

Additional file 5. Intervention coding into BCTs

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Luszczynska	p1	Action planning	received instructions about what implementation intentions should include
Luszczynska, Scholzc et al. 2007	C, d1	Information about health consequence	... patients were reminded about the nutrition and physical activity guidelines
	C	Social reward	The patients were complimented for seeking social support
	d1	Action planning	...patients received instructions about implementation intentions training
Sniehotta et al. 2006	p2, p3	Action planning	...participants formed up to three action plans about when, where, and how they intended to exercise...
	p3	Coping planning	participants formed up to three coping plans about strategies to overcome anticipated barriers
Luszczynska, Sobczyk et al. 2007	C, p4(d2)	Self-monitoring of behavior Reduce negative emotions Avoidance/reducing exposure to cues for th behavior Framing/reframing Social support (unspecified)	The program consists of weekly 1-hr group meetings focusing on nutrition and physical activity, behavioral weight control strategies (i.e., self-monitoring, stress management, problem solving, and cognitive restructuring), and social support by group members
	p4(d2)	Action planning	The participants were invited to write detailed plans regarding six food categories
		Coping planning	participants were asked to make coping plans regarding risky or tempting
Scholz et al. 2007	p5, p6	Action planning	Participants received a planning sheet...
	p6	Coping planning	Participants received a planning sheet to write down up to three coping plans.
Soureti et al. 2011a	C, d3, d4	Information about health consequence	...They also received educational information on the importance of a healthy diet low in saturated fat.
	d4	Biofeedback	...They then received feedback on their future CVD risk in the form of the HA risk message. Heart-Age (HA) is the age corresponding to someone of the same gender with the same CVD risk level
		Salienc of consequences	
	d3, d4	Action planning	Participants who received the PT selected from a list of 13 situations, in which they were tempted to eat unhealthily and then chose an approach to change their behavior from a list of 13 solutions.
		Coping planning	
Soureti et al. 2011b	C, d5, d6	Information about health consequence	All groups received educational information on the importance of a healthy diet low in saturated fat, ...

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	d5, d6	Action planning	Participants who received the planning tool selected from a list of 13 situations, in which they were tempted to eat unhealthily and then chose an approach to change their behavior from a list of 13 solutions.
		Coping planning	
Broekhuizen et al. 2012	d6	Prompt/cues	After completing the planning session, participants in the PTT entered their mobile number and chose a time band to receive text reminders of their plans.
	p7(d7)	Information about health consequence Information about antecedents Feedback on outcomes of behavior Instruction on how to perform the behavior Feedback on behavior Pharmacological support Information about health consequence Credible source Social support (unspecified) Prompt/cues Social support (unspecified) Information about social and environmental consequences Action planning Coping planning Feedback on behavior Information about health consequence Goal setting (behavior) Self-monitoring of behavior Adding objects to the environment Review behavior goals Social support (unspecified)	... generic online CVD risk information was presented, containing feedback on CVD risk behaviours and their contribution to overall CVD risk, as well as information on the changeability of these behaviours... participants received six tailored advice on smoking, physical activity, saturated fat intake, fruit intake, vegetables intake and compliance to statin therapy. computer-generated feedback was tailored to personal performance level, awareness of one's own performance... Personalised feedback on compliance to statin therapy... the participant and the personal coach further established the level of the participant's knowledge/awareness about FH and cardiovascular risk factors. one to five counsellor-initiated booster telephone sessions were performed during a period of 9 months to encourage the participant's behavioural changes. Giving personal feedback to participant's self-reported attitude and self-efficacy and by involving the social environment of the participant in making action plans. Stimulating participants to make action plans and discussing how to overcome possible barriers in behavioural change. Feedback on baseline level of physical activity Information regarding recommended level of physical activity, health benefits and safety Establishment of behavioural goals Distribution of a physical activity logbook Revision of the physical activity logbook General encouragement
Bélanger-Gravel et al. 2013	C, p8		

