

William Z Rymer

List of Publications by Year in descending order

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89
papers

3,414
citations

218677

26
h-index

161849

54
g-index

102
all docs

102
docs citations

102
times ranked

3085
citing authors

#	ARTICLE	IF	CITATIONS
1	Persistence of Motor Adaptation During Constrained, Multi-Joint, Arm Movements. Journal of Neurophysiology, 2000, 84, 853-862.	1.8	361
2	Deficits in the coordination of multijoint arm movements in patients with hemiparesis: evidence for disturbed control of limb dynamics. Experimental Brain Research, 2000, 131, 305-319.	1.5	262
3	Effect of age and osteoarthritis on knee proprioception. Arthritis and Rheumatism, 1997, 40, 2260-2265.	6.7	235
4	Characteristics of motor unit discharge in subjects with hemiparesis. Muscle and Nerve, 1995, 18, 1101-1114.	2.2	215
5	Target-dependent differences between free and constrained arm movements in chronic hemiparesis. Experimental Brain Research, 2004, 156, 458-470.	1.5	162
6	Effects of a wearable exoskeleton stride management assist system (SMAA®) on spatiotemporal gait characteristics in individuals after stroke: a randomized controlled trial. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 69.	4.6	145
7	Quantitative features of the stretch response of extrinsic finger muscles in hemiparetic stroke. , 2000, 23, 954-961.		112
8	Evidence for altered upper extremity muscle synergies in chronic stroke survivors with mild and moderate impairment. Frontiers in Human Neuroscience, 2015, 9, 6.	2.0	109
9	Quantifying changes in material properties of stroke-impaired muscle. Clinical Biomechanics, 2015, 30, 269-275.	1.2	101
10	Use of shear wave ultrasound elastography to quantify muscle properties in cerebral palsy. Clinical Biomechanics, 2016, 31, 20-28.	1.2	98
11	Effects of changes in hip joint angle on H-reflex excitability in humans. Experimental Brain Research, 2002, 143, 149-159.	1.5	89
12	Decorrelating Actions of Renshaw Interneurons on the Firing of Spinal Motoneurons Within a Motor Nucleus: A Simulation Study. Journal of Neurophysiology, 1998, 80, 309-323.	1.8	61
13	Reflex Torque Response to Movement of the Spastic Elbow: Theoretical Analyses and Implications for Quantification of Spasticity. Annals of Biomedical Engineering, 1999, 27, 815-829.	2.5	58
14	Power spectral analysis of surface electromyography (EMG) at matched contraction levels of the first dorsal interosseous muscle in stroke survivors. Clinical Neurophysiology, 2014, 125, 988-994.	1.5	58
15	Stride management assist exoskeleton vs functional gait training in stroke. Neurology, 2019, 92, e263-e273.	1.1	58
16	Flexor reflexes in chronic spinal cord injury triggered by imposed ankle rotation. , 2000, 23, 793-803.		56
17	Assessment of Active and Passive Restraint During Guided Reaching After Chronic Brain Injury. Annals of Biomedical Engineering, 1999, 27, 805-814.	2.5	55
18	Reducing Abnormal Muscle Coactivation After Stroke Using a Myoelectric-Computer Interface. Neurorehabilitation and Neural Repair, 2014, 28, 443-451.	2.9	55

