Thomas S Buchanan

List of Publications by Year
in descending order

117 papers	8,291 citations	57681 46 h-index	54771 88 g-index
117 all docs	117 docs citations	117 times ranked	6006 citing authors

#	Article	IF	Citations
1	Knee cartilage T₂ relaxation times 3 months after ACL reconstruction are associated with knee gait variables linked to knee osteoarthritis. Journal of Orthopaedic Research, 2022, 40, 252-259.	1.2	13
2	An Efficient One-Step Moment Balancing Algorithm for Computing Medial and Lateral Knee Compartment Contact Forces. Journal of Biomechanical Engineering, 2022, 144, .	0.6	2
3	Knee joint biomechanics during gait improve from 3 to 6 months after anterior cruciate ligament reconstruction. Journal of Orthopaedic Research, 2022, 40, 2025-2038.	1.2	4
4	Patellofemoral contact forces after ACL reconstruction: A longitudinal study. Journal of Biomechanics, 2022, 134, 110993.	0.9	5
5	Identifying Gait Pathology after ACL Reconstruction Using Temporal Characteristics of Kinetics and Electromyography. Medicine and Science in Sports and Exercise, 2022, 54, 923-930.	0.2	5
6	Validating Wearable Sensors Using Selfâ€Reported Instability among Patients with Knee Osteoarthritis. PM and R, 2021, 13, 119-127.	0.9	19
7	Sex and mechanism of injury influence knee joint loading symmetry during gait 6 months after ACLR. Journal of Orthopaedic Research, 2021, 39, 1123-1132.	1.2	9
8	Patients Walking Faster After Anterior Cruciate Ligament Reconstruction Have More Gait Asymmetry. International Journal of Sports Physical Therapy, 2021, 16, 169-176.	0.5	5
9	Quadriceps Strength Symmetry Does Not Modify Gait Mechanics After Anterior Cruciate Ligament Reconstruction, Rehabilitation, and Return-to-Sport Training. American Journal of Sports Medicine, 2021, 49, 417-425.	1.9	36
10	Slower Walking Speed Is Related to Early Femoral Trochlear Cartilage Degradation After ACL Reconstruction. Journal of Orthopaedic Research, 2020, 38, 645-652.	1.2	14
11	Operative and nonoperative management of anterior cruciate ligament injury: Differences in gait biomechanics at 5 years. Journal of Orthopaedic Research, 2020, 38, 2675-2684.	1.2	12
12	ACL injury and reconstruction affect control of ground reaction forces produced during a novel task that simulates cutting movements. Journal of Orthopaedic Research, 2020, 38, 1746-1752.	1.2	10
13	Partial medial meniscectomy leads to altered walking mechanics two years after anterior cruciate ligament reconstruction: Meniscal repair does not. Gait and Posture, 2019, 74, 87-93.	0.6	13
14	Gait Mechanics in Women of the ACLâ€SPORTS Randomized Control Trial: Interlimb Symmetry Improves Over Time Regardless of Treatment Group. Journal of Orthopaedic Research, 2019, 37, 1743-1753.	1.2	27
15	High muscle coâ€contraction does not result in high joint forces during gait in anterior cruciate ligament deficient knees. Journal of Orthopaedic Research, 2019, 37, 104-112.	1.2	21
16	Self-reported walking difficulty and knee osteoarthritis influences limb dynamics and muscle co-contraction during gait. Human Movement Science, 2019, 64, 409-419.	0.6	14
17	Influences of knee osteoarthritis and walking difficulty on knee kinematics and kinetics. Gait and Posture, 2018, 61, 439-444.	0.6	16
18	Dynamic structure of lower limb joint angles during walking post-stroke. Journal of Biomechanics, 2018, 68, 1-5.	0.9	9