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
		Adding objects to the environment	pedometer
	p8	Action planning Coping planning Credible source Social support (practical)	participants in the experimental condition (i.e. CA+IIs) completed an II task ('if-then' plans) regarding the classical what, when and where components ...participants attended two additional sessions for a total of three face-to-face sessions with a physical activity counsellor
Scholz et al. 2013	C, d8	Instruction on how to perform the behavior Information about health consequence Adding objects to the environment Feedback on behavior Social support (unspecified)	All participants received educational leaflets on a low-fat diet, based on recommendations of the Swiss Society of Nutrition. Next, they completed a self-check knowledge questionnaire on low-fat diet. Subsequently, participants could compare their answers with the correct answers and discuss this with a trained interviewer
	d8	Action planning	In a face-to-face situation with an undergraduate psychology student, ... participants were instructed to form up to three action plans on their low-fat diet.
Ströbl et al. 2013	p9(d9)	Coping planning Information about health consequence Goal setting (behavior) Goal setting (behavior) Self-monitoring of behavior Action planning Prompt/cues Social support (unspecified) Review behavior goals Feedback on behavior Coping planning Adding objects to the environment	Following this, participants were asked to form up to three coping plans. provide general information on behaviour-health link, ...prompt intention formation, ...prompt specific goal setting, ...prompt self-monitoring of behaviour; Patients were offered templates for the individual plans ... use of follow-up prompts, provide general encouragement, ... prompt review of behavioural goals, ... provide feedback on performance ...prompt barrier identification, relapse prevention. ...patients were given their booklets and invited to make individual physical activity and coping plans for the time after discharge.
de Freitas Agondi et al. 2014	C, d10	Credible source Social support (unspecified) Pharmacological support	usual care included medical and nursing consultations, general counseling about pharmacological and nonpharmacological treatment, and treatment optimization.

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Helena et al. 2014	d10	Information about health consequence	patients received a letter containing information on the benefits of reducing dietary salt intake	
		Action planning	participants were asked to indicate up to three actionplans on when,where,and how they thought they could reduce the salt added to food preparation	
		Coping planning	Then, the women were asked to indicate obstacles or barriers that could interfere with the implementation of the plans they had proposed...	
		Restructuring the physical environment	The women were asked to repeat aloud the plans and instructed to put the plans in a visible and strategic place at home.	
	C, p10(d11)	Prompt/cues	Social support (unspecified)	the plans developed were reinforced by telephone call. Continuous positive airway pressure (CPAP) regimen included diagnosis by a physician (consultant in lung medicine).
			Information about health consequence	patients were informed about the association between overweight and sleep apnea and about the aim ofthe CPAP treatment.
		p10(d11)	Self-monitoring of behavior	In clinical practice, the patients are then followed up with a whole-night sleep registration at home
			Adding objects to the environment	
			Feedback on behavior	the therapists strove to evoke and strengthen the individual's motivation to change and to encourage the patient to explore his or her own perceptions and thoughts regarding the pending behavioral changes.
			Social support (unspecified)	
			Framing/reframing	
			Goal setting (behavior)	a S-M-A-R-T (specific, measurable, achievable, relevant, and time limited) goal was set for the week to come.
			Action planning	The participants were asked to transform their intentions into an action plan for the physical activity and eating behavior change...
			Self-monitoring of behavior	The participants were encouraged to self-monitor their physical activity behavior and eating behavior
Review behavior goals	At each meeting, the behavioral goals and action plan of the patient were reviewed and feedback was given on performance			
Feedback on behavior				
Information about antecedents	Functional behavioral analyses were performed in order to identify functional relationships between antecedents, behavior, and consequences in each individual.			
Feedback on behavior				

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Janssen et al. 2014	p11(d12)	Coping planning	the participants and therapists discussed perceived barriers that could constrain their planned actions for behavioral performance. ...
		Information on health consequences	Information on consequences & Normative information.
		Self-monitoring of behavior	Self-monitoring of behaviour
		Focus on past success	Focus on past success
		Goal-setting(behavior)	Goal-setting
		Action planning	Action planning
		Graded tasks	Set graded tasks
		Behavioural contract	Agree behavioural contract
		Prompts/cues	Use prompts/cues
		Restructuring the physical environment	Environmental restructuring
		Social support (practical)	Plan social support
		Behavioral practice/ rehearsal	Prompt practice
		Coping planning	Barrier identification/problem-solving & Relapse prevention/coping planning
		Self-monitoring of outcomes of behavior	Self-monitoring of behaviour/outcome
		Feedback on behavior	Feedback on performance
		Social comparison	Facilitate social comparison
		Self-reward	Rewards contingent on success
Review behavior goals	Review of goals		
Reduce negative emotions	Stress management/emotional control		
van Genugten et al. 2014	C, p12(d13)	Adding objects to the environment	pedometers
		Information about health consequence	general information on weight gain prevention
	p12(d13)	Prompts/cues	Reminders to (re)visit the intervention were sent to the participants every two asking them to weigh the pros and cons of weight gain prevention, and to choose one behavior change and plan for that change.
		Goal setting (behavior)	giving participants feedback on their performance during the previous week, based on self-reported behavior change.
		Pros and cons	people were guided in choosing what they wanted to change (goal setting) and where. when. and how to make the change in an open format.
	Self-monitoring of behavior		
	Feedback on behavior		
	Action planning		

