Richard K Shields

List of Publications by Year
in descending order

136 papers	4,096 citations	117625 34 h-index	144013 57 g-index
141 all docs	141 docs citations	141 times ranked	3505 citing authors

#	Article	IF	Citations
1	mRNA Expression Signatures of Human Skeletal Muscle Atrophy Identify a Natural Compound that Increases Muscle Mass. Cell Metabolism, 2011, 13, 627-638.	16.2	298
2	Low frequency depression of H-reflexes in humans with acute and chronic spinal-cord injury. Experimental Brain Research, 2000, 133, 233-241.	1.5	172
3	Muscle and bone plasticity after spinal cord injury: Review of adaptations to disuse and to electrical muscle stimulation. Journal of Rehabilitation Research and Development, 2008, 45, 283-296.	1.6	160
4	Musculoskeletal Plasticity After Acute Spinal Cord Injury: Effects of Long-Term Neuromuscular Electrical Stimulation Training. Journal of Neurophysiology, 2006, 95, 2380-2390.	1.8	155
5	Fatigability, relaxation properties, and electromyographic responses of the human paralyzed soleus muscle. Journal of Neurophysiology, 1995, 73, 2195-2206.	1.8	154
6	Muscular, Skeletal, and Neural Adaptations Following Spinal Cord Injury. Journal of Orthopaedic and Sports Physical Therapy, 2002, 32, 65-74.	3.5	129
7	Evaluation of Health-Related Quality of Life in Individuals With Vestibular Disease Using Disease-Specific and General Outcome Measures. Physical Therapy, 1997, 77, 890-903.	2.4	110
8	Health related quality of life in patients with total hip or knee replacement. Archives of Physical Medicine and Rehabilitation, 1999, 80, 572-579.	0.9	103
9	Musculoskeletal Adaptations in Chronic Spinal Cord Injury: Effects of Long-term Soleus Electrical Stimulation Training. Neurorehabilitation and Neural Repair, 2007, 21, 169-179.	2.9	93
10	Total Hip and Knee Replacement Treatment Programs: A Report Using Consensus. Journal of Orthopaedic and Sports Physical Therapy, 1996, 23, 3-11.	3.5	82
11	The Effects of a Home Exercise Program on Impairment and Health-Related Quality of Life in Persons With Chronic Peripheral Neuropathies. Physical Therapy, 1997, 77, 1026-1039.	2.4	78
12	Electrically Induced Muscle Contractions Influence Bone Density Decline After Spinal Cord Injury. Spine, 2006, 31, 548-553.	2.0	73
13	Neuromuscular Control of the Knee during a Resisted Single-Limb Squat Exercise. American Journal of Sports Medicine, 2005, 33, 1520-1526.	4.2	71
14	Effects of electrically induced fatigue on the twitch and tetanus of paralyzed soleus muscle in humans. Journal of Applied Physiology, 1997, 82, 1499-1507.	2.5	67
15	Bone Mineral Density After Spinal Cord Injury: A Reliable Method for Knee Measurement. Archives of Physical Medicine and Rehabilitation, 2005, 86, 1969-1973.	0.9	66
16	Heat Stress and Cardiovascular, Hormonal, and Heat Shock Proteins in Humans. Journal of Athletic Training, 2012, 47, 184-190.	1.8	66
17	Identification of a modified Wienerâ€“Hammerstein system and its application in electrically stimulated paralyzed skeletal muscle modeling. Automatica, 2009, 45, 736-743.	5.0	65
18	High dose compressive loads attenuate bone mineral loss in humans with spinal cord injury. Osteoporosis International, 2012, 23, 2335-2346.	3.1	63

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19	Comparison of Surface Sensor and Bone-Fixed Measurement of Humeral Motion. Journal of Applied Biomechanics, 2002, 18, 163-170.	0.8	57
20	Neuromuscular responses in individuals with anterior cruciate ligament repair. Clinical Neurophysiology, 2011, 122, 997-1004.	1.5	54
21	Impaired skeletal muscle mitochondrial pyruvate uptake rewires glucose metabolism to drive whole-body leanness. ELife, 2019, 8, .	6.0	54
22	Influence of age on dynamic position sense: evidence using a sequential movement task. Experimental Brain Research, 2005, 164, 18-28.	1.5	53
