Scott L Delp

List of Publications by Citations

268 papers	23,738 citations	84 h-index	148 g-index
292 ext. papers	28,823 ext. citations	5.5 avg, IF	7.13 L-index

#	Paper	IF	Citations
268	OpenSim: open-source software to create and analyze dynamic simulations of movement. *IEEE Transactions on Biomedical Engineering*, **2007**, 54, 1940-50	5	2355
267	A model of the upper extremity for simulating musculoskeletal surgery and analyzing neuromuscular control. *Annals of Biomedical Engineering*, **2005**, 33, 829-40	4.7	632
266	A model of the lower limb for analysis of human movement. *Annals of Biomedical Engineering*, **2010**, 38, 269-79	4.7	528
265	Muscle contributions to propulsion and support during running. *Journal of Biomechanics*, **2010**, 43, 2709-16	2.9	465
264	Large-scale physical activity data reveal worldwide activity inequality. *Nature*, **2017**, 547, 336-339	50.4	449
263	Rejuvenation of the muscle stem cell population restores strength to injured aged muscles. *Nature Medicine*, **2014**, 20, 255-64	50.5	439
262	Generating dynamic simulations of movement using computed muscle control. *Journal of Biomechanics*, **2003**, 36, 321-8	2.9	415
261	A graphics-based software system to develop and analyze models of musculoskeletal structures. *Computers in Biology and Medicine*, **1995**, 25, 21-34	7	367
260	Wirelessly powered, fully internal optogenetics for brain, spinal and peripheral circuits in mice. *Nature Methods*, **2015**, 12, 969-74	21.6	364
259	Short telomeres and stem cell exhaustion model Duchenne muscular dystrophy in mdx/mTR mice. *Cell*, **2010**, 143, 1059-71	56.2	351
258	Grand challenge competition to predict in vivo knee loads. *Journal of Orthopaedic Research*, **2012**, 30, 503-13	3.8	334
257	Influence of muscle morphometry and moment arms on the moment-generating capacity of human neck muscles. *Spine*, **1998**, 23, 412-22	3.3	329
256	Full-Body Musculoskeletal Model for Muscle-Driven Simulation of Human Gait. *IEEE Transactions on Biomedical Engineering*, **2016**, 63, 2068-79	5	307
255	Is my model good enough? Best practices for verification and validation of musculoskeletal models and simulations of movement. *Journal of Biomechanical Engineering*, **2015**, 137, 020905	2.1	288
254	Muscle contributions to support and progression over a range of walking speeds. *Journal of Biomechanics*, **2008**, 41, 3243-52	2.9	283
253	A 3D model of muscle reveals the causes of nonuniform strains in the biceps brachii. *Journal of Biomechanics*, **2005**, 38, 657-65	2.9	282
252	Variation of muscle moment arms with elbow and forearm position. *Journal of Biomechanics*, **1995**, 28, 513-25	2.9	275

251	OpenSim: Simulating musculoskeletal dynamics and neuromuscular control to study human and animal movement. *PLoS Computational Biology*, **2018**, 14, e1006223	5	274
250	Flexing computational muscle: modeling and simulation of musculotendon dynamics. *Journal of Biomechanical Engineering*, **2013**, 135, 021005	2.1	268
249	Computer assisted knee replacement. *Clinical Orthopaedics and Related Research*, **1998**, 49-56	2.2	255
248	Variation of rotation moment arms with hip flexion. *Journal of Biomechanics*, **1999**, 32, 493-501	2.9	254
247	Minimally invasive high-speed imaging of sarcomere contractile dynamics in mice and humans. *Nature*, **2008**, 454, 784-8	50.4	249
246	The isometric functional capacity of muscles that cross the elbow. *Journal of Biomechanics*, **2000**, 33, 943-52	2.9	249
245	Quantified self and human movement: a review on the clinical impact of wearable sensing and feedback for gait analysis and intervention. *Gait and Posture*, **2014**, 40, 11-9	2.6	246
244	Muscles that support the body also modulate forward progression during walking. *Journal of Biomechanics*, **2006**, 39, 2623-30	2.9	236
243	Three-dimensional representation of complex muscle architectures and geometries. *Annals of Biomedical Engineering*, **2005**, 33, 661-73	4.7	226
242	The influence of muscles on knee flexion during the swing phase of gait. *Journal of Biomechanics*, **1996**, 29, 723-33	2.9	220
241	Compressive tibiofemoral force during crouch gait. *Gait and Posture*, **2012**, 35, 556-60	2.6	201
240	Accuracy of Muscle Moment Arms Estimated from MRI-Based Musculoskeletal Models of the Lower Extremity. *Computer Aided Surgery*, **2000**, 5, 108-119		199
239	Upper limb muscle volumes in adult subjects. *Journal of Biomechanics*, **2007**, 40, 742-9	2.9	187
238	Subject-specific knee joint geometry improves predictions of medial tibiofemoral contact forces. *Journal of Biomechanics*, **2013**, 46, 2778-86	2.9	170
237	Image-based musculoskeletal modeling: applications, advances, and future opportunities. *Journal of Magnetic Resonance Imaging*, **2007**, 25, 441-51	5.6	170
236	Muscle contributions to fore-aft and vertical body mass center accelerations over a range of running speeds. *Journal of Biomechanics*, **2013**, 46, 780-7	2.9	169
235	Knee muscle forces during walking and running in patellofemoral pain patients and pain-free controls. *Journal of Biomechanics*, **2009**, 42, 898-905	2.9	169
234	How robust is human gait to muscle weakness?. *Gait and Posture*, **2012**, 36, 113-9	2.6	164