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Vinkers et al. 2014	C	Coping planning	people were asked whether they expected to encounter a risk situation and to think about this situation and to describe their strategy to avoid or handle
		Self-monitoring of outcomes of behavior	they were provided with a tool to monitor and evaluate changes in their body weight.
		Feedback on outcomes of behavior	Furthermore, written feedback is provided.
		Information about health consequence	The group sessions ... were led by one of three dieticians who were explicitly required to only provide nutritional knowledge
		Social support (unspecified)	
		Goal setting (behavior)	participants were asked to make a list with 10 unhealthy eating habits, and choose one habit they wanted to change
		Self-monitoring of behavior	Two written assignments were sent requiring participants to reflect on their goal progress
		Information about health consequence	participants were asked to change an unhealthy habit they would be able to maintain, and the importance of behavior maintenance was emphasized.
		Goal setting (behavior)	
		Information about health consequence	participants' motivation, dietary knowledge and expectations towards the intervention were discussed.
Obara-Golebiowska et al. 2015	C, d16	Goal setting (behavior)	(a) concrete, realistic goal setting; (b) exploring conditions and barriers to goal attainment; (c) appraisal of the barriers to goal attainment; (d) making specific if-then plans for action initiation and mental simulation of plans; and (e) evaluating progress
		Information about health consequence	
		Goal setting (behavior)	
		Action planning	
		Mental rehearsal of successful performance	
		Self-monitoring of behavior	Participants were given a workbook that provided basic background information about weight management, 5-step plans, and diaries...
		Adding objects to the environment	
		Social support (unspecified)	participants were stimulated to discuss and make use of each other's knowledge and experience with weight management.
		Review behavior goals	renewing a goal that proved difficult to achieve in the past weeks and identifying specific goal-threatening situations and coping strategies
		Coping planning	the participants were offered a special reward based on their individual
Armitage et al. 2017	C, d17	Material reward (behavior)	participants developed a list of techniques for resisting high-calorie foods during and after the weight-loss program.
		Action planning	
		Social support (unspecified)	The ideas generated by the participants were discussed with others
		Instruction on how to perform the behavior	The volitional help sheet provides participants with a list of critical situations they may encounter and the responses they might find useful

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Cheung et al. 2017	C	Avoidance/reducing exposure to cues for the behavior	participants were simply asked to tick all the critical situations and appropriate responses that applied to them
	d17	Action planning	Participants were asked to draw links between as many critical situations and appropriate responses as they wanted thereby forming implementation intentions
Duan et al. 2018	p15(d18)	Coping planning	asked participants to set goals;
		Goal setting (behavior)	provided feedback regarding their weight, behavior, and socio-cognitive beliefs
		Feedback on behavior	
		Feedback on outcomes of behavior	
		Action planning	asked participants to make if-then plans specifying when, where, and how they would take specific actions to realize the behavior change
		Coping planning	provided participants the option to make coping plans
		Feedback on behavior	participants received tailored feedback about their behavior change progress by assessing current behavior and comparing to their weight and behavior before
		Discrepancy between current behavior and goal	
		Social comparison	role models narrating about their own change process and how they dealt with difficult situations
		Review outcome goals	participants received tailored feedback on their weight change by indicating whether or not they had achieved their weight goal
Stevens et al. 2001	p16(d19)	Information about health consequence	risk perception, outcome expectancies, and goal setting;
		Goal setting (behavior)	
		Goal setting (outcome)	
		Action planning	development of action plans;
		Review behavior goals	revision and adjustment of previous action plans and development of coping plans;
		Coping planning	
		Review behavior goals	revision and adjustment of previous coping plans and development of behavior-specific social support
		Social support (practical)	patients received individualized feedback on their self-reported behavior
		Feedback on behavior	short message service (SMS) text messages were sent as reminders
		Prompts/cues	provided nutrition education, information on physical activity, and social support for making and maintaining behavior changes.
Stevens et al. 2001	p17(d20)	Information about health consequence	
		Social support (practical)	
		Action planning	self-monitoring, setting explicit short-term goals and developing specific action plans to achieve those objectives, and developing alternative strategies for situations that trigger problem eating.
		Self-monitoring of behavior	
		Goal setting (behavior)	
Coping planning			

