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Supplemental Figures

Supplemental Figure 1. Literature flow
* Not already screened
† Not a population of interest (n=71), diet or physical activity alone (n=58), protocol or baseline data only (n=26), no outcome of interest reported (n=25), not intervention of interest (n=20), cost-effectiveness analysis only (n=17), not a primary study (n=12), >10% of participants do not meet eligibility criteria (n=12), miscellaneous (n=7: prediction model, retrospective study, duplicate article).
‡ plus 1 not analyzed due to limited quality of execution.

Supplemental Figure 2. Forest plot of RR of incident diabetes in at-risk participants in more vs. less intensive combined diet and physical activity promotion programs.
CI = confidence interval, RD = risk difference, RR = risk ratio.

Supplemental Figure 3. Forest plot of RR of reversion to normoglycemia in at-risk participants in more vs. less intensive combined diet and physical activity promotion programs.
CI = confidence interval, RD = risk difference, RR = risk ratio.

Supplemental Figure 4. Forest plot of net percent change in weight (from baseline) in at-risk participants in more vs. less intensive combined diet and physical activity promotion programs.
CI = confidence interval, N = number of participants.

Supplemental Table 1. Search strategy

Search period 1991 – June 26, 2014

Databases searched: Ovid Medline, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, CAB Abstracts, Global Health, and Ovid HealthStar. Reference lists of review and systematic review articles were screened and experts were solicited for additional articles.

Search Terms

1 ("pre-diabetes" or pre-diabet* or prediabet*).af.
2 exp prediabetic state/
3 (impaired and (fasting glucose or glucose tolerance)).af.
4 (impaired and fasting blood sugar).af.
5 ("diabetes risk" or (risk adj6 diabetes)).af.
6 or/1-5
7 (((behaviour or behavior) and modification) or behavior therapy or lifestyle or lifestyle intervention or healthy eating or diet or weight loss or physical activity or resistance training or exercise or life style or healthy-living).af.
8 exp diet/ or diet therapy.sh. or exp exercise/ or exp exercise therapy/ or exp lifestyle/ or exp weight loss/ or exp behavior therapy/
9 *"Diabetes Mellitus"/pc [Prevention & Control]
10 or/7-9
11 (diabetes prevention program* or diabetes prevention study*).af.
12 randomized controlled trial.pt.
13 controlled clinical trial.pt.
14 randomized controlled trials/
15 Random Allocation/
16 Double-blind Method/
17 Single-Blind Method/
18 clinical trial.pt.
19 Clinical Trials.mp. or exp Clinical Trials/
20 (clinic$ adj25 trial$).tw.
21 ((singl$ or doubl$ or trebl$ or tripl$) adj (mask$ or blind$)).tw.
22 Placebos/
23 placebo$.tw.
24 random$.tw.
25 trial$.tw.
26 (randomized control trial or clinical control trial).sd. or program evaluation.af.
27 (latin adj square).tw.
28 Comparative Study.tw. or Comparative Study.pt.
29 exp Evaluation studies/
30 Follow-Up Studies/
31 Prospective Studies/
32 (control$ or prospectiv$ or volunteer$).tw.
33 Cross-Over Studies/
34 or/12-33
35 exp cohort studies/ or exp prospective studies/ or exp retrospective studies/ or exp epidemiologic studies/ or exp case-control studies/

36 (cohort or retrospective or prospective or longitudinal or observational or follow-up or followup or registry).af.
37 case-control.af. or (case adj10 control).tw.
38 ep.fs.
39 or/35-38
40 ((6 and 10) or 11) and (34 or 39)
41 (((Non-alcoholic or nonalcoholic) and Fatty Liver Disease) or hepatitis).af.
42 40 not 41
43 remove duplicates from 42
44 meta-analysis.pt.
45 systematic$ review$.mp. [mp=ti, ab, ot, nm, hw, ps, rs, ui, tx, kw, ct]
46 (systematic$ adj9 overview$).mp.
47 (meta-analys$ or meta analys$ or metaanalys$).mp. [mp=ti, ab, ot, nm, hw, ps, rs, ui, tx, kw, ct]
48 evidence review$.mp. [mp=ti, ab, ot, nm, hw, ps, rs, ui, tx, kw, ct]
49 or/44-48
50 "pre-diabetes".af.
51 prediabetes.af.
52 impaired glucose tolerance.af.
53 impaired fasting glucose.af.
54 insulin resistance.af.
55 or/7-11
56 6 and 12
57 remove duplicates from 13
58 43 or 57

$=truncation symbol

Supplemental Table 2. Quality assessment of studies

Author, Year, PMID†	Study Design	1a*	1b*	2a*	2b*	2c*	3a*	3b*	4*	5a*	5b*	5c*	6*
Absetz 2007 (59,60) 17586741	Before-After	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Ackermann 2008 (42) 18779029	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Ackermann 2014 (35) 24740868	RCT	No	No	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Admiraal 2013 (52,73,109) 23894322	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Alibasic 2013‡ (120) 24082827	nRCS	No	No	Yes	No	No	Yes	No	Yes	No	No	Yes	No
Bhopal 2014 (32) 24622752	nRCS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cezaretto 2012 (36) 21538199	RCT	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Cole 2013 (43) 23589326	RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Costa 2012 (26) 22322921	nRCS	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
De la Rosa 2008 (64) No PMID	RCT	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
Dunbar 2010 (44) No PMID	RCT	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Eriksson 1991 (22,69) 1778354	nRCS	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Gagnon 2011 (45,61) 21489843	RCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gilis-Januszewska 2011 (70) No PMID	Before-After	No	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Gillison 2015 (55) 25592314	RCT	Yes	Yes	Yes	Yes	NA	No	Yes	Yes	Yes	No	Yes	Yes
Iqbal Hydrie 2012 (27) 22888411	RCT	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Islam 2014 (54) 24852392	nRCS	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	NA	Yes	Yes	Yes

Author, Year, PMID†	Study Design	1a*	1b*	2a*	2b*	2c*	3a*	3b*	4*	5a*	5b*	5c*	6*
Janus 2012 (53) 22929458	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Jiang 2013 (46) 23275375	Before-After	Yes	Yes	No	Yes	Yes	NA	Yes	Yes	No	Yes	Yes	Yes
Kanaya 2012 (37) 22698027	RCT	Yes	Yes	Yes	Yes	NA	No	Yes	Yes	Yes	Yes	Yes	Yes
Katula 2011 (56,75) 23498294	RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Knowler 2009 (9,87,92,116) 19878986	nRCS	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kosaka 2005 (47) 15649575	RCT	No	No	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kulzer 2009 (38) 19509014	RCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kyrios 2009 (76) 19351299	Before-After	No	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Laatikainen 2007 (77) 17877832	Before-After	No	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Liao 2002 (48,62) 12196418	RCT	No	No	Yes	Yes	NA	No	Yes	Yes	Yes	Yes	Yes	Yes
Ma 2013 (28,114,119) 23229846	RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Makrilakis 2010 (83,84) 20536519	Before-After	No	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	Yes	Yes
Moore 2011 (39,63) 20945253	RCT	No	Yes	Yes	Yes	NA	No	Yes	Yes	No	Yes	Yes	Yes
Nilsen 2011 (49) 22117618	RCT	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Author, Year, PMID†	Study Design	1a*	1b*	2a*	2b*	2c*	3a*	3b*	4*	5a*	5b*	5c*	6*
Ockene 2012 (40,85) 22390448	RCT	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Oldroyd 2006 (23,86) 16297488	RCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Pan 1997 (8,10,71,78) 9096977	RCT	No	No	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Patrick 2013 (88) 23759410	RCT	No	No	No	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Penn 2009 (24,89) 19758428	RCT	No		Yes	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Penn 2013 (57) 24227871	Before-After	Yes	Yes	Yes	Yes	NA	No	Yes	Yes	NA	Yes	Yes	Yes
Ramachandran 2006 (25,94,103) 16391903	RCT	Yes	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Ramachandran 2009 (93) 19277602	Before-After	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ramachandran 2013 (33) 24622367	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Roumen 2008 (29,100,118) 18445174	RCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Saaristo 2010 (96,97,98,99,101,117) 20664020	Before-After	No	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Saito 2011 (50) 21824948	RCT	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sakane 2011 (30,34) 21235825	RCT	No	Yes	Yes	Yes	NA	No	Yes	Yes	No	Yes	Yes	Yes
Savoye 2014 (102) 24062325	Pediatric RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	Yes	Yes	Yes
Sepah 2014 (51) 24723130	Before-After	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	No	No	Yes

Author, Year, PMID†	Study Design	1a*	1b*	2a*	2b*	2c*	3a*	3b*	4*	5a*	5b*	5c*	6*
Swanson 2012 (104) 22068253	Before-After	No	Yes	Yes	Yes	Yes	NA	Yes	Yes	No	Yes	Yes	Yes
Tate 2003 (41) 12684363	RCT	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	RCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vanderwood 2010 (107) 20805260	Before-After	No	Yes	Yes	Yes	NA	NA	Yes	Yes	No	Yes	Yes	Yes
Vermunt 2011 (31,108) 21775759	RCT	No	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vojta 2013 (110) 23498291	Before-After	No	Yes	Yes	No	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes
Weinstock 2013 (58,115) 23843020	RCT	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes

*Questions (Yes = "good quality"; No = "poor quality):

1a.[A] Description: Was the population well described (all features)?