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19	Reorganization of flexion reflexes in the upper extremity of hemiparetic subjects. , 1999, 22, 1209-1221.		53
20	Changes in motor unit behavior following isometric fatigue of the first dorsal interosseous muscle. Journal of Neurophysiology, 2015, 113, 3186-3196.	1.8	48
21	Anodal Transcranial Direct Current Stimulation Alters Elbow Flexor Muscle Recruitment Strategies. Brain Stimulation, 2014, 7, 443-450.	1.6	47
22	Muscle fatigue increases beta-band coherence between the firing times of simultaneously active motor units in the first dorsal interosseous muscle. Journal of Neurophysiology, 2016, 115, 2830-2839.	1.8	47
23	Asymmetries in vestibular evoked myogenic potentials in chronic stroke survivors with spastic hypertonia: Evidence for a vestibulospinal role. Clinical Neurophysiology, 2014, 125, 2070-2078.	1.5	46
24	Extracting extensor digitorum communis activation patterns using high-density surface electromyography. Frontiers in Physiology, 2015, 6, 279.	2.8	45
25	Effect of acute intermittent hypoxia on motor function in individuals with chronic spinal cord injury following ibuprofen pretreatment: A pilot study. Journal of Spinal Cord Medicine, 2017, 40, 295-303.	1.4	45
26	Alterations in the Peak Amplitude Distribution of the Surface Electromyogram Poststroke. IEEE Transactions on Biomedical Engineering, 2013, 60, 845-852.	4.2	36
27	Activation deficit correlates with weakness in chronic stroke: Evidence from evoked and voluntary EMG recordings. Clinical Neurophysiology, 2014, 125, 2413-2417.	1.5	35
28	Learning new gait patterns: Exploratory muscle activity during motor learning is not predicted by motor modules. Journal of Biomechanics, 2016, 49, 718-725.	2.1	33
29	Three-Dimensional Innervation Zone Imaging from Multi-Channel Surface EMG Recordings. International Journal of Neural Systems, 2015, 25, 1550024.	5.2	31
30	Applying a pelvic corrective force induces forced use of the paretic leg and improves paretic leg EMG activities of individuals post-stroke during treadmill walking. Clinical Neurophysiology, 2017, 128, 1915-1922.	1.5	28
31	Muscle material properties in passive and active stroke-impaired muscle. Journal of Biomechanics, 2019, 83, 197-204.	2.1	27
32	Performance Evaluation of a Wearable Tattoo Electrode Suitable for High-Resolution Surface Electromyogram Recording. IEEE Transactions on Biomedical Engineering, 2021, 68, 1389-1398.	4.2	27
33	Robust Muscle Activity Onset Detection Using an Unsupervised Electromyogram Learning Framework. PLoS ONE, 2015, 10, e0127990.	2.5	27
34	Abnormal corticomotor excitability assessed in biceps brachii preceding pronator contraction post-stroke. Clinical Neurophysiology, 2008, 119, 683-692.	1.5	26
35	Locomotor training alters the behavior of flexor reflexes during walking in human spinal cord injury. Journal of Neurophysiology, 2014, 112, 2164-2175.	1.8	25
36	Re-evaluation of EMG-torque relation in chronic stroke using linear electrode array EMG recordings. Scientific Reports, 2016, 6, 28957.	3.3	24

