Table S1 Coding of behavior-change techniques by BCT taxonomy v1.

BCT #	Trial: Reference number (see reference list of main document)																																			
	54	55	56	57	58, 59[a]	60	61-63	64	65	66	67	69, 70	71	72	73	74, 75	76	77-79	80: IG1[b]	80: IG2[b]	81, 82	83	84	85	50	86, 87	88, 89	90	91-93: IG1[c]	91-93, IG2[c]	94, 95: IG1[d]	94, 95: IG2[d]	94, 95: IG3[d]	96	Sum	Kappa	PABAK
1.1	●	●	●		●		●		●		●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●		●	●	27	0.84	0.88
1.2		●	●	●	●	●	●	●			●	●	●	●	●	●	●	●			●	●	●	●	●		●	●		●	●		●	●	26	0.92	0.94
1.3		●			●	●		●										●																●	6	0.89	0.94
1.4			●					●				●		●				●			●	●	●	●	●		●	●	●	●	●		●	●	17	0.94	0.94
1.5	●	●	●		●		●								●		●	●						●	●		●							●	12	1.00	1.00
1.6							●							●				●										●	●						5	1.00	1.00
1.8	●																																		1	1.00	1.00
1.9																									●										1	1.00	1.00
2.2	●	●			●	●	●				●							●			●	●	●	●					●				●	13	0.70	0.71
2.3	●	●	●		●	●	●	●			●	●	●	●	●		●	●		●	●	●	●	●		●	●	●			●	●	●	26	0.92	0.94
3.1	●		●	●	●	●		●			●	●	●	●	●	●	●	●			●	●	●	●	●		●	●	●	●	●		●	●	27	0.93	0.94
3.2														●			●												●						3	0.78	0.94
4.1		●		●	●	●					●	●		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●	●		●	●	24	0.73	0.76
5.1				●									●						●	●										●	●		●	●	8	1.00	1.00
5.2								●	●																										2	1.00	1.00
5.3		●		●	●		●				●	●	●	●	●												●		●	●	●		●	●	15	1.00	1.00
5.6																														●	●		●	●	4	1.00	1.00
6.1		●		●	●	●	●				●	●				●		●		●						●	●	●	●						14	0.82	0.82
6.2																													●	●	●		●	●	5	0.87	0.94
7.1							●											●			●	●	●	●			●								7	0.77	0.88
7.3								●				●		●							●	●	●	●			●								8	0.30	0.76
8.1		●		●	●	●			●	●	●	●			●	●		●		●	●	●	●			●	●	●	●	●	●		●	●	23	0.94	0.94
8.2													●																						1	1.00	1.00

Table S1 (*Continued*)

BCT #	**Trial: Reference number** (see reference list of main document)																																			
	54	55	56	57	58, 59[a]	60	61-63	64	65	66	67	69, 70	71	72	73	74, 75	76	77-79	80: IG1[b]	80: IG2[b]	81, 82	83	84	85	50	86, 87	88, 89	90	91-93: IG1[c]	91-93, IG2[c]	94, 95: IG1[d]	94, 95: IG2[d]	94, 95: IG3[d]	96	Sum	Kappa	PABAK
8.7							●		●		●			●		●	●	●			●	●	●	●		●	●	●						●	15	0.66	0.65
9.1																●			●	●									●						4	0.64	0.88
9.2		●	●		●								●	●										●											6	0.62	0.82
10.3													●				●				●	●	●	●			●								7	1.00	1.00
10.4							●	●									●	●			●	●	●	●			●								9	0.91	0.94
10.9		●			●								●				●							●											5	1.00	1.00
11.2									●																										1	1.00	1.00
12.1																													●						1	1.00	1.00
12.3													●								●	●	●	●											5	1.00	1.00
12.5		●	●		●	●	●				●	●	●		●		●	●		●	●	●	●	●			●	●				●	●	●	21	1.00	1.00
13.2		●			●																						●								3	1.00	1.00
13.5								●																											1	1.00	1.00
15.4																												●							1	0.00	0.94
16.2													●																						1	1.00	1.00
Sum	6	15	8	7	15	9	12	9	5	1	11	11	13	12	9	8	12	16	2	8	15	15	15	17	6	5	17	12	14	10	10	2	12	16			
Kappa	0.83	0.93	0.93	0.83	0.95	0.86	1.00	1.00	1.00	1.00	1.00	0.94	0.80	0.67	0.94	0.92	0.95	0.90	1.00	0.83	0.94	0.93	0.89	0.70	0.91	1.00	0.82	0.88	1.00	0.94	0.87	1.00	0.89	1.00			
PABAK	0.91	0.96	0.96	0.91	0.96	0.91	1.00	1.00	1.00	1.00	1.00	0.96	0.83	0.74	0.96	0.96	0.96	0.91	1.00	0.91	0.96	0.96	0.91	0.74	0.96	1.00	0.83	0.91	1.00	0.96	0.91	1.00	0.91	1.00			