- Socioeconomic status (or education)
- Sex
- Race/ethnicity
- Weight, baseline (eg, body mass index or % overweight)
- Glycemia, baseline (any glucose measure)

1b.[A] Description: Was the intervention well described (all features)?

- Setting (ie, healthcare or community or worksite)
- Deliverers
- Individual or group sessions
- Number of sessions
- Duration of intervention

2a.[B] Sampling: Is there a low risk of sampling bias due to a low enrollment of population of potentially eligible people and no other concern about "sampling frame"?

2b.[B] Sampling: Were the eligibility criteria clear (did the authors specific the screening criteria for study eligibility)?

2c.[B] Sampling: Nonrandomized studies only: Were the study participants a probability sample or equivalent (is the risk of selection bias low)?
3a.[C] Measurement: Was an intention-to-treat analysis used or were there no dropouts or crossovers?
3c.[C] Measurement: Were the outcome measures valid and reliable (consistent and reproducible)?
4.[C] Data Analysis: Did the authors conduct appropriate statistical testing?
Ignore adjustment for confounders, this is included in 5b.
5a.[C] Interpretation: Is the dropout rate <20% for diabetes incidence, reversion to normoglycemia, and weight change (if analyzed)?
5b.[C] Interpretation: Were potential confounders properly accounted for (by adjustment)?
For our purposes "confounders" includes "Table 1" characteristics that were significantly different between groups.
5c.[C] Interpretation: Are there no other potential biases or unmeasured or contextual confounders described by the authors or otherwise of concern?
6.[C] Other: No other unique study issues?

[A] "Major limitation" if either 1a or 1b answered "no".
[B] "Major limitation" if either 2a, 2b, or 2c answered "no".
[C] "Major limitation" if question answered "no".

† Of primary study.
‡ Study excluded due to limited quality of execution.

Supplemental Table 3. Study characteristics

Randomized Controlled Trials (Adults)

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Ackermann 2008 (42) 18779029	US Urban Multicenter	Community Community	NIDDK and the Indiana University School of Medicine	"At risk for DM" (ADA risk score and capillary blood glucose 110-199 mg/dL)	None BMI ≥24 kg/m^2		Diagnosis of DM, CV event, severe COPD, advanced arthritis, poorly controlled HTN
Ackermann 2014 (35) 24740868	US Regional Recruited in two test markets, but each person watch TV in their home	Community Television	UnitedHealth; Comcast	Prediabetes diagnosis from healthcare provider or one or more of the following risk factors: (a) high blood pressure; (b) abnormal blood cholesterol; (c) a parent or sibling who has/had type 2 DM; or (d) a personal history of gestational DM	>=18 overweight or obese; <=140 kg		Planning bariatric surgery within 6 months; physician-diagnosed DM; poorly controlled high blood pressure (>180/105 mmHg); being pregnant or actively planning pregnancy; symptoms of chest pain, dizziness, or severe shortness of breath with exertion; advice from a healthcare provider not to increase physical activity or attempt weight loss; another condition that significantly limits physical activities (e.g., advanced heart or lung disease, anemia, severe arthritis)
Admiraal 2013 (52,73,109) 23894322	Netherlands Urban Multicenter	Primary care clinic Primary care clinic	The Netherlands Organization for Health Research and Development (ZonMw)	PreDM, IGT, or IFG (by various glycemic criteria)	18-60 NR	FPG 5.7–6.9 mmol/L, 2h OTT 7.8–10.9 mmol/L, HbA1c 42–46 mmol/mol, and/or a value of 2.39 or more for the homeostasis model assessment of estimated insulin resistance (HOMA-IR)	Newly diagnosed type 2 DM (i.e. a fasting glucose ≥7.0 mmol/l, a 2-h post-load glucose ≥11.0 mmol/l, or a hemoglobin (Hb)-A1c level ≥48 mmol/mol), those already in a lifestyle program, those pregnant, know chronic disease or using drugs that interfere with plasma glucose levels

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Bhopal 2014 (32) 24622752	UK Regional Unclear	Direct referrals, Primary care clinic, Community Unclear	National Prevention Research Initiative	PreDM or IGT (by glycemic criteria) (WHO criteria)	≥35 NR	Indian or Pakistani origin; waist measurements ≥90 in men and ≥80 in women	Long-term oral corticosteroids, or weight loss medication, or with health disorders making adherence contraindicated or improbable, or pregnant, or who were unlikely to remain in the UK for 3 years
Cezaretto 2012 (36) 21538199	Brazil Urban Unclear	Primary care clinic Primary care clinic	NR	PreDM, IGT, or metabolic syndrome (by glycemic criteria) (ADA and IDF criteria)	18-79 None	None	Living out of Sao Paulo metropolitan area; pregnant women; neurological or unstable psychiatric problems; antidiabetic agents or medications for weight control; and neoplasias, chronic communicable diseases, hepatic or renal failure, and untreated thyroid dysfunctions
Cole 2013 (43) 23589326	US Urban Single center	Department of Defense beneficiaries Unclear	Brooke Army Medical Center Department of Pathology	PreDM, IGT, or IFG (by glycemic criteria) (ADA criteria)	>=18 NR	Fluent in English	Diagnosis of DM or not having attended the initial prediabetes education class
De la Rosa (64) 2008 No PMID	US Urban Single center	Primary care clinic Primary care clinic	NR	Metabolic syndrome (IDF criteria) or other at risk for DM & CVD	NR NR	NR	NR
Dunbar 2010 (44) No PMID	Australia Regional Multicenter	Primary care clinic Primary care clinic	Ray and Joy Uebergang Foundation, Warrnambool, Australia	DM risk score (FINDRISC ≥12)	40-75 None	Individuals in GGT DPP who completed the program, did not develop DM and were willing to participate in the follow- up	Outside 40-75 years age limit; developed DM

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Gagnon 2011 (45,61) 21489843	Canada Urban Single center	Primary care clinic, Specialty clinic, or Community Specialty care clinic	Novo Nordisk Endocrine Resident Research Award; Ministry of Health of Québec; Funding Agency for Human Health Research of Quebec	IGT or IFG (by glycemic criteria) (WHO criteria)	>18 BMI ≥27 kg/m^2	None	Unable to comply with the proposed intervention, had taken pharmacological treatment for obesity or any medications known to alter glucose tolerance
Gillison 2015 (55) 25592314	UK Regional Multicenter	Primary care clinic Primary care clinic	NIHR	IGT or IFG (by glycemic criteria) (WHO criteria) or at high cardiovascular risk hypertension, hypercholesterolemia, family history of DM or heart disease, history of gestational DM, or polycystic ovary syndrome	40-74 28 Kg/m^2 - 45 Kg/m^2	None	Existing heart disease or type 2 DM, or currently using weight loss drugs, not fluent in English, terminal illness and anyone who, in their General Practitioner's opinion, had other co-morbidities which would prevent engagement with the intervention.
Iqbal Hydrie 2012 (27) 22888411	Pakistan Urban Multicenter	Primary care clinic Unclear	NR	IGT (undefined)	>30 NR	NR	NR
Janus 2012 (53) 22929458	Australia Regional Multicenter	Primary care clinic Primary care clinic	National Health and Medical Research Council	DM risk score (AUSDRISK score ≥15)	50-75 NR	NR	Diagnosed DM, cancer, severe mental illness, substance abuse, recent MI, pregnancy, difficulty with spoken and written English, belonging to a cultural group for whom the AUSDRISK test is not calibrated and other household members involved in study

