

Supplementary Data 5. Study Evaluation and Participant Characteristics

Author (year)	Inclusion criteria	Exclusion criteria	Recruitment/Setting
Almeida (2015) Estabrooks (2011)	- No chest pains and anormal electrocardiogram during the treadmill stress test - Currently physically inactive or insufficiently active (<150 moderate intensity physical activity/week)	- Younger than 18 years of age - Had no access to a telephone - Not able to read or understand English - A contraindication to physical activity identified during stress testing - Already had a membership to a recreation center	During an outpatient health care visit and referred by the primary care physician
Ambeba (2015) Bizhanova (2023) Burke (2017, 2020, 2022a, 2022b) Cheng (2023) Kariuki (2023) Wang (2012)	- Age ≥ 18 years - Currently own and regularly use a smartphone with a data plan (iPhone or Android) - BMI ≥ 27 and ≤ 43 - Complete a 5-day electronic food diary during the run-in period	- Having an unstable condition requiring physician-supervised diet and exercise (e.g. recent myocardial infarction) - Physical limitations that preclude moderate-intensity PA - Pregnant or intending to become pregnant during the study period - Serious mental illness (e.g. schizophrenia) - Alcohol intake > 4 drinks/day - Currently in a formal weight loss program or use of weight loss medication - History of bariatric surgery - Score > 32 on the Eating Habits Checklist - Unwilling to use the Fitbit device provided (or their own Fitbit device)	- Recruitment via Pitt+Me (a research registry hosted by the Clinical Translational Science Institute) - University email announcements - Electronic and postal mailings - Study announcements on various social media sites - Fliers posted in the community, and primary care practices with whom the Co-PI has collaborated for previous lifestyle studies

Baert (2018) Bohanec (2021) Clays (2021) Voorend (2019)	• Willing and able to make use of a smartphone and to give informed consent for participation in the study • Adults ≥ 18 years old • Ischemic or non-ischemic HF disease • Functional New York Heart Association (NYHA) class 2–3 • Reduced left ventricular ejection fraction $\leq 40\%$ • Ambulatory HF patients in stable condition • Good cognitive function • Sufficient knowledge of the native language (Dutch in Belgium, Italian in Italy)	• Suffering from a concomitant end-stage chronic kidney disease necessitating hemodialysis • Already participating in a disease management program influencing the HeartMan intervention	• Recruitment via 3 hospitals in Belgium and one hospital and a local health authority in Italy
Beckie (2024) Sengupta (2020a, 2020b)	• English-speaking women ≥ 35 years of age • Documented coronary heart disease with or without coronary revascularization within the prior 5 year • Able to participate in physical activity unaided	• A psychiatric diagnosis • A debilitating neurological disorder • A markedly shortened life expectancy	• Three outpatient cardiology clinics

Bennett (2013, 2018) Foley (2012, 2016) Steinberg (2013)	<u>Steinberg2013</u> • Women aged 25-50 years • A body mass index (BMI) greater than or equal to 25 kg/m² • Come to all study assessments over 6 months • Use a personal cell phone to send and receive up to 5 texts per day for 6 months without compensation for the text messages • Be randomized into either treatment arm. <u>Bennett2018:</u> • Aged 21 to 65 years • A BMI of 30.0-44.9 kg/m² • A weight ≤ 330 pounds • A current diagnosis of hypertension, type 2 diabetes, and/or hyperlipidemia • At least two visits to a participating Piedmont center in the prior 12 months, North Carolina residency • The ability to read and write in English • Must have a mobile phone and be willing and able to send/receive 3-9 text messages per week	<u>Steinberg2013:</u> • Pregnancy or planned pregnancy within the next 6 months • A history of myocardial infarction or stroke within the past 2 years <u>Bennett2018:</u> • Current pregnancy • Being ≤ 12 months postpartum • Cohabitation with another study participant • Current employment by Piedmont • Current participation in another obesity treatment study or a study involving physical activity, high blood pressure, diabetes, or high cholesterol • Plans to move outside of the study region within the next two years • Must not have had a cardiovascular event in the prior 6 months or a diagnosis of coronary obstructive pulmonary disease • Congestive heart failure or tachycardia • No history of a condition that would affect body weight, for which weight loss is contraindicated, or that might impact treatment • Having profound cognitive, developmental or psychiatric disorders or who have been hospitalized in a psychiatric facility in the prior 12 months	<u>Steinberg2013:</u> • Via a nonprofit church-based community wellness organization located in Raleigh (North Carolina, USA) • In the surrounding community via flyers posted in neighborhood businesses • Outreach to adults in the area who had expressed interest in weight loss research trials <u>Bennett2018:</u> • Via four federally-qualified community health centers (CHCs) of Piedmont Health Services, Inc. (Piedmont), central North Carolina, USA. Participating CHCs are located in Carrboro, Burlington, and Prospect Hill, North Carolina
Bond (2014) Thomas (2015)	• Participants were 21 to 70 years of age • Overweight or obese (BMI≥25 kg/m²)	• Not reported	• Recruitment via study advertisements placed in local newspapers in Providence, Rhode Island, USA • Research hospital network-affiliated intranet/internet sites • Social media outlets (i.e. Facebook and Twitter)