23	The effects of fatigue on the torque-frequency curve of the human paralysed soleus muscle. Journal of Electromyography and Kinesiology, 1997, 7, 3-13.	1.7	49
24	The Revised Research Agenda for Physical Therapy. Physical Therapy, 2011, 91, 165-174.	2.4	49
25	Dose Estimation and Surveillance of Mechanical Loading Interventions for Bone Loss After Spinal Cord Injury. Physical Therapy, 2008, 88, 387-396.	2.4	45
26	Regional cortical and trabecular bone loss after spinal cord injury. Journal of Rehabilitation Research and Development, 2012, 49, 1365.	1.6	45
27	Fostering interprofessional teamwork in an academic medical center: Nearâ€peer education for students during gross medical anatomy. Anatomical Sciences Education, 2015, 8, 331-337.	3.7	43
28	Analysis of health-related quality of life and muscle impairment in individuals with amyotrophic lateral sclerosis using the medical outcome survey and the tufts quantitative neuromuscular exam. Archives of Physical Medicine and Rehabilitation, 1998, 79, 855-862.	0.9	42
29	An Acute Care Physical Therapy Clinical Practice Database for Outcomes Research. Physical Therapy, 1994, 74, 463-470.	2.4	41
30	Soleus H-reflex recruitment is not altered in persons with chronic spinal cord injury 11No commercial party having a direct financial interest in the results of the research supporting this article has or will confer a benefit upon the authors(s) or upon any organization with which the author(s) is/are associated.. Archives of Physical Medicine and Rehabilitation, 2004, 85, 840-847.	0.9	41
31	Reliability and Responsiveness of Musculoskeletal Ultrasound in Subjects with and without Spinal Cord Injury. Ultrasound in Medicine and Biology, 2010, 36, 1594-1607.	1.5	41
32	Altered mRNA expression after longâ€term soleus electrical stimulation training in humans with paralysis. Muscle and Nerve, 2011, 43, 65-75.	2.2	40
33	An Electromyographic Comparison of Abdominal Muscle Synergies During Curl and Double Straight Leg Lowering Exercises With Control of the Pelvic Position. Spine, 1997, 22, 1873-1879.	2.0	39
34	Effect of Seat Angle and Lumbar Support on Seated Buttock Pressure. Physical Therapy, 1988, 68, 1682-1686.	2.4	38
35	Postfatigue potentiation of the paralyzed soleus muscle: evidence for adaptation with long-term electrical stimulation training. Journal of Applied Physiology, 2006, 101, 556-565.	2.5	36
36	Balance loss when lifting a heavier-than-expected load: Effects of lifting technique. Archives of Physical Medicine and Rehabilitation, 2002, 83, 48-59.	0.9	34

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37	Assessment of physical function and secondary complications after complete spinal cord injury. Disability and Rehabilitation, 2006, 28, 103-110.	1.8	34
38	Neuromuscular propagation after fatiguing contractions of the paralyzed soleus muscle in humans. , 1998, 21, 776-787.		30
39	Lumbar Support Thickness: Effect on Seated Buttock Pressure in Individuals with and without Spinal Cord Injury. Physical Therapy, 1992, 72, 218-226.	2.4	28
40	Peripheral Quantitative Computed Tomography: Measurement Sensitivity in Persons With and Without Spinal Cord Injury. Archives of Physical Medicine and Rehabilitation, 2006, 87, 1376-1381.	0.9	28
41	Mathematical models of human paralyzed muscle after long-term training. Journal of Biomechanics, 2007, 40, 2587-2595.	2.1	27
42	Neuromuscular electrical stimulation and dietary interventions to reduce oxidative stress in a secondary progressive multiple sclerosis patient leads to marked gains in function: a case report. Cases Journal, 2009, 2, 7601.	0.4	27
43	Variability of motor cortical excitability using a novel mapping procedure. Journal of Neuroscience Methods, 2013, 214, 137-143.	2.5	27
