

Table I. Overview of study characteristics, intervention strategies and reported effect on physical activity with outcome measure used

Ref.	Study characteristics					Intervention strategies						
	Population	Population (male/female), <i>n</i> mean age (SD)	Intervention and control setting	Duration	PA outcome measure	Reported significance of effect	Wearable monitor used for feedback	Parameter	Frequency	Visualization	Therapist/coach contact	BCT components
Dorsch 2015 (28)	Stroke patients	Intervention: <i>n</i> = 78 (47/31) 61.8 years (40.3) Control: <i>n</i> = 73 (45/28) 65.0 years (13.2)	Inpatient RC (UC)	±20 days, during inpatient rehabilitation	Walking time/day	NS (mean change IG vs CG)	Accelerometer (Gulf Coast Data Concepts, Waveland, MS, USA)	Steps/day	3× p/w	n/a	RLC	AP
Frederix 2015 (22)	Coronary artery disease patients	Intervention: <i>n</i> = 40 (34/6) 58 years (9) Control: <i>n</i> = 40 (32/8) 63 years (10)	Inpatient RC (UC)	18 weeks	Steps/day	n/a	Triaxial accelerometer (Yorbody Company)	Steps/day	Weekly	WP	n/a	GS
Guiraud 2012 (23)	Non-compliant patients after a cardiac rehabilitation programme	Intervention: <i>n</i> = 19 (17/2) 54.5 years (12.6) Control: <i>n</i> = 10 (7/3) 62.9 years (10.7)	Outpatient cardiac rehabilitation (UC)	8 weeks	EE (kcal/week)	Baseline vs follow-up IG: <i>p</i> < 0.01* Baseline vs follow-up CG: NS	Accelerometer (MyWellness Key; Technogym SpA, IT, USA)	Time in moderate PA intensity	Every 15 days or login by choice	WP	PC	E + GS + BI + AP
Hornikx 2015 (31)	COPD	Intervention: <i>n</i> = 15 (9/6) 68 years (6) Control: <i>n</i> = 15 (8/7) 66 years (7)	Inpatient (hospital) (UC)	4 weeks	Steps/day	Baseline vs follow-up IG: <i>p</i> < 0.05* Baseline vs follow-up CG: < 0.05*	Dynaport MoveMonitor (McRoberts BV, The Hague, The Netherlands)	Steps/day	3 times/week	RT	PC	GS + BI
Kaminsky 2013 (30)	Inactive patients with cardiac diseases	Intervention: <i>n</i> = 10 (8/2) 53.3 years (8.1) Control: <i>n</i> = 8 (6/2) 59.4 years (9.9)	Home-based (UC)	8 weeks	Steps/day	Baseline vs follow-up IG: <i>p</i> < 0.05* Baseline vs follow-up CG: NS	NL-1000 pedometers (New-Lifestyles, Inc. Lee's Summit, MO, USA)	Steps/day	1 starting session	RT	n/a	GS
Kawagoshi 2014 (24)	Elderly with COPD	Intervention: <i>n</i> = 15 (14/1) 75 years (9) Control: <i>n</i> = 12 (10/2) 74 years (8)	Home-based rehabilitation (UC)	1 year	Walking time/day	<i>p</i> = 0.04* (mean change IG vs CG)	Pedometer (Kens Lifecorder EX, Nagoya, Japan)	Steps/day	Monthly	RT	RLC	E + GS
Mansfield 2015 (35)	Stroke	Intervention: <i>n</i> = 29 (20/9) 64 (19) Control: <i>n</i> = 28 (16/12) 61.5 years (13)	Inpatient RC (UC)	Based on length of inpatient rehabilitation	Steps/day	NS (mean change IG vs CG)	Accelerometer (Model X6-2mini, Gulf Data Concepts, LLC, Waveland, MS, USA)	Total walking time, steps/day, bout durations	Daily	RT	RLC	GS
