Rodger Kram

List of Publications by Year
in descending order

110 papers	10,109 citations	41344 49 h-index	36028 97 g-index
117 all docs	117 docs citations	117 times ranked	6800 citing authors

#	Article	IF	Citations
1	How Animals Move: An Integrative View. Science, 2000, 288, 100-106.	12.6	1,357
2	Energetics of running: a new perspective. Nature, 1990, 346, 265-267.	27.8	656
3	Effects of obesity and sex on the energetic cost and preferred speed of walking. Journal of Applied Physiology, 2006, 100, 390-398.	2.5	461
4	The Effects of Adding Mass to the Legs on the Energetics and Biomechanics of Walking. Medicine and Science in Sports and Exercise, 2007, 39, 515-525.	0.4	433
5	Simultaneous positive and negative external mechanical work in human walking. Journal of Biomechanics, 2002, 35, 117-124.	2.1	427
6	Mechanical and metabolic requirements for active lateral stabilization in human walking. Journal of Biomechanics, 2004, 37, 827-835.	2.1	378
7	Mechanical work for step-to-step transitions is a major determinant of the metabolic cost of human walking. Journal of Experimental Biology, 2002, 205, 3717-27.	1.7	360
8	Effects of Obesity on the Biomechanics of Walking at Different Speeds. Medicine and Science in Sports and Exercise, 2007, 39, 1632-1641.	0.4	287
9	Energy cost and muscular activity required for propulsion during walking. Journal of Applied Physiology, 2003, 94, 1766-1772.	2.5	265
10	Ground reaction forces during downhill and uphill running. Journal of Biomechanics, 2005, 38, 445-452.	2.1	255
11	Metabolic cost of generating muscular force in human walking: insights from load-carrying and speed experiments. Journal of Applied Physiology, 2003, 95, 172-183.	2.5	233
12	A Comparison of the Energetic Cost of Running in Marathon Racing Shoes. Sports Medicine, 2018, 48, 1009-1019.	6.5	225
13	Independent metabolic costs of supporting body weight and accelerating body mass during walking. Journal of Applied Physiology, 2005, 98, 579-583.	2.5	190
14	Force treadmill for measuring vertical and horizontal ground reaction forces. Journal of Applied Physiology, 1998, 85, 764-769.	2.5	185
15	Energetic Cost and Preferred Speed of Walking in Obese vs. Normal Weight Women. Obesity, 2005, 13, 891-899.	4.0	174
16	Metabolic Cost of Running Barefoot versus Shod. Medicine and Science in Sports and Exercise, 2012, 44, 1519-1525.	0.4	163
17	Reduction of Metabolic Cost during Motor Learning of Arm Reaching Dynamics. Journal of Neuroscience, 2012, 32, 2182-2190.	3.6	144
18	Altered Running Economy Directly Translates to Altered Distance-Running Performance. Medicine and Science in Sports and Exercise, 2016, 48, 2175-2180.	0.4	137

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19	The fastest runner on artificial legs: different limbs, similar function?. Journal of Applied Physiology, 2009, 107, 903-911.	2.5	136
20	Biomechanical and energetic determinants of the walkâ€“trot transition in horses. Journal of Experimental Biology, 2004, 207, 4215-4223.	1.7	132
21	Metabolic cost of generating horizontal forces during human running. Journal of Applied Physiology, 1999, 86, 1657-1662.	2.5	130
22	Energy cost and muscular activity required for leg swing during walking. Journal of Applied Physiology, 2005, 99, 23-30.	2.5	130
23	The locomotor kinematics of Asian and African elephants: changes with speed and size. Journal of Experimental Biology, 2006, 209, 3812-3827.	1.7	124
24	The effects of grade and speed on leg muscle activations during walking. Gait and Posture, 2012, 35, 143-147.	1.4	123
25	Are fast-moving elephants really running?. Nature, 2003, 422, 493-494.	27.8	115
26	Limitations to maximum running speed on flat curves. Journal of Experimental Biology, 2007, 210, 971-982.	1.7	110
27	Penguin waddling is not wasteful. Nature, 2000, 408, 929-929.	27.8	99
28	How does age affect leg muscle activity/coactivity during uphill and downhill walking?. Gait and Posture, 2013, 37, 378-384.	1.4	99
29	The effects of step width and arm swing on energetic cost and lateral balance during running. Journal of Biomechanics, 2011, 44, 1291-1295.	2.1	96
30	Effects of independently altering body weight and body mass on the metabolic cost of running. Journal of Experimental Biology, 2007, 210, 4418-4427.	1.7	94
31	The Biomechanics of Competitive Male Runners in Three Marathon Racing Shoes: A Randomized Crossover Study. Sports Medicine, 2019, 49, 133-143.	6.5	94
32	Walking in simulated reduced gravity: mechanical energy fluctuations and exchange. Journal of Applied Physiology, 1999, 86, 383-390.	2.5	91
33	Running-specific prostheses limit ground-force during sprinting. Biology Letters, 2010, 6, 201-204.	2.3	86
34	Advanced age and the mechanics of uphill walking: A joint-level, inverse dynamic analysis. Gait and Posture, 2014, 39, 135-140.	1.4	85
35	The metabolic and mechanical costs of step time asymmetry in walking. Proceedings of the Royal Society B: Biological Sciences, 2013, 280, 20122784.	2.6	83
36	Mechanical work performed by the individual legs during uphill and downhill walking. Journal of Biomechanics, 2012, 45, 257-262.	2.1	77