#	Article	IF	Citations
19	A Novel and Safe Approach to Simulate Cutting Movements Using Ground Reaction Forces. Sensors, 2018, 18, 2631.	2.1	2
20	Gait mechanics and tibiofemoral loading in men of the ACLâ€SPORTS randomized control trial. Journal of Orthopaedic Research, 2018, 36, 2364-2372.	1.2	24
21	Gait Mechanics After ACL Reconstruction Differ According to Medial Meniscal Treatment. Journal of Bone and Joint Surgery - Series A, 2018, 100, 1209-1216.	1.4	21
22	Gait mechanics in those with/without medial compartment knee osteoarthritis 5 years after anterior cruciate ligament reconstruction. Journal of Orthopaedic Research, 2017, 35, 625-633.	1.2	49
23	Semitendinosus Tendon for ACL Reconstruction: Regrowth and Mechanical Property Recovery. Orthopaedic Journal of Sports Medicine, 2017, 5, 232596711771294.	0.8	39
24	Gait mechanics and second ACL rupture: Implications for delaying return-to-sport. Journal of Orthopaedic Research, 2017, 35, 1894-1901.	1.2	58
25	Predictors of knee joint loading after anterior cruciate ligament reconstruction. Journal of Orthopaedic Research, 2017, 35, 651-656.	1.2	28
26	Motor unit diversity during elbow flexion. , 2017, , .		0
27	Fetal Rat Gubernaculum Mesenchymal Cells Adopt Myogenic and Myofibroblast-Like Phenotypes. Journal of Urology, 2016, 196, 270-278.	0.2	6
28	Decreased Knee Joint Loading Associated With Early Knee Osteoarthritis After Anterior Cruciate Ligament Injury. American Journal of Sports Medicine, 2016, 44, 143-151.	1.9	202
29	Viscoelastic properties of healthy achilles tendon are independent of isometric plantar flexion strength and crossâ€sectional area. Journal of Orthopaedic Research, 2015, 33, 926-931.	1.2	33
30	Continuous Shear Wave Elastography: A New Method to Measure Viscoelastic Properties of Tendons inÂVivo. Ultrasound in Medicine and Biology, 2015, 41, 1518-1529.	0.7	86
31	A more informed evaluation of medial compartment loading: the combined use of the knee adduction and flexor moments. Osteoarthritis and Cartilage, 2015, 23, 1107-1111.	0.6	104
32	Compensatory muscle activation caused by tendon lengthening post-Achilles tendon rupture. Knee Surgery, Sports Traumatology, Arthroscopy, 2015, 23, 868-874.	2.3	73
33	Knee Contact Force Asymmetries in Patients Who Failed Return-to-Sport Readiness Criteria 6 Months After Anterior Cruciate Ligament Reconstruction. American Journal of Sports Medicine, 2014, 42, 2917-2925.	1.9	52
34	Poststroke Muscle Architectural Parameters of the Tibialis Anterior and the Potential Implications for Rehabilitation of Foot Drop. Stroke Research and Treatment, 2014, 2014, 1-5.	0.5	8
35	Differences in Plantar Flexor Fascicle Length and Pennation Angle between Healthy and Poststroke Individuals and Implications for Poststroke Plantar Flexor Force Contributions. Stroke Research and Treatment, 2014, 2014, 1-6.	0.5	8
36	Clinically-relevant measures associated with altered contact forces in patients with anterior cruciate ligament deficiency. Clinical Biomechanics, 2014, 29, 531-536.	0.5	11

