1	Diurnal variations in articular cartilage thickness and strain in the human knee. Journal of Biomechanics, 2013, 46, 541-547.	0.9	110
2	In vivo cartilage contact strains in patients with lateral ankle instability. Journal of Biomechanics, 2010, 43, 2561-2566.	0.9	99
3	Knee Kinematics During Noncontact Anterior Cruciate Ligament Injury as Determined From Bone Bruise Location. American Journal of Sports Medicine, 2015, 43, 2515-2521.	1.9	76
4	In Vivo Measurement of Localized Tibiofemoral Cartilage Strains in Response to Dynamic Activity. American Journal of Sports Medicine, 2015, 43, 370-376.	1.9	72
5	In vivo cartilage strain increases following medial meniscal tear and correlates with synovial fluid matrix metalloproteinase activity. Journal of Biomechanics, 2015, 48, 1461-1468.	0.9	70
6	High Body Mass Index Is Associated With Increased Diurnal Strains in the Articular Cartilage of the Knee. Arthritis and Rheumatism, 2013, 65, 2615-2622.	6.7	62
7	The Effects of a Valgus Collapse Knee Position on In Vivo ACL Elongation. Annals of Biomedical Engineering, 2013, 41, 123-130.	1.3	61
8	Determination of the Position of the Knee at the Time of an Anterior Cruciate Ligament Rupture for Male Versus Female Patients by an Analysis of Bone Bruises. American Journal of Sports Medicine, 2018, 46, 1559-1565.	1.9	52
9	The effect of femoral tunnel placement on ACL graft orientation and length during in vivo knee flexion. Journal of Biomechanics, 2011, 44, 1914-1920.	0.9	50
10	Effect of normal gait on in vivo tibiofemoral cartilage strains. Journal of Biomechanics, 2016, 49, 2870-2876.	0.9	50
11	Obesity alters the in vivo mechanical response and biochemical properties of cartilage as measured by MRI. Arthritis Research and Therapy, 2018, 20, 232.	1.6	49
12	The effects of femoral graft placement on cartilage thickness after anterior cruciate ligament reconstruction. Journal of Biomechanics, 2014, 47, 96-101.	0.9	48
13	Relationship between T1rho magnetic resonance imaging, synovial fluid biomarkers, and the biochemical and biomechanical properties of cartilage. Journal of Biomechanics, 2017, 55, 18-26.	0.9	46
14	Matrix metalloproteinase activity and prostaglandin E2 are elevated in the synovial fluid of meniscus tear patients. Connective Tissue Research, 2017, 58, 305-316.	1.1	39
15	In Vivo Anterior Cruciate Ligament Deformation During a Single-Legged Jump Measured by Magnetic Resonance Imaging and High-Speed Biplanar Radiography. American Journal of Sports Medicine, 2019, 47, 3166-3172.	1.9	38
16	In Vivo Tibial Cartilage Strains in Regions of Cartilage-to-Cartilage Contact and Cartilage-to-Meniscus Contact in Response to Walking. American Journal of Sports Medicine, 2017, 45, 2817-2823.	1.9	34
17	A New Stress Test for Knee Joint Cartilage. Scientific Reports, 2019, 9, 2283.	1.6	32
18	Comparison of Cartilage Mechanical Properties Measured During Creep and Recovery. Scientific Reports, 2020, 10, 1547.	1.6	31

#	Article	IF	Citations
19	In vivo attachment site to attachment site length and strain of the ACL and its bundles during the full gait cycle measured by MRI and high-speed biplanar radiography. Journal of Biomechanics, 2020, 98, 109443.	0.9	30
20	Meniscus-Derived Matrix Scaffolds Promote the Integrative Repair of Meniscal Defects. Scientific Reports, 2019, 9, 8719.	1.6	29
21	Selective Enzymatic Digestion of Proteoglycans and Collagens Alters Cartilage T1rho and T2 Relaxation Times. Annals of Biomedical Engineering, 2019, 47, 190-201.	1.3	24
22	Effects of Anterior Cruciate Ligament Deficiency on Tibiofemoral Cartilage Thickness and Strains in Response to Hopping. American Journal of Sports Medicine, 2019, 47, 96-103.	1.9	23
23	An analysis of changes in in vivo cartilage thickness of the healthy ankle following dynamic activity. Journal of Biomechanics, 2016, 49, 3026-3030.	0.9	22
24	Effects of ACL graft placement on in vivo knee function and cartilage thickness distributions. Journal of Orthopaedic Research, 2017, 35, 1160-1170.	1.2	22
25	Quantifying the biochemical state of knee cartilage in response to running using T1rho magnetic resonance imaging. Scientific Reports, 2020, 10, 1870.	1.6	21
26	Automatic registration of MRI-based joint models to high-speed biplanar radiographs for precise quantification of in vivo anterior cruciate ligament deformation during gait. Journal of Biomechanics, 2018, 81, 36-44.	0.9	20