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37	Leg stiffness of sprinters using running-specific prostheses. Journal of the Royal Society Interface, 2012, 9, 1975-1982.	3.4	76
38	How Biomechanical Improvements in Running Economy Could Break the 2-hour Marathon Barrier. Sports Medicine, 2017, 47, 1739-1750.	6.5	76
39	A Test of the Metabolic Cost of Cushioning Hypothesis during Unshod and Shod Running. Medicine and Science in Sports and Exercise, 2014, 46, 324-329.	0.4	75
40	Advanced age affects the individual leg mechanics of level, uphill, and downhill walking. Journal of Biomechanics, 2013, 46, 535-540.	2.1	67
41	Partitioning the Metabolic Cost of Human Running: A Task-by-Task Approach. Integrative and Comparative Biology, 2014, 54, 1084-1098.	2.0	67
42	Extrapolating Metabolic Savings in Running: Implications for Performance Predictions. Frontiers in Physiology, 2019, 10, 79.	2.8	66
43	Calculating metabolic energy expenditure across a wide range of exercise intensities: the equation matters. Applied Physiology, Nutrition and Metabolism, 2018, 43, 639-642.	1.9	65
44	Real-time feedback enhances forward propulsion during walking in old adults. Clinical Biomechanics, 2014, 29, 68-74.	1.2	64
45	The kangaroo's tail propels and powers pentapedal locomotion. Biology Letters, 2014, 10, 20140381.	2.3	61
46	Mechanical energy fluctuations during hill walking: the effects of slope on inverted pendulum exchange. Journal of Experimental Biology, 2006, 209, 4895-4900.	1.7	59
47	Activity and functions of the human gluteal muscles in walking, running, sprinting, and climbing. American Journal of Physical Anthropology, 2014, 153, 124-131.	2.1	58
48	What determines the metabolic cost of human running across a wide range of velocities?. Journal of Experimental Biology, 2018, 221, .	1.7	56
49	Metabolic energy and muscular activity required for leg swing in running. Journal of Applied Physiology, 2005, 98, 2126-2131.	2.5	51
50	Obesity does not increase external mechanical work per kilogram body mass during walking. Journal of Biomechanics, 2009, 42, 2273-2278.	2.1	51
51	Pedelecs as a physically active transportation mode. European Journal of Applied Physiology, 2016, 116, 1565-1573.	2.5	51
52	Muscle contributions to propulsion and braking during walking and running: Insight from external force perturbations. Gait and Posture, 2014, 40, 594-599.	1.4	48
53	Changing the demand on specific muscle groups affects the walkâ€“run transition speed. Journal of Experimental Biology, 2008, 211, 1281-1288.	1.7	47
54	Giant Galaìpagos tortoises walk without inverted pendulum mechanical-energy exchange. Journal of Experimental Biology, 2005, 208, 1489-1494.	1.7	45