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Kanaya 2012 (37) 22698027	US Urban Multicenter	Community Community	NIDDK and NIA	DM risk score (ad hoc) and glycemic criteria (ad hoc: capillary blood glucose 106-160 mg/dL)	None None	None	DM; MI in past 6 mo; CHF, or stroke; heart procedure or heart surgery in past 6 mo; implanted defibrillator; hip or knee replacement in past 3 mo; insufficient cognitive functioning; pregnancy; and individuals not conversant in English or Spanish, or with plans to move out of the area within 1 year, and whose spouse or partner had already enrolled
Katula 2011 (56,75) 23498294	US Suburban Single center	Community Community	NIDDK	PreDM (by glycemic criteria) (ADA)	None BMI 25–40 kg/m^2	None	Recent history of an acute CVD event, clinical history of type 2 DM, uncontrolled HTN, cancer or other conditions limiting life expectancy, chronic use of medicines known to influence glucose metabolism, and major psychiatric or cognitive problems
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	US Regional Multicenter	Primary care clinic Unclear	NIH, CDC, Indian Health Service, General Clinical Research Center Program, National Center for Research Resources; the American Diabetes Association; Bristol-Myers Squibb; and Parke-Davis	PreDM or IGT (by glycemic criteria) (ADA)	≥25 BMI ≥24 kg/m^2 (≥22 kg/m^2in Asians)	None	Individuals taking medicines known to alter glucose tolerance or if they had illnesses that could seriously reduce their life expectancy or their ability to participate in the trial.

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Kosaka 2005 (47) 15649575	Japan Urban Single center	Primary care clinic Primary care clinic	NR	IGT or IFG (by glycemic criteria) (WHO)	NR NR	NR	Previous history of DM; diagnosed or suspected malignant neoplasm; diagnosed or suspected disease of the liver, pancreas, endocrine organs, or kidney; ischemic heart disease or cerebrovascular disease or a history of such disease
Kulzer 2009 (38) 19509014	Germany Regional Single center	Unclear Unclear	Roche Diagnostics, Germany	PreDM (by glycemic criteria) (undefined)	20-70 BMI ≥26 kg/m^2	Ability to read and understand German	Manifest DM or diagnosis of a serious illness. All patients gave informed consent.
Liao 2002 (48,62) 12196418	US Urban Single center	Primary care clinic Primary care clinic	National Institutes of Health Grants, the Medical Research Service of the Department of Veterans Affairs	PreDM (by glycemic criteria) (undefined)	NR NR	Japanese-American	History or evidence of significant CAD, valvular heart disease; HTN; arthritis; pulmonary, neurologic, or psychiatric disease or dementia that hindered their ability to participate; unusual dietary restrictions; current use of lipid-lowering drugs; or tobacco use. Participants were also excluded if laboratory tests showed evidence for liver or kidney disease or anemia or if triglyceride levels were >300 mg/dL.
Ma 2013 (28,114,119) 23229846	US Urban Single center	Primary care clinic Primary care clinic	NIDDK, AHA, Palo Alto Medical Foundation Research Institute	Prediabetes or metabolic syndrome (by glycemic criteria) (ADA)	≥18 BMI ≥25 kg/m^2	None	Serious medical or psychiatric conditions (eg, stroke, psychotic disorder) or special life circumstances (eg, pregnancy, planned move)
Moore 2011 (39,63) 20945253	Australia Urban, rural Multicenter	Primary care clinic, Community Unclear	Victorian Government (Australia)	PreDM, IGT, or IFG (by glycemic criteria) (WHO)	NR NR	NR	DM

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Nilsen 2011 (49) 22117618	Norway Regional Multicenter	Primary care clinic Primary care clinic	NR	DM risk score (FINDRISC Score ≥9)	18-64 None	None	Diagnosis of DM, the presence of serious heart, lung, kidney or liver failure, serious psychiatric illness, substance abuse and not mastering the Norwegian language
Ockene 2012 (40,85) 22390448	US Urban Single center	Community Community	NIDDK, NHLBI	DM risk score (San Antonio Diabetes Risk Score)	≥25 BMI >24 kg/m^2	Self-reported Latino/Hispanic; >30% likelihood of being diagnosed with DM in next 7.5y	FPG ≥126 mg/dL, inability or unwillingness to give informed consent, clinically diagnosed DM, a plan to move out of the area within the study period, presence of a psychiatric illness which limits ability to participate, no telephone, inability to walk unaided or walk five city blocks (1/4 mile) without stopping, having a medical condition likely to limit lifespan, taking a medication or having a medical condition that interfered with the assessment for DM, or having an endocrine disorder that alters blood sugar
Oldroyd 2006 (23,86) 16297488	UK Urban Single center	Primary care clinic Primary care clinic	Grants from the British Heart Foundation, Northern & Yorkshire NHS Research and Development and the Royal College of General Practitioners	IGT (by glycemic criteria) (WHO)	24-75 None	European origin	Individuals who were pregnant, on therapeutic diets or unable to undertake moderate physical activity

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Pan 1997 (8,10,71,78) 9096977	China Urban Multicenter	Primary care clinic Primary care clinic	World Bank; Ministry of Public Health PRC; CDC; China-Japan Friendship Hospital; Da Qing First Hospital	IGT (by glycemic criteria) (WHO)	>25 NR	NR	NR
Penn 2009 (24,89) 19758428	UK Urban Single center	Primary care clinic Unclear	Wellcome Trust	PreDM, IGT, or IFG (by glycemic criteria) (WHO)	>40 BMI >25 kg/m^2	None	A diabetic value in a second OGTT, previous DM, or with chronic illness that would make participation in moderate physical activity impossible, or on a special diet for medical reasons
Ramachandran 2006 (25,94,103) 16391903	India Urban NR	Community Unclear	M/S US Vitamins	IGT (by glycemic criteria) (WHO)	35-55 NR	NR	NR
Ramachandran 2013 (33) 24622367	India Regional Multicenter	Work sites Unclear	UK–India Education and Research Initiative (UKIERI) and World Diabetes Foundation	PreDM or IGT (by glycemic criteria) (unclear criteria)	35-55 BMI 23 kg/m^2	Positive family history of type 2 DM	Major illness such as cancer, chronic liver or kidney disease; no disorders with cognitive impairment, severe depression or mental imbalance; physical disability that would prevent regular physical activity; recruitment in another trial
Roumen 2008 (29,100,118) 18445174	Netherlands Urban Multicenter	Specialty care clinic Specialty care clinic	Dutch Diabetes Research Foundation; the Netherlands Organization for Health Research and Development; Netherlands Organization for Scientific Research	PreDM or IGT (by glycemic criteria) (ad hoc: 2 hour gluocose 7.8-12.5 mmol/L)	40-70 None	Caucasian	Known DM, chronic illness, medication known to interfere with glucose tolerance, participation in vigorous exercise and/or diet program

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Saito 2011 (50) 21824948	Japan Regional Multicenter	Primary care clinic Primary care clinic	All Japan Federation of Social Insurance Associations (the Zensharen)	PreDM, IGT, or IFG (by glycemic criteria) (WHO)	30-60 BMI ≥25 kg/m^2	None	DM or receiving treatment for DM; having a history of ischemic heart disease, stroke, chronic hepatitis, liver cirrhosis, chronic
Sakane 2011 (30,34) 21235825	Japan Regional Multicenter	Primary care clinic Primary care clinic	Ministry of Health, Welfare, and Labour of Japan	IGT (by glycemic criteria) (WHO)	30-60 None	None	1DM, 2) a history of gastrectomy, 3) physical conditions such as ischemic heart disease, heart failure, exercise induced asthma, and orthopedic problems where exercise was not allowed by a doctor, 4) definitive liver and kidney diseases, 5) autoimmune diseases, and 6) a habit of drinking heavily, already begun lifestyle modifications
Tate 2003 (41) 12684363	US Urban Single center	Unclear Email	ADA	"At risk for DM" (undefined)	None BMI 27-40 kg/m^2	None	Major health or psychiatric diseases, pregnancy, or recent weight loss of ≥4.5kg
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	Finland Regional Multicenter	Primary care clinic Multiple sites (implied)	Finnish Academy, the Ministry of Education, the Novo Nordisk Foundation, the Yrjo Jahnsson Foundation, and the Finnish Diabetes Research Foundation	IGT (by glycemic criteria) (WHO)	40-65 BMI ≥25 kg/m^2	None	Diagnosis of DM, the presence of chronic disease rendering survival for 6 years unlikely, and other characteristics (psychological or physical disabilities) deemed likely to interfere with participation in the study

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Vermunt 2011 (31,108) 21775759	Netherlands Regional Multicenter	Primary care clinic Primary care clinic	NR	DM risk score (FINDRISC ≥13)	40-70 NR	NR	NR
Weinstock 2013 (58,115) 23843020	US Regional Multicenter	Urban, community, and rural health centers Urban, community, and rural health centers	NIH - NIDDK	Metabolic syndrome (IDF criteria)	>18 years old BMI ≥30 kg/m^2	NR	DM and presence of severe medical problems that could interfere with participation (e.g., severe current psychiatric illness)

* Of primary study.