#	Article	IF	Citations
37	Differences in Neuromuscular Control and Quadriceps Morphology Between Potential Copers and Noncopers Following Anterior Cruciate Ligament Injury. Journal of Orthopaedic and Sports Physical Therapy, 2014, 44, 76-84.	1.7	26
38	Is echogenicity a viable metric for evaluating tendon properties in vivo?. Journal of Biomechanics, 2014, 47, 1806-1809.	0.9	13
39	Altered loading in the injured knee after ACL rupture. Journal of Orthopaedic Research, 2013, 31, 458-464.	1.2	59
40	Characteristics of human knee muscle coordination during isometric contractions in a standing posture: The effect of limb task. Journal of Electromyography and Kinesiology, 2013, 23, 1398-1405.	0.7	5
41	Minimum detectable change for knee joint contact force estimates using an EMG-driven model. Gait and Posture, 2013, 38, 1051-1053.	0.6	39
42	Research-Focused Undergraduate Laboratory Exercises in Biomechanics. , 2013, , .		0
43	An Electromyogram-Driven Musculoskeletal Model of the Knee to Predict in Vivo Joint Contact Forces During Normal and Novel Gait Patterns. Journal of Biomechanical Engineering, 2013, 135, 021014.	0.6	107
44	Muscle volume as a predictor of maximum force generating ability in the plantar flexors postâ€stroke. Muscle and Nerve, 2013, 48, 971-976.	1.0	29
45	Subject-specific measures of Achilles tendon moment arm using ultrasound and video-based motion capture. Physiological Reports, 2013, 1, e00139.	0.7	18
46	Hybrid models of the neuromusculoskeletal system improve subject-specificity. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2012, 226, 113-119.	1.0	15
47	Predictions of Condylar Contact During Normal and Medial Thrust Gait. , 2012, , .		4
48	Gait and Neuromuscular Asymmetries after Acute Anterior Cruciate Ligament Rupture. Medicine and Science in Sports and Exercise, 2012, 44, 1490-1496.	0.2	83
49	A real-time EMG-driven musculoskeletal model of the ankle. Multibody System Dynamics, 2012, 28, 169-180.	1.7	43
50	Paretic muscle atrophy and non-contractile tissue content in individual muscles of the post-stroke lower extremity. Journal of Biomechanics, 2011, 44, 2741-2746.	0.9	60
51	Time Course of Quad Strength, Area, and Activation after Knee Arthroplasty and Strength Training. Medicine and Science in Sports and Exercise, 2011, 43, 225-231.	0.2	55
52	Estimation of Ligament Loading and Anterior Tibial Translation in Healthy and ACL-Deficient Knees During Gait and the Influence of Increasing Tibial Slope Using EMG-Driven Approach. Annals of Biomedical Engineering, 2011, 39, 110-121.	1.3	78
53	A Hybrid Method for Computing Achilles Tendon Moment Arm Using Ultrasound and Motion Analysis. Journal of Applied Biomechanics, 2010, 26, 224-228.	0.3	32
54	A Clinically Applicable Model to Estimate the Opposing Muscle Groups Contributions to Isometric and Dynamic Tasks. Annals of Biomedical Engineering, 2010, 38, 2406-2417.	1.3	12

#	Article	IF	Citations
55	An EMG-Driven Biomechanical Model That Accounts for the Decrease in Moment Generation Capacity During a Dynamic Fatigued Condition. Journal of Biomechanical Engineering, 2010, 132, 071003.	0.6	13
56	Condylar Contact During Normal Walking and Lateral Trunk Sway Gait: an EMG-Driven Modeling Approach to Estimate Articular Loading. , 2010, , .		0
57	Experimentally Derived Musculotendon Parameters for the Human Soleus: Fiber Length, Pennation Angle and Isometric Force. , 2009, , .		0
58	An EMG-driven model to estimate muscle forces and joint moments in stroke patients. Computers in Biology and Medicine, 2009, 39, 1083-1088.	3.9	142
59	An EMG-Driven Forward Dynamics Model to Simulate Stance Phase of Gait. , 2009, , .		0
60	Can pennation angles be predicted from EMGs for the primary ankle plantar and dorsiflexors during isometric contractions?. Journal of Biomechanics, 2008, 41, 2492-2497.	0.9	34
61	A biomechanical model to estimate corrective changes in muscle activation patterns for stroke patients. Journal of Biomechanics, 2008, 41, 3097-3100.	0.9	11
62	Mechanisms Underlying Quadriceps Weakness in Knee Osteoarthritis. Medicine and Science in Sports and Exercise, 2008, 40, 422-427.	0.2	160
63	Do ACL-injured Copers Exhibit Differences in Knee Kinematics?. Clinical Orthopaedics and Related Research, 2007, 454, 74-80.	0.7	31
64	SUBJECT SPECIFIC MODELS OF THE NEUROMUSCULOSKELETAL SYSTEM: CURRENT SUCCESSES AND FUTURE CHALLENGES IN ESTIMATING MUSCLE FORCES. Journal of Biomechanics, 2007, 40, S20.	0.9	0
65	Optimal Pennation Angle of the Primary Ankle Plantar and Dorsiflexors: Variations with Sex, Contraction Intensity, and Limb. Journal of Applied Biomechanics, 2006, 22, 255-263.	0.3	55
66	Tibialis Anterior Volumes and Areas in ACL-Injured Limbs Compared with Unimpaired. Medicine and Science in Sports and Exercise, 2006, 38, 1553-1557.	0.2	10
67	Lower Extremity Muscle Morphology in Young Athletes: An MRI-Based Analysis. Medicine and Science in Sports and Exercise, 2006, 38, 122-128.	0.2	55
68	Altered knee kinematics in ACL-deficient non-copers: A comparison using dynamic MRI. Journal of Orthopaedic Research, 2006, 24, 132-140.	1.2	58
69	Estimation of Muscle Forces About the Ankle During Gait in Healthy and Neurologically Impaired Subjects. Computational Intelligence and Its Applications Series, 2006, , 320-347.	0.2	0
70	Estimation of Muscle Forces and Joint Moments Using a Forward-Inverse Dynamics Model. Medicine and Science in Sports and Exercise, 2005, 37, 1911-1916.	0.2	135
71	Use of an EMG-Driven Biomechanical Model to Study Virtual Injuries. Medicine and Science in Sports and Exercise, 2005, 37, 1917-1923.	0.2	14
72	Neuromuscular Biomechanical Modeling to Understand Knee Ligament Loading. Medicine and Science in Sports and Exercise, 2005, 37, 1939-1947.	0.2	88