44	Monitoring standing wheelchair use after spinal cord injury: A case report. Disability and Rehabilitation, 2005, 27, 142-146.	1.8	26
45	A Minimal Dose of Electrically Induced Muscle Activity Regulates Distinct Gene Signaling Pathways in Humans with Spinal Cord Injury. PLoS ONE, 2014, 9, e115791.	2.5	26
46	Effects of a Maximal Graded Exercise Test on Glutathione as a Marker of Acute Oxidative Stress. Journal of Cardiopulmonary Rehabilitation and Prevention, 2005, 25, 215-219.	0.5	25
47	Longitudinal changes in femur bone mineral density after spinal cord injury: effects of slice placement and peel method. Osteoporosis International, 2010, 21, 985-995.	3.1	25
48	Low-frequency stimulation regulates metabolic gene expression in paralyzed muscle. Journal of Applied Physiology, 2015, 118, 723-731.	2.5	25
49	Within-train neuromuscular propagation varies with torque in paralyzed human muscle. Muscle and Nerve, 2002, 26, 673-680.	2.2	24
50	Predicting human chronically paralyzed muscle force: a comparison of three mathematical models. Journal of Applied Physiology, 2006, 100, 1027-1036.	2.5	24
51	Cortical and segmental excitability during fatiguing contractions of the soleus muscle in humans. Clinical Neurophysiology, 2012, 123, 335-343.	1.5	24
52	Bone architecture adaptations after spinal cord injury: impact of long-term vibration of a constrained lower limb. Osteoporosis International, 2016, 27, 1149-1160.	3.1	24
53	Physiotherapy education is a good financial investment, up to a certain level of student debt: an inter-professional economic analysis. Journal of Physiotherapy, 2018, 64, 183-191.	1.7	24
54	Musculoskeletal Deterioration and Hemicorporectomy After Spinal Cord Injury. Physical Therapy, 2003, 83, 263-275.	2.4	23

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55	Doublet stimulation protocol to minimize musculoskeletal stress during paralyzed quadriceps muscle testing. Journal of Applied Physiology, 2008, 104, 1574-1582.	2.5	22
56	Femoral loads during passive, active, and activeâ€“resistive stance after spinal cord injury: a mathematical model. Clinical Biomechanics, 2004, 19, 313-321.	1.2	21
57	Mathematical models use varying parameter strategies to represent paralyzed muscle force properties: a sensitivity analysis. Journal of NeuroEngineering and Rehabilitation, 2005, 2, 12.	4.6	21
58	Active-resisted stance modulates regional bone mineral density in humans with spinal cord injury. Journal of Spinal Cord Medicine, 2013, 36, 191-199.	1.4	21
59	Effects of Repetitive Handgrip Training on Endurance, Specificity, and Crossâ€“Education. Physical Therapy, 1999, 79, 467-475.	2.4	20
60	Predictive model of muscle fatigue after spinal cord injury in humans. Muscle and Nerve, 2006, 34, 84-91.	2.2	20
61	Movement Accuracy Changes Muscleâ€Activation Strategies in Female Subjects During a Novel Singleâ€Leg Weightâ€Bearing Task. PM and R, 2009, 1, 319-328.	1.6	20
62	Limb segment vibration modulates spinal reflex excitability and muscle mRNA expression after spinal cord injury. Clinical Neurophysiology, 2012, 123, 558-568.	1.5	20
63	Low-frequency H-reflex depression in trained human soleus after spinal cord injury. Neuroscience Letters, 2011, 499, 88-92.	2.1	19
64	Effects of brain derived neurotrophic factor Val66Met polymorphism in patients with cervical spondylotic myelopathy. Journal of Clinical Neuroscience, 2016, 24, 117-121.	1.5	19
65	Weight-Bearing Exercise Accuracy Influences Muscle Activation Strategies of the Knee. Journal of Neurologic Physical Therapy, 2007, 31, 12-19.	1.4	18
66	Low force contractions induce fatigue consistent with muscle mRNA expression in people with spinal cord injury. Physiological Reports, 2014, 2, e00248.	1.7	18