Randomized Controlled Trials (Pediatric)

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Patrick 2013 (88) 23759410	US Urban Multicenter	Primary care clinic website, counseling calls, group sessions, text messages, and printed materials	National Institute of Diabetes and Digestive and Kidney Diseases	DM risk score (ADA risk score)	12- 16 years old BMI>85th percentile for age and sex, or weight >120% of ideal for height	Any two of the following risk factors: family history of T2DM in a first- or second-degree relative, race/ethnicity (American Indian, African-American, Hispanic, Asian/Pacific Islander), or signs of insulin resistance; access to the internet	DM diagnosis, pregnant, not planning to be in the San Diego area over the entire study period, or any medical condition that would prevent them from participating in the intervention
Savoye 2014 (102) 24062325	US Urban Single center	Specialty care clinic Community	Government	PreDM or IGT (by glycemic criteria) (ad hoc: 2 hour glucose 130-199 mg/dL)	10-16 BMI >95th percentile	Tanner stage ≥2	DM or other serious medical condition that would preclude participation in the program. Individuals taking medications that affect weight, insulin sensitivity, or glucose metabolism

* Of primary study.

Non-Randomized Comparative Studies

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Costa 2012 (26) 22322921	Spain Urban, rural Multicenter	Primary care clinic Primary care clinic	Commission of the European Communities, Directorate C - Public Health	DM risk score PreDM (by glycemic criteria) (FINDRISC >12 or WHO criteria)	45-75 None		Severe psychiatric disease, chronic liver and kidney disease, blood disorders
Eriksson 1991 (22,69) 1778354	Sweden Urban Unclear	Primary care clinic Primary care clinic	NR	IGT (by glycemic criteria) (WHO criteria)	47-49 NR	NR	NR
Islam 2014 (54) 24852392	US Urban Multicenter	Community Community	CDC, NIH, National Center for Advancing Translational Sciences	DM risk score (ADA risk score)	18-85 NR	Self-identification as Sikh Asian Indian	NR
Knowler 2009 (9,87,92,116) 19878986	US Regional Multicenter	Primary care clinic NR	NIH, CDC, Indian Health Service, General Clinical Research Center Program, National Center for Research Resources; the American Diabetes Association; Bristol-Myers Squibb; and Parke-Davis	PreDM or IGT (by glycemic criteria) (ADA/WHO)	≥35 BMI ≥24 kg/m^2	None	Individuals taking medicines known to alter glucose tolerance or if they had illnesses that could seriously reduce their life expectancy or their ability to participate in the trial.

* Of primary study.

Before-After Studies

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Absetz 2007 (59,60) 17586741	Finland Regional Multicenter	Primary care clinic Primary care clinic	Academy of Finland and the Finnish Ministry of Health	DM risk score (FINDRISC ≥12)	50-65 None	None	Mental health problem or substance abuse, acute cancer, T2DM, MI in past 6 mo
Gilis-Januszewska 2011 (70) No PMID	Poland Urban Multicenter	Primary care clinic Primary care clinic	NR	DM risk score (FINDRISC >14)	NR NR	NR	Known OGTT DM
Jiang 2013 (46) 23275375	US Regional Multicenter	Community Community	US Congress	IGT or IFG (by glycemic criteria) (ADA)	≥18 NR	American Indian/Alaska Native	A previous DM diagnosis, pregnancy, dialysis, and any condition that would affect successful participation based on provider judgment
Kyrios 2009 (76) 19351299	Australia Urban, rural Multicenter	Primary care clinic Unclear	Victorian Department of Human Services	PreDM (by glycemic criteria) (WHO)	≥34 NR	NR	NR
Laatikainen 2007 (77) 17877832	Australia Regional Multicenter	Primary care clinic Multiple sites (implied)	Australian Government Department of Health and Ageing, Canberra, Australia	DM risk score (FINDRISC ≥12)	NR NR	NR	Cancer, recent MI or stroke, cognitive impairment, substance abuse, pregnancy or previous type 2 DM.
Makrilakis 2010 (83,84) 20536519	Greece Urban Multicenter	Primary care clinic Primary care clinic	Commission of the European Communities	DM risk score (FINDRISC ≥15)	40-64 BMI >25 kg/m^2	No unknown DM on two 75-g oral glucose tolerance tests OGTT	Previously diagnosed or unknown DM

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Penn 2013 (57) 24227871	UK Rural Unclear	Primary care clinic, community Primary care clinic, community	Middlesbrough Council, Middlesbrough Primary Care Trust, Public Health North East, Sport England	PreDM, IGT, or IFG (by glycemic criteria) (WHO)	45-65 BMI ≥25 kg/m^2 or family history of DM	NR	Previous diagnoses of type 2 DM or inability to participant in moderate physical activity
Ramachandran 2009 (93) 19277602	India Urban Unclear	Community Unclear	India Diabetes Research Foundation	IGT (by glycemic criteria) (WHO)	35-55 NR	NR	NR

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Saaristo 2010 (96,97,98,99,101,117) 20664020	Finland Regional Multicenter	Primary care clinic Primary care clinic	Hospital districts of Pirkanmaa, Southern Ostrobothnia, Northern Ostrobothnia, Central Finland, and Northern Savo, the Finnish National Public Health Institute, the Finnish Diabetes Association, the Ministry of Social Affairs and Health, Slottery Machine Association, the Academy of Finland, and the Commission of the European Communities, Directorate C-Public Health	DM risk score (FINDRISC ≥15) or diagnosis of IFG or IGT (undefined) or ischemic CVD, gestational DM	None None	None	Individuals who had previously diagnosed or screening detected DM at baseline or did not have OGTT
Sepah 2014 (51) 24723130	US Regional Online	Community Online	Omada Health	PreDM (self-reported)	>=18 BMI ≥ 24 kg/m2 (≥ 22 kg/m2 if Asian)	Able to engage in light physical activity	NR
Swanson 2012 (104) 22068253	US Suburban Single center	Primary care clinic Primary care clinic	NR	PreDM, IGT, or IFG (by glycemic criteria) (ADA)	NR NR	None	NR

Author, Year, PMID*	Country Setting Multicenter	Recruitment setting Intervention setting	Funding	Eligibility criteria: Definition of "at risk for DM"	Eligibility criteria: Age, y Adiposity	Other eligibility criteria	Exclusion criteria
Vanderwood 2010 (107) 20805260	US Urban, rural Multicenter	Primary care clinic, Specialty care clinic, Community, Work sites Primary care clinic, Specialty care clinic, Community	Diabetes Control Program, part of the Montana Department of Public Health and Human Services	PreDM, IGT, or IFG (prior diagnosis) or CVD or DM risk factors (see other eligibility criteria)	≥18 BMI ≥25 kg/m^2	Hypertension, dyslipidemia, history of gestational DM, or gave birth to a baby ≥9 pounds	DM, unstable cardiac disease, cancer and currently undergoing treatment, ESRD or currently on dialysis, unable to participate in regular moderate physical activity, or were pregnant or planning to become pregnant in the next 6 mo
Vojta 2013 (110) 23498291	US Regional Multicenter	Community Community	CDC	PreDM (undefined)	≥18 NR	NR	NR

* Of primary study.