27	Activities of daily living influence tibial cartilage T1rho relaxation times. Journal of Biomechanics, 2019, 82, 228-233.	0.9	20
28	A comparison of patellofemoral cartilage morphology and deformation in anterior cruciate ligament deficient versus uninjured knees. Journal of Biomechanics, 2018, 67, 78-83.	0.9	19
29	A magnetic resonance imaging framework for quantifying intervertebral disc deformation in vivo: Reliability and application to diurnal variations in lumbar disc shape. Journal of Biomechanics, 2018, 71, 291-295.	0.9	18
30	In vivo assessment of the interaction of patellar tendon tibial shaft angle and anterior cruciate ligament elongation during flexion. Journal of Biomechanics, 2019, 90, 123-127.	0.9	16
31	The Characteristic Recovery Time as a Novel, Noninvasive Metric for Assessing In Vivo Cartilage Mechanical Function. Annals of Biomedical Engineering, 2020, 48, 2901-2910.	1.3	16
32	Patellar Tendon Orientation and Strain Are Predictors of ACL Strain In Vivo During a Single-Leg Jump. Orthopaedic Journal of Sports Medicine, 2021, 9, 232596712199105.	0.8	15
33	Immune cell profiles in synovial fluid after anterior cruciate ligament and meniscus injuries. Arthritis Research and Therapy, 2021, 23, 280.	1.6	14
34	Distribution of Bone Contusion Patterns in Acute Noncontact Anterior Cruciate Ligamentâ€“Torn Knees. American Journal of Sports Medicine, 2021, 49, 404-409.	1.9	13
35	Effect of walking on in vivo tibiofemoral cartilage strain in ACL-deficient versus intact knees. Journal of Biomechanics, 2021, 116, 110210.	0.9	13
36	Inflammatory, Structural, and Pain Biochemical Biomarkers May Reflect Radiographic Disc Space Narrowing: The Johnston County Osteoarthritis Project. Journal of Orthopaedic Research, 2020, 38, 1027-1037.	1.2	10

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37	Obesity alters the collagen organization and mechanical properties of murine cartilage. Scientific Reports, 2021, 11, 1626.	1.6	9
38	Lumbar intervertebral disc diurnal deformations and T2 and T1rho relaxation times vary by spinal level and disc region. European Spine Journal, 2022, 31, 746-754.	1.0	9
39	The Influence of Obesity and Meniscal Coverage on In Vivo Tibial Cartilage Thickness and Strain. Orthopaedic Journal of Sports Medicine, 2020, 8, 232596712096446.	0.8	8
40	Meniscus cell regional phenotypes: Dedifferentiation and reversal by biomaterial embedding. Journal of Orthopaedic Research, 2021, 39, 2177-2186.	1.2	8
41	Dose and Recovery Response of Patellofemoral Cartilage Deformations to Running. Orthopaedic Journal of Sports Medicine, 2020, 8, 232596712096751.	0.8	8
42	Predictors of Lumbar Spine Degeneration and Low Back Pain in the Community: The Johnston County Osteoarthritis Project. Arthritis Care and Research, 2022, 74, 1659-1666.	1.5	7
43	Reconsidering Reciprocal Length Patterns of the Anteromedial and Posterolateral Bundles of the Anterior Cruciate Ligament During In Vivo Gait. American Journal of Sports Medicine, 2020, 48, 1893-1899.	1.9	6
44	Increasing BMI increases lumbar intervertebral disc deformation following a treadmill walking stress test. Journal of Biomechanics, 2021, 121, 110392.	0.9	6
45	Mechanical metrics may show improved ability to predict osteoarthritis compared to T1rho mapping. Journal of Biomechanics, 2021, 129, 110771.	0.9	6
46	Design and validation of a semi-automatic bone segmentation algorithm from MRI to improve research efficiency. Scientific Reports, 2022, 12, 7825.	1.6	5
47	In Vivo Assessment of Exercise-Induced Glenohumeral Cartilage Strain. Orthopaedic Journal of Sports Medicine, 2018, 6, 232596711878451.	0.8	3
48	In vivo attachment site to attachment site length and strain of the ACL and its bundles during the full gait cycle measured by MRI and high-speed biplanar radiography: Response. Journal of Biomechanics, 2020, 109, 109918.	0.9	3
49	In vivo fluid transport in human intervertebral discs varies by spinal level and disc region. JOR Spine, 0, , .	1.5	3
50	Diabetes is associated with a lower minimum moment of inertia among older women: An analysis of 3D reconstructions of clinical CT scans. Journal of Biomechanics, 2021, 128, 110707.	0.9	2
51	Four-Point Bending Testing for Mechanical Assessment of Mouse Bone Structural Properties. Methods in Molecular Biology, 2021, 2230, 199-215.	0.4	2