Notes: Coding based on final agreed-upon coding, Kappa and PABAK values based on the independent coding versions of two reviewers after specification of additional coding rules. [a] only lifestyle program included; [b] IG 1: exercise recommendation, IG 2: recommendation plus motivational intervention; [c] IG1: tailored print material, IG2: targeted print material; [d] IG1: print material, IG2: pedometer, IG3: both combined.
Numbering of BCT: 1.1 Goal setting (behavior); 1.2 Problem solving; 1.3 Goal setting (outcome); 1.4 Action planning; 1.5 Review behavior goal(s); 1.6 Discrepancy between current behavior and goal; 1.8 Behavioral contract; 1.9 Commitment; 2.2 Feedback on behavior; 2.3 Self-monitoring of behavior; 3.1 Social support (unspecified); 3.2 Social support (practical); 4.1 Instruction on how to perform the behaviour; 5.1 Information about health consequences; 5.2 Salience of consequences; 5.6 Information about emotional consequences; 6.1 Demonstration of the behavior; 6.2 Social comparison; 7.1 Prompts/cues; 7.3 Reduce

prompts/cues; 8.1 Behavioral practice/rehearsal; 8.2 Behavior substitution; 8.7 Graded tasks; 9.1 Credible source; 9.2 Pros and cons; 10.3 Non-specific reward; 10.4 Social reward; 10.9 Self-reward; 11.2 Reduce negative emotions; 12.1 Restructuring the physical environment; 12.3 Avoidance/reducing exposure to cues for the behaviour; 12.5 Adding objects to the environment; 13.2 Framing/Reframing; 13.5 Identity associated with changed behaviour; 15.4 Self-talk; 16.2 Imaginary reward.

Abbreviations: Kappa, Cohen's Kappa; PABAK, Prevalence- adjusted bias- adjusted kappa; BCT, Behavior Change Technique (from BCTT v1).

Table S2 Methodological quality of the included studies (k = 30).