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Sniehotta et al. 2005	p18, p19	Action planning Coping planning Mental rehearsal of successful performance Commitment Adding objects to the environment	Participants received a planning booklet with two planning sheets for action plans and for coping plans
	p19	Self-monitoring of behavior Adding objects to the environment	they received by mail six weekly diaries after discharge, tailored to individual requirements.
Jackson et al. 2005	C, d21	Information about health consequence Adding objects to the environment Goal setting (behavior)	By use of an information postcard, participants were told what constitutes a portion of fruit and vegetables. They were asked to eat two extra portions of fruit or vegetables each day for the next 3 months. They then completed the TPB questionnaire.
	d21	Monitoring outcomes of behavior by others without feedback	
Svetkey et al. 2008	C, p20(d22), p21(d23)	Action planning Social support (practical) Instruction on how to perform the behavior Goal setting (behavior) Goal setting (outcome) Information about health consequence Self-monitoring of behavior Adding objects to the environment	The two implementation intentions were then written onto the back of the postcard A trained interventionist led 20 weekly group sessions over approximately 6 Intervention goals were for participants to reach 180 minutes per week of moderate physical activity (typically walking); reduce caloric intake; adopt the Dietary Approaches to Stop Hypertension dietary pattern, which has been shown to reduce CVD risk factors; and lose approximately 1 to 2 lb per week.
	C p20(d22)	Information about health consequence Goal setting (behavior) Feedback on behavior Feedback on outcomes of behavior	Participants were taught to keep food and physical activity self-monitoring records accelerometer participants received printed lifestyle guidelines with diet and physical activity recommendations. Interactive features allowed participants to set personal goals and action plans and to graph personal data over time.

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
	p21(d23)	Action planning Coping planning Social support (unspecified) Self-monitoring of behavior Self-monitoring of outcomes of behavior Prompt/cues Prompt/cues Social support (unspecified) Goal setting (behavior) Action planning Review behavior goals Review outcome goals Feedback on behavior Feedback on outcomes of behavior Self-monitoring of behavior Self-monitoring of outcomes of behavior Coping planning	Modules addressed problem solving and motivation, and a bulletin board facilitated social support participants were required to enter current weight and were encouraged to use the Web site for self-monitoring of physical activity and caloric intake. they were sent an e-mail reminder that was repeated after another week of no Participants had telephone contact with an interventionist each month, ... Each personal-contact session began with a self-reported weight and a review of progress since the last contact, including number of days on which a food diary was kept, frequency of weighing, average number of minutes of exercise, and progress on additional goals and action plans.
Thoolen et al. 2009	C	Information about health consequence Instruction on how to perform the behavior Adding objects to the environment Goal setting (behavior) Coping planning Action planning Instruction on how to perform the behavior Social support (unspecified) Behavioral practice/ rehearsal Self-monitoring of behavior	Each contact discussed the individual's barriers to weight loss maintenance and plans to overcome those barriers. The control group received a brochure on diabetes self-management. set small, concrete and attainable goals, recognise barriers to goal achievement, generate strategies for solving potential problems in specific situations, formulate specific action plans, and consider beforehand how to evaluate progress. During the sessions, the nurse primarily functions as coach, facilitating group interaction and practice with the proactive skills. ... keep a written daily register of goal-attainment
	p22(d24)		