Boudreau (2016) Moreau (2015)	• Canadian men and women with self-reported T2D residing in the province of Quebec • Not meeting the Canadian Diabetes Association guidelines on moderate-intensity aerobic physical activity • Being able to understand French • Having access to the Internet • Being between 18 and 65 years of age • Not having medical indications limiting the practice of PA	• Not reported	• Canada, partnership with Diabète Québec for recruitment
Buchan (2020)	• Female • Overweight or obese (BMI=25–30; waist circumference>80cm) • Aged between 25 and 54 years • Access to an iOS Apple device, internet, USB power outlet and weighing scale	• Significant weight loss in the past 6 months (>5% weight change) • Those already following a weight loss program • Serious medical conditions or contraindications to the practice of physical exercise • Any medication that may affect body weight or blood pressure	• Recruitment among the general population
Chokshi (2017)	• Aged ≥18 years • A history of acute coronary syndrome • Had coronary catheterization for suspected ischemic heart disease that resulted in a definitive diagnosis	• Already enrolled in a formal cardiac rehabilitation program within the past 1 year • Did not have access to a smartphone or tablet compatible with the wearable device • Admitted to the hospital and were not being discharged to home • Any other reason that participation was unsafe	• Four hospitals in southeastern Pennsylvania: Hospital of the University of Pennsylvania, Penn Presbyterian Medical Center, Chester County Hospital, and Lancaster General Hospital

Collins (2010, 2012, 2013)	• Aged between 18 and 60 years • BMI between 25 and 40 kg/m² • Agree to not participate in other weight loss programs during the study • Pass a health-screening questionnaire and be available for assessment sessions • Have access to a computer with e-mail and Internet facilities	• Currently pregnant or trying to become pregnant • History of major medical problems such as heart disease or diabetes requiring insulin treatment • Orthopedic or joint problems that are a barrier to physical activity • Recent weight loss of ≥ 4.5 kg in previous 6 months • Taking medications that might be affected by weight loss or affect weight loss	• Participants were recruited in the Hunter region of NSW (Australia) through advertising
Daryabeygi-Khotbehsara (2022, 2023)	• Diagnosed with type 2 diabetes • Aged 35-65 years • Own an Android smartphone & currently interact or engage with apps • Have no limitations to engage in low- and moderate-intensity physical activity • Be able to communicate in English • Be able to provide consent	• Not reported	• Online advertisement on social media(Facebook and Instagram) among Australians
Dorsch (2018, 2020)	• Older than 18 years • Diagnosed with hypertension • On antihypertensive therapy for at least 3 months • Using an iPhone were included	• Had chronic kidney disease (CKD), heart failure, systolic blood pressure >180 mmHg, diastolic blood pressure >110 mmHg, insulin-requiring diabetes mellitus • Taking loop diuretics, corticosteroids, or nonsteroidal anti-inflammatory medications	• Michigan Medicine, formerly the University of Michigan Health System
Finkelstein (2015)	• Adult women with BMI > 30 kg/m² • Inactive for > 3 hours on an average day	• Pregnant per participant's information • Inability to walk • Medical reasons to limit activity • Poorly controlled hypertension, SBP >160 mm Hg, DBP >100 mm Hg	• Flyers and from previous focus groups

Forman (2019a, 2019b) Goldstein (2017, 2020, 2021a, 2021b)	<u>Forman2019a:</u> - Adults (18–65 years old) - Overweight or obesity (body mass index 25–50 kg/m²) - Owned an iPhone <u>Forman 2019b:</u> - Owning an iPhone with a data plan - Willing to purchase or be lent a wireless body scale - BMI of 25–50 kg/m² - Aged 18–70 years - Living in the USA	<u>Forman2019a:</u> - Being enrolled in another structured weight loss program - Being pregnant or planning to become pregnant - Reported disordered eating symptoms - Had a medical condition that contraindicated weight loss - Had begun or changed dosage of a weight or appetite-affecting medication in the past 3 months - Had a history of bariatric surgery <u>Forman 2019b:</u> - Recent weight loss of 5% or more - Current enrollment in another structured weight control program - History of bariatric surgery - Pregnant or planning to become pregnant within the study period - Eating disorder symptomatology during the screening call - Recent (i.e., within the last 3 months) change in weight-influencing medication - Serious medical condition that may influence weight, appetite, or eating behavior	<u>Forman2019a:</u> - Recruitment through print and online advertisements <u>Forman 2019b:</u> - Recruitment through press releases - Facebook advertisements - Radio ads
Gatwood (2020)	Being a member of the Diabetes, Wellness, and Prevention Coalition Patient Advisory Council	Not reported	Members were recruited from urban areas within the study's operating region