67	Sustained Muscle Activity Minimally Influences Dynamic Position Sense of the Ankle. Journal of Orthopaedic and Sports Physical Therapy, 2005, 35, 443-451.	3.5	17
68	Low frequency fatigue in human quadriceps is fatigue dependent and not task dependent. Journal of Electromyography and Kinesiology, 2008, 18, 308-316.	1.7	17
69	Influence of Age on Neuromuscular Control during a Dynamic Weight-Bearing Task. Journal of Aging and Physical Activity, 2009, 17, 327-343.	1.0	17
70	Turning Over the Hourglass. Physical Therapy, 2017, 97, 949-963.	2.4	17
71	Whole body heat exposure modulates acute glucose metabolism. International Journal of Hyperthermia, 2018, 35, 644-651.	2.5	17
72	Impact of short- and long-term electrically induced muscle exercise on gene signaling pathways, gene expression, and PGC1a methylation in men with spinal cord injury. Physiological Genomics, 2020, 52, 71-80.	2.3	17

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73	Musculoskeletal deterioration and hemicorporectomy after spinal cord injury. Physical Therapy, 2003, 83, 263-75.	2.4	17
74	Fatigability, oxygen uptake kinetics and muscle deoxygenation in incomplete spinal cord injury during treadmill walking. European Journal of Applied Physiology, 2017, 117, 1989-2000.	2.5	16
75	Quadriceps lowâ€frequency fatigue and muscle pain are contractionâ€typeâ€dependent. Muscle and Nerve, 2010, 42, 230-238.	2.2	15
76	Whole body heat stress increases motor cortical excitability and skill acquisition in humans. Clinical Neurophysiology, 2016, 127, 1521-1529.	1.5	15
77	Precision Physical Therapy: Exercise, the Epigenome, and the Heritability of Environmentally Modified Traits. Physical Therapy, 2018, 98, 946-952.	2.4	15
78	Meeting Proceedings for SCI 2020: Launching a Decade of Disruption in Spinal Cord Injury Research. Journal of Neurotrauma, 2021, 38, 1251-1266.	3.4	14
79	Proprioceptive coordination of movement sequences in humans. Clinical Neurophysiology, 2005, 116, 87-92.	1.5	13
80	Fatigue and non-fatigue mathematical muscle models during functional electrical stimulation of paralyzed muscle. Biomedical Signal Processing and Control, 2010, 5, 87-93.	5.7	13
81	Distinct Skeletal Muscle Gene Regulation from Active Contraction, Passive Vibration, and Whole Body Heat Stress in Humans. PLoS ONE, 2016, 11, e0160594.	2.5	13
82	Phantom limb pain induced in amputee by strong magnetic fields. Journal of Magnetic Resonance Imaging, 1992, 2, 221-223.	3.4	12
83	Feedback-controlled stimulation enhances human paralyzed muscle performance. Journal of Applied Physiology, 2006, 101, 1312-1319.	2.5	12
84	Quadriceps Fatigue Alters Human Muscle Performance during a Novel Weight Bearing Task. Medicine and Science in Sports and Exercise, 2010, 42, 1712-1722.	0.4	12
85	Doublet Electrical Stimulation Enhances Torque Production in People With Spinal Cord Injury. Neurorehabilitation and Neural Repair, 2011, 25, 423-432.	2.9	12
86	Dynamic-Position-Sense Impairmentâ€™s Independence of Perceived Knee Function in Women With ACL Reconstruction. Journal of Sport Rehabilitation, 2012, 21, 44-53.	1.0	12
87	Cognitive function, quality of life, and aging: relationships in individuals with and without spinal cord injury. Physiotherapy Theory and Practice, 2022, 38, 36-45.	1.3	12
88	NIH Toolbox Cognition Battery in Young and Older Adults: Reliability and Relationship to Adiposity and Physical Activity. Journal of Geriatric Physical Therapy, 2021, 44, 51-59.	1.1	12
89	Enhancing Muscle Force and Femur Compressive Loads Via Feedback-Controlled Stimulation of Paralyzed Quadriceps in Humans. Archives of Physical Medicine and Rehabilitation, 2011, 92, 242-249.	0.9	11
90	Gravitational force modulates muscle activity during mechanical oscillation of the tibia in humans. Journal of Electromyography and Kinesiology, 2011, 21, 847-853.	1.7	11