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Zandstra et al. 2010	C, d25	Adding objects to the environment Mental rehearsal of successful performance Monitoring outcomes of behavior by others without feedback Instruction on how to perform the behavior Self-monitoring of behavior	Course material includes a patient workbook and a nurse's handbook Mental simulation is employed in each session to help patients become more proactive. participants were weighed on an electronic scale, received instructions on how to use the MR products and how to record consumption of the MR products
Sniehotta et al. 2011	d25 C, p23(d26)	Action planning Information about health consequence Instruction on how to perform the behavior Adding objects to the environment	Participants formed implementation-intentions Participants received two British Heart Foundation (BHF) booklets
	p23(d26)	Goal setting (behavior) Self-monitoring of behaviour (behavior) Action planning Coping planning Review behavior goals Behavioral practice/ rehearsal Self-reward	intention formation/goal setting, self-monitoring of behaviour, action planning, barrier identification/coping planning, review of behavioural goals, prompting practice, planning contingent rewards and relapse prevention.
Armitage et al. 2014	C, d27 C d27	Instruction on how to perform the behavior Avoidance/reducing exposure to cues for the behavior Action planning Coping planning	Participants were both told that identifying situations in which they might be tempted to eat. Participants were asked to tick as many or as few critical situations and appropriate responses that applied to them. Participants were asked to draw links between as many critical situations and appropriate responses as they wanted
Rodrigues et al. 2013	C, p24 p24	Goal setting (behavior) Instruction on how to perform the behavior Action planning Coping planning	Participants were recommended to engage in regular exercise they were advised to increase their everyday PA, for example, by using a bicycle instead of a car Participants received three identical planning sheets participants established up to three coping plans

Studies	Intervention group ID	Behavior change technique	Coding based on the original article	
Wilczynska et al. 2019	p25	Prompt/cues	phone calls were made	
		Framing/reframing	Increase motivation, Increase self-efficacy, self-reward	
		Reduce negative emotions	Change negative outcome expectancies related to PA	
		Instruction on how to perform the behavior	Provide strategies for overcoming barriers	
		Action planning	Provide planning strategies and instructions	
		Coping planning	Implement problem solving strategies, help change unhelpful automatic thoughts	
		Self-monitoring of behavior	Provide self-monitoring strategies	
		Social support (practical)	Social support	
		Demonstration of behavior	Model or demonstrate behavior	
		Feedback on behavior	Provide feedback on performance	
		Behavioral practice/ rehearsal	Behavior reinforcement	
		Social support (unspecified)	General encouragement	
		Information about health consequence	Provide information about eCoFit Challenges	
		Instruction on how to perform the behavior	Provide cognitive strategies to increase motivation and PA maintenance	
		Information about social and environmental consequences	Promote outdoor environment for RT and aerobic activities	
		Goal setting (behavior)	Goal setting	
		Self-monitoring of behavior	Self-monitoring	
Hayes et al. 2020	C, d28, d29	Restructuring the social environment	Social support	
		Feedback on behavior	Progress tracking	
		Adding objects to the environment	Pedometer	
		Goal setting (behavior)	All participants were assigned five dietary goals.	
		Self-monitoring of outcomes of behavior	Participants also were assigned the goal to weigh daily as regular weight self-monitoring promotes weight loss.	
		Reduce negative emotions	Participants were introduced to the dietary goals and asked to read through brief psychoeducational materials regarding dietary change for weight loss.	
	d28, d29 d29	Information about health consequence	Information about emotional consequence	
		Action planning	Participants formed an implementation intention for each of the six goals.	
		Prompt/cues	Text messages containing all implementation intentions and goal reminders	

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Zakrisson et al. 2019	p26	Social support (emotional) Goal setting (behavior) Action planning Instruction on how to perform the behavior Behavioral practice/ rehearsal Social support (practical) Information about health consequence Prompts/cues	The group meeting was to achieve a positive and supporting atmosphere among the group members. Individual action plans and goal setting discussions for better self-management and behavioural changes were performed supporting the patients to practice skills and gain the knowledge they needed for better self-management and behavioural changes.
Ayre et al. 2020	C, d30, d31 C d30, d31 d30 d31	Goal setting (behavior) Goal setting (behavior) Action planning Review behavior goals Reduce negative emotions Action planning Coping planning	During the first, second, and third weeks, participants were emailed a reminder of their plan. Participants were given a brief description of each action plan and then could choose which one they would like to use. Participants were asked to select from a list 3 situations and to select the situation they would be happiest to change. Participants were asked to select 1 option from a list of possible plans participants were asked to imagine how it might feel to enact the plan Participants were advised to select a different plan from the list to reduce their perceived difficulty of enacting the plan. Participants formulated a plan to reduce their unhealthy snacking Participants entered their selected situations and plan into text boxes.
Kim et al. 2019	C, p27(d32), p28(d33) p27(d32), p28(d33) p28(d33)	Information about health consequence Monitoring outcomes of behavior by others without feedback Pharmacological support Instruction on how to perform the behavior Information about health consequence Social support (unspecified) Action planning Restructuring the social environment	nurse diabetes educators provided initial diabetes self-management education in which the content consisted of general information on diabetes mellitus, complications, blood glucose monitoring, nutritional management, exercise, and medication utilization, using different strategies. the educators distributed an easy-to-read diabetes education brochure The study interventionist encouraged patients to make an action plan for each week and provide answers to their questions The social media-based self-management support was operated as a closed social media service

