Darryl G Thelen

List of Publications by Year
in descending order

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124 papers	11,516 citations	53794 45 h-index	30087 103 g-index
124 all docs	124 docs citations	124 times ranked	7157 citing authors

#	Article	IF	Citations
1	OpenSim: Open-Source Software to Create and Analyze Dynamic Simulations of Movement. IEEE Transactions on Biomedical Engineering, 2007, 54, 1940-1950.	4.2	3,477
2	Generating dynamic simulations of movement using computed muscle control. Journal of Biomechanics, 2003, 36, 321-328.	2.1	546
3	Using computed muscle control to generate forward dynamic simulations of human walking from experimental data. Journal of Biomechanics, 2006, 39, 1107-1115.	2.1	509
4	Adjustment of Muscle Mechanics Model Parameters to Simulate Dynamic Contractions in Older Adults. Journal of Biomechanical Engineering, 2003, 125, 70-77.	1.3	498
5	Hamstring Strain Injuries: Recommendations for Diagnosis, Rehabilitation, and Injury Prevention. Journal of Orthopaedic and Sports Physical Therapy, 2010, 40, 67-81.	3.5	409
6	The effect of speed and influence of individual muscles on hamstring mechanics during the swing phase of sprinting. Journal of Biomechanics, 2007, 40, 3555-3562.	2.1	267
7	Hamstring Muscle Kinematics during Treadmill Sprinting. Medicine and Science in Sports and Exercise, 2005, 37, 108-114.	0.4	251
8	Differences in lower-extremity muscular activation during walking between healthy older and young adults. Journal of Electromyography and Kinesiology, 2009, 19, 1085-1091.	1.7	249
9	Hamstring Musculotendon Dynamics during Stance and Swing Phases of High-Speed Running. Medicine and Science in Sports and Exercise, 2011, 43, 525-532.	0.4	221
10	MR observations of long-term musculotendon remodeling following a hamstring strain injury. Skeletal Radiology, 2008, 37, 1101-1109.	2.0	191
11	Increasing Running Step Rate Reduces Patellofemoral Joint Forces. Medicine and Science in Sports and Exercise, 2014, 46, 557-564.	0.4	187
12	Identifying the time of occurrence of a hamstring strain injury during treadmill running: A case study. Clinical Biomechanics, 2005, 20, 1072-1078.	1.2	177
13	Active and passive contributions to joint kinetics during walking in older adults. Journal of Biomechanics, 2008, 41, 1520-1527.	2.1	157
14	Simulation of Biceps Femoris Musculotendon Mechanics during the Swing Phase of Sprinting. Medicine and Science in Sports and Exercise, 2005, 37, 1931-1938.	0.4	144
15	Gauging force by tapping tendons. Nature Communications, 2018, 9, 1592.	12.8	130
16	Hamstrings are most susceptible to injury during the late swing phase of sprinting. British Journal of Sports Medicine, 2012, 46, 90-90.	6.7	126
17	Prediction and Validation of Load-Dependent Behavior of the Tibiofemoral and Patellofemoral Joints During Movement. Annals of Biomedical Engineering, 2015, 43, 2675-2685.	2.5	109
18	The Effect of Walking Speed on Lower-Extremity Joint Powers Among Elderly Adults Who Exhibit Low Physical Performance. Archives of Physical Medicine and Rehabilitation, 2005, 86, 2177-2183.	0.9	106