Abbreviations

ADA, American Diabetes Association

AUSDRISK, Australian Diabetes Risk Score

BMI, body mass index

CAD, coronary heart disease

CDC, Centers for Disease Control and Prevention

CHF, congestive heart failure

COPD, chronic obstructive pulmonary disease

CVD, cardiovascular disease

DM, diabetes mellitus

ESRD, end stage renal disease

FINDRISC, Finnish Diabetes Risk Score

FPG, fasting plasma glucose

g, gram

GGT DPP, Greater Green Triangle diabetes prevention program

HTN, hypertension

IDF, International Diabetes Federation

IFG, impaired fasting glucose

IGT, impaired glucose tolerance

kg, kilogram

m, meter

MI, myocardial infarction

mo, month

NHLBI, National Heart, Lung, and Blood Institute

NIA, National Institute on Aging

NIDDK, National Institute of Diabetes and Digestive and Kidney Disease

NIH, National Institute of Health

NR, not reported

NRCS, nonrandomized comparative studies

OGTT, oral glucose tolerance test

RCT, randomized controlled trial

UK, United Kingdom

US, United States

WHO, World Health Organization

y, year

Supplemental Table 4. Intervention characteristics

A. Comparative Studies of Combined Diet & Physical Activity vs. Control

1. Intervention Details

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Ackermann 2008 (42) 18779029	5-7% reduction	16 sessions 1-1.5 h 4-5 mo	16 sessions 16-24 h 14 mo	No	Yes	No	No	No	Yes	No	No
Admiraal 2013 (52,73,109) 23894322	NR	6-8 sessions NR 6 mo	8-10 sessions NR 12 mo	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes
Bhopal 2014 (32) 24622752	None	15 sessions NR 36 mo	15 sessions NR 36 mo	No	No	No	No	Yes	No	Yes	Yes
Cezaretto 2012 (36) 21538199	≥5% reduction	6 sessions NR 3 mo	13 sessions NR 9 mo	Yes	Yes	No	No	Yes	Yes	No	No
Costa 2012 (26) 22322921	NR	4-6 sessions 6 h 48 mo	4-6 sessions 6 h 48 mo	Yes	Yes	No	No	Yes	Yes	No	No

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
De la Rosa (64) 2008 No PMID	NR	18 sessions NR 18 mo	18 sessions NR 18 mo	Yes	No	Yes	No	Yes	No	Yes	Yes
Eriksson 1991 (22,69) 1778354	NR	48 sessions 48 h 6 mo	48 sessions 52 h 18 mo	No	Yes	Yes	Yes	No	No	No	No
Gillison 2015 (55) 25592314	5% reduction	4 session 2 h 1 mo	9 sessions 13.5 h 9 mo	No	Yes	Yes	Yes	No	Yes	No	Yes
Iqbal Hydrie 2012 (27) 22888411	≥5% reduction	9 sessions NR 18 mo	9 sessions NR 18 mo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Islam 2014 (54) 24852392	None	6 sessions 12 h 5 mo	6 sessions 12 h 5 mo	No	Yes	No	Yes	No	Yes	No	Yes
Janus 2012 (53) 22929458	5% reduction	5 sessions 7.5 h 2.5 mo	6 sessions 9 h 10 mo	Unclear	Yes	Unclear	Yes	Unclear	Yes	Unclear	Yes

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Kanaya 2012 (37) 22698027	NR	17 sessions NR 6 mo	19 sessions NR 12 mo	Yes	Yes	No	No	Yes	Yes	No	No
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	≥7% reduction	16 sessions NR 6 mo	16 sessions NR 34 mo	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Knowler 2009 (9,87,92,116) 19878986	≥7% reduction	16 sessions 8-16 h 6 mo	36 sessions 13-31 h 48 mo	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Kulzer 2009 (38) 19509014	NR	8 sessions 12 h 12 mo	12 sessions 18 h 12 mo	No	Yes	No	No	No	Yes	No	No
Ma 2013 (28,114,119) 23229846	More intensive: 7% reduction	12 sessions 18-24 h 3 mo	24 sessions NR 15 mo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Less intensive: 7% reduction	12 sessions 18-24 h 3 mo	12 sessions NR 15 mo	Yes	No	No	No	Yes	No	No	No

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Moore 2011 (39,63) 20945253	NR	7 sessions 15 h 6 mo	7 sessions 15 h 6 mo	Yes	Yes	No	No	Yes	Yes	No	No
Ockene 2012 (40,85) 22390448	NR	16 sessions 14.5 h 12 mo	16 sessions 14.5 h 12 mo	Yes	Yes	No	No	Yes	Yes	Yes	No
Oldroyd 2006 (23,86) 16297488	BMI <25 kg/m^2	6 sessions 2 h 6 mo	12 sessions 4 h 24 mo	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Pan 1997 (8,10,71,78) 9096977	BMI ≤23 kg/m^2	8 sessions NR 4 mo	30 sessions NR 72 mo	Yes	Yes	No	No	Yes	Yes	Yes	No
Patrick 2013 (88) 23759410	More intensive: "Weight loss"	36 sessions 24 h 12 mo	36 sessions 24 h 12 mo	Yes	Yes	Unclear	No	Yes	Yes	Unclear	Unclear

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
	Less Intensive 1: "Weight loss"	NA (3 text messages/week and access to web-tutorials) NA 12 mo	NA NA 12 mo	web tutorials; could communicate via text message if they had questions	No	Unclear	No	web tutorials; could communicate via text message if they had questions	No	Unclear	No
	Less Intensive 2: "Weight loss"	NA (weekly emails and access to web-tutorials) NA 12 mo	NA NA 12 mo	web tutorials	No	Unclear	No	web tutorials	No	Unclear	No
Penn 2009 (24,89) 19758428	BMI <25 kg/m^2	24 sessions 12 h 60 mo	24 sessions 12 h 60 mo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ramachandran 2006 (25,94,103) 16391903	NR	9 sessions NR 36 mo	9 sessions NR 36 mo	No	No	No	No	Yes	No	Yes	No

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Ramachandran 2013 (33) 24622367	None	NA (text messages at "frequent intervals") NA NA	NA NA 24 mo	No	No	No	No	No	No	No "Personalized education"	No
Roumen 2008 (29,100,118) 18445174	5-7% reduction	14 sessions NR 12 mo	14 sessions NR 36-72 mo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sakane 2011 (30,34) 21235825	≥5% reduction	4 sessions 8-12 h 6 mo	10 sessions 10-16 h 36 mo	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Savoye 2014 (102) 24062325	NR	52 sessions 61 h 6 mo	52 sessions 61 h 6 mo	No	Yes	No	Yes	No	Yes	No	Yes
Tate 2003 (41) 12684363	NR	4 sessions NR 12 mo	4 sessions NR 12 mo	Yes	No	No	No	Yes	No	No	No

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	5% reduction	7 sessions NR 12 mo	15 sessions NR 36 mo	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Vermunt 2011 (31,108) 21775759	≥5% reduction	5 sessions 5 h 18 mo	5 sessions 5 h 18 mo	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

* Of primary study.