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37	Interdisciplinary Concepts for Design and Implementation of Mixed Reality Interactive Neurorehabilitation Systems for Stroke. <i>Physical Therapy</i> , 2015, 95, 449-460.	2.4	22
38	Identification of Static and Dynamic Components of Reflex Sensitivity in Spastic Elbow Flexors Using a Muscle Activation Model. <i>Annals of Biomedical Engineering</i> , 2001, 29, 330-339.	2.5	21
39	Duration of observation required in detecting fasciculation potentials in amyotrophic lateral sclerosis using high-density surface EMG. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2012, 9, 78.	4.6	21
40	Finger-thumb coupling contributes to exaggerated thumb flexion in stroke survivors. <i>Journal of Neurophysiology</i> , 2014, 111, 2665-2674.	1.8	21
41	EMG burst presence probability: A joint time-frequency representation of muscle activity and its application to onset detection. <i>Journal of Biomechanics</i> , 2015, 48, 1193-1197.	2.1	21
42	Suppression of stimulus artifact contaminating electrically evoked electromyography. <i>NeuroRehabilitation</i> , 2014, 34, 381-389.	1.3	19
43	Accelerometry-enabled measurement of walking performance with a robotic exoskeleton: a pilot study. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2016, 13, 35.	4.6	19
44	Altered Motor Unit Discharge Coherence in Paretic Muscles of Stroke Survivors. <i>Frontiers in Neurology</i> , 2017, 8, 202.	2.4	18
45	Biomechanics and neural control of movement, 20 years later: what have we learned and what has changed?. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2017, 14, 91.	4.6	18
46	How a diverse research ecosystem has generated new rehabilitation technologies: Review of NIDILRR's Rehabilitation Engineering Research Centers. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2017, 14, 109.	4.6	17
47	Efficacy and time course of acute intermittent hypoxia effects in the upper extremities of people with cervical spinal cord injury. <i>Experimental Neurology</i> , 2021, 342, 113722.	4.1	17
48	Changes in motoneuron afterhyperpolarization duration in stroke survivors. <i>Journal of Neurophysiology</i> , 2014, 112, 1447-1456.	1.8	16
49	Control of motor unit firing during step-like increases in voluntary force. <i>Frontiers in Human Neuroscience</i> , 2014, 8, 721.	2.0	15
50	EMG-force relation in the first dorsal interosseous muscle of patients with amyotrophic lateral sclerosis. <i>NeuroRehabilitation</i> , 2014, 35, 307-314.	1.3	15
51	Robotic devices for physical rehabilitation of stroke patients: fundamental requirements, target therapeutic techniques, and preliminary designs. <i>Technology and Disability</i> , 1996, 5, 205-215.	0.6	14
52	Quantifying the Deep Tendon Reflex Using Varying Tendon Indentation Depths: Applications to Spasticity. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2014, 22, 280-289.	4.9	14
53	Innervation zones of fasciculating motor units: observations by a linear electrode array. <i>Frontiers in Human Neuroscience</i> , 2015, 9, 239.	2.0	13
54	An evaluation of passive properties of spastic muscles in hemiparetic stroke survivors. , 2010, 2010, 2993-6.		12

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55	Contributions of motoneuron hyperexcitability to clinical spasticity in hemispheric stroke survivors. <i>Clinical Neurophysiology</i> , 2015, 126, 1599-1606.	1.5	12
56	Limited fascicle shortening and fascicle rotation may be associated with impaired voluntary force-generating capacity in pennate muscles of chronic stroke survivors. <i>Clinical Biomechanics</i> , 2020, 75, 105007.	1.2	12
57	Motor Adaptation to Weight Shifting Assistance Transfers to Overground Walking in People with Spinal Cord Injury. <i>PM and R</i> , 2019, 11, 1200-1209.	1.6	10
58	Sensitivity of fasciculation potential detection is dramatically reduced by spatial filtering of surface electromyography. <i>Clinical Neurophysiology</i> , 2014, 125, 1498-1500.	1.5	9
59	Targeted Pelvic Constraint Force Induces Enhanced Use of the Paretic Leg During Walking in Persons Post-Stroke. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2020, 28, 2184-2193.	4.9	9
60	Gradual adaptation to pelvis perturbation during walking reinforces motor learning of weight shift toward the paretic side in individuals post-stroke. <i>Experimental Brain Research</i> , 2021, 239, 1701-1713.	1.5	8
61	A new method for reflex threshold estimation in spastic muscles. , 2009, 2009, 5300-3.		7
62	Estimating the time course of population excitatory postsynaptic potentials in motoneurons of spastic stroke survivors. <i>Journal of Neurophysiology</i> , 2015, 113, 1952-1957.	1.8	7
63	Stretch reflex excitability in contralateral limbs of stroke survivors is higher than in matched controls. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2019, 16, 154.	4.6	7
64	Spike sorting paradigm for classification of multi-channel recorded fasciculation potentials. <i>Computers in Biology and Medicine</i> , 2014, 55, 26-35.	7.0	6
65	Estimation of musculotendon kinematics under controlled tendon indentation. <i>Journal of Biomechanics</i> , 2015, 48, 3568-3576.	2.1	6
66	Motor unit innervation zone localization based on robust linear regression analysis. <i>Computers in Biology and Medicine</i> , 2019, 106, 65-70.	7.0	6
67	Increased motor variability facilitates motor learning in weight shift toward the paretic side during walking in individuals post-stroke. <i>European Journal of Neuroscience</i> , 2021, 53, 3490-3506.	2.6	6
68	Enhanced error facilitates motor learning in weight shift and increases use of the paretic leg during walking at chronic stage after stroke. <i>Experimental Brain Research</i> , 2021, 239, 3327-3341.	1.5	6
69	Perceptual Assessment of Spatial Neglect Within a Virtual Environment. , 2007, , .		5
70	Using surface electromyography to detect changes in innervation zones pattern after human cervical spinal cord injury. , 2016, 2016, 3757-3760.		5
71	Organization of the motor unit pool for different directions of isometric contraction of the first dorsal interosseous muscle. <i>Muscle and Nerve</i> , 2018, 57, E85-E93.	2.2	5
72	The Effects of Selective Muscle Weakness on Muscle Coordination in the Human Arm. <i>Applied Bionics and Biomechanics</i> , 2018, 2018, 1-16.	1.1	5

