File S3

Included study characteristics

First Author, Year	Study Type	Total/Group Ages (years unless stated otherwise); mean(SD) *range*	Total/Group Sex (b, g, m, f, ?; boys, girls, male, female, unknown)	Biomechanical Characteristic	Movement Assessed
Anliker, 2011 [1]	Comparison			Kinetics	Single leg hopping
		12.3(3.6), *8-20*	0b:67g		
		14.1(3.46), *8-20*	81b:0g		
		44.5(14.8), *21-82*	0m:118f		
		39.4(13.7), *21-71*	57m:0f		
Anliker, 2012 [2]	Intervention	*8-12*	22b:23g	Kinetics	Non-dominant single leg hopping
		10.5(1.2)	11b:11g		
		10.8(1.1)	11b:12g		
Anliker, 2013 [3]	Comparison	15.1 (1.5), *12.3-18.0*	66b:0g	Kinetics	Single leg hopping
Arabatzi, 2014 [4]	Intervention			Kinetics	Squat jump Half squat
		b 10.5(0.5); g 10.5(0.6)	9b:9g		
		b 15.5(0.6); g 13.7(1.8)	11b:10g		
		b 20.7(1.1); g 20.4(1.4)	8b:11g		
Assaiante, 1997 [5]	Comparison			Kinematics	Single leg hopping Two footed hopping
		5.5-6	0b:6g		
		7-7.5	0b:6g		
			0m: 6f		
Bach, 2021 [6]	Comparison				Walking

		35.3 (5.6) months 66.1 (6.5) months 92.9 (9.5) months 24.15 (2.5)	02b:03g 03b:03g 06b:06g 04m:03f	EMG, Kinematics, Spatiotemporal	Running
Bach, 2023 [7]	Comparison, Longitudinal	10.6 and 11.9 months to 32 months *30-45*	1b:1g 4m:1f	Kinematics, EMG, Kinetics	Running Walking
Barbosa, 2019 [8]	Comparison, Reliability	b 15.16 (0.97) ; g 14.82(0.23) b 10.88 (0.33) ; g 11.08 (0.40)	7b:5g 5b:4g	Kinetics	Running Walking Jumping (over box)
Barnes, 2017 [9]	Comparison, Relationship, Validity	10.3(0.6)	58b:45g	Kinematics, Kinetics	Running
Bassa, 2023 [10]	Comparison	*9-27* 10.50(0.64), *9-11* 24.07(3.41), *19-27*	15b:0g 15m:0f	Kinematics, Kinetics	Squat jump (for drop height) Drop jump
Bauer, 2001 [11]	Descriptive	9.3(0.7)	8b:5g	Kinematics, Kinetics	Drop landing
Beerse, 2017 [12]	Comparison	8.7(1.81), *5-11* 24.54(3.53)	9b:5g 9m:8f	Kinematics, Kinetics	Single leg hopping
Beerse, 2020 [13]	Comparison	*7-35* 9.62(1.59), *7-12* 23.39(1.42), *18-35*	5b:9g 8m:7f	EMG, Kinematics, Kinetics	Two footed hopping
Beerse, 2022 [14]	Comparison	8.84(1.75), *5-11* 24.54(3.53), *18-35*	33? 17? 16?	Kinematics, Kinetics	Single leg hopping
Bittencourt, 2012 [15]	Comparison	16.6(5.0)	119b:54g	Kinematics	Single leg squat

		17.1(5.3) 16.7(4.6)	101? 72?		Vertical jump (landing)
Bowser, 2021 [16]	Comparison	8-12 9.8(1.3) 10.2(1.3)	 12b:14g 8b:8g	Kinematics, Kinetics, Spatiotemporal	Running
Brady, 2020 [17]	Comparison	10(2.1)	8?	Kinetics, Pressure	Walking Fast walking Running
Briem, 2017 [18]	Comparison	10.4, *10-11* 10.4(0.6) 10.5(0.5)	48b:68g 0b:68g 48b:0g	Kinematics, Kinetics	Drop jump
Briggs, 2017 [19]	Comparison	*11-18* 14.05(2.09) 14.10(2.02)	 13b:7g 13b:7g	Kinematics, Kinetics Kinetics	Walking Jogging
Busche, 2013 [20]	Descriptive	*3-19*	432b:436g		Counter movement jump Chair rising test
Cesar, 2015 [21]	Comparison	 8.87(1.46), *7-11* 27.13(3.98), *20-35*	31b/m 15b:0g 16m:0f	Kinematics, Spatiotemporal	Running Running termination
Cesar, 2016 [22]	Comparison	 8.87(1.46), *7-11* 27.13(3.98), *21-34*	31b/m 15b:0g 16m:0f	Kinematics	Running termination
Chan-Viquez, 2020 [23]	Comparison	 4.0(0.3), *3-5.1* 21.8(1.4), *18-25*	 6b:9g 5m:5f	EMG, Kinematics Kinematics	Walking Vertical jump Forward jump
Chard, 2013 [24]	Comparison	10.3(1.6), *8-13*	5b:8g	Kinematics, Spatiotemporal	Walking Running