A. Comparative Studies of Combined Diet & Physical Activity vs. Control

2. Intervention Goals

Author, Year, PMID*	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Ackermann 2008 (42) 18779029	Moderate-level physical activity similar to brisk walking 150 min/wk	None	NR	NR	NR	NR
Bhopal 2014 (32) 24622752	None	None	NR	NR	NR	NR
Cezaretto 2012 (36) 21538199	Moderate physical activity ≥150 min/wk	None	NR	NR	≤10%	≥20g/d
Costa 2012 (26) 22322921	Moderate physical activity ≥30 min/d	30 min/d	30 min/d	30 min/d	<30% (saturated fat <10%)	15g/1000kcal
De la Rosa (64) 2008 No PMID	None	None	NR	NR	NR	NR
Eriksson 1991 (22,69) 1778354	None	None	NR	NR	NR	NR
Gillison 2015 (55) 25592314	None (self-regulatory)	Healthy eating	NR	NR	NR	NR
Iqbal Hydrie 2012 (27) 22888411	Moderate exercise ≥30 min/d	None	NR	NR	<30%	15g/1000kcal
Islam 2014 (54) 24852392	None	None	NR	NR	NR	NR
Kanaya 2012 (37) 22698027	Self-selected and attainable goal-setting and action plans	None	NR	NR	NR	NR
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	150 min/wk	Lower fat and calorie intake	NR	NR	NR	NR

Author, Year, PMID*	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Knowler 2009 (9,87,92,116) 19878986	150 min/wk	Lower fat and calorie intake	NR	NR	If weight 120-170 lbs, 1,200 kcal/day If 175-215 lbs, 1,500 kcal/day If 200-245 lbs, 1,800 kcal/day If ≥250 lbs, 2,000 kcal/ day	NR
Kulzer 2009 (38) 19509014	None	None	NR	NR	NR	NR
Moore 2011 (39,63) 20945253	None	None	NR	NR	NR	NR
Ockene 2012 (40,85) 22390448	Increase overall physical activity by 4000 steps/d	None	NR	Decrease intake	NR	NR
Oldroyd 2006 (23,86) 16297488	20–30 min of aerobic activity ≥1x/wk	None	NR	50%	≤30% (polysaturated to saturated fat at a ratio ≥1.0)	≥20g/4.2MJ
Pan 1997 (8,10,71,78) 9096977	1-2 units/d 1 exercise unit: 30 min mild, 20 min moderate, 10 min strenuous, 5 min very strenuous	Gradually lose weight at a rate of 0.5-1.0 kg/mo until they achieved a BMI of 23 kg/m2	If BMI >25, reduce calories If BMI<25 then 25-30 kcal/kg body weight	If BMI <25, 55-65% If BMI >25, NR	If BMI <25, 25-30% If BMI >25, NR	NR
Patrick 2013 (88) 23759410	More intensive: NR	NR	NR	NR	NR	NR
	Less intensive 1: NR	NR	NR	NR	NR	NR
	Less intensive 2: NR	NR	NR	NR	NR	NR

Author, Year, PMID*	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Penn 2009 (24,89) 19758428	Moderate aerobic physical activity 30 min/d	None	NR	>50%	<30%	Increased
Ramachandran 2006 (25,94,103) 16391903	Walk or cycle ≥30min/d	None	NR	NR	NR	NR
Ramachandran 2013 (33) 24622367	Brisk walk for a minimum of 30 min per day (or equivalent), as a realistic goal with proven effectiveness	Avoidance of simple sugars and refined carbohydrates; Reduce total fat intake; Restrict use of saturated fat, Include more fibre-rich food	NR	NR	<20 g/d	NR
Roumen 2008 (29,100,118) 18445174	Moderate physical activity	None	Very low calorie diet	55%	30-35%	>3g/MJ
Sakane 2011 (30,34) 21235825	Leisure time physical activity of 700 kcal/week	None	Proper amount	NR	<25%	NR

Author, Year, PMID*	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Savoye 2014 (102) 24062325	Each 50-min session consisted of a warm-up, high-intensity, and cool down period. High-intensity exercises consisted of typical children's games that were modified to increase heart rate. Once per month there were special exercise activities such as martial arts, dance-off contests, Zumba, and the use of Just Dance (Ubisoft Entertainment, Brittany, France).	Nondiet, healthy food-choice approach that emphasized low-fat foods of moderate portions. Smart Moves Workbook. Topics included "Determining Portion Sizes," "Better Food Choices: A Non-Diet Approach," "Making Sense of a Food Label," and "Bag It! The Pros to Bringing Lunch to School."	NR	NR	NR	NR
Tate 2003 (41) 12684363	None	None	NR	NR	NR	NR
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	Moderate exercise ≥30 min/d	None			<30% (saturated fat <10%)	≥15g/1000kcal
Vermunt 2011 (31,108) 21775759	None	None	NR	NR	<30%	3.4 g/MJ

* Of primary study.

B. Comparative Studies of More vs. Less Intensive Combined Diet & Physical Activity

1. Intervention Details

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Ackermann 2014 (35) 24740868	More intense	>=7% initial weight	16 sessions + web portal NR 4-6 mo	16 sessions + web portal NR 4-6 mo	option to interact with a virtual lifestyle support coach	option to participate in group discussions via email and through online forum postings	No	No	No	No	No	No
	Less intense	>=7% initial weight	16 sessions NR 4-6 mo	16 sessions NR 4-6 mo	No	No	No	No	No	No	No	No
Cole 2013 (43) 23589326	More intense	NR	4 sessions 7.5 h 3 mo	4 sessions 7.5 h 3 mo	No	No	Unclear	No	Yes	Yes	Unclear	No
	Less intense	NR	>=1 >=4 3 mo	>=1 >=4 3 mo	No	No	Unclear	No	Yes	Yes	Unclear	No

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Dunbar 2010 (44) No PMID	More intense	>5% reduction	6 sessions 12 h 12 mo	18 sessions 15 h 30 mo	No	Yes	No	No	No	Yes	No	No
	Less intense	>5% reduction	6 sessions 12 h 12 mo	6 sessions 12 h 30 mo	No	Yes	No	No	No	Yes	No	No
Gagnon 2011 (45,61) 21489843	More intense	5-10% reduction	59 sessions 44 h 12 mo	59 sessions 44 h 12 mo	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
	Less intense	None	50 sessions 38 h 12 mo	50 sessions 38 h 12 mo	No	Yes	No	No	No	Yes	No	Yes
Katula 2011 (56,75) 23498294	More intense	5-7% reduction	24 sessions NR 12 mo	44 sessions NR 12 mo	Yes	Yes	No	No	Yes	Yes	No	Yes

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
	Less intense	None	6 sessions NR 12 mo	6 sessions NR 12 mo	Yes	No	No	No	Yes	No	No	Yes
Kosaka 2005 (47) 15649575	More intense	BMI ≤22 kg/m^2	16 sessions NR 48 mo	16 sessions NR 48 mo	Yes	No	No	No	Yes	No	No	No
	Less intense	BMI ≤22 kg/m^2	8 sessions NR 48 mo	8 sessions NR 48 mo	Yes	No	No	No	Yes	No	No	No
Liao 2002 (48,62) 12196418	More intense	Not a goal	≥72 sessions ≥36 h 6 mo	≥72 sessions ≥36 h 24 mo	Yes	No	Yes	Yes	No	No	Yes	Yes
	Less intense	Not a goal	≥72 sessions ≥36 h 6 mo	≥72 sessions ≥36 h 24 mo	No	No	No	Yes	Yes	No	No	Yes

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Ma 2013 (28,114,119) 23229846	More intensive	7% reduction	12 sessions 18-24 h 3 mo	24 sessions NR 15 mo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Less intensive	7% reduction	12 sessions 18-24 h 3 mo	12 sessions NR 15 mo	Yes	No	No	No	Yes	No	No	No
Nilsen 2011 (49) 22117618	More intense	5% reduction	11 sessions >35 h 18 mo	11 sessions >35 h 18 mo	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
	Less intense	5% reduction	3 sessions NR 18 mo	3 sessions NR 18 mo	Yes	No	No	No	Yes	No	No	No
Patrick 2013 (88) 23759410	More intense	"Weight loss"	36 sessions 24 h 12 mo	36 sessions 24 h 12 mo	Yes	Yes	Unclear	No	Yes	Yes	Unclear	Unclear

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
	Less intense 1	"Weight loss"	NA (3 text messages/week and access to web-tutorials) NA 12 mo	NA NA 12 mo	web tutorials; could communicate via text message if they had questions	No	Unclear	No	web tutorials; could communicate via text message if they had questions	No	Unclear	No
	Less intense 2	"Weight loss"	NA (weekly emails and access to web-tutorials) NA 12 mo	NA NA 12 mo	web tutorials	No	Unclear	No	web tutorials	No	Unclear	No
Saito 2011 (50) 21824948	More intense	5% reduction	9-11 sessions NR 36 mo	9-11 sessions NR 36 mo	Yes	No	Yes	No	Yes	No	Yes	Yes
	Less intense	5% reduction	4 sessions NR 36 mo	4 sessions NR 36 mo	Yes	No	Yes	No	Yes	No	Yes	Yes

Author, Year, PMID*	Arm	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Weinstock 2013 (58,115) 23843020	Telephone individually (IC)	≥5% initial weight	16 individual sessions NR 12 mo	28 individual sessions NR 24 mo	Yes	No	Unclear	Yes	Yes	No	Unclear	Yes
	Conference calls (CC)	≥5% initial weight	16 group sessions NR 12 mo	28 group sessions NR 24 mo	No	Yes	Unclear	Yes	No	Yes	Unclear	Yes

* Of primary study.

