

**Supplementary Table S1. Characteristics of the included studies**

Study	Sample size	Demographic and clinical features of participants						Intervention				
		Total	Ages in years,	Time since stroke	Paretic side	Experimental group		Control group	Treatment	Outcome	Video	
		(EG/CG)	mean (SD)	onset in days/ [weeks]/"months"	(n: right/left)				dosage	measures	types	
				mean (SD)		EG	CG					
Bang DH 2013 <sup>18</sup>	30 (15/15)	64.1 (6.35)	58.9 (7.03)	"14.1" (3.78)	"12.6" (3.86)	8/7	6/9	Action observation therapy (watching videos for 9 minutes + Treadmill training for 30 minutes)	Sham action observation	40 min/day, 5 day/week, for 4 weeks	TUG; 10MWT; 6MWT; KASW	Treadmill training
Cowles T 2013 <sup>5</sup>	22 (9/13)	78.8 (8.1)	75.6 (12.4)	19.5 (7.0)	17.8 (5.1)	1/8	6/7	Conventional rehabilitation + action observation therapy (watching the therapist performing the actions for 2 minutes and then practicing the actions for 4 to 6 minutes)	Conventional rehabilitation	30 min/session, 2 sessions/day, for 15 working days	MI; ARAT	Functional tasks (e.g., bring telephone to ear)
Dettmers C 2014 <sup>26</sup>	56 (19/19/18)	62.79 (N/A)	58.83 (11.25)	"37.91" (69.96)	"26.74" (61.69)	11/8	12/6	Conventional rehabilitation + action observation therapy (watching each video clip for 5 minutes and then	Conventional rehabilitation	1 hour/day, for 6 weeks	WMFT; NHPT; MAL; SIS	Functional tasks (e.g., grasping and lifting

								practice the same actions)				a glass)
Ertelt D 2007 <sup>2</sup>	16 (8/8)	57.16 (8.73)	55.40 (10.77)	1472.9 (1258.8)	724.8 (360.9)	2/6	2/6	Action observation therapy (watching the videos for 6 minutes, and then performing the actions for 6 minutes; each action was presented twice)	Sham action observation	90 min/day, for 18 working days	FAT; WMFT; SIS	Functional tasks (e.g., the use of a ball or a cup)
Franceschini M 2012 <sup>6</sup>	90 (48/42)	65.7 (11.9)	67.0 (12.4)	29.5 (4.2)	31.0 (4.6)	22/26	18/24	Conventional rehabilitation + action observation therapy (watching the videos for 3 minutes and then performing the actions for 2 minutes, for 3 motor sequences)	Conventional rehabilitation + sham action observation	15 min/session, 2 sessions/day, 5 day/week, for 4 weeks	BBT; FAT; FMA; MAS; FIM	Functional tasks (e.g., drinking from a glass)
Fu J 2017 <sup>7</sup>	53 (28/25)	62.04 (9.93)	59.76 (10.57)	39.49 (18.45)	41.12 (18.79)	12/16	13/12	Conventional rehabilitation + action observation therapy (watching the videos for 10 minutes and then practicing the actions for 10 minutes)	Conventional rehabilitation + sham action observation	20 min/day, 6 day/week, for 8 weeks	FMA; WMFT; MBI; Motor evoked potential	Upper-limb movements
Kim CH 2016 <sup>19</sup>	22 (11/11)	60.77 (7.03)	59.11 (7.05)	[12.89] (2.93)	[11.33] (2.96)	5/6	5/6	Conventional rehabilitation + action observation therapy (watching videos for 9 minutes, a break for 1 minute, and practicing the	Conventional rehabilitation + task-oriented training	40 min/day, 5 time/week, for 4 weeks	FMA; BBT; MBI; MAS	Functional tasks (e.g., folding up a towel)

								tasks for 30 minutes)				
Kim E 2015 <sup>8</sup>	12 (6/6)	N/A		N/A		N/A		Conventional rehabilitation + action observation therapy (no report on detailed observation time)	Conventional rehabilitation + performing the actions without watching videos	30 min/day, 5 day/week, for 6 weeks	WMFT	Functional tasks (e.g., feeding)
Kim JC 2018 <sup>20</sup>	21 (11/10)	57.08 (7.29)	52.92 (8.21)	“37.08” (32.45)	“38.92” (31.92)	4/7	3/7	Action observation therapy (watching videos for 2.5 minutes and practicing the action for 12.5 minutes)	Sham action observation	15 min/session, 2 sessions/day, 3 time/week, for 6 weeks	WDI; LOS; TUG; DGI	Balance training, walking
Kim JH 2013 <sup>21</sup>	27 (9/9/9)	55.3 (12.1)	59.8 (8.9)	“8.3” (3.3)	“8.5” (3.6)	6/3	3/6	Neurodevelopmental therapy + action observation therapy (watching video for 20 minutes and practicing for 10 minutes)	Neurodevelopmental therapy	30 min/day, 5 time/week, for 4 weeks	TUG; FRT; WAQ; gait parameters	Balance training, walking (e.g., stepping over obstacles)
Kim JS 2012 <sup>22</sup>	30 (15/15)	64.1 (8.3)	65.5 (7.7)	“4.6” (1.3)	“4.1” (1.0)	8/7	8/7	Conventional rehabilitation + action observation therapy (watching 5 different kinds of video clips in walking for 10 minutes and practicing for 10 minutes)	Conventional rehabilitation + watching a video in which they were taken through a progressive	20 min/day	Gait parameters	Sit-to-stand, balance training, walking