Cheung, 2020 [25]	Comparison (children) Comparison, Intervention, Longitudinal (adults)	4.2(1.6) 30.2(4.8) 45.3(6.8) 43.0(11.3) 37.3(6.4)	4b:6g 4m:5f 6m:8f 8m:7f 15m:0f	EMG, Kinetics, Spatiotemporal	Running
Chia, 2021 [26]	Longitudinal	11.8(0.5) 12.8(0.9) 14.6(1.2)	0b:69g 0b:164g 0b:131g	Kinematics	Unanticipated 45° cut from jump landing
Chow, 2014 [27]	Intervention	9.93(0.33)	36b:0g	Kinematics, Kinetics	Standing broad jump
Clark, 2016 [28]	Descriptive, Validity	10(0.8)	7b:4g	Kinematics	Walking Jogging Sprinting Overarm throw Balance task
Coker, 2018 [29]	Comparison	12.58 (0.56)	7b:19g	Kinematics, Spatiotemporal	Standing long jump
Colyer, 2020 [30]	Comparison	9.4(1.6), *6.6-12.1* b 7.40 ± 0.44 ; g 6.70 b 8.55 ± 0.56 ; g 7.47 ± 0.61 b 10.58 ± 0.59 ; g 8.85 ± 0.48 b 11.50 ± 0.43 ; g 9.75 ± 0.53	80b:73g 21b:1g 22b:18g 24b:15g 12b:13g	Kinetics	Sprinting

		b 12.08 ; g 10.78 ± 0.43 g 11.55 ± 0.32	1b:16g 0b:16g		
Cowley, 2020 [31]	Comparison, Relationship	 6.4 (1.7), *3-10* 6.5 (1.6), *3-10*	 28b:0g 11b:0g	Kinematics, Kinetics	Counter movement jump
Cranage, 2020 [32]	Comparison	 *2* *3* *4*	22b:25g 8b:7g 7b:10g 7b:8g	Spatiotemporal	Walking Running
Cronin, 2014 [33]	Comparison	10.5 (1.5)	16?	Kinetics, Spatiotemporal	Running
Dallas, 2020 [34]	Comparison, Intervention	 13.91 (3.02) 12.80 (2.89) 8.44 (2.06) 9.40 (2.87)	 0b:12g 0b:13g 0b:12g 0b:11g	Kinetics, Spatiotemporal	Hopping
Dobbs, 2020a [35]	Comparison	*9-17*	206b:0g 130b:0g 33b:0g 43b:0g	Kinematics, Kinetics, Spatiotemporal	Back squat Isometric mid-thigh pulls Squat jump Counter movement jump
Dobbs, 2020b [36]	Comparison, Intervention	*9-17*	38b:0g 14b:0g 10b:0g 7b:0g 7b:0g	Kinematics, Kinetics, Spatiotemporal	Back squat Isometric mid-thigh pulls Squat jump Counter movement jump

Dukaric, 2021 [37]	Reliability	7.5(0.2b/0.3g), *6-7*	12b:19g	Kinetics, Spatiotemporal	Unilateral horizontal drop jump, bilateral landing
Duncan, 2013 [38]	Validity	14.3(1.3), *12-16*	40b:51g	Kinetics	Counter movement jump
Espinosa-Sánchez, 2017a [39]	Comparison	 *8.5-9.5* *9.5-10.5* *10.5 -11.5* *11.5-12.5*	20b:20g 0b:?g 0b:?g ?b:0g ?b:0g	Kinematics	Standing long jump
Espinosa-Sánchez, 2017b [40]	Comparison, Relationship	10.72(1.25), *7.83-13.17* 10.04(1.04), *7.83-11.75* 11.49(0.98), *9.92-13.17*	38b:43g 0b:43g 38b:0g	Kinematics	Standing long jump
Fassett, 2022 [41]	Comparison	9.63(1.49), *8-12*	4b:4g	Kinetics	Broad jump Leap jump Counter movement jump Jumping Jack Crop jump
Fernandez-Santos, 2018 [42]	Comparison, Relationship	8.8 (1.9), *6-12* 9.0 (1.7) 8.6 (2.0)	63b:58g 63b:0g 0b:58g	Kinematics	Standing long jump
Floria, 2013 [43]	Comparison	*4-8* 6.6(0.8), *5.3-7.9* 6.3(0.8), *5-7.6*	 12? 12?	Kinetics	Counter movement jump
Floria, 2014a [44]	Comparison	8.7 (0.8) 22.3 (3.1)	20? 20?	Kinetics	Counter movement jump with/without arm swing
Floria, 2014b [45]		6.8(1.3), *5-8*	36?	Kinetics	