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73	Longer electromechanical delay in paretic triceps surae muscles during voluntary isometric plantarflexion torque generation in chronic hemispheric stroke survivors. <i>Journal of Electromyography and Kinesiology</i> , 2021, 56, 102475.	1.7	5
74	Ascending vestibular drive is asymmetrically distributed to the inferior oblique motoneuron pools in a subset of hemispheric stroke survivors. <i>Clinical Neurophysiology</i> , 2016, 127, 2022-2030.	1.5	4
75	Development of a Planar Haptic Robot With Minimized Impedance. <i>IEEE Transactions on Biomedical Engineering</i> , 2021, 68, 1441-1449.	4.2	3
76	Response to "Training and Retention of Rehabilitation Researchers". <i>American Journal of Physical Medicine and Rehabilitation</i> , 2005, 84, 976-979.	1.4	2
77	Assessment and monitoring of recovery of spatial neglect within a Virtual Environment. , 2008, , .		2
78	Sound-Evoked Biceps Myogenic Potentials Reflect Asymmetric Vestibular Drive to Spastic Muscles in Chronic Hemiparetic Stroke Survivors. <i>Frontiers in Human Neuroscience</i> , 2017, 11, 535.	2.0	2
79	Variations of Tendon Tap Force Threshold needed to Evoke Surface Electromyogram Responses after Botulinum Toxin Injection in Chronic Stroke Survivors. , 2019, , .		2
80	Response to Letter to the Editor for Manuscript "Muscle material properties in passive and active stroke-impaired muscle". <i>Journal of Biomechanics</i> , 2019, 93, 232.	2.1	1
81	Characterization of Differences in the Time Course of Reflex and Voluntary Responses Following Botulinum Toxin Injections in Chronic Stroke Survivors. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2020, 28, 1642-1650.	4.9	1
82	In-Vivo Study of Passive Musculotendon Mechanics in Chronic Hemispheric Stroke Survivors. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2020, 28, 1022-1031.	4.9	1
83	Repeated adaptation and de-adaptation to the pelvis resistance force facilitate retention of motor learning in stroke survivors. <i>Journal of Neurophysiology</i> , 2022, 127, 1642-1654.	1.8	1
84	Reflex and intrinsic mechanical changes in spastic limbs of MS patients. , 0, , .		0
85	Analysis of the effects of firing rate and synchronization on spike-triggered averaging of neuronal output. , 2006, , .		0
86	Motor unit structural change post stroke examined via surface electromyography: A preliminary report. , 2013, , .		0
87	Poster 305 Lower Extremity Motor Function in Chronic Spinal Cord Injury After Exposure to Ibuprofen and Intermittent Hypoxia: A Randomized Trial. <i>PM and R</i> , 2014, 6, S170.	1.6	0
88	Mechanomyogram amplitude vs. isometric ankle plantarflexion torque of human medial gastrocnemius muscle at different ankle joint angles. <i>Journal of Electromyography and Kinesiology</i> , 2021, 61, 102609.	1.7	0
89	Characteristic Variation of Electromechanical Delay After the Botulinum Toxin Injection in Spastic Biceps Brachii Muscles. <i>Frontiers in Neurology</i> , 2021, 12, 789442.	2.4	0