233	Hamstrings and psoas lengths during normal and crouch gait: implications for muscle-tendon surgery. *Journal of Orthopaedic Research*, **1996**, 14, 144-51	3.8	157
232	Virally mediated optogenetic excitation and inhibition of pain in freely moving nontransgenic mice. *Nature Biotechnology*, **2014**, 32, 274-8	44.5	154
231	Patellofemoral joint contact area increases with knee flexion and weight-bearing. *Journal of Orthopaedic Research*, **2005**, 23, 345-50	3.8	153
230	A Brainstem-Spinal Cord Inhibitory Circuit for Mechanical Pain Modulation by GABA and Enkephalins. *Neuron*, **2017**, 93, 822-839.e6	13.9	152
229	Orderly recruitment of motor units under optical control in vivo. *Nature Medicine*, **2010**, 16, 1161-5	50.5	150
228	Nonuniform shortening in the biceps brachii during elbow flexion. *Journal of Applied Physiology*, **2002**, 92, 2381-9	3.7	148
227	How muscle fiber lengths and velocities affect muscle force generation as humans walk and run at different speeds. *Journal of Experimental Biology*, **2013**, 216, 2150-60	3	146
226	How muscle architecture and moment arms affect wrist flexion-extension moments. *Journal of Biomechanics*, **1997**, 30, 705-12	2.9	146
225	Capacity to increase walking speed is limited by impaired hip and ankle power generation in lower functioning persons post-stroke. *Gait and Posture*, **2009**, 29, 129-37	2.6	143
224	Muscular contributions to hip and knee extension during the single limb stance phase of normal gait: a framework for investigating the causes of crouch gait. *Journal of Biomechanics*, **2005**, 38, 2181-9	2.9	142
223	Six-week gait retraining program reduces knee adduction moment, reduces pain, and improves function for individuals with medial compartment knee osteoarthritis. *Journal of Orthopaedic Research*, **2013**, 31, 1020-5	3.8	141
222	OpenSim: a musculoskeletal modeling and simulation framework for investigations and exchange. *Procedia IUTAM*, **2011**, 2, 212-232		138
221	Machine learning in human movement biomechanics: Best practices, common pitfalls, and new opportunities. *Journal of Biomechanics*, **2018**, 81, 1-11	2.9	138
220	Muscle contributions to support and progression during single-limb stance in crouch gait. *Journal of Biomechanics*, **2010**, 43, 2099-105	2.9	137
219	The variability of femoral rotational alignment in total knee arthroplasty. *Journal of Bone and Joint Surgery - Series A*, **2005**, 87, 2276-80	5.6	137
218	Structural foundations of optogenetics: Determinants of channelrhodopsin ion selectivity. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 822-9	11.5	136
217	Toe-in gait reduces the first peak knee adduction moment in patients with medial compartment knee osteoarthritis. *Journal of Biomechanics*, **2013**, 46, 122-8	2.9	130
216	Effects of hip center location on the moment-generating capacity of the muscles. *Journal of Biomechanics*, **1993**, 26, 485-99	2.9	129

