Michael H Schwartz

List of Publications by Year
in descending order

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127 papers	8,832 citations	44069 48 h-index	45317 90 g-index
149 all docs	149 docs citations	149 times ranked	4601 citing authors

#	Article	IF	Citations
1	The gait deviation index: A new comprehensive index of gait pathology. Gait and Posture, 2008, 28, 351-357.	1.4	587
2	The Gait Profile Score and Movement Analysis Profile. Gait and Posture, 2009, 30, 265-269.	1.4	559
3	A new method for estimating joint parameters from motion data. Journal of Biomechanics, 2005, 38, 107-116.	2.1	437
4	The effect of walking speed on the gait of typically developing children. Journal of Biomechanics, 2008, 41, 1639-1650.	2.1	434
5	An index for quantifying deviations from normal gait. Gait and Posture, 2000, 11, 25-31.	1.4	378
6	Muscle contributions to support and progression over a range of walking speeds. Journal of Biomechanics, 2008, 41, 3243-3252.	2.1	352
7	Measurement and management of errors in quantitative gait data. Gait and Posture, 2004, 20, 196-203.	1.4	320
8	Compressive tibiofemoral force during crouch gait. Gait and Posture, 2012, 35, 556-560.	1.4	297
9	Muscle synergies and complexity of neuromuscular control during gait in cerebral palsy. Developmental Medicine and Child Neurology, 2015, 57, 1176-1182.	2.1	258
10	How robust is human gait to muscle weakness?. Gait and Posture, 2012, 36, 113-119.	1.4	217
11	Distal Femoral Extension Osteotomy and Patellar Tendon Advancement to Treat Persistent Crouch Gait in Cerebral Palsy. Journal of Bone and Joint Surgery - Series A, 2008, 90, 2470-2484.	3.0	180
12	Muscle contributions to support and progression during single-limb stance in crouch gait. Journal of Biomechanics, 2010, 43, 2099-2105.	2.1	170
13	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, 273-281.	1.4	166
14	The minimal clinically important difference for the Gait Profile Score. Gait and Posture, 2012, 35, 612-615.	1.4	163
15	Comprehensive Treatment of Ambulatory Children With Cerebral Palsy. Journal of Pediatric Orthopaedics, 2004, 24, 45-53.	1.2	149
16	Deep neural networks enable quantitative movement analysis using single-camera videos. Nature Communications, 2020, 11, 4054.	12.8	133
17	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, 960-967.	2.1	132
18	How much muscle strength is required to walk in a crouch gait?. Journal of Biomechanics, 2012, 45, 2564-2569.	2.1	118

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19	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, 546-552.	1.4	108
20	A new method for evaluating ankle foot orthosis characteristics: BRUCE. Gait and Posture, 2009, 30, 144-149.	1.4	105
21	Dynamic motor control is associated with treatment outcomes for children with cerebral palsy. Developmental Medicine and Child Neurology, 2016, 58, 1139-1145.	2.1	105
22	Distal Femoral Extension Osteotomy and Patellar Tendon Advancement to Treat Persistent Crouch Gait in Cerebral Palsy. Journal of Bone and Joint Surgery - Series A, 2009, 91, 271-286.	3.0	99
23	Use of the normalcy index for the evaluation of gait pathology. Gait and Posture, 2004, 19, 85-90.	1.4	92
24	Contributions of muscles to mediolateral ground reaction force over a range of walking speeds. Journal of Biomechanics, 2012, 45, 2438-2443.	2.1	88
25	Electromyography Data Processing Impacts Muscle Synergies during Gait for Unimpaired Children and Children with Cerebral Palsy. Frontiers in Computational Neuroscience, 2017, 11, 50.	2.1	87
26	A nondimensional normalization scheme for oxygen utilization data. Gait and Posture, 2006, 24, 14-22.	1.4	83
27	Crouch gait patterns defined using k-means cluster analysis are related to underlying clinical pathology. Gait and Posture, 2009, 30, 155-160.	1.4	81
28	Do the hamstrings operate at increased muscleâ€“tendon lengths and velocities after surgical lengthening?. Journal of Biomechanics, 2006, 39, 1498-1506.	2.1	80
29	The in vivo three-dimensional motion of the human lumbar spine during gait. Gait and Posture, 2008, 28, 378-384.	1.4	79
30	Muscle synergies demonstrate only minimal changes after treatment in cerebral palsy. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 46.	4.6	77
31	Chondrocytes in culture produce a mechanically functional tissue. Journal of Orthopaedic Research, 1998, 16, 227-236.	2.3	76
32	Intramuscular Psoas Lengthening Improves Dynamic Hip Function in Children With Cerebral Palsy. Journal of Pediatric Orthopaedics, 2002, 22, 158-164.	1.2	75
33	The Efficacy of Ankleâ€Foot Orthoses on Improving the Gait of Children With Diplegic Cerebral Palsy: A Multiple Outcome Analysis. PM and R, 2015, 7, 922-929.	1.6	70
34	Predicting outcomes of rectus femoris transfer surgery. Gait and Posture, 2009, 30, 100-105.	1.4	67
35	The effect of tibial torsion on the dynamic function of the soleus during gait. Gait and Posture, 2003, 17, 113-118.	1.4	66
36	Automatic real-time gait event detection in children using deep neural networks. PLoS ONE, 2019, 14, e0211466.	2.5	66