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91	Low-Force Muscle Activity Regulates Energy Expenditure after Spinal Cord Injury. Medicine and Science in Sports and Exercise, 2017, 49, 870-878.	0.4	11
92	Age and Cognitive Stress Influences Motor Skill Acquisition, Consolidation, and Dual-Task Effect in Humans. Journal of Motor Behavior, 2019, 51, 622-639.	0.9	11
93	Limb compressive load does not inhibit post activation depression of soleus H-reflex in indiviudals with chronic spinal cord injury. Clinical Neurophysiology, 2013, 124, 982-990.	1.5	10
94	Quantitative muscle MRI as a sensitive marker of early muscle pathology in myotonic dystrophy type 1. Muscle and Nerve, 2021, 63, 553-562.	2.2	10
95	Genomic and Epigenomic Evaluation of Electrically Induced Exercise in People with Spinal Cord Injury: Application to Precision Rehabilitation. Physical Therapy, 2021, , .	2.4	10
96	A biomechanical analysis of exercise in standing, supine, and seated positions: Implications for individuals with spinal cord injury. Journal of Spinal Cord Medicine, 2012, 35, 140-147.	1.4	9
97	Repetitive eccentric muscle contractions increase torque unsteadiness in the human triceps brachii. Journal of Electromyography and Kinesiology, 2010, 20, 619-626.	1.7	8
98	Prior heat stress effects fatigue recovery of the elbow flexor muscles. Muscle and Nerve, 2011, 44, 115-125.	2.2	8
99	High bone density masks architectural deficiencies in an individual with spinal cord injury. Journal of Spinal Cord Medicine, 2014, 37, 349-354.	1.4	8
100	Dynamic Fatigue Does Not Alter Soleus H-Reflexes Conditioned by Homonymous or Heteronymous Pathways. Motor Control, 2017, 21, 345-358.	0.6	8
101	Novel human models for elucidating mechanisms of rate-sensitive H-reflex depression. Biomedical Journal, 2020, 43, 44-52.	3.1	8
102	Effects of repetitive handgrip training on endurance, specificity, and cross-education. Physical Therapy, 1999, 79, 467-75.	2.4	8
103	Potential regenerative rehabilitation technology: implications of mechanical stimuli to tissue health. BMC Research Notes, 2014, 7, 334.	1.4	7
104	Effect of Surgery on Gait and Sensory Motor Performance in Patients With Cervical Spondylotic Myelopathy. Neurosurgery, 2016, 79, 701-707.	1.1	7
105	Vibration training after chronic spinal cord injury: Evidence for persistent segmental plasticity. Neuroscience Letters, 2017, 647, 129-132.	2.1	7
106	Modulation of H-Reflex Depression with Paired-Pulse Stimulation in Healthy Active Humans. Rehabilitation Research and Practice, 2017, 2017, 1-6.	0.6	7
107	Benchmarking the Physical Therapist Academic Environment to Understand the Student Experience. Physical Therapy, 2018, 98, 658-669.	2.4	7
108	Motor demands of cognitive testing may artificially reduce executive function scores in individuals with spinal cord injury. Journal of Spinal Cord Medicine, 2021, 44, 253-261.	1.4	7

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109	Benchmarking in Academic Physical Therapy: A Multicenter Trial Using the PT-GQ Survey. Physical Therapy, 2021, 101, .	2.4	7
110	Epigenetics and the International Classification of Functioning, Disability and Health Model: Bridging Nature, Nurture, and Patient-Centered Population Health. Physical Therapy, 2022, 102, .	2.4	7
111	Vitalizing Practice Through Research and Research Through Practice: The Outcomes of a Conference to Enhance the Delivery of Care. Physical Therapy, 2011, 91, 1275-1284.	2.4	6
112	White matter microstructure relates to motor outcomes in myotonic dystrophy type 1 independently of disease duration and genetic burden. Scientific Reports, 2021, 11, 4886.	3.3	6
113	Skeletal muscle activity and CNS neuro-plasticity. Neural Regeneration Research, 2016, 11, 69.	3.0	6
