

SUPPLEMENTARY DIGITAL MATERIAL 2

Supplementary Table II.—Main characteristics and methodological quality of the included studies.

Study	Participants		Characteristics	Gait parameters						Tool	Experimental protocol				COSMINQuality
	N	Group		Gait Speed (cm/s)	Cadence (step/min)	Stride length (cm)	Stride time (s)	DST (%GC)	Base of support (cm)		Task		Walks per trial	Number of sessions (time interval)	
											Single-task	Dual-task			
Chen <i>et al.</i> 2020 (31)	12	AH	Age:51.3±12.0 yrs; M/F:5/7 Gait speed (ST):112.3±14.5 cm/s Gait speed (DT):86.1±24.6 cm/s	■	■	■	■	■	■	ZW (4.3 m)	■	■ (count - 7)	4	3 (1 wk)	●●●○
Decavel <i>et al.</i> 2019 (33)	19	AH	Age:46.6±8.6 yrs; M/F:10/9 Gait speed (ST):150±20 cm/s Gait speed (DT):140±20 cm/s	■	■	■	■	■	■	GR (6.1 m)	■	■ (count - 7)	1 (7.62 m)	2 (1 wk)	●●●●
Manor <i>et al.</i> 2019 (34)	14	AH	Age:29.6±4.2 yrs; M/F: 6/8 Gait speed (ST, DT): -	-	-	-	■	-	-	GR (5.2 m)	■	■ (count - 3)	3 (24 m)	2 (>1 wk)	●●●●
Ade <i>et al.</i> 2018 (35)	18	AH	Age:27.0±13.3 yrs; M/F:14/4 Gait speed (ST):147.9±17.2 cm/s	■	■	■	-	-	■	GR (9 m)	■	-	1 (13 m)	2 (4±2 d)	●●●●
Silsupadol <i>et al.</i> 2017 (36)	34	AH	Age:55.8±4.6 yrs; M/F:15/8 Gait speed (ST): 111±21 cm/s	■	■	-	-	-	-	GR (5.2 m)	■	-	2 (10 m)	1	●○○○
Schmitz-Hubsch <i>et al.</i> 2016 (37)	9	AH	Age:50 [30–62] yrs; M/F:3/6 Gait speed (ST): -	-	■	-	■	■	■	GR (5.1 m)	■	-	2 (8.1 m)	1	●○○○

Monticone <i>et al.</i> 2014 (38)	25	AH	Age:49.9±11.8 yrs; M/F:5/20 Gait speed (DT):83.9±15.7 cm/s	■	■	■	■	-	■	GR (-)	-	■ (words)	1 (30 m)	2 (1 d)	●●●●
Paterson <i>et al.</i> 2008 (39)	13	AH	Age:20.0±0.8 yrs; M/F:0/13 Gait Speed (ST):171± 21 cm/s	■	-	-	-	-	■	GR (8.1 m)	■	-	10 (~13 m)	2 (1 wk)	●●●●
Menz <i>et al.</i> 2004 (40)	30	AH	Age:28.5±4.8 yrs; M/F:12/18 Gait Speed (ST):143±14 cm/s	■	■	-	-	-	-	GR (4.6 m)	■	-	3 (~8.6 m)	2 (1 wk)	●●●○
Bilney <i>et al.</i> 2003 (41)	25	AH	Age:40.5±17.2 yrs; M/F:13/12 Gait Speed (ST): 146 ±16 cm/s	■	■	■	-	■	-	GR (7.3 m)	■	-	3 (13.3 m)	1	●○○○
Van Uden <i>et al.</i> 2004 (42)	21	AH	Age:34 [19-59] yrs; M/F:12/9 Gait Speed (ST):143±20 cm/s	■	-	■	■	-	■	GR (6 m)	■	-	8 (~10m)	2 (1 wk)	●●●●
Steinert <i>et al.</i> 2019 (43)	44	EY	Age:73.9±6.1 yrs; M/F:22/22 Gait speed (ST):120.7±19.9 cm/s	■	■	-	-	-	-	GR (5.2 m)	■	-	3	1	●○○○
Byun <i>et al.</i> 2016 (44)	82	EY	Age:68.7±6.14 yrs; M/F:47/35 Gait speed (ST): 127±14 cm/s	■	■	-	-	-	-	GR (4.5 m)	■	-	3 (20 m)	1	●○○○
Hars <i>et al.</i> 2013 (45)	30	EY	Age:75.2±6.9 yrs; M/F:0/30 Gait speed (ST):104±15 cm/s Gait speed (DT):95.5±20 cm/s	■	-	-	-	-	-	GR (8.1 m)	■	■ (count - 1)	2 (12.1 m)	1 (60 min)	●○○○