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19	Identification of passive elastic joint momentâ€“angle relationships in the lower extremity. Journal of Biomechanics, 2007, 40, 2628-2635.	2.1	106
20	The contribution of passive-elastic mechanisms to lower extremity joint kinetics during human walking. Gait and Posture, 2008, 27, 628-634.	1.4	106
21	Selfâ€Reported Walking Ability Predicts Functional Mobility Performance in Frail Older Adults. Journal of the American Geriatrics Society, 2000, 48, 1408-1413.	2.6	99
22	Age and gender differences in peak lower extremity joint torques and ranges of motion used during single-step balance recovery from a forward fall. Journal of Biomechanics, 2001, 34, 67-73.	2.1	99
23	Non-uniform in vivo deformations of the human Achilles tendon during walking. Gait and Posture, 2015, 41, 192-197.	1.4	99
24	Muscle activities used by young and old adults when stepping to regain balance during a forward fall. Journal of Electromyography and Kinesiology, 2000, 10, 93-101.	1.7	95
25	Co-contraction of lumbar muscles during the development of time-varying triaxial moments. Journal of Orthopaedic Research, 1995, 13, 390-398.	2.3	88
26	Advanced age brings a greater reliance on visual feedback to maintain balance during walking. Human Movement Science, 2015, 40, 381-392.	1.4	88
27	The Influence of Component Alignment and Ligament Properties on Tibiofemoral Contact Forces in Total Knee Replacement. Journal of Biomechanical Engineering, 2016, 138, 021017.	1.3	85
28	Ability of Sagittal Kinematic Variables to Estimate Ground Reaction Forces and Joint Kinetics in Running. Journal of Orthopaedic and Sports Physical Therapy, 2014, 44, 825-830.	3.5	84
29	Neuromusculoskeletal Models Provide Insights into the Mechanisms and Rehabilitation of Hamstring Strains. Exercise and Sport Sciences Reviews, 2006, 34, 135-141.	3.0	80
30	The influence of prior hamstring injury on lengthening muscle tissue mechanics. Journal of Biomechanics, 2010, 43, 2254-2260.	2.1	79
31	Non-uniform displacements within the Achilles tendon observed during passive and eccentric loading. Journal of Biomechanics, 2014, 47, 2831-2835.	2.1	78
32	Spatial variations in Achilles tendon shear wave speed. Journal of Biomechanics, 2014, 47, 2685-2692.	2.1	78
33	Identification of dynamic myoelectric signal-to-force models during isometric lumbar muscle contractions. Journal of Biomechanics, 1994, 27, 907-919.	2.1	76
34	Co-Simulation of Neuromuscular Dynamics and Knee Mechanics During Human Walking. Journal of Biomechanical Engineering, 2014, 136, 021033.	1.3	75
35	The modulation of forward propulsion, vertical support, and center of pressure by the plantarflexors during human walking. Gait and Posture, 2013, 38, 993-997.	1.4	74
36	Length and activation dependent variations in muscle shear wave speed. Physiological Measurement, 2013, 34, 713-721.	2.1	74

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37	Knee Joint Loading in Healthy Adults During Functional Exercises: Implications for Rehabilitation Guidelines. Journal of Orthopaedic and Sports Physical Therapy, 2018, 48, 162-173.	3.5	71
38	Quantitative ultrasound mapping of regional variations in shear wave speeds of the aging Achilles tendon. European Radiology, 2017, 27, 474-482.	4.5	67
39	Effects of prior hamstring strain injury on strength, flexibility, and running mechanics. Clinical Biomechanics, 2010, 25, 681-686.	1.2	61
40	Hip Muscle Loads During Running at Various Step Rates. Journal of Orthopaedic and Sports Physical Therapy, 2014, 44, 766-A4.	3.5	59
41	Effect of age on center of mass motion during human walking. Gait and Posture, 2009, 30, 217-222.	1.4	56
42	Muscular coordination of knee motion during the terminal-swing phase of normal gait. Journal of Biomechanics, 2007, 40, 3314-3324.	2.1	55
43	The use of 2D ultrasound elastography for measuring tendon motion and strain. Journal of Biomechanics, 2014, 47, 750-754.	2.1	54
44	Achilles tendon displacement patterns during passive stretch and eccentric loading are altered in middle-aged adults. Medical Engineering and Physics, 2015, 37, 712-716.	1.7	54
45	A 3D model of the Achilles tendon to determine the mechanisms underlying nonuniform tendon displacements. Journal of Biomechanics, 2017, 51, 17-25.	2.1	52
46	Selective lateral muscle activation in moderate medial knee osteoarthritis subjects does not unload medial knee condyle. Journal of Biomechanics, 2014, 47, 1409-1415.	2.1	49
47	Depth-dependent variations in Achilles tendon deformations with age are associated with reduced plantarflexor performance during walking. Journal of Applied Physiology, 2015, 119, 242-249.	2.5	47
48	Gender Differences in Bicycle Saddle Pressure Distribution during Seated Cycling. Medicine and Science in Sports and Exercise, 2008, 40, 1126-1134.	0.4	46
49	Tendon motion and strain patterns evaluated with two-dimensional ultrasound elastography. Journal of Biomechanics, 2012, 45, 2618-2623.	2.1	46
50	Gait variability in healthy old adults is more affected by a visual perturbation than by a cognitive or narrow step placement demand. Gait and Posture, 2015, 42, 380-385.	1.4	46
51	Imaging and simulation of Achilles tendon dynamics: Implications for walking performance in the elderly. Journal of Biomechanics, 2016, 49, 1403-1410.	2.1	46
52	Variation in the human Achilles tendon moment arm during walking. Computer Methods in Biomechanics and Biomedical Engineering, 2017, 20, 201-205.	1.6	46
53	Shear Wave Predictions of Achilles Tendon Loading during Human Walking. Scientific Reports, 2019, 9, 13419.	3.3	46
54	Knee Cartilage Thickness, T1Ï•and T2 Relaxation Time Are Related to Articular Cartilage Loading in Healthy Adults. PLoS ONE, 2017, 12, e0170002.	2.5	46