	Comparison, Relationship	22.3(3.1)	20?		Counter movement jump
Fong, 2007 [46]	Comparison	12.7(0.4)	12b:0g	Kinematics, Kinetics, Spatiotemporal	60° cut Human pendulum impact testing
Forrest, 2012[47]	Comparison	12.0(1.1)	0b:10g	Kinetics, Spatiotemporal	Running Mechanical impact testing
Fransz, 2016a [48]	Reliability	14.1(1.86), *11-18*	82?	Kinetics	Single leg drop landing
Fransz, 2016b [49]	Relationship, Reliability	14.1(1.86), *11-18*	82?	Kinetics	Single leg drop landing
Fridolfsson, 2018 [50]	Comparison, Validity			Kinematics, Spatiotemporal	Walking Running
		10.1(0.6)	7b:3g		
		15.1(0.4)	5b:5g		
		29.2(6.6)	5b:5g		
Frost, 1995 [51]	Comparison, Longitudinal, Repeatability	9.06(1.42), *7-11*	15b:9g	Kinematics, Spatiotemporal	Walking x2 speeds Running x2 speeds (see groups)
Frost, 1997a [52]	Comparison		15b:15g	Kinematics, Kinetics	Walking x2 speeds Running x4 speeds
		7-8	5b:5g		
		10-12	5b:5g		
		15-16	5b:5g		
Frost, 1997b [53]	Comparison		15b:15g	EMG	Walking x2 speeds Running x4 speeds
		7-8	5b:5g		
		10-12	5b:5g		
		15-16	5b:5g		

Frost, 2002 [54]	Comparison		15b:15g	EMG	Walking x2 speeds
		7-8	5b:5g	Kinematics	Running x4 speeds
		10-12	5b:5g		
		15-16	5b:5g		
Galloway, 2018 [55]	Comparison, Longitudinal		0b:739g	Kinematics, Kinetics	Vertical drop jump
		13.6(1.8) - baseline	0b:739g		
		13.3(1.6) - follow-up	0b:503g		
		14.5(1.7) - follow-up 2	0b:503g		
Gao, 2018 [56]	Reliability			EMG, Kinematics	Walking (both studies)
		6.7(0.5)	4b:7g		Stair negotiation
		8.6(0.8)	9b:5g		Climbing
					Crawling
					Swinging
					Balancing
					Trampoline jumping
					Game of tag
					Sitting
					Static squat
					Single leg hops
					Vertical jump
					Standing long jump
Garcia, 2004 [57]	Reliability, Validity	7.38(1.15), *6-10*	8b:8g	Kinetics	Walking (treadmill)
					Jogging (treadmill; x3 speeds)
					Running (treadmill; x4 speeds)

					Walking (over force plate) Running (over force plate) Continuous jumping (over force plate) Drop landing (over force plate)
Garcia, 2022a [58]	Comparison	*8-19* 9.8(1.2) 12.8(1.0) 16.2(1.4) 10.0(1.2) 13.3(1.2) 16.4(1.0)	 0b:11g 0b:18g 0b:26g 20b:0g 20b:0g 19b:0g	Kinematics, Spatiotemporal	Running (overground)
Garcia, 2022b [59]	Comparison	*9-19* 14.6(2.8) 14.6(2.9)	 2b:15g 2b:15g	Kinematics, Spatiotemporal	Running (treadmill)
Gioldasis, 2022 [60]	Comparison	11.41(0.52)	12b:0g	Spatiotemporal	15m straight line sprint (stationary and flying start) 15m dribbling (stationary and flying start) 15m slalom sprint (stationary and flying start)

					15m slalom dribbling (stationary and flying start)
Goodgold, 2002 [61]	Comparison	 9 11	2b:0g 1b:0g 1b:0g	Kinematics	Standing Walking Running
Haapala, 2021a [62]	Relationship	9.6(3), *7-11*	14b:21g	EMG	Walking Running Hopscotch Stair negotiation Sitting Standing
Haapala, 2021b [63]	Relationship	9.6(3),*7-11* 9.6 (2.8) 9.7 (2.9)	14b:21g 14b:0g 0b:21g	EMG	Walking Running Hopscotch Stair negotiation Sitting Standing
Harrison, 2007 [64]	Comparison	7.1(2.8)	25b:24g	Kinematics	Counter movement jump
Harsted, 2019 [65]	Validity	4.8(0.8), *3-6*	14?	Kinematics	Squats Standing broad jump
Harsted, 2022 [66]	Reliability, Repeatability	5.15(0.79)	30b:33g	Kinematics	Squat Standing broad jump
Hazell, 2014 [67]	Comparison	*1.8-6* 2.5(0.4), *1.8-3* 3.4(0.3), *3-3.9*	42b:39g 7b:8g 12b:9g	Kinetics	Counter movement jump Sit to stand