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55	The role of elastic energy storage and recovery in downhill and uphill running. Journal of Experimental Biology, 2012, 215, 2283-2287.	1.7	44
56	The metabolic cost of human running: is swinging the arms worth it?. Journal of Experimental Biology, 2014, 217, 2456-2461.	1.7	42
57	Energetics of vertical kilometer foot races; is steeper cheaper?. Journal of Applied Physiology, 2016, 120, 370-375.	2.5	38
58	Contributions of metabolic and temporal costs to human gait selection. Journal of the Royal Society Interface, 2018, 15, 20180197.	3.4	31
59	The energetic cost of maintaining lateral balance during human running. Journal of Applied Physiology, 2012, 112, 427-434.	2.5	29
60	Applied horizontal force increases impact loading in reduced-gravity running. Journal of Biomechanics, 2001, 34, 679-685.	2.1	28
61	Use aerobic energy expenditure instead of oxygen uptake to quantify exercise intensity and predict endurance performance. Journal of Applied Physiology, 2018, 125, 672-674.	2.5	28
62	Does Metabolic Rate Increase Linearly with Running Speed in all Distance Runners?. Sports Medicine International Open, 2018, 02, E1-E8.	1.1	27
63	Counterpoint: Artificial legs do not make artificially fast running speeds possible. Journal of Applied Physiology, 2010, 108, 1012-1014.	2.5	26
64	Maximum-speed curve-running biomechanics of sprinters with and without unilateral leg amputations. Journal of Experimental Biology, 2016, 219, 851-858.	1.7	26
65	Low metabolic cost of locomotion in ornate box turtles,<i>Terrapene ornata</i>. Journal of Experimental Biology, 2008, 211, 3671-3676.	1.7	22
66	Why is walker-assisted gait metabolically expensive?. Gait and Posture, 2011, 34, 265-269.	1.4	22
67	Dynamic stability of running: The effects of speed and leg amputations on the maximal Lyapunov exponent. Chaos, 2013, 23, 043131.	2.5	22
68	Measuring Changes in Aerodynamic/Rolling Resistances by Cycle-Mounted Power Meters. Medicine and Science in Sports and Exercise, 2011, 43, 853-860.	0.4	21
69	Running for Exercise Mitigates Age-Related Deterioration of Walking Economy. PLoS ONE, 2014, 9, e113471.	2.5	21
70	Preferred walking speed on rough terrain; is it all about energetics?. Journal of Experimental Biology, 2019, 222, .	1.7	19
71	Applying the cost of generating force hypothesis to uphill running. PeerJ, 2014, 2, e482.	2.0	19
72	Effect of Running Speed and Leg Prostheses on Mediolateral Foot Placement and Its Variability. PLoS ONE, 2015, 10, e0115637.	2.5	13

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73	Metabolic cost of level, uphill, and downhill running in highly cushioned shoes with carbon-fiber plates. Journal of Sport and Health Science, 2022, 11, 303-308.	6.5	13
74	The metabolic costs of walking and running up a 30-degree incline: implications for vertical kilometer foot races. European Journal of Applied Physiology, 2017, 117, 1869-1876.	2.5	12
75	Comparison of running and cycling economy in runners, cyclists, and triathletes. European Journal of Applied Physiology, 2018, 118, 1331-1338.	2.5	12
76	Steep (30Â°) uphill walking vs. running: COM movements, stride kinematics, and leg muscle excitations. European Journal of Applied Physiology, 2020, 120, 2147-2157.	2.5	12
77	Commentaries on Viewpoint: Physiology and fast marathons. Journal of Applied Physiology, 2020, 128, 1069-1085.	2.5	12
78	Ground reaction forces during steeplechase hurdling and waterjumps. Sports Biomechanics, 2017, 16, 152-165.	1.6	11
79	Do poles save energy during steep uphill walking?. European Journal of Applied Physiology, 2019, 119, 1557-1563.	2.5	11
80	Level, uphill and downhill running economy values are strongly inter-correlated. European Journal of Applied Physiology, 2019, 119, 257-264.	2.5	11
81	Effects of course design (curves and elevation undulations) on marathon running performance: a comparison of Breaking 2 in Monza and the INEOS 1:59 Challenge in Vienna. Journal of Sports Sciences, 2021, 39, 754-759.	2.0	11
82	Pound for pound: Working out how obesity influences the energetics of walking. Journal of Applied Physiology, 2009, 106, 1755-1756.	2.5	10
83	Factors affecting the increased energy expenditure during passive cycling. European Journal of Applied Physiology, 2012, 112, 3341-3348.	2.5	10
84	Forces and mechanical energy fluctuations during diagonal stride roller skiing; running on wheels?. Journal of Experimental Biology, 2014, 217, 3779-85.	1.7	10
85	Optimal Starting Block Configuration in Sprint Running: A Comparison of Biological and Prosthetic Legs. Journal of Applied Biomechanics, 2014, 30, 381-389.	0.8	10
86	Cardiometabolic Effects of a Workplace Cycling Intervention. Journal of Physical Activity and Health, 2019, 16, 547-555.	2.0	9
87	Effects of shoe type and shoeâ€"pedal interface on the metabolic cost of bicycling. Footwear Science, 2016, 8, 19-22.	2.1	8
88	Modelling the effect of curves on distance running performance. PeerJ, 2019, 7, e8222.	2.0	8
89	Load carriage with compliant poles â€" Physiological and/or biomechanical advantages?. Journal of Biomechanics, 1987, 20, 893.	2.1	5
90	Does the preferred walkâ€"run transition speed on steep inclines minimize energetic cost, heart rate or neither?. Journal of Experimental Biology, 2021, 224, .	1.7	5

