William Z Rymer

List of Publications by Year
in descending order

89 papers	3,414 citations	218381 26 h-index	161609 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.	0.9	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.	0.7	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.	1.0	215
5	Target-dependent differences between free and constrained arm movements in chronic hemiparesis. Experimental Brain Research, 2004, 156, 458-470.	0.7	162
6	Effects of a wearable exoskeleton stride management assist system (SMAÂ®) on spatiotemporal gait characteristics in individuals after stroke: a randomized controlled trial. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 69.	2.4	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.	1.0	109
9	Quantifying changes in material properties of stroke-impaired muscle. Clinical Biomechanics, 2015, 30, 269-275.	0.5	101
10	Use of shear wave ultrasound elastography to quantify muscle properties in cerebral palsy. Clinical Biomechanics, 2016, 31, 20-28.	0.5	98
11	Effects of changes in hip joint angle on H-reflex excitability in humans. Experimental Brain Research, 2002, 143, 149-159.	0.7	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.	0.9	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.	1.3	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.	0.7	58
15	Stride management assist exoskeleton vs functional gait training in stroke. Neurology, 2019, 92, e263-e273.	1.5	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.	1.3	55
18	Reducing Abnormal Muscle Coactivation After Stroke Using a Myoelectric-Computer Interface. Neurorehabilitation and Neural Repair, 2014, 28, 443-451.	1.4	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.	0.9	48
21	Anodal Transcranial Direct Current Stimulation Alters Elbow Flexor Muscle Recruitment Strategies. Brain Stimulation, 2014, 7, 443-450.	0.7	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.	0.9	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.	0.7	46
24	Extracting extensor digitorum communis activation patterns using high-density surface electromyography. Frontiers in Physiology, 2015, 6, 279.	1.3	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.	0.7	45
26	Alterations in the Peak Amplitude Distribution of the Surface Electromyogram Poststroke. IEEE Transactions on Biomedical Engineering, 2013, 60, 845-852.	2.5	36
27	Activation deficit correlates with weakness in chronic stroke: Evidence from evoked and voluntary EMG recordings. Clinical Neurophysiology, 2014, 125, 2413-2417.	0.7	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.	0.9	33
29	Three-Dimensional Innervation Zone Imaging from Multi-Channel Surface EMG Recordings. International Journal of Neural Systems, 2015, 25, 1550024.	3.2	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.	0.7	28
31	Muscle material properties in passive and active stroke-impaired muscle. Journal of Biomechanics, 2019, 83, 197-204.	0.9	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.	2.5	27
33	Robust Muscle Activity Onset Detection Using an Unsupervised Electromyogram Learning Framework. PLoS ONE, 2015, 10, e0127990.	1.1	27
34	Abnormal corticomotor excitability assessed in biceps brachii preceding pronator contraction post-stroke. Clinical Neurophysiology, 2008, 119, 683-692.	0.7	26
35	Locomotor training alters the behavior of flexor reflexes during walking in human spinal cord injury. Journal of Neurophysiology, 2014, 112, 2164-2175.	0.9	25
36	Re-evaluation of EMG-torque relation in chronic stroke using linear electrode array EMG recordings. Scientific Reports, 2016, 6, 28957.	1.6	24