McMurdo 2010 (29)	Community-dwelling elderly	Intervention: pedometer + BCI: <i>n</i> = 68 77.1 years (4.9) (BCI alone group = excluded from meta-analysis) Control: <i>n</i> = 68 77.0 years (4.9)	Home-based via primary care	6 months	Accelerometer count	Baseline vs follow-up <i>p</i> = 0.02* Baseline vs follow-up CG: NS	Pedometer (Omron HJ-113, Healthcare UK Ltd, Milton Keynes, UK)a	Steps/day	First month weekly, last months every 2 weeks	RT	PC	E + GS + BI + AP
Moy 2015 (25)	COPD	Intervention: <i>n</i> = 154 (146/8) 67.0 years (8.6) Control: <i>n</i> = 84 (77/7) 66.4 years (9.2)	Home-based	4 months	Steps/day	Baseline vs follow-up IG: <i>p</i> < 0.01* Baseline vs follow-up CG: NS	Pedometer (Omron HJ-720 ITC Healthcare Ltd, Milton Keynes, UK)	Steps/day	1 × p/w or every moment by choice	RT + WP	n/a	E + GS + SS
van Nimwegen 2013 (34)	Patients with Parkinson's disease	Intervention: <i>n</i> = 299 (194/105) 65.1 years (7.9) Control: <i>n</i> = 287 (188/99) 65.9 years (7.2)	Home-based via hospital (UC)	2 years	EE (kcal/day)	<i>p</i> < 0.001* (mean change IG vs CG)	Accelerometer (Directlife, Consumer Lifestyle, Philips, Amsterdam, The Netherlands)	kcal/day	Monthly or login on website by choice	WP	RLC	E + GS + BI
Nolan 2017 (26)	COPD	Intervention: <i>n</i> = 76 (56/20) 69 years (9) Control: <i>n</i> = 76 (54/22) 68 years (8)	Outpatient PR (UC)	8 weeks	Time spent expending >3 METs/day	NS (mean change IG vs CG)	Yamax Digi-walker CW700	Steps/day	Every week	RT	RLC	GS + BI
Peel 2016 (27)	Elderly in geriatric rehabilitation	Intervention: <i>n</i> = 128 (50/78) 81 years (9) Control: <i>n</i> = 127 (57/70) 82 years (8)	Inpatient geriatric rehabilitation (UC)	4 weeks	Minutes walking/day non-therapy hours	<i>p</i> = 0.001* (IG vs CG at follow-up)	ActivPal (PAL technologies Ltd, Glasgow, UK)	Minutes walking/day	Daily and every treatment session	n/a	RLC	GS
Shoemaker 2016 (33)	Patients with heart failure and implantable cardioverter defibrillator	Intervention: <i>n</i> = 6 62 years (19) (Exercise/health coaching group is excluded from meta-analysis) Control: <i>n</i> = 4 63 years (23)	Home-based (UC)	3 months	Hours of activity/day	Baseline vs follow-up IG: NS Baseline vs follow-up CG: NS	ActiGraph GT3X triaxial accelerometer	Steps/day	Weekly	MA	RLC	E
Van der Weegen 2015 (32)	Diabetes type 2 and COPD	Intervention: <i>n</i> = 65 (34/31) 57.5 years (7.0) (SSP group excluded from meta-analysis) Control: <i>n</i> = 68 (37/31) 59.2 (7.5)	Homebased via GP (UC)	4–6 months	Mean minutes PA/day	<i>p</i> < 0.001* (mean change IG vs CG)	Personal Activity Monitor AM300 (Pam)	Mean minutes PA/day	In total 3 sessions or login by choice	RT + WP	RLC + PC	E + GS + BI + AP

*Significant effect on increase in PA in intervention group *p* < 0.05, n/a: not applicable; PA: physical activity; EE: energy expenditure; IG: intervention group; CG: control group; RC: rehabilitation centre; GP: general practice; PR: pulmonary rehabilitation, (UC): both intervention and control group received usual care; NS: not significant.. visualization: real-time display (RT)/web-based portal (WP)/mobile application (MA); Therapist or coach contact: real-life consultation (RLC)/phone call (PC)/text message or e-mail (TE).