Criteria→ ↓Author, year	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals und drop-outs	Global ratings	Intervention Integrity			Analyses	
								Integrity*	Consistency+	Contamination+	Sample-size calculation+	Intention-to-treat analysis+
Bantum et al., 2014	w	s	s	m	s	s	m	2	1	3	2	2
Basen-Engquist et al., 2006	w	s	s	m	s	s	m	4	3	3	2	1
Bennett et al., 2007	w	s	s	m	s	s	m	1	3	3	2	1
Bloom et al., 2008	w	s	w	m	w	s	w	4	3	3	2	1
Carmack Taylor et al., 2004 & 2006	m	s	w	m	s	s	m	4	3	3	2	3
Culos-Reed et al., 2010	w	s	s	m	s	m	m	4	3	3	2	1
Demark-Wahnefried et al. 2003 & 2007; Ottenbacher et al., 2012	w	s	w	m	s	s	w	4	3	3	1	1
Hatchett et al., 2013	w	s	s	m	s	s	m	4	3	3	2	2
Hébert et al., 2012	m	s	s	m	s	s	s	4	3	3	2	1
Ibfelt et al., 2011	m	s	s	m	w	m	m	4	3	3	2	2
Irwin et al., 2008	w	s	s	m	s	s	m	2	3	3	1	1
James et al., 2011 & 2015	w	s	s	w	w	m	w	4	1	3	1	1
Kim et al., 2011	w	s	s	m	s	s	m	4	3	3	2	1
Lahart et al., 2016	w	s	s	m	s	s	m	4	3	3	1	1
Ligibel et al., 2012	w	s	s	m	s	s	m	1	3	3	1	2
Livingston et al., 2011 & 2015	m	s	w	m	s	s	m	4	3	3	1	1
Matthews et al., 2007	w	s	s	m	s	w	w	4	3	3	2	1
Morey et al., 2009; Demark-Wahnefried et al. 2012; Snyder et al. 2009	w	s	s	m	s	m	m	4	3	3	1	1
Park et al., 2015	m	s	s	s	s	s	s	4	3	3	1	1
Pinto et al., 2005 & 2008	m	s	s	m	s	s	s	4	3	3	2	3
Pinto et al., 2013a (breast)	m	s	s	m	s	m	s	4	3	3	1	3
Pinto et al., 2013b (colon)	m	s	s	m	s	s	s	4	3	3	1	1
Rabin et al., 2016	w	s	s	m	s	m	m	4	3	3	2	2
Rau et al., 2009	w	s	s	m	w	m	w	4	3	3	2	2
Reif et al., 2010 & 2013	m	s	s	m	s	s	s	4	3	3	1	1
Rogers et al., 2012 & 2015	m	s	s	m	s	s	s	1	1	3	1	1
Sheppard 2016	w	s	s	m	s	m	m	4	3	3	2	2
Short et al., 2012, 2013 & 2015	m	s	s	s	s	s	s	4	3	3	1	1
Vallance et al., 2007 & 2008	w	s	s	m	s	s	m	4	3	3	1	1
von Gruenigen et al., 2012	m	s	s	m	s	m	s	4	1	3	1	1

Notes: s, strong quality; m, moderate quality; w, weak quality. * Rating: 1, 80%-100%; 2, 60%-79%; 3, ≤60%; 4, unclear. + Rating: 1, yes; 2, no; 3, unclear.

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3,4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	2
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	5
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4,5
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Supplement figure S2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5,6
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5,6
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5-7
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	6-8
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6-8
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6-8

Figure S1 PRISMA Checklist.

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	7,8
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	8
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	8, 9, figure 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	9, figure 2, Supplement table S2
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Figure 3
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	10-12, table 2, table 3
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	1, 10,11 Supplement figure S3
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	Table 2
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	13-17
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	17-18
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	18,19
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	19

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org. Page 2 of 2

Figure S1 (*Continued*)

1.	exp Neoplasms/
2.	(cancer* or tumor* or tumour* or neoplas* or cancer survivor*).mp.
3.	1 or 2
4.	exp Exercise/
5.	exp Exercise Therapy/
6.	Physical Fitness/
7.	exp Physical endurance/
8.	exp Exercise Movement Techniques/
9.	exp Motor Activity/
10.	exp Muscle Strength/
11.	(exercis* or aerobic* or resistance* or strength* or walk* or endurance*).mp.
12.	physical active*.mp.
13.	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14.	no exp Patient Education as Topic/
15.	(educat* or inform* or teach* or supervis* or communicat* or leaflet*).mp.
16.	survivors/
17.	survivor*.mp.
18.	exp Behavior Therapy/
19.	(behavior* or behavior*).mp.
20.	exp Health Promotion/
21.	health promotion*.mp.
22.	no exp Health Education/
23.	no exp Health Knowledge, Attitudes, Practice/
24.	15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23
25.	3 and 13 and 24
26.	randomized controlled trial.pt
27.	25 AND 26

Figure S2 MEDLINE Search Strategy (via PubMed).