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37	Interdisciplinary Concepts for Design and Implementation of Mixed Reality Interactive Neurorehabilitation Systems for Stroke. Physical Therapy, 2015, 95, 449-460.	1.1	22
38	Identification of Static and Dynamic Components of Reflex Sensitivity in Spastic Elbow Flexors Using a Muscle Activation Model. Annals of Biomedical Engineering, 2001, 29, 330-339.	1.3	21
39	Duration of observation required in detecting fasciculation potentials in amyotrophic lateral sclerosis using high-density surface EMG. Journal of NeuroEngineering and Rehabilitation, 2012, 9, 78.	2.4	21
40	Finger-thumb coupling contributes to exaggerated thumb flexion in stroke survivors. Journal of Neurophysiology, 2014, 111, 2665-2674.	0.9	21
41	EMG burst presence probability: A joint timeâ€“frequency representation of muscle activity and its application to onset detection. Journal of Biomechanics, 2015, 48, 1193-1197.	0.9	21
42	Suppression of stimulus artifact contaminating electrically evoked electromyography. NeuroRehabilitation, 2014, 34, 381-389.	0.5	19
43	Accelerometry-enabled measurement of walking performance with a robotic exoskeleton: a pilot study. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 35.	2.4	19
44	Altered Motor Unit Discharge Coherence in Paretic Muscles of Stroke Survivors. Frontiers in Neurology, 2017, 8, 202.	1.1	18
45	Biomechanics and neural control of movement, 20Âyears later: what have we learned and what has changed?. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 91.	2.4	18
46	How a diverse research ecosystem has generated new rehabilitation technologies: Review of NIDILRRâ€™s Rehabilitation Engineering Research Centers. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 109.	2.4	17
47	Efficacy and time course of acute intermittent hypoxia effects in the upper extremities of people with cervical spinal cord injury. Experimental Neurology, 2021, 342, 113722.	2.0	17
48	Changes in motoneuron afterhyperpolarization duration in stroke survivors. Journal of Neurophysiology, 2014, 112, 1447-1456.	0.9	16
49	Control of motor unit firing during step-like increases in voluntary force. Frontiers in Human Neuroscience, 2014, 8, 721.	1.0	15
50	EMG-force relation in the first dorsal interosseous muscle of patients with amyotrophic lateral sclerosis. NeuroRehabilitation, 2014, 35, 307-314.	0.5	15
51	Robotic devices for physical rehabilitation of stroke patients: fundamental requirements, target therapeutic techniques, and preliminary designs. Technology and Disability, 1996, 5, 205-215.	0.3	14
52	Quantifying the Deep Tendon Reflex Using Varying Tendon Indentation Depths: Applications to Spasticity. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 280-289.	2.7	14
53	Innervation zones of fasciculating motor units: observations by a linear electrode array. Frontiers in Human Neuroscience, 2015, 9, 239.	1.0	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. Clinical Neurophysiology, 2015, 126, 1599-1606.	0.7	12
56	Limited fascicle shortening and fascicle rotation may be associated with impaired voluntary force-generating capacity in pennate muscles of chronic stroke survivors. Clinical Biomechanics, 2020, 75, 105007.	0.5	12
57	Motor Adaptation to Weight Shifting Assistance Transfers to Overground Walking in People with Spinal Cord Injury. PM and R, 2019, 11, 1200-1209.	0.9	10
58	Sensitivity of fasciculation potential detection is dramatically reduced by spatial filtering of surface electromyography. Clinical Neurophysiology, 2014, 125, 1498-1500.	0.7	9
59	Targeted Pelvic Constraint Force Induces Enhanced Use of the Paretic Leg During Walking in Persons Post-Stroke. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 2184-2193.	2.7	9
60	Gradual adaptation to pelvis perturbation during walking reinforces motor learning of weight shift toward the paretic side in individuals post-stroke. Experimental Brain Research, 2021, 239, 1701-1713.	0.7	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. Journal of Neurophysiology, 2015, 113, 1952-1957.	0.9	7
63	Stretch reflex excitability in contralateral limbs of stroke survivors is higher than in matched controls. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 154.	2.4	7
64	Spike sorting paradigm for classification of multi-channel recorded fasciculation potentials. Computers in Biology and Medicine, 2014, 55, 26-35.	3.9	6
65	Estimation of musculotendon kinematics under controlled tendon indentation. Journal of Biomechanics, 2015, 48, 3568-3576.	0.9	6
66	Motor unit innervation zone localization based on robust linear regression analysis. Computers in Biology and Medicine, 2019, 106, 65-70.	3.9	6
67	Increased motor variability facilitates motor learning in weight shift toward the paretic side during walking in individuals postâ€stroke. European Journal of Neuroscience, 2021, 53, 3490-3506.	1.2	6
68	Enhanced error facilitates motor learning in weight shift and increases use of the paretic leg during walking at chronic stage after stroke. Experimental Brain Research, 2021, 239, 3327-3341.	0.7	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 motorâ€unit pool for different directions of isometric contraction of the first dorsal interosseous muscle. Muscle and Nerve, 2018, 57, E85-E93.	1.0	5
72	The Effects of Selective Muscle Weakness on Muscle Coordination in the Human Arm. Applied Bionics and Biomechanics, 2018, 2018, 1-16.	0.5	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. Journal of Electromyography and Kinesiology, 2021, 56, 102475.	0.7	5
74	Ascending vestibular drive is asymmetrically distributed to the inferior oblique motoneuron pools in a subset of hemispheric stroke survivors. Clinical Neurophysiology, 2016, 127, 2022-2030.	0.7	4
75	Development of a Planar Haptic Robot With Minimized Impedance. IEEE Transactions on Biomedical Engineering, 2021, 68, 1441-1449.	2.5	3
76	Response to â€œTraining and Retention of Rehabilitation Researchersâ€• American Journal of Physical Medicine and Rehabilitation, 2005, 84, 976-979.	0.7	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. Frontiers in Human Neuroscience, 2017, 11, 535.	1.0	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 â€œMuscle material properties in passive and active stroke-impaired muscleâ€• Journal of Biomechanics, 2019, 93, 232.	0.9	1
81	Characterization of Differences in the Time Course of Reflex and Voluntary Responses Following Botulinum Toxin Injections in Chronic Stroke Survivors. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 1642-1650.	2.7	1
82	In-Vivo Study of Passive Musculotendon Mechanics in Chronic Hemispheric Stroke Survivors. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 1022-1031.	2.7	1
83	Repeated adaptation and de-adaptation to the pelvis resistance force facilitate retention of motor learning in stroke survivors. Journal of Neurophysiology, 2022, 127, 1642-1654.	0.9	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. PM and R, 2014, 6, S170.	0.9	0
88	Mechanomyogram amplitude vs. isometric ankle plantarflexion torque of human medial gastrocnemius muscle at different ankle joint angles. Journal of Electromyography and Kinesiology, 2021, 61, 102609.	0.7	0
89	Characteristic Variation of Electromechanical Delay After the Botulinum Toxin Injection in Spastic Biceps Brachii Muscles. Frontiers in Neurology, 2021, 12, 789442.	1.1	0