		4.5(0.3), *4-4.9* 5.3(0.3), *5-6*	13b:15g 10b:7g		Body sway test
Herbaut, 2017 [68]	Comparison	10.7(0.4), *9-12*	14b:0g	Kinematics, Kinetics, Spatiotemporal	Running(overground)
Hewett, 2004 [69]	Comparison, Repeatability	 11.5(0.7) 12.6(1.1) 15.5(1.5) 12.0(0.6) 14.2(1.4) 15.8(1.7)	81b:100g 0b:14g 0b:28g 0b:58g 27b:0g 24b:0g 30b:0g	Kinematics, Kinetics	Drop jump
Hioki, 2023 [70]	Comparison	11.1(2.6) *7-8* *9-10* *11-12* *13-15*	143b:0g 30b:0g 32b:0g 28b:0g 53b:0g	Kinetics	Counter movement jump Single leg counter movement jump Rebound jump Single leg rebound jump
Holden, 2015 [71]	Comparison	 13(1.67) 13(1.15)	 97b:0g 0b:84g	Kinematics	Counter movement jump
Hollander, 2014 [72]	Comparison	7.42(1.05), *6-9*	14b:22g	Kinematics, Kinetics, Spatiotemporal	Running(treadmill)
Hollander, 2018 [73]	Relationship	12(1.3), *10-14*	50b:46g	Kinematics, Kinetics, Pressure, Spatiotemporal	Running Two step walking
Horita, 1991 [74]	Comparison	 20(1) *6*	 12m:0f 1b:7g	Kinematics, Kinetics	Standing long jump

Hraski, 2015 [75]	Comparison, Relationship	*4-18* *4-6* *7-9* *10-12* *13-15* *16-18*	100b/20m 20b:0g 20b:0g 20b:0g 20b:0g 20b:0g 20m:0f	Kinematics	Standing long jump
Huurnink, 2019 [76]	Comparison	 11.8(0.6), *11-12* 13.9(0.5), *13-14* 15.8(0.5), *15-16* 17.7(0.7), *17-18* 23.2(3.2), *19-33*	190? 35? 46? 41? 44? 24?	Kinetics, Spatiotemporal	Single leg drop jump landing
Janz, 2003 [77]	Relationship, Validity	8.6(1.7), *6-11*	19b:21g	Kinetics, Spatiotemporal	Walking x2 speeds Running Drop jump landing
Jeras, 2020 [78]	Comparison	 10.6(0.6), *9-11* 13.1(0.8), *12-14* 16.8(1.3), *15-19*	 0b:20g 0b:24g 0b:16g	Kinetics, Spatiotemporal	Counter movement jump Squat jump Drop jump
Johannsen, 2003 [79]	Intervention, Comparison	*3-5*, *7-8*, *11-12*, *15-18* 10.0(5.1) 10.3(5.3)	23b:31g 12b:14g 11b:17g	Kinetics	Drop jump landing
Jones, 2020 [80]	Comparison, Relationship	*7-11* 8.1(0.7)b : 8.0(0.6)g 9.2(0.7)b : 9.4(0.5)g 10.0(0.7)b : 10.2(0.7)g 10.8(0.7)b : 10.9(0.8)g	 20b:20g 20b:20g 20b:20g 20b:20g	Kinetics	Counter movement jump

Katsikari, 2020 [81]	Intervention, Longitudinal	*9-11*	0b:24g	Kinematics, Kinetics, Spatiotemporal	Squat jump Counter movement jump Drop jump (20/35/50 cm)
Kellis, 2001 [82]	Comparison, Reliability	3.2(0.4)	14b:0g	Pressure	One foot standing Two feet standing One foot drop landing Two feet drop landing Walking
Khajooei, 2020 [83]	Comparison	5.6(1.1), *4-7*	5b:9g	Kinematics, Kinetics, Pressure, Spatiotemporal	Horizontal jump Counter movement jump Walking Sprinting One foot standing Two feet standing
Kim, 2023 [84]	Comparison	10.6(1.7)	5b:5g	Kinetics, Spatiotemporal	Running (treadmill)
Korff, 2009 [85]	Comparison, Relationship	 12.3(0.6), *11-13* 16.8(0.8), *16-18*	73? 43? 30?	Kinetics Spatiotemporal	Two-legged hopping Counter movement jump
Kung, 2019 [86]	Comparison	 *10-12* *13-14* *15-17*	 5b:12g 6b:6g 10b:7g	Kinematics	Walking Running Walk-run transition Run-walk transition