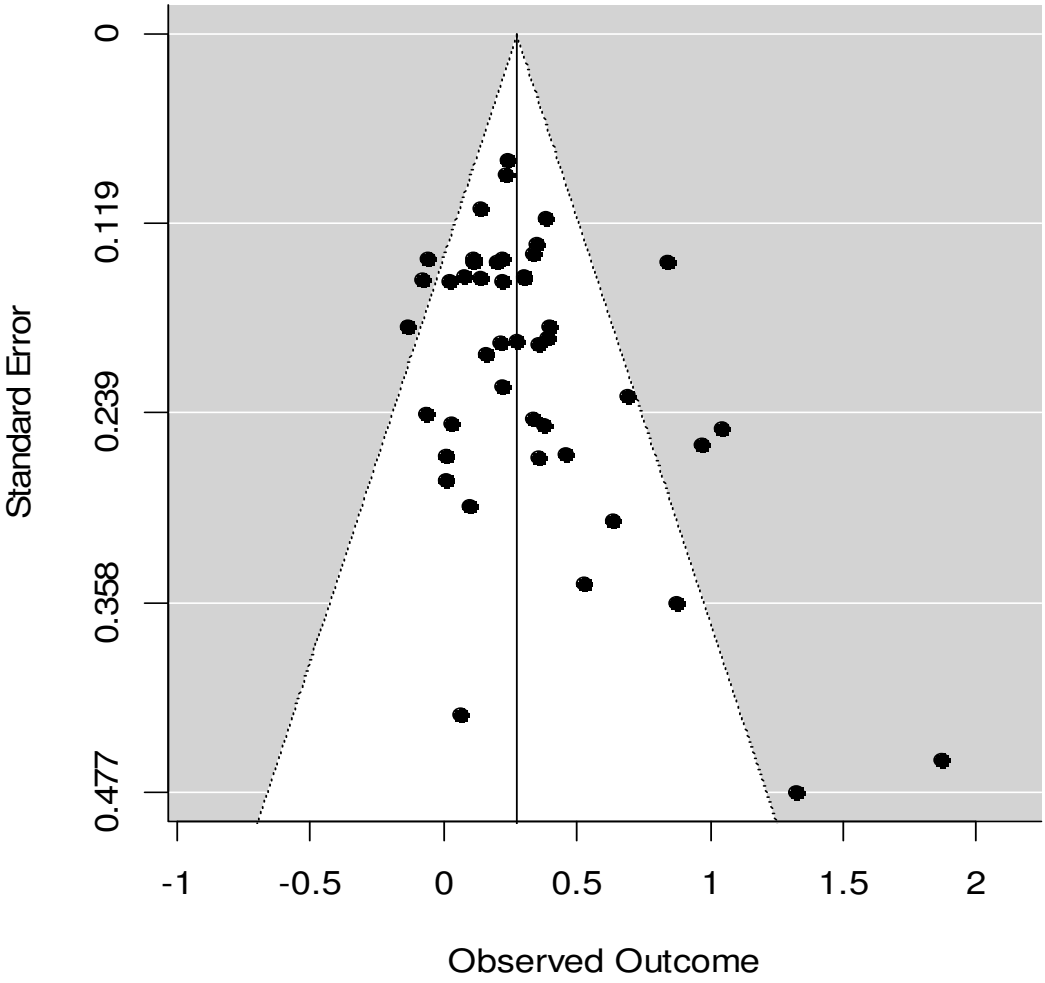

Figure S3 Funnel plot of precision of effect size estimates (k = 45) related to magnitude of effect sizes**.**