Hars <i>et al.</i> 2013 (45)	30	EY	Age:83.5±5.5 yrs; M/F:7/23 Gait speed (ST):60±17 cm/s Gait speed (DT):54.5±17 cm/s	■	-	-	-	-	-	GR (8.1 m)	■	■ (count - 1)	2 (12.1 m)	1 (60 min)	●○○○
Beauchet <i>et al.</i> 2011 (46)	69	EY	Age:75.5±4.3 yrs; M/F:39/30 Gait speed (ST): -	-	-	-	■	-	-	GR (3.5 m)	■	■ (count - 1)	2 (~7.5m)	1	●○○○
Youdas <i>et al.</i> 2010 (47)	24	EY	Age:74±5 yrs; M/F:13/11 Gait speed (ST):127.2±24.2 cm/s	■	■	■	-	-	-	GR (5.2 m)	■	-	3 (~15.7 m)	1	●○○○
Brach <i>et al.</i> 2008 (48)	558	EY	Age:79.4±4 yrs; M/F:219/339 Gait speed (ST):100±23 cm/s	■	-	-	-	-	■	GM II (4 m)	■	-	4 (6 m)	1	●○○○
Paterson <i>et al.</i> 2008 (39)	14	EY	Age:67.9±7.8 yrs; M/F:0/14 Gait Speed (ST):103±25 cm/s	■	-	-	-	-	■	GR (8.1 m)	■	-	10 (~13 m)	2 (1 wk)	●●●●
Menz <i>et al.</i> 2004 (40)	31	EY	Age:80.8±3.1 yrs; M/F:13/18 Gait Speed (ST):116±21 cm/s	■	■	-	-	-	-	GR (4.6 m)	■	-	3 (~8.6 m)	2 (1 wk)	●●●○
Lemke <i>et al.</i> 2017 (55)	80	CI	Age:82.7±5.9 yrs [§] ; M/F: 29/76 [§] Gait speed (DT):81.7±32.8 cm/s	■	-	-	-	-	-	GR (-)	-	■ (count - 3)	1	2 (2-5 d)	●●●○
Beauchet <i>et al.</i> 2011 (46)	14	CI	Age:65.7±9.8 yrs; M/F:13/1 Gait speed (ST,DT): -	-	-	-	■	-	-	GR (3.5 m)	■	■ (count - 1)	2 (~7.5m)	1	●○○○
Montero-Odasso <i>et al.</i> 2009 (56)	11	CI	Age:76.6±7.3 yrs; M/F:5/6	■	-	■	■	-	-	GR (-)	■	■	3 (10 m)	2 (1 wk)	●●●○

			Gait speed (ST):119.1±20.2 cm/s Gait speed (DT):111.4±18.7 cm/s								(count - 1)				
Wittwer <i>et al.</i> 2008 (57)	20	CI	Age:80.6±5.2 yrs; M/F:10/10 Gait Speed (ST):107±21 cm/s	■	■	■	-	-	■	GR (8.3 m)	■	-	3 (~10 m)	2 (1 wk)	●●●●
Schmidheiny <i>et al.</i> 2015 (61)	35	VD	Age:59±18 yrs; M/F:21/14 Gait speed (ST): 120±20 cm/s Gait speed (DT): 105±25.5 cm/s	■	■	-	-	-	-	GR (7 m)	■	■ (count - 7)	2 (11 m)	1 (10 min)	●○○○
Chen <i>et al.</i> 2020 (31)	18	MS	Age:49.7±12.2 yrs; M/F:4/14 Gait speed (ST): 90.8±38.4 cm/s Gait speed (DT): 78.6±38.7 cm/s	■	■	■	■	■	■	ZW (4.3 m)	■	■ (count - 7)	4	3 (1 wk)	●●●○
Decavel <i>et al.</i> 2019 (33)	58	MS	Age:51±12 yrs; M/F:21/37 Gait speed (ST):80±40 cm/s Gait speed (DT):60±30 cm/s	■	■	■	■	■	■	GR (6.1 m)	■	■ (count - 7)	1 (7.62m)	2 (1 wk)	●●●○
Monticone <i>et al.</i> 2014 (38)	25	MS	Age:49±12 yrs; M/F:8/17 Gait speed (DT):56.2±18.5 cm/s	■	■	■	■	-	■	GR (-)	-	■ (words)	1 (30 m)	2 (1 wk)	●●●○
Xu <i>et al.</i> 2017 (62)	32	PD	Age:64.4±10.4 yrs [§] ; M/F: 27/24 [§] Gait speed (ST): 66±20 cm/s	■	■	■	■	-	-	USEW (9.8 m)	■	-	2	1	●○○○