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91	The effect of cycling shoes and the shoe-pedal interface on maximal mechanical power output during outdoor sprints. Footwear Science, 2020, 12, 185-192.	2.1	4
92	Running with horizontal pulling forces: the benefits of towing. European Journal of Applied Physiology, 2008, 104, 473-479.	2.5	3
93	TAYLOR'S TREADMILL MENAGERIE. Journal of Experimental Biology, 2012, 215, 2349-2350.	1.7	3
94	Motor-Driven (Passive) Cycling. Medicine and Science in Sports and Exercise, 2016, 48, 1821-1828.	0.4	3
95	A. V. Hill sticks his neck out. Journal of Experimental Biology, 2016, 219, 468-469.	1.7	3
96	Last Word on Point:Counterpoint: Artificial limbs do/do not make artificially fast running speeds possible. Journal of Applied Physiology, 2010, 108, 1020-1020.	2.5	3
97	The metabolic cost of emulated aerodynamic drag forces in marathon running. Journal of Applied Physiology, 0, , .	2.5	3
98	The Metabolic Cost of Locomotion; Muscle by Muscle. Exercise and Sport Sciences Reviews, 2011, 39, 57-58.	3.0	2
99	Authorâ€™s Reply to Candau et al.: Comment on: â€œHow Biomechanical Improvements in Running Economy Could Break the 2-Hour Marathon Barrierâ€. Sports Medicine, 2017, 47, 2405-2407.	6.5	2
100	No effect of cycling shoe sole stiffness on sprint performance. Footwear Science, 2021, 13, 69-77.	2.1	2
101	The influence of bicycle lean on maximal power output during sprint cycling. Journal of Biomechanics, 2021, 125, 110595.	2.1	2
102	Are Efficiency and the Cost of Generating Force Both Relevant Concepts?. Journal of Applied Biomechanics, 1997, 13, 460-463.	0.8	1
103	Bouncing to conclusions: clear evidence for the metabolic cost of generating muscular force. Journal of Applied Physiology, 2011, 110, 865-866.	2.5	1
104	Nose-down saddle tilt improves gross efficiency during seated-uphill cycling. European Journal of Applied Physiology, 2021, , 1.	2.5	1
105	The Energetic Cost of Maintaining Lateral Balance in Human Running. Medicine and Science in Sports and Exercise, 2011, 43, 100.	0.4	0
106	Changing relative crank angle increases the metabolic cost of leg cycling. European Journal of Applied Physiology, 2017, 117, 2021-2027.	2.5	0
107	Last Word on Viewpoint: Use aerobic energy expenditure instead of oxygen uptake to quantify exercise intensity and predict endurance performance. Journal of Applied Physiology, 2018, 125, 675-675.	2.5	0
108	Shoes, running economy and distance running performance. Footwear Science, 2019, 11, S2-S3.	2.1	0

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109	Does arm swing provide mechanical and metabolic benefits during human running?. FASEB Journal, 2012, 26, 1145.1.	0.5	0
110	Could a hybrid cycling-running shoe offer time savings to triathletes?. Footwear Science, 0, , 1-8.	2.1	0