		19-29	6m:6f		(= 4 speeds)
Lang, 2013 [87]	Relationship	*3-19*	432b:436g	Kinetics	Multiple single leg hopping Hand grip
Laurson, 2022 [88]	Reference values	*10-18* *10* *11* *12* *13* *14* *15* *16* *17* *18*	280b:249f 22b:21g 42b:33g 38b:29g 27b:35g 40b:19g 30b:54g 29b:29g 35b:15g 17b:14g	Kinetics	Vertical counter movement jump Counter movement jump (field test) Standing long jump (field test)
Lazaridis, 2010 [89]	Comparison	9.8(0.6), *9-11* 25(2.7), *19-27*	12b:0g 12m:0f	EMG, Kinematics, Kinetics	Drop jump (20 cm)
Lazaridis, 2013 [90]	Comparison	9.8(0.6), *9-11* 25(2.7), *19-27*	12b:0g 12m:0f	EMG, Kinematics, Kinetics	Squat jump Counter movement jump Drop jump (20/40 cm)
Lazaridis, 2018 [91]	Intervention, Comparison	10(0.7), *9-11* 25.3(3.3), *22-28*	13b:0g 13m:0f	EMG, Kinematics, Kinetics	Drop jump (30 cm) Squat jump Counter movement jump
Legramandi, 2013 [92]	Comparison	2.6(0.3), *2*	3b:3g	Kinetics	Running

		4.2(0.4), *3-4* 6.1(0.3), *5-6* 8.1(0.7), *7-8* 10.0(0.5), *9-10* 11.4(0.2), *11-12* 13.5(0.3), *13-14* 16.1(0.4), *15-16* 27.7(2.5) 20.9(1.4) 39.1(4.7) 73.4(5.3)	4b:3g 3b:3g 3b:3g 4b:2g 1b:5g 3b:3g 3b:3g 3m:3f 6m:2f 3m:1f 3m:3f		
Lloyd, 2012 [93]	Comparison	 9.44(0.27), *9* 12.68(0.30), *12* 15.89(0.31), *15*	32b:0g 11b:0g 11b:0g 10b:0g	Spatiotemporal EMG	Maximal hopping Sub-maximal hopping
Lye, 2016 [94]	Relationship, Comparison	**med**[IQR] **7.4**[6.5-8.0], *6-9* **10.9**[9.9-11.4], *9-13*	32? 15? 17?	Kinematics, Kinetics	Walking (x2 speeds) Running (x2 speeds)
Maliszewski, 1996 [95]	Comparison	 9.8(0.8), *9-11* 25(4.6), *18-34*	 21b:0g 25m:0f	Spatiotemporal	Running (treadmill)
Martakis, 2023 [96]	Longitudinal, Relationship	11.4(3.9), *6-18*	 441b:416g 20b:15g	Kinetics	Counter movement jump
Masci, 2012 [97]	Comparison	7(3), *3-12* 4.6(0.9) 4.7(1.10) 7.3(2.9)	40? 10? 10? 10?	Kinematics, Spatiotemporal	Hopping

		10.4(1.9)	10?		
Masci, 2013 [98]	Comparison	5(3), *2-12* 2.2(0.3) 2.8(0.7) 5.6(1.8) 7.8(2.2)	54? 9? 15? 15? 15?	Kinematics, Spatiotemporal	Sprinting
McKay, 2005 [99]	Intervention	10.2(0.7), *8.3-11.7* 10.2(0.7) 10.2(0.8)	36b:34g 36b:0g 0b:34g	Kinetics	Drop landing (10/30/50 cm) Plyometric jump (from 10/30/50 cm) Maximal jumping jacks Sub-maximal jumping jacks Alternating feet jump Side-to-side jumps (over 10/20 cm barrier) Counter movement jump
McMillan, 2010 [100]	Comparison	*10-12* 11.0(0.8) 12.1(0.7)	12b:0g 6b:0g 6b:0g	Kinematics, Kinetics, Spatiotemporal	Drop jump landing
McSweeney, 2020 [101]	Reliability, Repeatability	11(2)	12b:5g	Kinetics, Pressure	Walking Running
Mercer, 2010 [102]	Comparison	 10.5(0.9) 9.9(1.1)	11b:7g 11b:0g 0b:7g	Kinetics, Spatiotemporal	Running (treadmill; 3 x speeds)

					Running (overground)
Mesquita, 2018 [103]	Relationship		22b:20g	Pressure	Running
		7.47(0.36)	9b:10g		
		7.36(0.40)	9b:5g		
		7.22(0.49)	4b:5g		
Mesquita, 2019 [104]	Comparison, Reference values	*4-10*	63b:57g	Pressure	Running
		4-5	20b:15g		Walking
		6-8	25b:22g		
		9-10	18b:20g		
Meyer 2015 [105]	Validity	10.1(3.0), 5.4-15.7	10b:3g	Kinetics	Walking Jogging Running Drop landing (10/20/30 cm) Breakdance move Rope skipping
Meyers, 2015 [106]	Reliability	14.1(0.7), 12.9-15.7	54b:0g	Spatiotemporal	Sprinting
Meyers, 2016 [107]	Longitudinal, Comparison		106b:0g	Spatiotemporal	Sprinting
		11.79(0.54)	67b:0g		
		13.52(0.54) – follow-up			
		13.13(0.47)	39b:0g		
		14.87(0.47) – follow-up			
Meyers, 2017 [108]	Relationship, Comparison	13.0(1.3), 11-16	375b:0g	Spatiotemporal	Sprinting
		12.4(0.8)			
		15.1(0.6)			