Golbus (2024) Hellem (2023)	<u>Hellem2023:</u> • 18 years of age or older • English-speaking <u>Golbus2024:</u> • Participants must be 18 years or older • Have a self-reported history of hypertension with no medication changes in the past 4 weeks • Own a smartphone with a compatible operating system (Apple or Android) for downloading the myBPmyLife app • Have an email address • Be fluent in spoken and written English • Sign written informed consent	<u>Hellem2023:</u> • Cognitive or language deficits • Hearing or vision loss • Could not read and write in English <u>Golbus2024:</u> • Contraindications to physical activity or a sodium-restricted diet • Unstable symptoms or very high BP (SBP >180mmHg, DBP >120mmHg) • End-stage renal disease • Difficulty using a BP cuff or smartwatch • Daily sodium intake <1500mg • Were pregnant or planning pregnancy • Had heart failure • Another household member in the study • Involved in another wearable device or investigational study	<u>Hellem2023:</u> • Waiting rooms at the FQHC clinic and the University of Michigan Cardiovascular Center <u>Golbus2024:</u> • Recruitment from University of Michigan Health, an academic medical center, and the Hamilton Community Health Network (HCHN), a network of federally qualified health center clinics in Flint, Michigan
Gupta (2015)	• Had obesity and stress	• Not reported	• Not reported
Hamborg (2024) Martens Anderson (2022)	• Age ≥18 years • Participation in a supervised exercise-based cardiac rehabilitation program in either hospital or municipality setting • Access to a personal mobile phone with a Danish number • Ability to walk 3 meters without assistance	• Insufficient Danish language skills to read and understand text messages and questionnaires • Being cognitively or mentally unable to participate • Terminal with a life expectancy of fewer than three months	• Slagelse and Holbæk Hospitals, Region Zealand, and in the City of Slagelse (municipality)

Hemnes (2021) Martin (2015)	<u>Martin 2015:</u> • Aged 18 to 69 years • Using a Fitbug-compatible smartphone (ie, iPhone≥4S, Galaxy≥S3) • Reporting <3 days/week of moderate or vigorous leisure-time activity lasting ≥30 min/day by the long form of the International Physical Activity Questionnaire (IPAQ) <u>Hemnes2021:</u> • Adults (aged 18 years or older) • A diagnosis of idiopathic, heritable, drug/toxin-associated, or connective tissue disease-associated PAH who were in World Health Organization (WHO) functional class I, II, or III • Participants were ambulatory and receiving a stable PAH medical regimen for at least 3 months	<u>Martin2015:</u> • Not reported <u>Hemnes2021:</u> • Currently enrolled in another interventional study • Unable to perform normal activity due to reliance on a cane/walker • Activity-limiting angina or activity-limiting osteoarthritis • PAH etiology other than idiopathic, heritable, or associated with connective tissue disease or toxins • Pregnancy • Forced vital capacity <65% • WHO class IV heart failure • Preferred form of activity is not measured by an activity tracker (e.g. swimming, yoga, or activities on wheels)	<u>Martin2015:</u> • Recruited at an academic CVD prevention center in Baltimore, Maryland <u>Hemnes2024:</u> • Recruitment via Vanderbilt University Medical Center
Hietbrink (2023a, 2023b)	<u>Hietbrink2023a:</u> • ≥18 years and were familiar with an Android smartphone (version 5.0 or higher) <u>Hietbrink2023b:</u> • Diagnosed with T2D • In possession of a smartphone • Dutch-speaking • Signed an informed consent form	<u>Hietbrink2023a:</u> • Underwent renal replacement therapy • Were engaged in drug abuse • Insufficient proficiency in the Dutch language <u>Hietbrink2023b:</u> • Unable to open or read text messages or emails	<u>Hietbrink2023a+b:</u> • Recruitment via Ziekenhuisgroep Twente (ZGT) hospital, the Netherlands
Khunti (2021) Morton (2015) Yates (2015)	• Aged 40–74 years old for white European, or aged 25–74 years old for South Asian • Have a previously recorded plasma glucose or HbA1c value in the prediabetes range within the last five years • Have access to a mobile phone and willing to use it as part of the study	• Unable to take part in ambulatory-based activity • Pregnant • Involved in other related intervention studies • Diagnosed with diabetes, or diabetes detected at baseline visit • Unable to understand basic written and verbal English • Unable to give informed consent	• Via primary care and existing databases from other studies

Kim (2024) Park (2024)	<u>Park2024:</u> • A T2DM diagnosis • Age 40-69 • HbA1c of 7.0% in the last three months • Android smartphone ownership • The ability to walk without assistive devices	<u>Park2024:</u> • Having difficulty using smartphones • Serious pain • Cognitive problems • Participating in other self-care research • Clinically unstable patients who received acute treatment within the past year	<u>Park2024:</u> • Pusan National University Yangsan Hospital's diabetes outpatient clinic
Korinek (2018)	• Were generally healthy • Insufficiently active • 40–65 years old • A body mass index (BMI) of 25–45 kg/m² • Owned and regularly used an Android phone capable of connecting to a Fitbit Zip via Bluetooth 4.0 • Were willing to engage with the mHealth intervention for 14 weeks • Considered insufficiently active (engaged in less than 1000 metabolic equivalent of task (MET)-minutes/week as measured by the International Physical Activity Questionnaire)	• Did not speak English • Were pregnant • Had a BMI > 45 kg/m² • Indicated medical problems that preclude unsupervised PA based on the Physical Activity Readiness Questionnaire (PAR-Q) • Were currently participating in a commercial or research-related diet or exercise program	• Participants were recruited nationally through community advertising techniques
Leitner (2022)	• Be pre-hypertensive or have Stage I hypertension (SBP between 120-140/ DBP under 90 per ACC/AHA 2017 guidelines) • Not be taking any antihypertensive medications	• Not reported	• Remote recruitment from anywhere in the USA
Lim (2016)	• Diagnosed with type 2 diabetes • Aged 60 years or older • A glycated hemoglobin (HbA1c) level of 7.0–10.5 % (53.0–91.3 mmol/mol)	• Being unable to use text messages • Not having access to the internet for any reason	• Recruitment via the outpatient clinic of the Seoul National University Bundang Hospital (SNUBH)
Lin (2015)	• African American adults aged 21+ years • A body mass index > 27 • Having text-messaging capability	• Self-reported substance abuse • Uncontrolled hypertension • A score > 38 on the Inventory of Depressive Symptomatology • Other health conditions that made it unsafe to participate	• Baltimore-area churches