B. Comparative Studies of More vs. Less Intensive Combined Diet & Physical Activity

2. Intervention Goals

Author, Year, PMID*	Arm	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Dunbar 2010 (44) No PMID	More intense	Moderate level physical activity >4 h/wk	None	NR	NR	< 30% (< 10% from saturated fat)	≥15 g/1000 cal
	Less intense	Moderate level physical activity >4 h/wk	None	NR	NR	< 30% (< 10% from saturated fat)	≥15 g/1000 cal
Gagnon 2011 (45,61) 21489843	More intense	Moderate activity to 60 min/d	None	NR	NR	NR	NR
	Less intense	None	None	NR	NR	NR	NR
Katula 2011 (56,75) 23498294	More intense	Moderate physical activity with a goal of 180 min/wk	None	Goal of 1,200–1,800 kcal/d	NR	NR	NR
	Less intense	None	None	NR	NR	NR	NR
Kosaka 2005 (47) 15649575	More intense	None	None	NR	NR	NR	NR
	Less intense	None	None	NR	NR	NR	NR
Liao 2002 (48,62) 12196418	More intense	70% of heart rate reserve	45% total calories from protein, <200 mg cholesterol	NR	55%	<30%	NR
	Less intense	None	20% total calories from protein, and <300 mg cholesterol	NR	50%	30%	NR
Nilsen 2011 (49) 22117618	More intense	Improvement in exercise capacity of one MET	None	NR	NR	NR	NR

Author, Year, PMID*	Arm	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
	Less intense	None	None	NR	NR	NR	NR
Saito 2011 (50) 21824948	More intense	Individual	None	NR	55-60% total energy intake	20-25% total energy intake	Additional where necessary
	Less intense	Individual	None	NR	55-60% total energy intake	20-25% total energy intake	Additional where necessary
Weinstock 2013 (58,115) 23843020	Telephone individual calls (IC)	Individual goal setting	Individual goal setting	NR	NR	NR	NR
	Conference calls (CC)	Group goal setting	Group goal setting	NR	NR	NR	NR

* Of primary study.

C. Before-After Combined Diet & Physical Activity Studies

1. Intervention Details

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Absetz 2007 (59,60) 17586741	>5% reduction	5 sessions 10 h 2 mo	6 sessions 12 h 8 mo	No	Yes	No	Yes	No	Yes	No	Yes
Gilis-Januszewska 2011 (70) No PMID	None	10 sessions NR 4 mo	16 sessions NR 10 mo	Yes	Yes	No	No	Yes	Yes	No	No
Jiang 2013 (46) 23275375	≥7% reduction	20 sessions NR 4-6 mo	20 NR 4-6 mo	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Kyrios 2009 (76) 19351299	None	7 sessions NR 6 mo	7 sessions NR 6 mo	Yes	Yes	No	No	Yes	Yes	No	No
Laatikainen 2007 (77) 17877832	None	5 sessions 8 h 3 mo	6 sessions 9 h 8 mo	No	Yes	No	Yes	No	Yes	No	Yes

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Makrilakis 2010 (83,84) 20536519	None	6 sessions 6 h 12 mo	6 sessions 6 h 12 mo	No	No	No	No	No	No	No	No
Penn 2013 (57) 24227871	"Weight reduction"	20 sessions 30 h 3 mo	20 sessions 30 h 3 mo	No	Yes	No	Yes	No	Yes	No	No
Saaristo 2010 (96,97,98,99,101,117) 20664020	None	≥4 sessions NR 12 mo	≥4 sessions NR 12 mo	Yes	Yes	No	No	Yes	Yes	No	No
Sepah 2014 (51) 24723130	5% weight loss	16 sessions NR 4 mo	25 sessions NR 12 mo	No	Yes	No	No	No	Yes	No	No
Swanson 2012 (104) 22068253	7% reduction	5 sessions 9 h 6 mo	5 sessions 9 h 6 mo	Yes	No	Yes	No	No	Yes	No	No

Author, Year, PMID*	Weight loss goal	Core: # sessions contact time (h) duration (mo)	Total: # sessions contact time (h) duration (mo)	Exercise: individual sessions	Exercise: group sessions	Customized exercise program	Trainer supervision	Diet: individual sessions	Diet: group sessions	Customized diet program	Meetings with dietician
Ramachandran 2009 (93) 19277602	None	38 sessions NR 36 mo	38 sessions NR 36 mo	Yes	No	No	No	Yes	No	No	No
Vanderwood 2010 (107) 20805260	7% reduction	16 sessions 16 h 6 mo	22 sessions 22 h 10 mo	No	Yes	No	No	No	Yes	No	No
Vojta 2013 (110) 23498291	7% reduction	16 sessions NR 4 mo	24 sessions NR 12 mo	No	Yes	No	Yes	No	Yes	No	No

* Of primary study.

C. Before-After Combined Diet & Physical Activity Studies

2. Intervention goals

Author, Year, PMID*	Exercise goal	Diet goal	Calories	Carbohydrates (of daily energy consumed)	Fat (of daily energy consumed)	Fiber (per day)
Absetz 2007 (59,60) 17586741	At least 4 h/week moderate level physical activity	None	NR	NR	<30% (<10% from saturated fat)	≥15 g/1000 kcal
Gilis-Januszewska 2011 (70) No PMID	Increased physical activity	Increased consumption of fruits, vegetables	NR	NR	Reduced intake of total and saturated fats	Increased consumption fibre
Jiang 2013 (46) 23275375	Increased physical activity	Healthy diet	NR	NR	NR	NR
Kyrios 2009 (76) 19351299	None	None	NR	NR	NR	NR
Laatikainen 2007 (77) 17877832	None	None	NR	NR	NR	NR
Makrilakis 2010 (83,84) 20536519	None	None	NR	NR	NR	NR
Penn 2013 (57) 24227871	None	Weight loss, if overweight	NR	NR	NR	NR
Saaristo 2010 (96,97,98,99,101,117) 20664020	None	None	NR	NR	NR	NR
Swanson 2012 (104) 22068253	Strengthening; improve flexibility and balance as needed; 10,000 steps/d	None	NR	NR	NR	NR
Ramachandran 2009 (93) 19277602	Strenuous/brisk activity	None	Reduction in overall intake	Reduction of refined carbohydrates and avoidance of sugar	Reduction of fat intake	Inclusion of fiber-rich foods
Vanderwood 2010 (107) 20805260	Moderate intensity	None	NR	NR	NR	NR

* Of primary study.

Abbreviations

BMI, body mass index
cal, calorie
d, day
h, hour
kcal, kilocalories
kg, kilogram
lbs, pounds
m, meter
MET; metabolic equivalent
mg, milligram
min, minute
MJ, megajoule
mo, month
NR, not reported
wk, week

Supplemental Table 5. Studies using trainers or dietitians

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Absetz 2007 (59,60) 17586741	Depending on each center's resources, the nurses facilitated groups either solo or together with another nurse or a physiotherapist. Facilitators received 2 days of training with a standardized training program, training manuals, and practical exercises. A project dietitian supported facilitators and gave dietary counseling during one group session.	Depending on each center's resources, the nurses facilitated groups either solo or together with another nurse or a physiotherapist. Facilitators received 2 days of training with a standardized training program, training manuals, and practical exercises. A project dietitian supported facilitators and gave dietary counseling during one group session.
Ackermann 2014 (35) 24740868	See Diet Counselor	Intervention group participants were offered the option to interact with a virtual lifestyle coach, who responded to participants and group discussions via email and through online forum postings
Admiraal 2013 (52,73,109) 23894322	Furthermore, we offered to supervise a 20-week physical activity program for all participants in the intervention group. This program, ''exercise on prescription'', has been described elsewhere. Trained coaches monitored the participation in the physical activity program.	The counselors were trained dietitians who were familiar with the Hindustani Surinamese culture and dietary habits. We offered the participants a family session with the dietitian to decrease the social pressure to eat unhealthily and to increase the social support for a healthful lifestyle within the family.
Bhopal 2014 (32) 24622752		The intervention was consultation with a dietitian; both participants and family volunteers were part of this intervention. Dietitians were trained in venepuncture, anthropometric and blood pressure measurement, delivery of information, behaviour change using the stages of change model, and promotion of physical activity. Each family was mostly seen by the same dietitian throughout the study. The dietitians advised participants and family volunteers on achieving weight loss through a calorie-deficit diet and physical activity of at least 30 min daily brisk walking. 3-day food diaries and a dietary patterns questionnaire were used to collect data to inform dietitians' advice. Participants were invited to attend annual group sessions, including a food shopping tour and brisk walking. Pedometers were given to the participants to provide step counts for motivation through self-monitoring and for the dietitians to assess progress. Bodyweight and waist circumference data, and the Chester step test, were used as motivational devices by dietitians.