Meylan, 2012 [109]	Reliability	*9-16* 10.9(1.2) 12.64(1.13) 14.5(1.3)	22b:20g 14b:5g 5b:7g 3b:8g	Kinetics, Spatiotemporal	Vertical counter movement jump Horizontal counter movement jump
Miyamoto, 2018 [110]	Comparison	*10-11*	24b:0g	Kinematics, Spatiotemporal	Sprinting
Mizushima, 2021 [111]	Comparison	*10-12* 11.2(0.7) 11.1(0.7)	103b:91g 55b:46g 48b:45g	Kinematics, Spatiotemporal	Sprinting (shod) Sprinting (barefoot) Counter movement jump (shod) Repeated-rebound jump (shod)
Muro, 2023 [112]	Comparison	*4-16* *4* *6* *8* *10* *12* *14* *16*	227b:223g 33b:32g 33b:32g 33b:30g 32b:33g 35b:33g 30b:30g 31b:33g	Spatiotemporal	Multiple two footed hopping
Nagahara, 2018 [113]	Comparison, Relationship	10.9(2.6), *6.5-15.4* *6.5-8.8* *8.8-12.1* *12.1-15.4*	99b:0g 23b:0g 38b:0g 38b:0g	Kinetics, Spatiotemporal	Sprinting
Nagahara, 2019 [114]	Comparison, Relationship	*7.0-15.3* ≤ *12.7*	0b:94g 0b:60g	Kinetics, Spatiotemporal	Sprinting

		> 12.7	0b:34g		
Nardello, 2011 [115]	Relationship, Validity		10b:10g/25m:25f	Kinematics, Kinetics	Walking (treadmill; x5 speeds)
		6–13	5b:5g		Running (treadmill; x5 speeds) (gradient conditions for 25-35 group)
		14–17	5b:5g		
		18–24	5m:5f		
		25–35	5m:5f		
		36–45	5m:5f		
		46–55	5m:5f		
		56–65	5m:5f		
Nogueira, 2015 [116]	Comparison, Descriptive	10.4(0.5), *9.7-11.4*	6b:5g	Kinetics	360° jump Cartwheel Ginga Handstand Hopping Hop plus martelo Jump lunges Jump plus martelo Star jumps Running Tuck jump
O'Brien, 2009 [117]	Comparison, Relationship			Kinetics	Squat jump
		8.9(0.7), *8-10*	10b:0g		
		9.2(0.8), *8-10*	0b:10g		
		28.2(3.6)	10m:0f		
		27.4(4.2)	0m:10f		
Ogawa, 2021 [118]	Comparison	*4-5*	60b:60g	Kinematics, Spatiotemporal	Standing long jump
		4	30b:30g		

		5	30b:30g		
Parker, 1993 [119]	Comparison, Repeatability, Variability	 3.8(0.3), *3.5-4* 5.2(0.3), *4.5-5.5* 7.0(0.3), *6.5-7.5* 8.6(0.3), *8-9* 23(3.4), *18-28*	45? 10? 10? 10? 5? 10?	Kinetics, Spatiotemporal	One footed hopping
Paz, 2019 [120]	Comparison	13.6(1.1) 13.6(1.2) 13.6(1.0)	29b:21g 29b:0g 0b:21g	Kinematics	Unilateral step down Vertical drop jump
Pelland, 2004 [121]	Methods, Reliability, Validity	*6-12*	?	EMG, Kinematics	Drop landing
Petrovic, 2020 [122]	Comparison, Intervention	*9-12* 10.6(0.7) 10.8(0.8)	100b:188g 100b:0g 0b:188g	Kinematics, Kinetics	Cutting manoeuvre
Pittenger, 2002 [123]	Comparison, Descriptive	*10-11* 10.7, *10-11* 10.9, *10-11*	7b:7g 7b:0g 0b:7g	Kinetics	One-leg rope jumping Two-leg rope jumping
Plesek, 2021 [124]	Comparison	*3-6* 3.6(0.3), *3.0-3.9* 4.6(0.3), *4.0-4.9* 5.6(0.3), *5.0-5.9* 6.5(0.4), *6.0-6.9*	26b:22g 5b:7g 7b:5g 5b:7g 9b:3g	Kinematics, Spatiotemporal	Running
Plesek, 2022 [125]	Comparison	 4.1(0.6) 6.0(0.6)	 8b:7g 8b:7g	Kinematics, Kinetics, Spatiotemporal	Running