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37	Femoral derotational osteotomy: Surgical indications and outcomes in children with cerebral palsy. Gait and Posture, 2014, 39, 778-783.	1.4	64
38	A microstructural model for the elastic response of articular cartilage. Journal of Biomechanics, 1994, 27, 865-873.	2.1	63
39	The GDI-Kinetic: A new index for quantifying kinetic deviations from normal gait. Gait and Posture, 2011, 33, 730-732.	1.4	63
40	Comprehensive shortâ€term outcome assessment of selective dorsal rhizotomy. Developmental Medicine and Child Neurology, 2008, 50, 765-771.	2.1	60
41	Comprehensive non-dimensional normalization of gait data. Gait and Posture, 2016, 44, 68-73.	1.4	60
42	Repeatability of muscle synergies within and between days for typically developing children and children with cerebral palsy. Gait and Posture, 2016, 45, 127-132.	1.4	60
43	Can biomechanical variables predict improvement in crouch gait?. Gait and Posture, 2011, 34, 197-201.	1.4	58
44	Muscle contributions to vertical and fore-aft accelerations are altered in subjects with crouch gait. Gait and Posture, 2013, 38, 86-91.	1.4	58
45	Gait status 17â€“26 years after selective dorsal rhizotomy. Gait and Posture, 2012, 35, 244-249.	1.4	57
46	Muscular coordination of knee motion during the terminal-swing phase of normal gait. Journal of Biomechanics, 2007, 40, 3314-3324.	2.1	55
47	Long-Term Outcomes of Distal Femoral Extension Osteotomy and Patellar Tendon Advancement in Individuals with Cerebral Palsy. Journal of Bone and Joint Surgery - Series A, 2018, 100, 31-41.	3.0	53
48	Longâ€term outcomes after selective dorsal rhizotomy: a retrospective matched cohort study. Developmental Medicine and Child Neurology, 2017, 59, 1196-1203.	2.1	52
49	A tool for quantifying hip flexor function during gait. Gait and Posture, 2000, 12, 122-127.	1.4	51
50	Movement Deviation Profile: A measure of distance from normality using a self-organizing neural network. Human Movement Science, 2012, 31, 284-294.	1.4	50
51	Predicting the outcome of intramuscular psoas lengthening in children with cerebral palsy using preoperative gait data and the random forest algorithm. Gait and Posture, 2013, 37, 473-479.	1.4	49
52	A baseline of dynamic muscle function during gait. Gait and Posture, 2006, 23, 211-221.	1.4	45
53	Correlation of the Edinburgh Gait Score With the Gillette Gait Index, the Gillette Functional Assessment Questionnaire, and Dimensionless Speed. Journal of Pediatric Orthopaedics, 2007, 27, 7-11.	1.2	45
54	An exploration of the function of the triceps surae during normal gait using functional electrical stimulation. Gait and Posture, 2007, 26, 482-488.	1.4	45