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55	Influence of Ligament Properties on Tibiofemoral Mechanics in Walking. Journal of Knee Surgery, 2016, 29, 099-106.	1.6	45
56	Influence of step rate and quadriceps load distribution on patellofemoral cartilage contact pressures during running. Journal of Biomechanics, 2015, 48, 2871-2878.	2.1	44
57	Influence of Gender, Power, and Hand Position on Pelvic Motion during Seated Cycling. Medicine and Science in Sports and Exercise, 2007, 39, 2204-2211.	0.4	43
58	The effects of Achilles tendon compliance on triceps surae mechanics and energetics in walking. Journal of Biomechanics, 2017, 60, 227-231.	2.1	43
59	Influence of patellar position on the knee extensor mechanism in normal and crouched walking. Journal of Biomechanics, 2017, 51, 1-7.	2.1	42
60	Do Neural Factors Underlie Age Differences in Rapid Ankle Torque Development?. Journal of the American Geriatrics Society, 1996, 44, 804-808.	2.6	41
61	InÂVivo Measures of Shear Wave Speed as a Predictor of Tendon Elasticity and Strength. Ultrasound in Medicine and Biology, 2015, 41, 2722-2730.	1.5	40
62	Medial knee loading is altered in subjects with early osteoarthritis during gait but not during step-up-and-over task. PLoS ONE, 2017, 12, e0187583.	2.5	39
63	Contributions of muscles to terminal-swing knee motions vary with walking speed. Journal of Biomechanics, 2007, 40, 3660-3671.	2.1	35
64	Load-dependent variations in knee kinematics measured with dynamic MRI. Journal of Biomechanics, 2013, 46, 2045-2052.	2.1	35
65	The influence of glove and hand position on pressure over the ulnar nerve during cycling. Clinical Biomechanics, 2011, 26, 642-648.	1.2	34
66	Efficient computation of cartilage contact pressures within dynamic simulations of movement. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2018, 6, 491-498.	1.9	34
67	The effect of articular geometry features identified using statistical shape modelling on knee biomechanics. Medical Engineering and Physics, 2019, 66, 47-55.	1.7	33
68	Quantitative interpretation of lumbar muscle myoelectric signals during rapid cyclic attempted trunk flexions and extensions. Journal of Biomechanics, 1994, 27, 157-167.	2.1	32
69	Measurement of tibiofemoral kinematics using highly accelerated 3D radial sampling. Magnetic Resonance in Medicine, 2013, 69, 1310-1316.	3.0	32
70	Age-Related Differences in Gait Kinematics, Kinetics, and Muscle Function: A Principal Component Analysis. Annals of Biomedical Engineering, 2017, 45, 695-710.	2.5	32
71	Can altered neuromuscular coordination restore soft tissue loading patterns in anterior cruciate ligament and menisci deficient knees during walking?. Journal of Biomechanics, 2019, 82, 124-133.	2.1	32
72	Visuomotor Entrainment and the Frequency-Dependent Response of Walking Balance to Perturbations. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 1135-1142.	4.9	28