Nezami (2022)	• Be 21 to 55 years old • Have a BMI of 25 to 50 kg/m² • Have a child aged 2 to 12 years old • Speak and read English • Own an iPhone with an active data plan	• Current participation in another weight loss or nutrition program • Being pregnant, breastfeeding, or planning pregnancy in the next 6 months • Having lost more than 10 lb in the last 6 months • 150 weekly minutes or more of moderate-to-vigorous physical activity • Planning to relocate or be out of town for 2 weeks or more in the next 8 months • Being unable to complete two study visits at the clinic • Having preexisting medical condition(s) that preclude adherence to an unsupervised exercise program • Undergoing treatment of diabetes with insulin or oral medications that may cause hypoglycemia • Having a history of a diagnosed eating disorder • Having a diagnosis of schizophrenia or bipolar disorder • Being hospitalized for a psychiatric diagnosis within the last year • Reporting a past diagnosis or current symptoms of alcohol or substance dependence	• Email lists and advertisements on Facebook and Instagram in the Raleigh-Durham area of North Carolina
Novak (2024) Vetrovsky (2023)	• Diagnosis of prediabetes or type 2 diabetes according to the Czech guidelines for GPs • Age 18 years or older • Followed for prediabetes/diabetes by a participating GP • Regular mobile phone users (not necessarily a smartphone), able and willing to answer calls and read text messages as part of the study • Able and willing to wear and use a wrist-worn Fitbit activity tracker for the study duration • Written informed consent provided before any assessment related to the study	• Unable to walk for any reason. • Pregnant • Having a household member already recruited for this study to avoid contamination • Living in a residential or nursing care home where the imposed regime could interfere with the intervention • Having any co-morbid conditions that would seriously affect their adherence to the trial procedures	• Recruitment was conducted by collaborating GPs in the Czech Republic

Pellegrini (2015)	- Adults between 21 and 70 years old - Physician-diagnosed type 2 diabetes - Needed to own an Android smartphone - Be willing to wear an intervention accelerometer and use the NEAT! application on their smartphone - Have a sedentary occupation or spend ≥ 75 % of the day sitting	- Unable to ambulate without assistance - Did not wear the assessment accelerometer >7 days at baseline	Via flyers in the Chicago land community and online postings (e.g., Craigslist)
Plaete (2015) Poppe (2017, 2018, 2019a, 2019b)	<u>Poppe 2018:</u> - Having type 2 diabetes - Being ≥ 18 years old - Dutch-speaking - Not having participated in earlier studies with 'MyPlan' <u>Poppe 2019:</u> - Being literate in the Dutch language to engage in the intervention - Being computer literate - Having internet access - Not having participated in the qualitative study about MyPlan 2.0 - Diagnosed with type 2 diabetes since at least 1 month - Being 18 years or older	<u>Poppe 2018:</u> - Not reported <u>Poppe 2019:</u> - Not reported	<u>Poppe 2018:</u> - Diabetes Association Flanders - The Ghent University Hospital - Snowball sampling <u>Poppe 2019:</u> - The Ghent University Hospital and the Damian General Hospital (Ostend) - Advertisements via the Flemish Diabetes Association - In adults with type 2 diabetes who participated in the previous research of the involved research groups
Radhakrishnan (2020, 2021)	- Adults who were aged 55 years or older - English-speaking - Diagnosed with heart failure classified according to the New York Heart Association's HF classification as class II or III during their inpatient stay or outpatient visit to the cardiac center - Own a smartphone - Can independently walk without a walker or human assistance - Have a score of 4 or higher on the Mini-Cog cognitive screen	- Severe visual or tactile impairments, which would prevent the use of a smartphone - End-stage renal failure or terminal illness, both of which adversely affect HF prognosis	- Cardiac rehabilitation centres in Texas - Via recruitment company Trialfacts to recruit participants from Texas and Oklahoma