215	Simbody: multibody dynamics for biomedical research. *Procedia IUTAM*, **2011**, 2, 241-261		127
214	Optogenetic control of targeted peripheral axons in freely moving animals. *PLoS ONE*, **2013**, 8, e72691	3.7	125
213	How superior placement of the joint center in hip arthroplasty affects the abductor muscles. *Clinical Orthopaedics and Related Research*, **1996**, 137-46	2.2	123
212	A modeling framework to estimate patellofemoral joint cartilage stress in vivo. *Medicine and Science in Sports and Exercise*, **2005**, 37, 1924-30	1.2	122
211	Muscles that influence knee flexion velocity in double support: implications for stiff-knee gait. *Journal of Biomechanics*, **2004**, 37, 1189-96	2.9	120
210	The role of estimating muscle-tendon lengths and velocities of the hamstrings in the evaluation and treatment of crouch gait. *Gait and Posture*, **2006**, 23, 273-81	2.6	119
209	Are subject-specific musculoskeletal models robust to the uncertainties in parameter identification?. *PLoS ONE*, **2014**, 9, e112625	3.7	116
208	Optimizing Locomotion Controllers Using Biologically-Based Actuators and Objectives. *ACM Transactions on Graphics*, **2012**, 31,	7.6	115
207	Muscle contributions to support during gait in an individual with post-stroke hemiparesis. *Journal of Biomechanics*, **2006**, 39, 1769-77	2.9	115
206	Surgical navigation for total knee arthroplasty: a perspective. *Journal of Biomechanics*, **2007**, 40, 728-35	2.9	112
205	Crouched postures reduce the capacity of muscles to extend the hip and knee during the single-limb stance phase of gait. *Journal of Biomechanics*, **2008**, 41, 960-7	2.9	112
204	Analysis of hindlimb muscle moment arms in Tyrannosaurus rex using a three-dimensional musculoskeletal computer model: implications for stance, gait, and speed. *Paleobiology*, **2005**, 31, 676	2.6	112
203	Preserving plantar flexion strength after surgical treatment for contracture of the triceps surae: a computer simulation study. *Journal of Orthopaedic Research*, **1995**, 13, 96-104	3.8	110
202	Beyond the brain: Optogenetic control in the spinal cord and peripheral nervous system. *Science Translational Medicine*, **2016**, 8, 337rv5	17.5	106
201	How tibiofemoral alignment and contact locations affect predictions of medial and lateral tibiofemoral contact forces. *Journal of Biomechanics*, **2015**, 48, 644-650	2.9	106
200	Three-dimensional dynamic simulation of total knee replacement motion during a step-up task. *Journal of Biomechanical Engineering*, **2001**, 123, 599-606	2.1	106
199	Using real-time MRI to quantify altered joint kinematics in subjects with patellofemoral pain and to evaluate the effects of a patellar brace or sleeve on joint motion. *Journal of Orthopaedic Research*, **2009**, 27, 571-7	3.8	97
198	The high variability of tibial rotational alignment in total knee arthroplasty. *Clinical Orthopaedics and Related Research*, **2006**, 452, 65-9	2.2	95