Schmitz-Hubsch <i>et al.</i> 2016 (37)	8	CA	Age:53.0 [29–70] yrs; M/F:5/3 Gait speed (ST): -	-	■	-	■	■	■	GR (5.1 m)	■	-	2 (8.1 m)	1	●○○○
Rao <i>et al.</i> 2005 (63)	12	HD	Age:50.0±8.0 yrs; M/F:7/5 Gait Speed (ST): 103±21 cm/s	■	■	■	■	-	■	GR (4.6 m)	■	-	2 (10m)	1 (30 min)	●○○○
Lewek <i>et al.</i> 2019 (49)	32	SK	Age:58.0±11.0 yrs [§] ; M/F:34/42 [§] Gait speed (ST):<40 cm/s	■	-	-	-	-	-	GR (-)	■	-	3	2 (19±13 d)	●●●○
Lewek <i>et al.</i> 2019 (49)	29	SK	Age:58.0±11.0 yrs [§] ; M/F:34/42 [§] Gait speed (ST): [40- 80] cm/s	■	-	-	-	-	-	GR (-)	■	-	3	2 (19±13 d)	●●●○
Lewek <i>et al.</i> 2019 (49)	15	SK	Age: 58.0±11.0 yrs [§] ; M/F:34/42 [§] Gait speed (ST):>80 cm/s	■	-	-	-	-	-	GR (-)	■	-	3	2 (19±13 d)	●●●○
Cho <i>et al.</i> 2015 (50)	43	SK	Age:53.0±4.0 yrs; M/F:23/20 Gait speed (ST): 65.9±13.2 cm/s Gait speed (DT): 40.3±9.8 cm/s	■	■	■	-	-	-	GR (8.1 m)	■	■ (count - 1)	1 (12.1 m)	2 (1-2 d)	●●●○
Peters <i>et al.</i> 2014 (51)	12	SK	Age:59.6±11.4 yrs; M/F:8/4 Gait speed (ST): 25±11 cm/s	■	-	-	-	-	-	GR (5.3 m)	■	-	2	1	●○○○
Peters <i>et al.</i> 2014 (51)	24	SK	Age:65±10 yrs; M/F:15/9 Gait speed (ST): 56±11 cm/s	■	-	-	-	-	-	GR (5.3 m)	■	-	2	1	●○○○

Peters <i>et al.</i> 2014 (51)	26	SK	Age:63±15 yrs; M/F:16/10 Gait speed (ST): 103±16 cm/s	■	-	-	-	-	-	GR (5.3 m)	■	-	2	1	●○○○
Kuys <i>et al.</i> 2011 (52)	21	SK	Age:64±13 yrs; M/F:11/10 Gait speed (ST): 65±23 cm/s	■	■	-	-	-	-	GR (9 m)	■	-	1 (~11 m)	2 (<2 d)	●●●●
Lewek <i>et al.</i> 2011 (53)	26	SK	Age:56±11 yrs; M/F:15/11 Gait speed (ST): 70±25 cm/s	■	-	-	-	-	-	GR (5.2 m)	■	-	3 (~8.2 m)	2 (11±8 d)	●●○○
Vartiainen <i>et al.</i> 2009 (54)	20	SK	Age:37±12 yrs; M/F:11/9 Gait speed (ST): 79±34 cm/s	■	■	-	-	-	-	GR (-)	■	-	3 (10 m)	1	●○○○
Perez-Sanpablo <i>et al.</i> 2017 (58)	23	SCI	Age:46±13 yrs; M/F:15/8 Gait speed (ST): -	■	■	-	-	■	■	GR (5.2 m)	■	-	3 (10 m)	1 (2 min)	●○○○
Nair <i>et al.</i> 2012 (59)	16	SCI	Age:42±11 yrs; M/F:13/3 Gait speed (ST): 50±35 cm/s	■	■	-	-	-	-	GM II (-)	■	-	2	2 (1-2 wk)	●●●●
Rome <i>et al.</i> 2005 (60)	50	RA	Age:60±10 yrs; M/F:12/38 Gait Speed (ST): 102±37 cm/s	■	■	■	■	-	■	GR (4.6 m)	■	-	2	1	●○○○

■: Data reported in the study; -: Data not reported in the study; COSMIN Quality judgement: ●○○○ Inadequate, ●●○○ Doubtful, ●●●○ Adequate, ●●●● Very Good.

§The data is referred to the whole population included in the study and not to the subgroup involved in the reliability analysis.

AH: healthy adult; CA: Spinocerebellar Ataxia Type 14; CI: cognitive impairment; COSMIN: COnsensus-based Standards for the selection of health Measurement INstruments; count -: count backwards; d: days; DT: Dual-Task Condition; EY: elderly; GM II: GaitMat II; GR: GaitRite®; HD: Huntington's disease; M/F: Male/Female; MS: multiple sclerosis; PD: Parkinson's disease; RA: Rheumatoid Arthritis; SCI: spinal cord injury; SK: Stroke; ST: Single-Task condition; VD: vestibular dysfunction; wk: weeks; words: reciting words starting with a predefine letter; yrs: years ZW: ZenoWalkway.

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