Reinwand (2013) Storm (2016)	• Age between 20 and 85 years • No contraindications for physical activity and fruit and vegetable consumption • Having an interest in improving physical activity and fruit and vegetable consumption • Sufficient reading and writing skills in the relevant language (German or Dutch) • Computer literacy and Internet access	• Not reported	• Cardiac rehabilitation centers and heart training groups in Germany and the Netherlands • Online platforms focused on diabetes and cardiovascular diseases • Research companies with online panels in both countries
Richardson (2007, 2010)	• Over 18 years of age • Had at least one of the following: BMI $\geq$ 25, type 2 diabetes, or coronary artery disease • Had access to an Internet-connected computer with Windows XP or Vista operating system • Had a valid email address • Used email at least once per week • Had to be sedentary • Had access to a treating physician who could provide medical clearance	• Were pregnant • Could not walk a block on their own • Could not make their own medicolegal decisions	• Recruitment from a University of Michigan Health System provider
Schoenthaler (2020)	<u>Patients</u> • Have had a diagnosis of T2D for $\geq$6 months • Have had uncontrolled T2D, defined as HbA1c $>$7%, documented in the EHR at least twice in the past year • Be fluent in English or Spanish • Be willing to send and receive text messages • Be aged $\geq$18 years <u>Providers</u> • Were a primary care provider practicing at the participating practices • Provided care to at least five patients with T2D	<u>Patients</u> • Refused or were unable to provide informed consent • Had acute renal failure, end-stage renal disease (ESRD) or evidence of dialysis, renal transplantation, or other ESRD-related services documented in the HER • Were participating in another T2D study • Had significant psychiatric comorbidity or reports of substance abuse • Were pregnant or planning to become pregnant within 12 months • Planned to discontinue care at the practice within the next 12 months	• Recruitment from a network of primary care practices of New York University Langone Health (NYULH)

Shibuta (2023)	• Employees of 4 private enterprises • Systolic BP had been ≥ 140 mm Hg at a workplace health checkup in the fiscal year 2017 • Working in the Tokyo metropolitan area	• Systolic BP of ≥ 180 mm Hg • Recent hemoglobin level < 10 g/dL • Diabetes other than type 2 • Experience of any hypoglycemic events within the past 3 months • Pregnancy, lactation, or pregnancy plans in the near future	• Recruitment via 4 enterprises in the service industry (e.g. department store) and belong to Tokyu Department Store Health Insurance Society
Steinberg (2020)	• Women aged 21–70 years • BMI > 18.5 kg/m² • Hypertension (self-reported or confirmed by medication use or having a recent systolic measurement of 120 to 159 mmHg or a diastolic blood pressure measurement of 80 to 99 mmHg) • Owned a smartphone with an updated operating system • A data plan • An email address • Fluency in English • Willing to receive daily text messages	• A cardiovascular event in the last 6 months • A current cancer diagnosis • Had been institutionalized for a psychiatric disorder within the past year • Were pregnant or lactating • Enrolled in another dietary change study	• Flyers distributed to gyms, community centers, grocery stores, and health and wellness clinics throughout Raleigh, Durham, and Chapel Hill, North Carolina • Study details posted on Research Match, a national clinical trials registry that matches participants to studies • Social media posts on Twitter, Facebook, and Nextdoor • Contact with participants who were ineligible for other studies but showed interest in similar behavioral studies
Sun (2020)	• Not reported	• Not reported	• Not reported

Sze (2023) Waki (2024)	• Aged 20 years and above • BMI 22 kg/m² and above • HbA1c 7.5 % or more as recorded in the latest blood investigation within three months from the time of consent acquisition • The latest average number of steps per week was less than 10,000 steps / day • Being in the contemplation, preparation, or action stage of the transtheoretical model (TTM) to achieve the target step count of 10,000 steps / day • Willing to go to the designated community pharmacy for monthly meetings with the pharmacist during the research period	• Wearing a pacemaker • History of hypoglycemic attack within three months from the time of consent acquisition, • History of moderate or severe heart disease • Blood pressure of 180/110 mmHg or higher • History of severe heat stroke • Moderate or severe mental illness • Diagnosis of hyperthyroidism and a history of treatment other than thyroid hormone supplementation within the last 12 months • Autoimmune disease, liver disease, gastrointestinal disease, or neurological disease, in which the chief of diabetes internal medicine judges that restriction of exercise therapy is necessary • Respiratory illness • Most recent blood investigations in the last three months from the time of study consent acquisition with hemoglobin (Hb) < 10 g / dL, or albumin (Alb) 3.0 g / dL or less, or eGFR 30 mL/min/1.73 m² or less (diabetic nephropathy stage 4 and 5) • Retinopathy diagnosed within the past year from the time of consent acquisition, • Restrictions on medium-intensity aerobic exercise and physical activity (150 min / week of fast walking and 10,000 steps / day of walking as a guide) • Pregnant or lactating women and women with a possibility of pregnancy • Participating in other clinical studies at the time of study registration • At time of enrollment, receiving diabetes dialysis prophylaxis or planning to receive diabetes dialysis prophylaxis during the intervention period	• Recruitment via Mitsui Memorial Hospital Japan
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Tabak (2013, 2014a, 2014b, 2014c) Wieringa (2011)	• A clinical diagnosis of COPD • No infection or exacerbation in the 4 weeks prior to start of the study • A current smoker	• Disorders or progressive disease seriously influencing daily activities or causing inability to use the smartphone application • Other diseases influencing bronchial symptoms and/or lung function • Need for regular oxygen therapy (>16 h per day or pO₂ < 7.2 kPa) • History of asthma • Recently (<6 weeks) started training with a physiotherapist	• Recruitment via the department of pulmonary medicine of the Medisch Spectrum Twente hospital in Enschede, the Netherlands
vanderWeegen (2013, 2015) Verwey (2014a, 2014b)	• Between 40 and 70 years old with DM2 or COPD • Did not comply with the Dutch Norm for Healthy Exercise • Access to a computer with an internet connection, and mastery of the Dutch language • For the DM2 patients: BMI >25 • For the COPD patients: a clinical diagnosis of COPD according to the GOLD-criteria stage 1-3, known to be stable in their respiratory function for at least 6 weeks, and on a stable drug regimen	• The presence of coexisting medical conditions with a low survival rate • Severe psychiatric illness • Chronic disorders or diseases that seriously influence the ability to be physically active • Being treated primarily by a medical specialist • Participating in another PA intervention	• Recruitment via 24 family practices in the South of Netherlands
vanGenugten (2010, 2012, 2014)	• Being overweight (BMI = 25-30 kg/m²) • Aged between 25 and 65 years • Sufficient command of the Dutch language • Access to the Internet is required	• Not having a sufficient command of the Dutch language • Not having Internet access • Being pregnant • Following a diet prescribed diet • Having a history of depression or eating disorders	• Through advertisements in local newspapers • Flyers that were delivered door-to-door • In waiting rooms of GP's • Among the employees of 4 large companies • Rotterdam region, the Netherlands