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55	Is simultaneous hamstring lengthening necessary when performing distal femoral extension osteotomy and patellar tendon advancement?. Gait and Posture, 2011, 33, 1-5.	1.4	45
56	The comparison of normative reference data from different gait analysis services. Gait and Posture, 2014, 40, 286-290.	1.4	45
57	Protocol changes can improve the reliability of net oxygen cost data. Gait and Posture, 2007, 26, 494-500.	1.4	43
58	Deficits in functional performance and gait one year after total knee arthroplasty despite improved self-reported function. Knee Surgery, Sports Traumatology, Arthroscopy, 2017, 25, 3378-3386.	4.2	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	Can altered muscle synergies control unimpaired gait?. Journal of Biomechanics, 2019, 90, 84-91.	2.1	41
61	Repeatability of electromyography recordings and muscle synergies during gait among children with cerebral palsy. Gait and Posture, 2019, 67, 290-295.	1.4	39
62	Validation of a Miniature Thermochron for Monitoring Thoracolumbosacral Orthosis Wear Time. Spine, 2012, 37, 309-315.	2.0	36
63	Contributions of muscles to terminal-swing knee motions vary with walking speed. Journal of Biomechanics, 2007, 40, 3660-3671.	2.1	35
64	Variability and minimum detectable change for walking energy efficiency variables in children with cerebral palsy. Developmental Medicine and Child Neurology, 2009, 51, 615-621.	2.1	35
65	Probabilistic gait classification in children with cerebral palsy: A Bayesian approach. Research in Developmental Disabilities, 2011, 32, 2542-2552.	2.2	35
66	Gait analysis comparison of cruciate retaining and substituting TKA following PCL sacrifice. Knee, 2012, 19, 279-285.	1.6	35
67	Associations Between Muscle Synergies and Treatment Outcomes in Cerebral Palsy Are Robust Across Clinical Centers. Archives of Physical Medicine and Rehabilitation, 2018, 99, 2175-2182.	0.9	35
68	Crouch severity is a poor predictor of elevated oxygen consumption in cerebral palsy. Journal of Biomechanics, 2017, 60, 170-174.	2.1	34
69	Muscle synergies are similar when typically developing children walk on a treadmill at different speeds and slopes. Journal of Biomechanics, 2017, 64, 112-119.	2.1	31
70	Estimating the effect size of surgery to improve walking in children with cerebral palsy from retrospective observational clinical data. Scientific Reports, 2018, 8, 16344.	3.3	29
71	Treadmill vs. overground running gait during childhood: A qualitative and quantitative analysis. Gait and Posture, 2015, 41, 613-618.	1.4	27
72	Use of the Gait Deviation Index for the Evaluation of Patients With Parkinson's Disease. Journal of Motor Behavior, 2012, 44, 161-167.	0.9	25