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Groeneveld et al. 2011	C, p29(d34)	Information about health consequence Identification of self as role model Information about health consequence Adding objects to the environment	The study interventionist uploaded diabetes self-management information in both video and short text formats The study interventionist encouraged patients to share their diabetes management experiences on the discussion board. brochures were provided containing information on PA, healthy eating, smoking cessation, and CVD.
	C p29(d34)	Biofeedback Feedback on behavior Social support (unspecified) Biofeedback Feedback on behavior Pros and cons Goal setting (behavior) Action planning	The participants received brief oral or written information from the occupational physician about their risk profile This counselor applied a client-centered counseling style using MI techniques (1) participant's CVD risk profile was presented and his current health status was discussed. (2) participant decided to aim at PA and diet, or smoking. (3) participant was encouraged to indicate advantages and disadvantages of current and 'desired' behavior. (4) participant was asked to indicate his willingness, readiness, and perceived confidence. (5) participant formulated implementation intentions.
Almeida et al. 2015	C, p30, p31	Feedback on behavior Social support (unspecified) Prompt/cues Information about health consequence	In the following counseling sessions, progress and barriers were discussed. participants received 3 interactive voice response (IVR) support calls and 3 tailored newsletters interventions began with an opening message about the importance of PA to achieving good health
	C, p31	Restructuring the physical environment Adding objects to the environment	the session included an interactive geographic information system (GIS) interface that allowed participants to select a free 12-month voucher to a fitness facility
	p30, p31	Action planning Feedback on behavior Goal setting (behavior) Social support (unspecified) Coping planning	the session included personal action planning to improve self- and response- The session included an assessment of the patient's PA level The program provided a range of minutes of PA that would be an appropriate starting point for the patient and used a collaborative goal setting process the session included assisting the patients with PA barrier identification and strategies to overcome barriers
Silva et al. 2020	p32	Action planning Social support (unspecified) Behavioral practice/rehearsal Coping planning	with the researcher's help, participants were asked to form a plan on when, where and how they intended to walk for at least 30 minutes five times a week ... participants described the barriers to walking and formulated strategies to overcome them

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Fleig et al. 2011	p33(d35)	Goal setting (behavior) Framing/reframing Action planning Focus on past success Action planning Review behavior goals Mental rehearsal of successful performance Self-monitoring of behavior	post rehabilitation exercise goal setting, checking the self concordance of these goals, the formation of action plans, and the recall of positive exercise experiences. the formation of action plans, the reflection of positive exercise experiences, and an action control diary to self-monitor one's home-based behavior
Leung et al. 2019	p34	Information about social and environmental consequences Information about health consequence Behavioral practice/rehearsal Action planning Restructuring the physical environment Commitment Social support (practical) Instruction on how to perform the behavior Demonstration of the behavior Credible source Coping planning	introduction of the concept of photovoice and the importance of doing regular physical activity; warm-up stretching exercises; capturing photos in the neighbourhood; sharing of thoughts when the participants reviewed the photos; identifying resources and facilities related to physical activity within the neighbourhood; formulating action plans for physical activity A health and fitness officer was invited to rectify the myths of physical exhaustion and guide the participants to do exercise ...all participants worked together to find possible solutions/strategies to remove barriers for each individual.
Dombrowski et al. 2016	C, p35(d36) p35(d36)	Behavioral contract Commitment Action planning Social support (unspecified) Credible source Coping planning Prompt/cues	All people who participate in this programme are sufficiently motivated to actively sign up and commit personal time and money. The dietician then explained the idea of forming a detailed plan and provided an additional form participants specified which barriers they foresee and how to cope with them Participants were encouraged to use the planning form as a prompt/cue in their home environment.
Göhner et al. 2012	p36(d37)	Goal setting (behavior) Pros and cons Commitment	clarification of personal health objectives decisional balance sheet decision-making approach