Watson (2012)	• Between 20 and 55 years old • Had a BMI between 25 and 35 kg/m² • Were fluent in spoken and written English • Had a primary care physician • Had access to a personal computer with an available USB port, speakers, and Internet access • Either answered no to all 7 questions on the Physical Activity Readiness Questionnaire (PAR-Q) or obtained written permission from their primary care physician to take part in the study	• Not reported	• Recruitment took place in Boston, Massachusetts, USA • Through advertisements in local newspapers • On a local website (Craigslist) • At healthcare facilities • Through broadcast emails within the hospital email network
Yom-Tov (2017)	• Nonoptimal glycemic control (HbA1c over 6.5%) • A sedentary lifestyle with no dedicated physical activity up to the recruitment to the study • Ownership of an Android-based smartphone with a data connection	• Other types of diabetes • Any disability that precludes walking for 20 min	• The endocrinology and diabetes outpatient clinic at a tertiary hospital in Israel
Zahedani (2023)	• Age of 18 years • A prior diagnosis of diabetes who were not taking insulin • A diagnosis of prediabetes • No history of glucose abnormalities • A signed disclaimer to use deidentified data	• Not reported	• Not reported

Author (year)	Intervention group(s) (IG)	Control group(s) (CG)	No. participants	Gender female (%)	Age Mean (SD)
Almeida (2015) Estabrooks (2011)	- ENV: Environmental intervention - SC: Social cognitive intervention - COMBO: Combined environmental (ENV) and social cognitive (SC) intervention	CON: Control condition (healthy eating personal action plan)	452	59.3	58.6 (9.7)
Ambeba (2015) Bizhanova (2023) Burke (2017, 2020, 2022a, 2022b) Cheng (2023) Kariuki (2023) Wang (2012)	SMARTER intervention (SM+FB group)	Self-monitoring only (SM-group)	<u>Burke2022b</u> : 502 <u>Cheng2023</u> : 356	79.5	45.0 (14.4)
Baert (2018) Bohanec (2021) Clays (2021) Voorend (2019)	Heartman DSS intervention	Usual care	<u>Voorend2019</u> : 10 <u>Clays2021</u> : 56	<u>Voorend2019</u> : 30.0 <u>Clays2021</u> : 23.0	<u>Voorend2019</u> : 56.3 (11.3) <u>Clays2021</u> : 63.0 (10.5)
Beckie (2024) Sengupta (2020a, 2020b)	HerBeat intervention	Educational usual care (usual care + workbook and 90-min DVD)	47	100.0	IG: 62.7 (7.3) CG: 59.7 (10.5)
Bennett (2013, 2018) Foley (2012, 2016) Steinberg (2013)	Shape/Track intervention	<u>Steinberg2013</u> : - Education control arm (2 in-person group education sessions + a set of videos at 3 months that covered topics + pedometers + a “prescription” to walk 10,000 steps per day) <u>Bennett2018</u> : - Usual care (standard of care + trainings on obesity treatment + self-help materials + quarterly newsletters)	<u>Steinberg2013</u> : 50 <u>Bennett2018</u> : 351	<u>Steinberg2013</u> : 100.0 <u>Bennett2018</u> : 68.0	<u>Steinberg2013</u> : 38.3 (8.2) <u>Bennett2018</u> : 50.7 (8.9)
Bond (2014) Thomas (2015)	- Condition 1: 3-min break after 30 continuous sedentary minutes - Condition 2: 6-min break after 60 continuous sedentary minutes	Not applicable	30	83.0	47.5 (13.5)