		22.4(1.1)	8m:7f		
Plesek, 2023 [126]	Comparison	*3-6* 3.6(0.3), *3.0-3.9* 4.6(0.3), *4.0-4.9* 5.6(0.3), *5.0-5.9* 6.5(0.4), *6.0-6.9*	26b:22g 5b:7g 7b:5g 5b:7g 9b:3g	Kinematics, Kinetics	Running
Puklavec, 2021 [127]	Intervention	11(0.5) - total 11.0(0.3) 11.1(0.3) 12.1(0.3) 11.2(0.3)	75? 19? 24? 14? 18?	Kinematics	Running long jump
Quatman, 2006 [128]	Longitudinal, Reliability	 13.8(1.4) 12.6(1.0) 14.8(1.4) – follow-up boys 13.6(1.0) – follow-up girls	17b:16g 17b:0g 0b:16g	Kinetics	vertical drop jump
Raffalt, 2016a [129]	Comparison, Variability	 11.5(2.2) 26.3(4.6)	 11b:0g 12m:0f	Kinematics, Kinetics	Counter movement jump
Raffalt, 2016b [130]	Comparison, Variability	 11.5(1.8) 26.1(4.9)	 10b:0g 10m:0f	Kinematics, Kinetics	Counter movement jump
Raffalt, 2017 [131]	Comparison, Variability	 11.5(1.8) 26.3(5.0)	 10b:0g 10m:0f	EMG, Kinetics	Counter movement jump Drop jump (30 [both], 60 [adult]cm)

					Drop jump landing (30[child], 60 [both], 90[adult] cm)
Raudsepp, 1995 [132]	Comparison, Relationship	*8* <

		15.1(0.33)	34b:0g		
Rumpf, 2019 [137]	Reliability	10.42(1.37), *8-13*	25b:0g	Kinematics, Kinetics, Spatiotemporal	Sprinting
Ryan, 2006 [138]	Comparison	7.1(2.8)	25b:24g	Kinematics	Vertical counter movement jump
Sannicandro, 2014 [139]	Intervention	13.6(1.4)	17b:14g	Kinetics,	Counter movement jump
		b 14.4(0.5) ; g 13(1.3)	9b:7g	Spatiotemporal	
		b 13(1.1)b ; g 14.1(0.2)	8b:7g		
Sayer, 2019 [140]	Comparison	15.6(5.4), *10-25*	0b/m:60g/f	Kinematics, Kinetics, Spatiotemporal	Running
Schepens, 1998 [141]	Comparison, Relationship	*2-16*, *23-31*		Kinetics,	Running (different relative speeds)
		2.54(0.29), *2*	2b:5g	Spatiotemporal	
		4.42(0.42), *3-4*	5b:3g		
		6.13(0.39), *5-6*	3b:3g		
		8.13(0.65), *7-8*	3b:3g		
		9.99(0.53), *9-10*	4b:2g		
		11.47(0.25), *11-12*	1b:5g		
		13.49(0.33), *13-14*	3b:3g		
		16.06(0.47), *15-16*	3b:3g		
		27.65(2.79), *23-31*	3m:3f		
Schepens, 2001 [142]	Comparison, Relationship	*3-12* , adults		Kinetics,	Running (different relative speeds)
		4.53(0.23), *3-4*	1b:4g	Spatiotemporal	
		6.23(0.82), *5-6*	2b:3g		
		8.23(0.41), *7-8*	1b:4g		
		10.32(0.35), *9-10*	3b:2g		
		11.87(0.68), *11-12*	2b:2g		

		21.62(1.54)	3m:3f		
Sgrò, 2015 [143]	Comparison, Relationship, Validity	11.3 (1.0) *9 -12* 10.7 (0.97), *9-12* 11.35 (0.93), *9-12*	40b:0g 20b:0g 20b:0g	Kinematics, Spatiotemporal	Counter movement jump
Sgrò, 2017 [144]	Comparison, Relationship	9.4 (1.1), *8-11* 9.25 (0.85), *8-11* 8.85 (0.93), *8-11*	35b:29g	Kinetics, Spatiotemporal	Counter movement jump
Shafizadeh, 2021 [145]	Comparison, Intervention	8.21 (1.01) *7-9.5*	10b:0g 10b:0g 10b:0g 10b:0g	Kinematics, Kinetics	Running
Sheerin, 2012 [146]	Intervention	11.5 (1.4), *9-14* 11.3 (1.7), *9-14* 11.6 (0.6), *9-14*	11b:8g 8b:3g 4b:8g	Kinematics	Running
Song-Hua, 2017 [147]	Comparison	 10.69 (2.11), *7-13* 11.02 (1.01), *7-13*	40? 20? 20?	Pressure	Running Walking
Steinberg, 2017 [148]	Comparison	 10.7 (1.7) 9.4 (0.8) 9.6 (1.1)	 5b:5g 6b:4g 5b:5g	Kinematics, Pressure, Spatiotemporal	Running Walking
Taylor-Haas, 2022 [149]	Comparison	13.5 (2.7), *9-19* b 11.5 ; g 10.5 b 12.8 ; g 13.3 b 15.4 ; g 15.8	60b:73g 16b:25g 18b:18g 26b:30g	Kinematics	Running