197	Prostaglandin E2 is essential for efficacious skeletal muscle stem-cell function, augmenting regeneration and strength. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 6675-6684	11.5	94
196	Internal rotation gait: a compensatory mechanism to restore abduction capacity decreased by bone deformity. *Developmental Medicine and Child Neurology*, **1997**, 39, 40-4	3.3	94
195	Evaluation of a deformable musculoskeletal model for estimating muscle-tendon lengths during crouch gait. *Annals of Biomedical Engineering*, **2001**, 29, 263-74	4.7	94
194	Three-dimensional isometric strength of neck muscles in humans. *Spine*, **2001**, 26, 1904-9	3.3	94
193	Can strength training predictably improve gait kinematics? A pilot study on the effects of hip and knee extensor strengthening on lower-extremity alignment in cerebral palsy. *Physical Therapy*, **2010**, 90, 269-79	3.3	93
192	The effect of excessive tibial torsion on the capacity of muscles to extend the hip and knee during single-limb stance. *Gait and Posture*, **2007**, 26, 546-52	2.6	91
191	Contributions of muscle forces and toe-off kinematics to peak knee flexion during the swing phase of normal gait: an induced position analysis. *Journal of Biomechanics*, **2004**, 37, 731-7	2.9	90
190	Scaling of peak moment arms of elbow muscles with upper extremity bone dimensions. *Journal of Biomechanics*, **2002**, 35, 19-26	2.9	88
189	The action of the rectus femoris muscle following distal tendon transfer: does it generate knee flexion moment?. *Developmental Medicine and Child Neurology*, **1997**, 39, 99-105	3.3	87
188	Kinematic and kinetic factors that correlate with improved knee flexion following treatment for stiff-knee gait. *Journal of Biomechanics*, **2006**, 39, 689-98	2.9	86
187	The influence of femoral internal and external rotation on cartilage stresses within the patellofemoral joint. *Journal of Orthopaedic Research*, **2008**, 26, 1627-35	3.8	85
186	How much muscle strength is required to walk in a crouch gait?. *Journal of Biomechanics*, **2012**, 45, 2564-9	2.9	84
185	Rectus femoris and vastus intermedius fiber excursions predicted by three-dimensional muscle models. *Journal of Biomechanics*, **2006**, 39, 1383-91	2.9	84
184	In vivo motion of the rectus femoris muscle after tendon transfer surgery. *Journal of Biomechanics*, **2002**, 35, 1029-37	2.9	84
183	Architecture of the rectus abdominis, quadratus lumborum, and erector spinae. *Journal of Biomechanics*, **2001**, 34, 371-5	2.9	83
182	Predicting the metabolic cost of incline walking from muscle activity and walking mechanics. *Journal of Biomechanics*, **2012**, 45, 1842-9	2.9	82
181	Moment-generating capacity of upper limb muscles in healthy adults. *Journal of Biomechanics*, **2007** , 40, 2442-9	2.9	82
180	Use it or lose it: multiscale skeletal muscle adaptation to mechanical stimuli. *Biomechanics and Modeling in Mechanobiology*, **2015**, 14, 195-215	3.8	80

179	Transfer of the rectus femoris: effects of transfer site on moment arms about the knee and hip. *Journal of Biomechanics*, **1994**, 27, 1201-11	2.9	80
178	Changes in tibiofemoral forces due to variations in muscle activity during walking. *Journal of Orthopaedic Research*, **2014**, 32, 769-76	3.8	79
177	Fibre operating lengths of human lower limb muscles during walking. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2011**, 366, 1530-9	5.8	79
176	The importance of swing-phase initial conditions in stiff-knee gait. *Journal of Biomechanics*, **2003**, 36, 1111-6	2.9	79
175	Accuracy of muscle moment arms estimated from MRI-based musculoskeletal models of the lower extremity. *Computer Aided Surgery*, **2000**, 5, 108-19		79
174	Differences in patellofemoral kinematics between weight-bearing and non-weight-bearing conditions in patients with patellofemoral pain. *Journal of Orthopaedic Research*, **2011**, 29, 312-7	3.8	78
173	Evaluation of a new algorithm to determine the hip joint center. *Journal of Biomechanics*, **2006**, 39, 125-30	2.9	78
172	Rotational moment arms of the medial hamstrings and adductors vary with femoral geometry and limb position: implications for the treatment of internally rotated gait. *Journal of Biomechanics*, **2001**, 34, 437-47	2.9	78
171	Intraoperative passive kinematics of osteoarthritic knees before and after total knee arthroplasty. *Journal of Orthopaedic Research*, **2006**, 24, 1607-14	3.8	74
170	Maximum isometric moments generated by the wrist muscles in flexion-extension and radial-ulnar deviation. *Journal of Biomechanics*, **1996**, 29, 1371-5	2.9	73
169	Simulating Ideal Assistive Devices to Reduce the Metabolic Cost of Running. *PLoS ONE*, **2016**, 11, e0163417	3.7	73
168	Do the hamstrings operate at increased muscle-tendon lengths and velocities after surgical lengthening?. *Journal of Biomechanics*, **2006**, 39, 1498-506	2.9	70
167	Men and women adopt similar walking mechanics and muscle activation patterns during load carriage. *Journal of Biomechanics*, **2013**, 46, 2522-8	2.9	69
166	Posterior tilting of the tibial component decreases femoral rollback in posterior-substituting knee replacement: a computer simulation study. *Journal of Orthopaedic Research*, **1998**, 16, 264-70	3.8	69
165	Do the hamstrings and adductors contribute to excessive internal rotation of the hip in persons with cerebral palsy?. *Gait and Posture*, **2000**, 11, 181-90	2.6	69
164	Patellar maltracking correlates with vastus medialis activation delay in patellofemoral pain patients. *American Journal of Sports Medicine*, **2011**, 39, 590-8	6.8	68
163	Contributions of muscles to mediolateral ground reaction force over a range of walking speeds. *Journal of Biomechanics*, **2012**, 45, 2438-43	2.9	66
162	New MR imaging methods for metallic implants in the knee: artifact correction and clinical impact. *Journal of Magnetic Resonance Imaging*, **2011**, 33, 1121-7	5.6	66