	Condition 3: 12-min break after 120 continuous sedentary minutes				
Boudreau (2016) Moreau (2015)	DEF computer tailored intervention (computer tailoring + PA cognitions messages)	Not applicable	11	54.5	53.5 (Not reported)
Buchan (2020)	Onitor Track + exercise intervention + dietary intervention + Facebook group	Not applicable	15	100.0	Median (IQR): 42.0 (30.0-52.0)
Chokshi (2017)	Financial incentive-based program (personalized step goal, self-monitoring with wearable, daily feedback and loss-framed financial incentives)	Step goal 10.000 steps per day that could be adjusted, wearable, not informed about baseline step count	105	IG: 28.0 CG: 32.7	IG: 60.0 (9.5) CG: 59.1 (11.5)
Collins (2010, 2012, 2013)	- IG1: Standard (Basic) commercial online weight loss program - IG2: Extra support (Enhanced) version of the online weight loss program and received system-generated personalized feedback, based on diary entries and website use	Wait-list control	301	58.5	41.9 (10.2)
Daryabeygi- Khotbehsara (2022, 2023)	iMove intervention	Not applicable	10	70.0	49.0 (8.6)
Dorsch (2018, 2020)	LowSalt4Life intervention (app group)	Usual care (no app group)	50	IG: 58.0 CG: 61.0	IG: 56.6 (10.0) CG: 58.2 (11.0)
Finkelstein (2015)	- Group A: Inactivity reminder active (period 1), inactivity reminder inactive (period 2) - Group B: Inactivity reminder inactive (period 1), inactivity reminder active (period 2)	Not applicable	30	100.0	52.0 (12.0)
Forman (2019a, 2019b) Goldstein (2017, 2020, 2021a, 2021b)	Weight Watchers + OnTrack	Weight Watchers	181	IG: 84.0 CG: 87.1	IG: 47.2 (13.3) CG: 44.5 (14.1)

Gatwood (2020)	Messages from MODEL intervention	Not applicable	16	81.3	60.8 (range 45-70)
Golbus (2024) Hellem (2023)	- Researcher-generated mHealth notifications - Community-generated mHealth notifications	Not applicable	86	FQHC: 58.0 UC: 70.0	FQHC: 48.6 (11.4) UC: 49.1 (19.2)
Gupta (2015)	Let's Exercise intervention	Not applicable	33	Not reported	Range 24.0-30.0
Hamborg (2024) Martens Anderson (2022)	The FAIR intervention	Not applicable	8	37.5	Median (range) 57.0 (37.0-74.0)
Hemnes (2021) Martin (2015)	<u>Martin2015:</u> - Unblinded self-monitoring without text messages - Unblinded self-monitoring with text messages <u>Hemnes2024:</u> Text-messaging arm	<u>Martin2015:</u> - Blinded self-monitoring - Usual care <u>Hemnes2024:</u>	<u>Martin2015:</u> 48 <u>Hemnes2024:</u> 42	<u>Martin2015:</u> 46.0 <u>Hemnes2024:</u> IG: 75.0 CG: 95.0	<u>Martin2015:</u> 58.0 (8.0) <u>Hemnes2024:</u> Median (IQR) IG: 47.0 (41.0-54.0) CG 47.0 (36.0-58.0)
Hietbrink (2023a, 2023b)	<u>Hietbrink2023a:</u> - Self-monitoring of physical activity, diet and glucose values + E-Supporter coaching content) <u>Hietbrink2023b:</u> - Self-monitoring with Fitbit and food diary + E-Supporter coaching content	Not applicable	<u>Hietbrink2023a:</u> 9 <u>Hietbrink2023b:</u> 20 (15 for physical activity and 5 for nutrition)	<u>Hietbrink2023a:</u> 22.0 <u>Hietbrink2023b:</u> 30.0	<u>Hietbrink2023a:</u> 65.2 (8.7) <u>Hietbrink2023b:</u> 68.0 (8.0)
Khunti (2021) Morton (2015) Yates (2015)	- Walking Away (WA): 3h group-based, theory-driven, behavioral intervention + annual refresher + pedometer - Walking Away Plus (WAP): WA + mHealth follow-on support with goal-setting and automated feedback	Advice leaflet about nondiabetic hyperglycemia and physical activity	1366	WA: 49.6 WAP: 49.1 CG: 49.1	WA: 59.4 (9.4) WAP: 59.3 (9.1) CG: 59.4 (8.8)
Kim (2024) Park (2024)	Automated Personalized Self-care Program (APSC program)	Standard care	32	IG: 26.3 CG: 53.8	IG: 58.2 (7.0) CG: 58.2 (8.9)
Korinek (2018)	JustWalk intervention	Not applicable	20	90.0	47.3 (6.1)