#	Article	IF	Citations
73	Quadriceps femoris muscle morphology and function after ACL injury: a differential response in copers versus non-copers. Journal of Biomechanics, 2005, 38, 685-693.	0.9	101
74	Knee height, knee pain, and knee osteoarthritis: The Beijing Osteoarthritis Study. Arthritis and Rheumatism, 2005, 52, 1418-1423.	6.7	42
75	Quadriceps Weakness, Atrophy, and Activation Failure in Predicted Noncopers after Anterior Cruciate Ligament Injury. American Journal of Sports Medicine, 2005, 33, 402-407.	1.9	138
76	Neuromuscular function after anterior cruciate ligament reconstruction with autologous semitendinosus-gracilis graft. Journal of Electromyography and Kinesiology, 2005, 15, 170-180.	0.7	18
77	A Method for Measurement of Joint Kinematics in Vivo by Registration of 3-D Geometric Models With Cine Phase Contrast Magnetic Resonance Imaging Data. Journal of Biomechanical Engineering, 2005, 127, 829-837.	0.6	36
78	High-arched runners exhibit increased leg stiffness compared to low-arched runners. Gait and Posture, 2004, 19, 263-269.	0.6	522
79	Altered Quadriceps Control in People with Anterior Cruciate Ligament Deficiency. Medicine and Science in Sports and Exercise, 2004, 36, 1089-1097.	0.2	56
80	Neuromusculoskeletal Modeling: Estimation of Muscle Forces and Joint Moments and Movements from Measurements of Neural Command. Journal of Applied Biomechanics, 2004, 20, 367-395.	0.3	704
81	Subject-Specific Estimates of Tendon Slack Length: A Numerical Method. Journal of Applied Biomechanics, 2004, 20, 195-203.	0.3	84
82	MUSCLE AND TENDON MORPHOLOGY AFTER RECONSTRUCTION OF THE ANTERIOR CRUCIATE LIGAMENT WITH AUTOLOGOUS SEMITENDINOSUS-GRACILIS GRAFT. Journal of Bone and Joint Surgery - Series A, 2004, 86, 1936-1946.	1.4	89
83	A one-parameter neural activation to muscle activation model: estimating isometric joint moments from electromyograms. Journal of Biomechanics, 2003, 36, 1197-1202.	0.9	130
84	Specificity of muscle action after anterior cruciate ligament injury. Journal of Orthopaedic Research, 2003, 21, 1131-1137.	1.2	45
85	Using Hill-Type Muscle Models and EMG Data in a Forward Dynamic Analysis of Joint Moment. Journal of Mechanics in Medicine and Biology, 2003, 03, 169-186.	0.3	34
86	In Vivo Joint Kinematics in Normal and Anterior Cruciate Ligament Injured Knees: Results of a Cine Phase Contrast Dynamic MRI Study. , 2003, , 217.		0
87	A Numerical Method for Estimating Tendon Slack Length. , 2003, , 235.		0
88	Effect of Anterior Cruciate Ligament Reconstruction With an Autologous Semitendinosus-Gracilis Graft on Neuromuscular Function. , 2003, , .		0
89	Quadriceps Control: A Key Factor in Coping With Anterior Cruciate Ligament Deficiency. , 2003, , .		0
90	Prediction of joint moments using a neural network model of muscle activations from EMG signals. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2002, 10, 30-37.	2.7	144