114	Precision Rehabilitation: How Lifelong Healthy Behaviors Modulate Biology, Determine Health, and Affect Populations. Physical Therapy, 2022, 102, .	2.4	6
115	Extracellular to Intracellular Body Water and Cognitive Function among Healthy Older and Younger Adults. Journal of Functional Morphology and Kinesiology, 2022, 7, 18.	2.4	6
116	Speed, resistance, and unexpected accelerations modulate feed forward and feedback control during a novel weight bearing task. Gait and Posture, 2017, 52, 345-353.	1.4	5
117	Limb segment load inhibits post activation depression of soleus H-reflex in humans. Clinical Neurophysiology, 2012, 123, 1836-1845.	1.5	4
118	Disrupted somatosensory input alters postural control strategies during the Star Excursion Balance Test (SEBT) in healthy people. Gait and Posture, 2021, 90, 141-147.	1.4	4
119	Limb Segment Load Inhibits the Recovery of Soleus H-Reflex After Segmental Vibration in Humans. Journal of Motor Behavior, 2018, 50, 631-642.	0.9	3
120	Myotonic dystrophy type 1 alters muscle twitch properties, spinal reflexes, and perturbationâ€induced transâ€cortical reflexes. Muscle and Nerve, 2020, 61, 205-212.	2.2	3
121	Simultaneous Recording of Motor Evoked Potentials in Hand, Wrist and Arm Muscles to Assess Corticospinal Divergence. Brain Topography, 2021, 34, 415-429.	1.8	3
122	Professionalism Values in Health Science Education: Self- and Peer-Assessment of Faculty, Staff, and Students. Journal of Allied Health, 2017, 46, 178-184.	0.2	3
123	Fatigue modulates synchronous but not asynchronous soleus activation during stimulation of paralyzed muscle. Clinical Neurophysiology, 2013, 124, 1853-1860.	1.5	2
124	Hybrid stimulation enhances torque as a function of muscle fusion in human paralyzed and non-paralyzed skeletal muscle. Journal of Spinal Cord Medicine, 2019, 42, 562-570.	1.4	2
125	Benchmarking in Academic Physical Therapy Using the PT-GQâ„¢ Survey: Wave 2 Update With Application to Accreditation Reporting. Physical Therapy, 0, , .	2.4	2
126	Neuroimaging in Rehabilitation: A Resource for Clinicians. Physical Therapy, 2007, 87, 639-640.	2.4	1

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127	Application of Wiener-Hammerstein system identification in electrically stimulated paralyzed skeletal muscle modeling. , 2008, , .		1
128	Sustained submaximal contraction yields biphasic modulation of soleus Postâ€activation depression in healthy humans. Scandinavian Journal of Medicine and Science in Sports, 2019, 29, 944-951.	2.9	1
129	Neuromuscular Electrical Stimulation Primes Feedback Control During a Novel Single Leg Task. Journal of Motor Behavior, 2021, 53, 409-418.	0.9	1
130	Trunk Angle Modulates Feedforward and Feedback Control during Single-Limb Squatting. Journal of Functional Morphology and Kinesiology, 2021, 6, 82.	2.4	1
131	Corticospinal modulation of vibration-induced H-reflex depression. Experimental Brain Research, 2022, 240, 803.	1.5	1
132	Above Board: Clear Bylaws Support the Research Mission of the Foundation for Physical Therapy. Physical Therapy, 2009, 89, 1010-1012.	2.4	0
133	A Motor Response Offset Score Mitigates Apparent Differences in Cognitive Function between People with and without Spinal Cord Injury. FASEB Journal, 2019, 33, 738.17.	0.5	0
134	Low Frequency Electrically Induced Muscle Exercise Modulates Glucose Tolerance and Uric Acid Levels in People with SCI. FASEB Journal, 2019, 33, 868.28.	0.5	0
135	Longâ€Term Electricallyâ€Induced Muscle Exercise Duration Modulates Distinct Gene Signaling Pathways in People with Spinal Cord Injury. FASEB Journal, 2019, 33, 537.4.	0.5	0
136	Modified Outpatient Physical Therapy Improvement in Movement Assessment Log (mOPTIMAL): A Responsive and Reliable Tool for Patients with Non-Operative Shoulder Pain. Iowa orthopaedic journal, The, 2020, 40, 91-99.	0.5	0