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Christiansen et al. 2010	C, p37	Action planning Coping planning Self-monitoring of behavior Social support (unspecified)	generation of implementation intentions (“when-where-and-how plans”); anticipation of personal barriers and development of counter-strategies self-monitoring of the new behavior A trained psychologist (the principal investigator) delivered the modules in one-on-one sessions...The control group participated in the standard treatment such as physiotherapy under the guidance of qualified personnel
	p37	Information about health consequence Instruction on how to perform the behavior Reduce negative emotions Information about antecedents Pros and cons	The patients receive general information about pain (e.g., the relationship between pain and stress, interaction between the psychological and somatic factors of pain) in addition to medical care and consultation, physiotherapy, and physical therapy (e.g., massage) and education (relaxation techniques). To begin with, the patient, assisted by the psychologist, listed four positive and four negative aspects associated with “exercising more”... Next, the patients verbally elaborated two positive aspects of the desired future and two negative aspects of impending reality.
Gagnon-Girouard et al. 2010	d38, d39	Coping planning Action planning Information about health consequence Social support (emotional) Behavioral practice/rehearsal Reduce negative emotions Framing/reframing Avoidance/reducing exposure to cues for the behavior Goal setting (behavior)	We applied common cognitive behavioral therapeutic principles of problem solving, in particular the strategies of planning changes Finally, we assisted the patients in the formation of implementation intentions. Different themes such as enjoyment of physical activity and healthy nutrition, recognition of internal cues of hunger and satiety, identification of external influences on eating behaviors and food intake, and acceptance of one’s own and others’ body image were addressed through guided self-reflection and observations, group discussions, practical exercises, and lectures.
	d39	Action planning Social support (unspecified) Social support (practical) Goal setting (outcome)	...participants were asked to choose a personal objective and to design and present their own action plan in line with this objective. In the HAES group, the interveners were active leaders, providing specific information, structured activities, and counselling to participants.
Richardson et al. 2012	p38	Goal setting (behavior) Action planning	patients participated in collaborative goal setting with the therapist, Patients then created weekly action plans related to the goal using a self-management behaviour that addressed the functional goal.

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
Miller et al. 2016	p39(d40)	Information about health consequence	The goals of the program were to build self-management skills, identify goals, set action plans and engage in problem solving approaches in a group setting.
		Instruction on how to perform the behavior	
		Information about social and environmental consequence	
		Self-monitoring of outcomes of behavior	
		Adding objects to the environment	
		Feedback on behavior	
		Social support (unspecified)	
		Self-monitoring of behavior	
		Self-monitoring of outcomes of behavior	
		Adding objects to the environment	
		Information about health consequence	
		Instruction on how to perform the behavior	
		Social support (unspecified)	
		Goal setting (behavior)	
Goal setting (outcome)			
Kwasnicka et al. 2020	p40(d41)	Action planning	The lifestyle intervention was goal-based with a goal of losing 7% of initial body weight, progressively increasing PA to 150 minutes/week of at least moderate intensity. The latter 8 sessions focused on problem solving to achieving lifestyle goals, relapse prevention, and motivational factors for sustaining behavioral change... The following week, participants were asked to review the success of their action plan and how it could be modified, if unsuccessful. The control group received an information booklet regarding lifestyle changes for diabetes prevention
		Coping planning	
		Discrepancy between current behavior and goal	
		Information about health consequence	
		Adding objects to the environment	
		Social support (unspecified)	
		Instruction on how to perform the behavior	
		...	
		...	
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Studies	Intervention group ID	Behavior change technique	Coding based on the original article
		Information about health consequence Goal setting (behavior) Social support (practical) Behavioral practice/rehearsal Demonstration of the behavior Information about social and environmental consequence Action planning Coping planning Review behavioral goals Restructuring the social environment Social support (unspecified)	dense foods, and alcohol; and a gradual increase in physical activity by choosing the activity that the men enjoy the most or could most easily incorporate into daily life. This content was delivered in coach training with discussion of the basic principles of the theory, interactive activities (for example, scenarios, role-playing), detailed descriptions of these environmental components,...
		Self-monitoring of behavior Self-monitoring of outcomes of behavior Adding objects to the environment Social support (emotional)	Aussie-FIT participants were supported in how to best form habits [14] and how to form specific action and coping plans (expanding on their initial SMART goals); these plans were revisited and revised during subsequent Aussie-FIT sessions. ...participants and coaches being invited to join closed Facebook groups Automated text messages, written in language to promote feelings of autonomy, competence, and relatedness, were sent each week to encourage session attendance. In session 1, participants received an Aussie-FIT booklet with session summaries and space to complete in-session activities and to self-monitor their weight-loss progress and goals. Men also received activity monitors (Fitbit Zip), club t-shirts, and reusable 'LiveLighter' branded water bottles.
Kivelä et al. 2020	C, p41(d42)	Social support (unspecified) Information about health consequence Feedback on outcome(s) of behavior	Participants were free to communicate through the Facebook group with the coach and with each other. They received the usual care regarding their health problems from the physicians and nurses at the primary healthcare centres if they needed it... included assessment for the need of treatment, physical examination, problem assessment, laboratory and X-ray tests, medical advice and patient support and education during their visits.
	p41(d42)	Reduce negative emotions Goal setting (behavior) Action planning Adding objects to the environment Social support (emotional) Feedback on behavior	...nurse coaches helped ... to identify their life situations and define their goals for the plans. The goals and health coaching focused on the management and The frequent attenders received their written plans for home self care support.
Osborn et al. 2018	C	Adding objects to the environment	In the follow-up sessions, the nurse coaches assessed their stage of changes, motivated them toward lifestyle and behavioural changes, gave emotional support. The usual clinical pathways for cardiovascular disease risk factors were continued in this group. British Heart Foundation leaflets were mailed out to participants.