Teixeira, 2023 [150]	Comparison, Intervention	 10.0 (0.6) 9.75 (0.75)	 12b:0g 12b:0g	Kinetics	Vertical jump Drop landing Horizontal jump
Tirosh, 2020 [151]	Comparison	 8.4 (1.1) 10.7 (1.3)	 10b:10g 7b:5g	Kinetics	Running
Tottori, 2018 [152]	Relationship	11.6(0.4)	15b:0g	Spatiotemporal	Sprinting
Tsatalas, 2010 [153]	Intervention, Longitudinal	10.1(0.5), *9-12*	12b:0g	Kinematics	Running (treadmill)
Tsubaki, 2016 [154]	Comparison, Relationship	41.8, *7-79* 11.2(3.5), *< 20* 49.7(19.0), *> 20* 10.6(2.2), *< 20* 53.9(16.7), *> 20*	210m:191f 53b/m:0g/f 157m:0f 0b/m:44g/f 0m:147f	Kinetics	Grip strength Knee extension torque Timed up and go Chair rise Counter movement jump
Vieira, 2018 [155]	Comparison	 *4* *5* *6*	28? 10? 10? 8?	Kinetics, Pressure, Spatiotemporal	Running
Walaszek, 2017 [156]	Longitudinal, Repeatability	 6.03(0.51) 6.12(0.50)	24b:0g 12b:0g 12b:0g	Kinetics	Balance test (eyes open and closed) Counter movement jump
Wang, 2004 [157]	Comparison, Relationship	 6.18(0.43), *6* 18.17(0.64), *18*	 9b:0g 9m:0f	Kinematics, Kinetics	Counter movement jump
Wang, 2022 [158]	Relationship	5.65(0.65), *4-6*	4b:11g	Kinematics	Standing long jump

					Standing vertical jumps
Waugh, 2017 [159]	Comparison	8.8(0.3) 26.0(2.1)	5b:7g 5m:7f	Kinematics, Kinetics, Spatiotemporal	Two footed hopping
Wdowski, 2020 [160]	Comparison	10.1 (1.6) 8.7 (0.5), *8-9* 11.8 (0.5), *11-12*	 10b:0g 8b:0g	Kinematics, Spatiotemporal	Counter movement jump Running
Wdowski, 2021 [161]	Comparison	10.1 (1.6)	18b:0g	Kinematics, Kinetics	Anterior jump landing Lateral jump landing
Wegener, 2015 [162]	Comparison	10 (1.4), *8-12*	9b:11g	Kinematics, Kinetics Spatiotemporal	Running Walking
Wei, 2021 [163]	Comparison	4.16 (1.63) 35.10 (9.45)	4b:6g 6m:4f	Kinematics, Kinetics	Running
Weimar, 2011 [164]	Comparison	5.2	13b:17g	Kinematics	Horizontal jump
Whatman, 2013 [165]	Relationship, Reliability	11 (1)	23?	Kinematics	Drop jump Small knee bend Single leg knee bend Running (treadmill)
Wild, 2017 [166]	Comparison	11.8(0.5), *10-13*	0b:30g 0b:15g 0b:15g	EMG, Kinematics, Kinetics	Two-to-one-foot horizontal landing
Williams, 2013 [167]	Comparison	*6-12* 6.182(0.361) 6.286(0.401) 7.975(0.491)	 8b:9g 8b:8g 9b:8g	Kinematics, Kinetics, Spatiotemporal	Vertical jump

		8.062(0.552) 10.143(0.668) 10.130(0.677) 11.702(0.424) 11.779(0.478)	12b:9g 8b:9g 7b:7g 7b:4g 4b:7g		
Williams, 2019 [168]	Relationship	9.95(1.35) 9.47(1.48) 10.50(0.73)	9b:6g 9b:0g 0b:6g	Kinematics, Spatiotemporal	Running
Wren, 2020 [169]	Comparison, Variability	10.5 (1.7) *7-12* 14.3 (0.7), *13-15*	18b:11g 13b:13g	Kinematics, Kinetics	Vertical drop jump Heel touch (single leg squat from step) Single leg hop
Yu, 2005 [170]	Relationship	*11-16* *11* *12* *13* *14* *15* *16*	 5b:5g 5b:5g 5b:5g 5b:5g 5b:5g 5b:5g	Kinematics, Spatiotemporal	Stop-jump
Zhao, 2021 [171]	Relationship Comparison	 *3* *4* *5*	45b:45g 30? 30? 30?	Kinematics, Kinetics	Vertical jump

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