#	Article	IF	Citations
91	Force transmission through the juvenile idiopathic arthritic wrist: a novel approach using a sliding rigid body spring model. Journal of Biomechanics, 2002, 35, 125-133.	0.9	18
92	Scaling of peak moment arms of elbow muscles with upper extremity bone dimensions. Journal of Biomechanics, 2002, 35, 19-26.	0.9	111
93	A real-time EMG-driven virtual arm. Computers in Biology and Medicine, 2002, 32, 25-36.	3.9	130
94	Human elbow joint torque is linearly encoded in electromyographic signals from multiple muscles. Neuroscience Letters, 2001, 311, 97-100.	1.0	14
95	The Role of the Forearm Muscles Related to Wrist Malalignment in Juvenile Chronic Arthritis. Advances in Physiotherapy, 2001, 3, 108-119.	0.2	2
96	Lower Extremity Kinematic and Kinetic Differences in Runners with High and Low Arches. Journal of Applied Biomechanics, 2001, 17, 153-163.	0.3	145
97	Dynamic stability in the anterior cruciate ligament deficient knee. Knee Surgery, Sports Traumatology, Arthroscopy, 2001, 9, 62-71.	2.3	340
98	Strategies of muscular support of varus and valgus isometric loads at the human knee. Journal of Biomechanics, 2001, 34, 1257-1267.	0.9	286
99	Dynamic Knee Stability: Current Theory and Implications for Clinicians and Scientists. Journal of Orthopaedic and Sports Physical Therapy, 2001, 31, 546-566.	1.7	186
100	Displacement response of juvenile arthritic wrists during grasp. Arthritis and Rheumatism, 2000, 13, 375-381.	6.7	2
101	The isometric functional capacity of muscles that cross the elbow. Journal of Biomechanics, 2000, 33, 943-952.	0.9	290
102	Muscle activity in rapid multi-degree-of-freedom elbow movements: solutions from a musculoskeletal model. Biological Cybernetics, 1999, 80, 357-367.	0.6	13
103	Assessment of Wrist Malalignment in Juvenile Rheumatoid Arthritis. Advances in Physiotherapy, 1999, 1, 99-109.	0.2	3
104	Building biomechanical models based on medical image data: An assessment of model accuracy. Lecture Notes in Computer Science, 1998, , 539-549.	1.0	5
105	Muscle activation at the human knee during isometric flexion-extension and varus-valgus loads. Journal of Orthopaedic Research, 1997, 15, 11-17.	1.2	47
106	How muscle architecture and moment arms affect wrist flexion-extension moments. Journal of Biomechanics, 1997, 30, 705-712.	0.9	198
107	An Evaluation of Optimization Techniques for the Prediction of Muscle Activation Patterns During Isometric Tasks. Journal of Biomechanical Engineering, 1996, 118, 565-574.	0.6	89
108	Maximumisometric moments generated by the wrist muscles in flexion-extension and radial-ulnar deviation. Journal of Biomechanics, 1996, 29, 1371-1375.	0.9	81

#	Article	IF	Citations
109	Selective muscle activation following rapid varus/valgus perturbations at the knee. Medicine and Science in Sports and Exercise, 1996, 28, 870-876.	0.2	57
110	Variation of muscle moment arms with elbow and forearm position. Journal of Biomechanics, 1995, 28, 513-525.	0.9	308
111	Abnormal muscle coactivation patterns during isometric torque generation at the elbow and shoulder in hemiparetic subjects. Brain, 1995, 118, 495-510.	3.7	573
112	Muscle activity is different for humans performing static tasks which require force control and position control. Neuroscience Letters, 1995, 194, 61-64.	1.0	79
113	Ankle inversion injury and hypermobility: Effect on hip and ankle muscle electromyography onset latency. Archives of Physical Medicine and Rehabilitation, 1995, 76, 1138-1143.	0.5	237
114	Selective muscle activation following electrical stimulation of the collateral ligaments of the human knee joint. Archives of Physical Medicine and Rehabilitation, 1995, 76, 750-757.	0.5	46
115	Estimation of muscle forces about the wrist joint during isometric tasks using an EMG coefficient method. Journal of Biomechanics, 1993, 26, 547-560.	0.9	103
116	Effects of arm acceleration and behavioral conditions on the organization of postural adjustments during arm flexion. Experimental Brain Research, 1987, 66, 257-70.	0.7	263
117	<title>Method For Determining In-Vivo Ligament Lengths From Biplanar X Rays With Incomplete Data</title>. , 1983, 0361, 193.		0