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73	Empirical evaluation of gastrocnemius and soleus function during walking. Journal of Biomechanics, 2014, 47, 2969-2974.	2.1	27
74	The influence of knee joint geometry and alignment on the tibiofemoral load distribution: A computational study. Knee, 2019, 26, 813-823.	1.6	27
75	Effects of step length on stepping responses used to arrest a forward fall. Gait and Posture, 2005, 22, 219-224.	1.4	24
76	Middle-aged adults exhibit altered spatial variations in Achilles tendon wave speed. Physiological Measurement, 2015, 36, 1485-1496.	2.1	23
77	Lumbar Muscle Activities in Rapid Three-dimensional Pulling Tasks. Spine, 1996, 21, 605-613.	2.0	21
78	Effect of Loading on In Vivo Tibiofemoral and Patellofemoral Kinematics of Healthy and ACL-Reconstructed Knees. American Journal of Sports Medicine, 2017, 45, 3272-3279.	4.2	21
79	In vivo measurement of dynamic rectus femoris function at postures representative of early swing phase. Journal of Biomechanics, 2008, 41, 137-144.	2.1	20
80	American Society of Biomechanics Clinical Biomechanics Award 2015: MRI assessments of cartilage mechanics, morphology and composition following reconstruction of the anterior cruciate ligament. Clinical Biomechanics, 2016, 34, 38-44.	1.2	19
81	Calibration of the shear wave speed-stress relationship in ex vivo tendons. Journal of Biomechanics, 2019, 90, 9-15.	2.1	19
82	How does patellar tendon advancement alter the knee extensor mechanism in children treated for crouch gait?. Gait and Posture, 2018, 64, 248-254.	1.4	18
83	Biplanar ultrasound investigation of in vivo Achilles tendon displacement non-uniformity. Translational Sports Medicine, 2019, 2, 73-81.	1.1	18
84	Wearable Tendon Kinetics. Sensors, 2020, 20, 4805.	3.8	17
85	American Society of Biomechanics Clinical Biomechanics Award 2017: Non-anatomic graft geometry is linked with asymmetric tibiofemoral kinematics and cartilage contact following anterior cruciate ligament reconstruction. Clinical Biomechanics, 2018, 56, 75-83.	1.2	16
86	Computational techniques for using insole pressure sensors to analyse three-dimensional joint kinetics. Computer Methods in Biomechanics and Biomedical Engineering, 2010, 13, 505-514.	1.6	15
87	Accuracy of model-based tracking of knee kinematics and cartilage contact measured by dynamic volumetric MRI. Medical Engineering and Physics, 2016, 38, 1131-1135.	1.7	15
88	Achilles tendon loading is lower in older adults than young adults across a broad range of walking speeds. Experimental Gerontology, 2020, 137, 110966.	2.8	15
89	Cartilage defect location and stiffness predispose the tibiofemoral joint to aberrant loading conditions during stance phase of gait. PLoS ONE, 2018, 13, e0205842.	2.5	14
90	The effects of cognitive load and optical flow on antagonist leg muscle coactivation during walking for young and older adults. Journal of Electromyography and Kinesiology, 2019, 44, 8-14.	1.7	14

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91	Anterior Cruciate Ligament Graft Tunnel Placement and Graft Angle Are Primary Determinants of Internal Knee Mechanics After Reconstructive Surgery. American Journal of Sports Medicine, 2020, 48, 3503-3514.	4.2	14
92	Influence of Bicycle Seat Tube Angle and Hand Position on Lower Extremity Kinematics and Neuromuscular Control: Implications for Triathlon Running Performance. Journal of Applied Biomechanics, 2011, 27, 297-305.	0.8	13
93	Evidence of Generalized Muscle Stiffness in the Presence of Latent Trigger Points Within Infraspinatus. Archives of Physical Medicine and Rehabilitation, 2018, 99, 2257-2262.	0.9	13
94	The coupled effects of crouch gait and patella alta on tibiofemoral and patellofemoral cartilage loading in children. Gait and Posture, 2018, 60, 181-187.	1.4	12
95	Nonuniform Deformation of the Patellar Tendon During Passive Knee Flexion. Journal of Applied Biomechanics, 2018, 34, 14-22.	0.8	12
96	Shear Wave Tensiometry Reveals an Age-Related Deficit in Triceps Surae Work at Slow and Fast Walking Speeds. Frontiers in Sports and Active Living, 2020, 2, 69.	1.8	12
97	Ultrashort echo time (UTE) imaging reveals a shift in bound water that is sensitive to sub-clinical tendinopathy in older adults. Skeletal Radiology, 2021, 50, 107-113.	2.0	12
98	A Magnetic Resonance-Compatible Loading Device for Dynamically Imaging Shortening and Lengthening Muscle Contraction Mechanics. Journal of Medical Devices, Transactions of the ASME, 2009, 3, .	0.7	11
99	Comparison of hierarchical and six degrees-of-freedom marker sets in analyzing gait kinematics. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 199-207.	1.6	11
100	Calibration of the shear wave speed-stress relationship in in situ Achilles tendons using cadaveric simulations of gait and isometric contraction. Journal of Biomechanics, 2020, 106, 109799.	2.1	11
101	The accuracy of conventional 2D video for quantifying upper limb kinematics in repetitive motion occupational tasks. Ergonomics, 2015, 58, 2057-2066.	2.1	10
102	Abnormal muscle activation patterns are associated with chronic gait deficits following traumatic brain injury. Gait and Posture, 2018, 62, 510-517.	1.4	10
103	The effects of sub-threshold vibratory noise on visuomotor entrainment during human walking and standing in a virtual reality environment. Human Movement Science, 2019, 66, 587-599.	1.4	10
104	Patients With Medial Knee Osteoarthritis Reduce Medial Knee Contact Forces by Altering Trunk Kinematics, Progression Speed, and Stepping Strategy During Stair Ascent and Descent: A Pilot Study. Journal of Applied Biomechanics, 2019, 35, 280-289.	0.8	10
105	Interfibrillar shear behavior is altered in aging tendon fascicles. Biomechanics and Modeling in Mechanobiology, 2020, 19, 841-849.	2.8	9
106	Fusion of Wearable Kinetic and Kinematic Sensors to Estimate Triceps Surae Work during Outdoor Locomotion on Slopes. Sensors, 2022, 22, 1589.	3.8	9
107	Shear wave speeds track axial stress in porcine collateral ligaments. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 105, 103704.	3.1	7
108	Empirical assessment of dynamic hamstring function during human walking. Journal of Biomechanics, 2013, 46, 1255-1261.	2.1	6