Studies	Intervention group ID	Behavior change technique	Coding based on the original article
	p42(d43)	Information about health consequence Monitoring outcomes of behavior by others without Social support (unspecified) Goal setting (behavior) Feedback on behavior Review behavioral goals Action planning Coping planning Adding objects to the environment	These included setting a behavioural goal, involving supportive others, creating an action plan, recording progress, providing positive feedback, reviewing progress, coping with setbacks, and forming habits.
Boekhout et al. 2018	p43	Pros and cons Information about social and environmental consequences Feedback on behavior Action planning Coping planning Restructuring the social environment Information about health consequence	British Heart Foundation leaflets on keeping your heart healthy were given to intervention nurses or health-care assistants to distribute to participants at their first Primrose appointment. raise consciousness of the current level of PA; motivates participants to increase physical activity participants receive planning sheets that the participant is stimulated to use in order to plan PA: formats how they plan to deal with difficult situations that may interfere with PA received brochures from local PA-exercise groups received medical information on exercising with a physical limitation.
Breslin et al. 2019	C, p44	Information about health consequence Credible source Social support (practical) Instruction on how to perform the behavior	Participants received a weekly multicomponent weight loss program, delivered in a group setting by a trained professional weight loss practitioner Participants received an eating plan to promote a healthier life
	p44	Social support (unspecified) behavioral practice/rehearsal Demonstration of the behavior Instruction on how to perform the behavior	... individual physical activity 30-minute long consultations took place in weeks two, three and four participants attended a 30-minute long group educational physical activity session

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Rodgers et al. 2014	p45	Goal setting (behavior)	The consultation session included discussions about possible discrepancies between the individual's activity levels and recommended guidelines; goal setting; and problem solving
		Discrepancy between current behavior and goal	
		Coping planning	
		Self-monitoring of behavior	
Wooldridge et al. 2019	C, p46, p47	Action planning	Participants completed a physical activity log each day to enhance self-monitoring
		Feedback on behavior	participants formed weekly physical activity implementation intentions
	Information about health consequence	researcher checked the log details matched with what was said to be performed	
	p46, p47	Information about health consequence	One investigator delivered an information lecture on the importance of exercising
		Social support (unspecified)	...participants were encouraged to 'brain storm' ideas for increasing/maintaining their exercise
Information about antecedents		Patients were encouraged to report their experiences to discuss any challenges they were having	
p47	p46, p47	Action planning	...participants to identify some specific activities they wished to engage in following the standard if-then- format of implementation intentions
		Instruction on how to perform the behavior	Participants received educational materials including a worksheet for overcoming barriers to physical activity
	p47	Information about health consequence	accelerometer
		Adding objects to the environment	
		Action planning	To develop plans, participants followed a template in which they completed IF-THEN statements
		Social support (practical)	The plan was made jointly with partners

Note: In the second column, "C" refers to control group. Lowercase "P" followed by a number refers to the group with interventions aiming to improve physical activity. Lowercase "D" followed by a number refers to the group with interventions targeting diet behavior.