Leitner (2022)	- Experimental group 1 (self-monitoring + one-time recommendation) - Experimental group 2 (self-monitoring + weekly recommendations)	Self-monitoring without recommendations	38	IG1: 33.0 IG2: 46.0 CG: 37.0	IG1: 50.1 (15.0) IG2: 48.4 (12.2) CG: 52.9 (13.1)
Lim (2016)	U-healthcare intervention	Self-monitored blood glucose (SMBG) group (glucose meter and activity monitor)	100	IG: 20.0 CG: 30.0	IG: 64.3 (5.2) CG: 65.8 (4.7)
Lin (2015)	TRIMM text message intervention (standard care + TRIMM)	Standard care control (20-minute one-on-one sessions with a dietitian + a visit with a study physician to review their health status + educational materials on diet and physical activity + a digital pedometer)	124	IG: 90.5 CG: 78.7	IG: 49.2 (12.7) CG: 52.3 (12.0)
Nezami (2022)	Simplified group (75-minute group kickoff session + activity tracker (Fitbit Inspire) + smart scale (Withing's Body) + PATH study app + daily goals + simplified self-monitoring using the Traffic Light Diet)	Standard group (75-minute group kickoff session + activity tracker (Fitbit Inspire) + smart scale (Withing's Body) + PATH study app + daily goals + daily self-monitoring of dietary caloric intake)	72	IG: 94.3 CG: 94.6	IG: 40.2 (4.7) CG: 39.8 (4.7)
Novak (2024) Vetrovsky (2023)	ENERGISED intervention	Not applicable	10	0.0	Range 40.0-76.0
Pellegrini (2015)	NEAT! Intervention	Not applicable	9 (8/9 completed the intervention)	78.0	53.1 (10.7)
Plaete (2015) Poppe (2017, 2018, 2019a, 2019b)	<u>Poppe2018:</u> - MyPlan2.0 intervention <u>Poppe2019b:</u> - IG1: MyPlan2.0 Physical activity - IG2: MyPlan2.0 Sedentary behavior	<u>Poppe2018:</u> - Not applicable <u>Poppe2019b:</u> - Waiting-list control group	Poppe 2018: 21 Poppe 2019b: 54 (32 for PA and 22 for SB)	Poppe2018: 38.1 Poppe2019b: 37.0	Poppe2018: 65.9 (5.6) Poppe2019b: 62.7 (8.4)
Radhakrishnan (2020, 2021)	Heart Mountain intervention	Sensors-only control for weight and physical activity self-monitoring	38	47.0	Age range (N) 55-64y: 53 65-74y: 32 >75y: 15
Reinwand (2013) Storm (2016)	RENATA intervention	Waiting control group	790	62.9	50.8 (12.2)

Richardson (2007, 2010)	Online community arm (study website to view graphs of their walking progress + individually-tailored motivational messages + weekly calculated goals + online community (post and read messages with other participants))	No online community arm (study website to view graphs of their walking progress + individually-tailored motivational messages + weekly calculated goals)	324	65.0	52.0 (11.4)
Schoenthaler (2020)	i-Matter intervention	Not applicable	<u>Patients:</u> 10 (7 patients completed the first round of testing (1 Spanish-speaking) and 3 patients completed the second round) <u>Providers:</u> 6	<u>Patients:</u> Not reported <u>Providers:</u> 50.0	<u>Patients and providers:</u> Not reported
Shibuta (2023)	DialBetes Step intervention	Not applicable	30	37.0	52.9 (5.3)
Steinberg (2020)	Dash Cloud intervention (daily diet tracking using the Nutritionix app + daily or weekly text messages + animated skills videos + the DASH booklet available from the NHLBI)	Active Comparator Arm (daily diet tracking using the Nutritionix app + a video that introduced the DASH dietary pattern + the DASH booklet available from the NHLBI)	59	100.0	49.9 (11.9)
Sun (2020)	BeActive intervention	Not applicable	5	20.0	Range 23.0-34.0
Sze (2023) Waki (2024)	StepAdd intervention	Not applicable	33	24.2	61.5 (9.4)
Tabak (2013, 2014a, 2014b, 2014c) Wieringa (2011)	<u>Tabak2013&2014a:</u> - Activity Coach intervention <u>Tabak2014b:</u> - Condition Coach (Activity Coach + teleconsultation + web-based exercising + self-management support)	<u>Tabak2013&2014a:</u> - Not applicable <u>Tabak2014b:</u> - Usual care	<u>Tabak2013:</u> 21 <u>Tabak2014a:</u> 15 <u>Tabak2014b:</u> 29	<u>Tabak2013:</u> 66.7 <u>Tabak2014a:</u> 40.0 <u>Tabak2014b:</u> IG: 50.0 CG: 50.0	<u>Tabak2013:</u> 63.5 (9.6) <u>Tabak2014a:</u> 66.0 (9.2) <u>Tabak2014b:</u> IG: 64.1 (9.0) CG: 62.8 (7.4)
vanderWeegen (2013, 2015) Verwey (2014a, 2014b)	- Group 1: Tool (It's LiFe monitoring and feedback tool + Self-Management Support Program (SSP)) - Group 2: Self-Management Support Program (SSP)	Group 3: Care as usual	199	G1: 52.3 G2: 47.0 G3: 54.4	G1: 57.5 (7.0) G2: 56.9 (8.3) G3: 59.2 (7.5)

vanGenugten (2010, 2012, 2014)	Tailored information (TI) website GRIPP	Generic Information (GI) website (main components were 3 modules with general information on weight gain prevention with similar content and similar reminders as TI group)	539	69.1	47.8 (9.4)
Watson (2012)	Pedometer + ActiHealth website + Virtual Coach Program	Pedometer + ActiHealth website	70	IG: 89.0 CG: 80.0	IG: 44.1 (Not reported) CG: 40.6 (Not reported)
Yom-Tov (2017)	Text messaging intervention with reinforcement learning algorithm	Unchanging one-weekly reminders to exercise	27	IG: 40.0 CG: 14.3	IG: 58.7 (2.1) CG: 55.1 (3.6)
Zahedani (2023)	Season of Me program (4-weeks with and 8-weeks without CGM)	Not applicable	1066, consisting of normoglycemic individuals (n = 746), individuals with prediabetes (n = 206), and individuals with T2D (n = 94)	51.0	49.0 (11.5)