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73	Quantifying gait deviations in individuals with rheumatoid arthritis using the Gait Deviation Index. Scandinavian Journal of Rheumatology, 2014, 43, 124-131.	1.1	25
74	A data driven model for optimal orthosis selection in children with cerebral palsy. Gait and Posture, 2014, 40, 539-544.	1.4	25
75	Intramuscular psoas lengthening improves dynamic hip function in children with cerebral palsy. Journal of Pediatric Orthopaedics, 2002, 22, 158-64.	1.2	25
76	Comprehensive treatment of ambulatory children with cerebral palsy: an outcome assessment. Journal of Pediatric Orthopaedics, 2004, 24, 45-53.	1.2	24
77	Walking energy expenditure in able-bodied individuals: A comparison of common measures of energy efficiency. Gait and Posture, 2009, 29, 592-596.	1.4	23
78	Variation of hamstrings lengths and velocities with walking speed. Journal of Biomechanics, 2010, 43, 1522-1526.	2.1	23
79	Long-term changes in femoral anteversion and hip rotation following femoral derotational osteotomy in children with cerebral palsy. Gait and Posture, 2016, 50, 223-228.	1.4	23
80	Ground reaction and solid ankleâ€“foot orthoses are equivalent for the correction of crouch gait in children with cerebral palsy. Developmental Medicine and Child Neurology, 2019, 61, 219-225.	2.1	22
81	Evaluation of Conventional Selection Criteria for Psoas Lengthening for Individuals With Cerebral Palsy. Journal of Pediatric Orthopaedics, 2011, 31, 534-540.	1.2	19
82	Pre-operative gastrocnemius lengths in gait predict outcomes following gastrocnemius lengthening surgery in children with cerebral palsy. PLoS ONE, 2020, 15, e0233706.	2.5	19
83	An investigation of the action of the hamstring muscles during standing in crouch using functional electrical stimulation (FES). Gait and Posture, 2008, 28, 372-377.	1.4	18
84	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
85	Pilot evaluation of changes in motor control after wearable robotic resistance training in children with cerebral palsy. Journal of Biomechanics, 2021, 126, 110601.	2.1	18
86	Three-Dimensional Lumbar Spine Vertebral Motion During Running Using Indwelling Bone Pins. Spine, 2014, 39, E1560-E1565.	2.0	17
87	The impact of symptomatic knee osteoarthritis on overall gait pattern deviations and its association with performance-based measures and patient-reported outcomes. Knee, 2017, 24, 536-546.	1.6	16
88	The centre of mass trajectory is a sensitive and responsive measure of functional compensations in individuals with knee osteoarthritis performing the five times sit-to-stand test. Gait and Posture, 2018, 62, 140-145.	1.4	16
89	Changes in hip abductor moment 3 or more years after femoral derotation osteotomy among individuals with cerebral palsy. Developmental Medicine and Child Neurology, 2017, 59, 912-918.	2.1	15
90	Mechanical energy estimation during walking: Validity and sensitivity in typical gait and in children with cerebral palsy. Gait and Posture, 2012, 35, 231-237.	1.4	14

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91	Assessment of Three-Dimensional Lumbar Spine Vertebral Motion During Gait with Use of Indwelling Bone Pins. Journal of Bone and Joint Surgery - Series A, 2013, 95, e184.	3.0	14
92	Proximal versus distal femoral derotation osteotomy in bilateral cerebral palsy. Developmental Medicine and Child Neurology, 2018, 60, 1033-1037.	2.1	13
93	Energy consumption does not change after selective dorsal rhizotomy in children with spastic cerebral palsy. Developmental Medicine and Child Neurology, 2020, 62, 1047-1053.	2.1	13
94	A gait index may underestimate changes of gait: a comparison of the Movement Deviation Profile and the Gait Deviation Index. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 57-63.	1.6	12
95	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
96	Longâ€term effects of spasticity treatment, including selective dorsal rhizotomy, for individuals with cerebral palsy. Developmental Medicine and Child Neurology, 2022, 64, 561-568.	2.1	12
97	Comparing the effects of two spasticity management strategies on the long-term outcomes of individuals with bilateral spastic cerebral palsy: a multicentre cohort study protocol. BMJ Open, 2019, 9, e027486.	1.9	11
98	Effect of Intraarticular Corticosteroid Foot Injections on Walking Function in Children With Juvenile Idiopathic Arthritis. Arthritis Care and Research, 2015, 67, 1693-1701.	3.4	10
99	Synergies are minimally affected during emulation of cerebral palsy gait patterns. Journal of Biomechanics, 2022, 133, 110953.	2.1	10
100	The energy of semicoherent interfaces. Journal of the Mechanics and Physics of Solids, 2000, 48, 2539-2557.	4.8	9
101	The effect of distal femoral extension osteotomy on muscle lengths after surgery. Journal of Children's Orthopaedics, 2017, 11, 472-478.	1.1	9
102	Muscle Synergy Constraints Do Not Improve Estimates of Muscle Activity From Static Optimization During Gait for Unimpaired Children or Children With Cerebral Palsy. Frontiers in Neurorobotics, 2019, 13, 102.	2.8	9
103	Low gait efficiency is the primary reason for the increased metabolic demand during gait in children with cerebral palsy. Human Movement Science, 2018, 57, 426-433.	1.4	8
104	The importance of a consistent workflow to estimate muscle-tendon lengths based on joint angles from the conventional gait model. Gait and Posture, 2021, 88, 1-9.	1.4	8
105	Team Approach. JBJS Reviews, 2017, 5, e10.	2.0	7
106	Rectus femoris transfer in children with cerebral palsy: comparing a propensity scoreâ€matched observational study to a randomized controlled trial. Developmental Medicine and Child Neurology, 2021, 63, 196-203.	2.1	7
107	Synergies analysis produces consistent results between motion analysis laboratories. Gait and Posture, 2021, 86, 139-143.	1.4	7
108	Surgical treatment of pes planovalgus in ambulatory children with cerebral palsy: Static and dynamic changes as characterized by multi-segment foot modeling, physical examination and radiographs. Gait and Posture, 2020, 76, 168-174.	1.4	6