161	A Biomechanical Model of the Scapulothoracic Joint to Accurately Capture Scapular Kinematics during Shoulder Movements. *PLoS ONE*, **2016**, 11, e0141028	3.7	66
160	Importance of preswing rectus femoris activity in stiff-knee gait. *Journal of Biomechanics*, **2008**, 41, 2362-9	2.9	63
159	Weight-bearing MRI of patellofemoral joint cartilage contact area. *Journal of Magnetic Resonance Imaging*, **2004**, 20, 526-30	5.6	63
158	Simulating ideal assistive devices to reduce the metabolic cost of walking with heavy loads. *PLoS ONE*, **2017**, 12, e0180320	3.7	61
157	Best practices for analyzing large-scale health data from wearables and smartphone apps. *Npj Digital Medicine*, **2019**, 2, 45	15.7	61
156	Mechanisms of improved knee flexion after rectus femoris transfer surgery. *Journal of Biomechanics*, **2009**, 42, 614-9	2.9	61
155	Patellar tilt correlates with vastus lateralis: vastus medialis activation ratio in maltracking patellofemoral pain patients. *Journal of Orthopaedic Research*, **2012**, 30, 927-33	3.8	60
154	Musculoskeletal modelling of an ostrich (Struthio camelus) pelvic limb: influence of limb orientation on muscular capacity during locomotion. *PeerJ*, **2015**, 3, e1001	3.1	59
153	Stretching Your Energetic Budget: How Tendon Compliance Affects the Metabolic Cost of Running. *PLoS ONE*, **2016**, 11, e0150378	3.7	59
152	Learning one's genetic risk changes physiology independent of actual genetic risk. *Nature Human Behaviour*, **2019**, 3, 48-56	12.8	59
151	Predictive simulation generates human adaptations during loaded and inclined walking. *PLoS ONE*, **2015**, 10, e0121407	3.7	58
150	Optogenetic and chemogenetic strategies for sustained inhibition of pain. *Scientific Reports*, **2016**, 6, 30570	4.9	55
149	Predicting outcomes of rectus femoris transfer surgery. *Gait and Posture*, **2009**, 30, 100-5	2.6	55
148	Three-dimensional spatial tuning of neck muscle activation in humans. *Experimental Brain Research*, **2002**, 147, 437-48	2.3	55
147	Superior displacement of the hip in total joint replacement: effects of prosthetic neck length, neck-stem angle, and anteversion angle on the moment-generating capacity of the muscles. *Journal of Orthopaedic Research*, **1994**, 12, 860-70	3.8	54
146	Patellar maltracking is prevalent among patellofemoral pain subjects with patella alta: an upright, weightbearing MRI study. *Journal of Orthopaedic Research*, **2013**, 31, 448-57	3.8	53
145	Optimal control simulations reveal mechanisms by which arm movement improves standing long jump performance. *Journal of Biomechanics*, **2006**, 39, 1726-34	2.9	52
144	Patients with patellofemoral pain exhibit elevated bone metabolic activity at the patellofemoral joint. *Journal of Orthopaedic Research*, **2012**, 30, 209-13	3.8	51