Oh SJ 2019 <sup>27</sup>	35	58.85	59.35	“5.81”	“5.66”	12/5	N/A	Functional action	relaxation program			
	(17/18)	(7.60)	(9.39)	(0.87)	(0.94)			observation therapy (watching videos for 15 minutes and practicing for 15 minutes)	General action observation therapy (watching videos for 15 minutes, e.g., looking at the front while walking, and practicing for 15 minutes)	30 min/day	Gait parameters, (e.g., FGA	Walking around the hospital)
Park EC 2015 <sup>23</sup>	40 (20/20)	51.15 (14.81)	48.65 (12.81)	“14.91” (6.1)	“13.4” (8.2)	11/9	9/11	Conventional rehabilitation + action observation therapy (each training set including watching videos for 3 minutes, taking 1 minute break, and walking training for 5 minutes. The walking training took a total of 20 minutes per session)	Conventional rehabilitation + shame action observation	30 min/day, 5 day/week, for 8 weeks	Static standing balance; TUG; 10MWT	Walking (e.g., walking on a flat land)
Park HJ 2017 <sup>24</sup>	25 (12/13)	57.33 (6.89)	55.08 (8.12)	“33.58” (24.67)	“21.15” (12.44)	5/7	9/4	Conventional rehabilitation + action observation therapy (no report on detailed observation time)	Conventional rehabilitation + shame action observation	30 min/day, 3 day/week, for 4 weeks	10MWT; CWT; ABC; Gait parameters	Communit y-based ambulation (e.g., walking in a parking

Park HR 2014 <sup>25</sup>	21 (11/10)	55.91 (9.1)	54.80 (12.22)	“21.09” (16.66)	“25.60” (19.67)	4/7	4/6	Conventional rehabilitation + action observation therapy (watching video clips demonstrating 4 tasks for functional walking for 10 minutes)	Conventional rehabilitation + shame action observation	30 min/day, 3 day/week, for 4 weeks	10MWT; F8WT; DGI; Gait symmetry scores	Weight shifting, walking (e.g., walking on straight paths)
Sale P 2014 <sup>4</sup>	67 (33/34)	66.5 (12.7)		29.6 (4.5)			30/37	Conventional rehabilitation + action observation therapy (watching the videos for 3 minutes and then performing the actions for 2 minutes, for 3 motor sequences)	Conventional rehabilitation + sham action observation	15 min/session, 2 sessions/day, 5 day/week, for 4 weeks	FMA; BBT	Functional tasks (e.g., drinking a cup of coffee)
Zhu MH 2015 <sup>10</sup>	61 (31/30)	57.75 (15.57)	56.89 (14.93)	30.67 (17.85)	31.54 (18.79)	17/14	17/13	Conventional rehabilitation + action observation therapy (watching each video for 50 seconds and then practicing the actions)	Conventional rehabilitation	30 min/day, 6 day/week, for 8 weeks	FMA; BI; MAS	Range of motion exercises, functional tasks (e.g., handling of a pen)

Abbreviations: 6MWT, 6-Minute Walk Test; 10MWT, 10-Meter Walk Test; ABC, Activities-specific Balance Confidence scale; ARAT, Action Research Arm Test; BBT, Box and Block Test; BI, Barthel Index; CG, Control group; CWT, Community Walk Test; DGI, Dynamic Gait Index; EG, Experimental group; FAC, Functional Ambulation Category; FAT, Frenchay Arm Test; FGA, Functional Gait Assessment; FIM, Functional Independence Measure; FMA, Fugl-Meyer Assessment; FRT, Functional Reaching

Test; KASW, knee angle in swing phase during walking; MAS, Modified Ashworth scale; MBI, modified Barthel Index; MI, Motricity Index; min, minutes; NHPT, Nine Hole Peg Test; SIS, Stroke Impact Scale; TUG, the Timed Up and Go test; WAQ, Walking Ability Questionnaire; WDI, Weight Distribution Index; WMFT, Wolf Motor Function Test.

Note. N/A indicates not available.