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109	Long-term functional outcomes after an external femoral derotation osteotomy in individuals with cerebral palsy. Gait and Posture, 2021, 87, 184-191.	1.4	6
110	Causal Effects of Motor Control on Gait Kinematics After Orthopedic Surgery in Cerebral Palsy: A Machine-Learning Approach. Frontiers in Human Neuroscience, 2022, 16, .	2.0	6
111	Causal factors affecting gross motor function in children diagnosed with cerebral palsy. PLoS ONE, 2022, 17, e0270121.	2.5	6
112	Evidence of knee extensor dysfunction during sit-to-stand following distal femoral extension osteotomy and patellar tendon advancement in young adults with cerebral palsy: A pilot study. Gait and Posture, 2017, 58, 527-532.	1.4	5
113	Comparing shortâ€term outcomes between conus medullaris and cauda equina surgical techniques of selective dorsal rhizotomy. Developmental Medicine and Child Neurology, 2021, 63, 336-342.	2.1	5
114	Short-term causal effects of common treatments in ambulatory children and young adults with cerebral palsy: three machine learning estimates. Scientific Reports, 2022, 12, 7818.	3.3	5
115	Muscle synergy complexity is related to selective motor control in cerebral palsy. Gait and Posture, 2014, 39, S40.	1.4	4
116	Leaving hip rotation out of a conventional 3D gait model improves discrimination of pathological gait in cerebral palsy: A novel neural network analysis. Gait and Posture, 2019, 70, 48-52.	1.4	4
117	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
118	Ambulatory children with cerebral palsy do not exhibit unhealthy weight gain following selective dorsal rhizotomy. Developmental Medicine and Child Neurology, 2015, 57, 1070-1075.	2.1	3
119	ESMAC BEST PAPER 2017. Gait and Posture, 2018, 63, 290-295.	1.4	3
120	A patella marker to improve hip and knee kinematics for models with functionally defined joint axes. Gait and Posture, 2021, 87, 43-48.	1.4	2
121	Alternative methods for measuring ankle-foot orthosis alignment in clinical care. Gait and Posture, 2021, 90, 86-91.	1.4	2
122	A comparison of functional and regression-based hip joint centers in persons with achondroplasia. Gait and Posture, 2009, 30, S81-S82.	1.4	1
123	Number of synergies impacts sensitivity of gait to weakness and contracture. Journal of Biomechanics, 2022, 134, 111012.	2.1	1
124	Muscle Contributions to Medial-Lateral Acceleration of the Body During Walking. , 2009, , .		0
125	Simulated forceâ€“length curves as a tool to enhance clinical interpretation of gait data. Gait and Posture, 2009, 30, S76-S77.	1.4	0
126	Crouch gait patterns derived from cluster analysis are related to clinical parameters and surgical interventions. Gait and Posture, 2009, 30, S99-S100.	1.4	0

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127	Quantifying alignment bias during the fabrication and fitting of ankle-foot orthoses: A single center study. Gait and Posture, 2022, 96, 29-34.	1.4	0