143	Surgical Simulation: An Emerging Technology for Training in Emergency Medicine. *Presence: Teleoperators and Virtual Environments*, **1997**, 6, 147-159	2.9	51
142	Running with a load increases leg stiffness. *Journal of Biomechanics*, **2015**, 48, 1003-8	2.9	50
141	Gait biomechanics in the era of data science. *Journal of Biomechanics*, **2016**, 49, 3759-3761	2.9	48
140	Differences in muscle activity between natural forefoot and rearfoot strikers during running. *Journal of Biomechanics*, **2014**, 47, 3593-7	2.9	48
139	Muscle contributions to vertical and fore-aft accelerations are altered in subjects with crouch gait. *Gait and Posture*, **2013**, 38, 86-91	2.6	47
138	3D finite element models of shoulder muscles for computing lines of actions and moment arms. *Computer Methods in Biomechanics and Biomedical Engineering*, **2014**, 17, 829-37	2.1	47
137	The Simbios National Center: Systems Biology in Motion. *Proceedings of the IEEE*, **2008**, 96, 1266	14.3	47
136	Muscular coordination of knee motion during the terminal-swing phase of normal gait. *Journal of Biomechanics*, **2007**, 40, 3314-24	2.9	47
135	Minimal formulation of joint motion for biomechanisms. *Nonlinear Dynamics*, **2010**, 62, 291-303	5	46
134	Muscle-tendon mechanics explain unexpected effects of exoskeleton assistance on metabolic rate during walking. *Journal of Experimental Biology*, **2017**, 220, 2082-2095	3	45
133	WHAT IS A MOMENT ARM? CALCULATING MUSCLE EFFECTIVENESS IN BIOMECHANICAL MODELS USING GENERALIZED COORDINATES **2013**, 2013,		45
132	Can biomechanical variables predict improvement in crouch gait?. *Gait and Posture*, **2011**, 34, 197-201	2.6	45
131	Evaluation of methods that locate the center of the ankle for computer-assisted total knee arthroplasty. *Clinical Orthopaedics and Related Research*, **2005**, 439, 129-35	2.2	45
130	Computer modeling of gait abnormalities in cerebral palsy: application to treatment planning. *Theoretical Issues in Ergonomics Science*, **2005**, 6, 305-312	2.2	45
129	Force- and Moment-Generating Capacity of Lower-Extremity Muscles Before and After Tendon Lengthening. *Clinical Orthopaedics and Related Research*, **1992**, &NA;, 247???259	2.2	45
128	In□Vivo Interrogation of Spinal Mechanosensory Circuits. *Cell Reports*, **2016**, 17, 1699-1710	10.6	44
127	Averaging different alignment axes improves femoral rotational alignment in computer-navigated total knee arthroplasty. *Journal of Bone and Joint Surgery - Series A*, **2008**, 90, 2098-104	5.6	44
126	Predicting gait adaptations due to ankle plantarflexor muscle weakness and contracture using physics-based musculoskeletal simulations. *PLoS Computational Biology*, **2019**, 15, e1006993	5	43

125	Stabilisation of walking by intrinsic muscle properties revealed in a three-dimensional muscle-driven simulation. *Computer Methods in Biomechanics and Biomedical Engineering*, **2013**, 16, 451-62	2.1	43
124	Three-dimensional muscle-tendon geometry after rectus femoris tendon transfer. *Journal of Bone and Joint Surgery - Series A*, **2004**, 86, 348-54	5.6	41
123	Weakly supervised classification of aortic valve malformations using unlabeled cardiac MRI sequences. *Nature Communications*, **2019**, 10, 3111	17.4	40
122	Simulation of human movement: applications using OpenSim. *Procedia IUTAM*, **2011**, 2, 186-198		40
121	In Vivo Imaging of Human Sarcomere Twitch Dynamics in Individual Motor Units. *Neuron*, **2015**, 88, 1109-1120	13.9	38
120	Real-time imaging of skeletal muscle velocity. *Journal of Magnetic Resonance Imaging*, **2003**, 18, 734-9	5.6	37
119	Simulating the task-level control of human motion: a methodology and framework for implementation. *Visual Computer*, **2005**, 21, 289-302	2.3	37
118	Deep neural networks enable quantitative movement analysis using single-camera videos. *Nature Communications*, **2020**, 11, 4054	17.4	37
117	Preparatory co-activation of the ankle muscles may prevent ankle inversion injuries. *Journal of Biomechanics*, **2017**, 52, 17-23	2.9	36
116	Feasibility of using real-time MRI to measure joint kinematics in 1.5T and open-bore 0.5T systems. *Journal of Magnetic Resonance Imaging*, **2008**, 28, 158-66	5.6	36
115	Acute changes in foot strike pattern and cadence affect running parameters associated with tibial stress fractures. *Journal of Biomechanics*, **2018**, 76, 1-7	2.9	35
114	Biomechanical Effects of an Injury Prevention Program in Preadolescent Female Soccer Athletes. *American Journal of Sports Medicine*, **2017**, 45, 294-301	6.8	34
113	Musculoskeletal modelling deconstructs the paradoxical effects of elastic ankle exoskeletons on plantar-flexor mechanics and energetics during hopping. *Journal of Experimental Biology*, **2014**, 217, 4018-28	3	34
112	Comparison of MRI and □-NaF PET/CT in patients with patellofemoral pain. *Journal of Magnetic Resonance Imaging*, **2012**, 36, 928-32	5.6	34
111	Optical control of neuronal excitation and inhibition using a single opsin protein, ChR2. *Scientific Reports*, **2013**, 3, 3110	4.9	34
110	Automatic real-time gait event detection in children using deep neural networks. *PLoS ONE*, **2019**, 14, e0211466	3.7	33
109	Subject-specific toe-in or toe-out gait modifications reduce the larger knee adduction moment peak more than a non-personalized approach. *Journal of Biomechanics*, **2018**, 66, 103-110	2.9	33
108	Changes in in vivo knee contact forces through gait modification. *Journal of Orthopaedic Research*, **2013**, 31, 434-40	3.8	31