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109	Knee extension moment arm variations relate to mechanical function in walking and running. Journal of the Royal Society Interface, 2021, 18, 20210326.	3.4	6
110	Sensitivity of the shear wave speed-stress relationship to soft tissue material properties and fiber alignment. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 125, 104964.	3.1	6
111	Individuals with Chronic Mild-to-Moderate Traumatic Brain Injury Exhibit Decreased Neuromuscular Complexity During Gait. Neurorehabilitation and Neural Repair, 2022, 36, 317-327.	2.9	6
112	Achilles tendon shear wave speed tracks the dynamic modulation of standing balance. Physiological Reports, 2019, 7, e14298.	1.7	4
113	Achilles Tendon Morphology Is Related to Triceps Surae Muscle Size and Peak Plantarflexion Torques During Walking in Young but Not Older Adults. Frontiers in Sports and Active Living, 2020, 2, 88.	1.8	4
114	Normative Achilles and patellar tendon shear wave speeds and loading patterns during walking in typically developing children. Gait and Posture, 2021, 88, 185-191.	1.4	4
115	Simulation of Soft Tissue Loading from Observed Movement Dynamics. , 2017, , 1-34.		4
116	Relationship Between Lateral Patellar Stability and Tibial Tubercle Location for Varying Patellofemoral Geometries. Journal of Biomechanical Engineering, 2019, 141, .	1.3	4
117	Influence of Articular Geometry and Tibial Tubercle Location on Patellofemoral Kinematics and Contact Mechanics. Journal of Applied Biomechanics, 2022, 38, 58-66.	0.8	4
118	Atypical triceps surae force and work patterns underlying gait in children with cerebral palsy. Journal of Orthopaedic Research, 2022, 40, 2763-2770.	2.3	4
119	A Kalman Filter Approach for Estimating Tendon Wave Speed from Skin-Mounted Accelerometers. Sensors, 2022, 22, 2283.	3.8	3
120	Patella Apex Influences Patellar Ligament Forces and Ratio. Journal of Biomechanical Engineering, 2021, 143, .	1.3	2
121	Simulation of surface strain in tibiofemoral cartilage during walking for the prediction of collagen fibre orientation. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2019, 7, 396-405.	1.9	1
122	Ligament Shear Wave Speeds Are Sensitive to Tensiometer-Tissue Interactions: A Parametric Modeling Study. Lecture Notes in Computational Vision and Biomechanics, 2020, , 48-59.	0.5	1
123	Simulation of Soft Tissue Loading from Observed Movement Dynamics. , 2018, , 395-428.		0
124	Shear wave tensiometry tracks reductions in collateral ligament tension due to incremental releases. Journal of Orthopaedic Research, 2023, 41, 524-533.	2.3	0