107	Stability and range of motion of Insall-Burstein condylar prostheses. A computer simulation study. *Journal of Arthroplasty*, **1995**, 10, 383-8	4.4	31
106	Tradeoffs between motion and stability in posterior substituting knee arthroplasty design. *Journal of Biomechanics*, **1995**, 28, 1155-66	2.9	30
105	Wearable sensors enable personalized predictions of clinical laboratory measurements. *Nature Medicine*, **2021**, 27, 1105-1112	50.5	30
104	Self-Tracking Energy Transfer for Neural Stimulation in Untethered Mice. *Physical Review Applied*, **2015**, 4,	4.3	29
103	Optical inhibition of motor nerve and muscle activity in vivo. *Muscle and Nerve*, **2013**, 47, 916-21	3.4	29
102	Multiecho IDEAL gradient-echo water-fat separation for rapid assessment of cartilage volume at 1.5 T: initial experience. *Radiology*, **2009**, 252, 561-7	20.5	29
101	Contributions of muscles to terminal-swing knee motions vary with walking speed. *Journal of Biomechanics*, **2007**, 40, 3660-71	2.9	29
100	Effect of equinus foot placement and intrinsic muscle response on knee extension during stance. *Gait and Posture*, **2006**, 23, 32-6	2.6	29
99	Simulation-Based Design for Wearable Robotic Systems: An Optimization Framework for Enhancing a Standing Long Jump. *IEEE Transactions on Biomedical Engineering*, **2016**, 63, 894-903	5	28
98	Sarcomere lengths in human extensor carpi radialis brevis measured by microendoscopy. *Muscle and Nerve*, **2013**, 48, 286-92	3.4	28
97	Coronal plane stability before and after total knee arthroplasty. *Clinical Orthopaedics and Related Research*, **2007**, 463, 43-9	2.2	28
96	Length changes of the hamstrings and adductors resulting from derotational osteotomies of the femur. *Journal of Orthopaedic Research*, **1999**, 17, 279-85	3.8	28
95	Moment arm and force-generating capacity of the extensor carpi ulnaris after transfer to the extensor carpi radialis brevis. *Journal of Hand Surgery*, **1999**, 24, 1083-90	2.6	28
94	Microendoscopy reveals positive correlation in multiscale length changes and variable sarcomere lengths across different regions of human muscle. *Journal of Applied Physiology*, **2018**,	3.7	28
93	Engineered myosin VI motors reveal minimal structural determinants of directionality and processivity. *Journal of Molecular Biology*, **2009**, 392, 862-7	6.5	26
92	Contributions of muscles and passive dynamics to swing initiation over a range of walking speeds. *Journal of Biomechanics*, **2010**, 43, 1450-5	2.9	26
91	Trochanteric transfer in total hip replacement: effects on the moment arms and force-generating capacities of the hip abductors. *Journal of Orthopaedic Research*, **1996**, 14, 245-50	3.8	26
90	Changes in sarcomere lengths of the human vastus lateralis muscle with knee flexion measured using in vivo microendoscopy. *Journal of Biomechanics*, **2016**, 49, 2989-2994	2.9	24

89	Cine phase-contrast magnetic resonance imaging as a tool for quantification of skeletal muscle motion. *Seminars in Musculoskeletal Radiology*, **2003**, 7, 287-95	1.8	24
88	Medical device surveillance with electronic health records. *Npj Digital Medicine*, **2019**, 2, 94	15.7	23
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