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Cole 2013 (43) 23589326		[Intervention] sessions were set up to accommodate 6-8 patients and were supported by the following staff: a nutrition technician serving as a screener; a dietitian or nutrition technician as the session recorder; a certified diabetes educator registered dietitian as the provider; and a behavioral specialist, registered nurse, or registered dietitian trained in group dynamics as the facilitator of the sessions. Standard of care control group attended at least one 45- to 60-minute individualized counseling session with a registered dietitian following the initial 3-hour prediabetes education class. During these individual appointments, the dietitian discussed the patient's clinical outcomes and progress made in achieving lifestyle modifications since attending the prediabetes class and provided additional education, including assistance to develop SMART goals, and scheduled the patient for a follow-up appointment if desired
De la Rosa (64) 2008 No PMID		A 30 minute initial session was given to patients in the intervention group by a physician and a metabolic syndrome educator/registered dietitian.
Eriksson 1991 (22,69) 1778354	Eighteen participants from Group 1 (44 %) and 68 from Group 2 (38 %) followed the protocol as organised groups, with a 6-month period of supervised physical training followed by a 6-month period of dietary treatment, or vice versa. After 12 months all participants continued to follow the protocol, with both diet and training, either on their own or together with previous group partners (one group under- went supervised training for a total of 18 months), and some groups continued training at local sports clubs.	
Gagnon 2011 (45,61) 21489843		At each visit, the participant individually met with three members of our interdisciplinary team (15 minutes each): • the nurse, responsible of assessing the psychosocial context and providing support, reviewing progress, and identifying any barriers to change and strategies to overcome them; • the dietitian, who evaluated the participant's food intake and helped to choose two or three nutritional goals (such as portion size, vegetable and wholegrain consumption, fat content, snacks and caloric beverages) to work on until the next appointment; • the endocrinologist, responsible for coaching the participant to progressively increase levels of physical activity (long-term objective of 60 min/day of moderate activity).

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Gillison 2015 (55) 25592314	New materials were developed for lifestyle coaches resulting in the addition of 13 techniques and practical adjustments to reflect the needs of the patient population and local context. The intervention was facilitated by a pair of lifestyle coaches. Adherence to the study protocol and participant attendance was recorded by the lifestyle coaches.	NR
Iqbal Hydrie 2012 (27) 22888411	The subjects had sessions with a dietitian and a physical trainer at each visit and they were individually counselled to increase their level of physical activity.	The subjects had sessions with a dietitian and a physical trainer at each visit and they were individually counselled to increase their level of physical activity.
Islam 2014 (54) 24852392	The intervention consisted of six CHW-facilitated interactive group sessions of approximately 2 h in length and included the following topics: diabetes prevention, nutrition, physical activity, diabetes complications and other cardiovascular diseases, stress and family support, and access to health care. Findings from a mixed-methods formative study were used to inform inclusion of culturally relevant topics and strategies in the curriculum. Coalition members who were health professionals, including a nutritionist, a certified diabetes educator, a physical therapist, and a mental health professional, reviewed curriculum components relevant to their areas of expertise. In addition, community partners included cultural and religious messaging to promote healthy living and overcome cultural barriers.	See Physical Activity Counselor
Janus 2012 (53) 22929458	Certified and accredited Life! facilitators (trained health professionals such as nurses or diabetes educators) delivered the intervention. A physiotherapist or exercise physiologist and a dietitian co-facilitated sessions three and four, respectively.	Certified and accredited Life! facilitators (trained health professionals such as nurses or diabetes educators) delivered the intervention. A physiotherapist or exercise physiologist and a dietitian co-facilitated sessions three and four, respectively.
Jiang 2013 (46) 23275375		The curriculum was delivered in group settings within 16–24 weeks after baseline assessment and typically was taught by the program dietitian and/or health educator. It was supplemented by monthly individual lifestyle coaching sessions to customize goals and plan and to identify and solve barriers to participation. Participants were encouraged to use a Keeping Track booklet to monitor their fat and calorie intake and weekly physical activity. If used, booklets were reviewed by lifestyle coaches who gave feedback to the participants during the monthly lifestyle coaching sessions. Approximately one-half of the lifestyle coaches were health educators or dietitians. Others were nurses, nursing students, nurse or medical assistants, exercise specialist, or lay health workers from various professional backgrounds.

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Katula 2011 (56,75) 23498294		Participants also received three personalized consultations with a registered dietitian (during months 1, 3, and 6).
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	Each of the 27 participating clinical centers has a Principal Investigator, a Program Coordinator and additional staff to carry out the protocol that may include recruitment coordinators, dietitians, behaviorists, exercise physiologists, physicians, nurses, data collectors and others. The intervention is conducted by case managers with training in nutrition, exercise, or behavior modification who meet with an individual participant for at least 16 sessions in the first 24 weeks and contact the participant at least monthly thereafter(with in-person contacts at least every 2 months throughout the remainder of the program). Two supervised group exercise sessions per week are provided to help participant achieve their exercise goal.	Each of the 27 participating clinical centers has a Principal Investigator, a Program Coordinator and additional staff to carry out the protocol that may include recruitment coordinators, dietitians, behaviorists, exercise physiologists, physicians, nurses, data collectors and others. The intervention is conducted by case managers with training in nutrition, exercise, or behavior modification who meet with an individual participant for at least 16 sessions in the first 24 weeks and contact the participant at least monthly thereafter(with in-person contacts at least every 2 months throughout the remainder of the program).
Knowler 2009 (9,87,92,116) 19878986	Each of the 27 participating clinical centers has a Principal Investigator, a Program Coordinator and additional staff to carry out the protocol that may include recruitment coordinators, dietitians, behaviorists, exercise physiologists, physicians, nurses, data collectors and others. The intervention is conducted by case managers with training in nutrition, exercise, or behavior modification who meet with an individual participant for at least 16 sessions in the first 24 weeks and contact the participant at least monthly thereafter(with in-person contacts at least every 2 months throughout the remainder of the program). Two supervised group exercise sessions per week are provided to help participant achieve their exercise goal.	Each of the 27 participating clinical centers has a Principal Investigator, a Program Coordinator and additional staff to carry out the protocol that may include recruitment coordinators, dietitians, behaviorists, exercise physiologists, physicians, nurses, data collectors and others. The intervention is conducted by case managers with training in nutrition, exercise, or behavior modification who meet with an individual participant for at least 16 sessions in the first 24 weeks and contact the participant at least monthly thereafter(with in-person contacts at least every 2 months throughout the remainder of the program).
Laatikainen 2007 (77) 17877832	The sessions were facilitated by specially trained study nurses, dietitians and physiotherapists.	The sessions were facilitated by specially trained study nurses, dietitians and physiotherapists.
Liao 2002 (48,62) 12196418	The treatment group received endurance exercise training and a dietary prescription. For the first 6 months, exercise sessions were directed by an exercise physiologist.	The treatment group received endurance exercise training and a dietary prescription. Based on 3-day food records, each participant's baseline diet was analyzed; this information was used by a dietitian to instruct participants on their prescribed diet. At visits where participants met with the dietitian, food records were used as a tool to show how well they were meeting the prescribed diet.

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Ma 2013 (28,114,119) 23229846	More intensive intervention only: The E-LITE lifestyle coach, a registered dietitian certified to deliver the GLB program, and a contracted fitness instructor jointly taught all the classes at the participating clinic	More intensive intervention only: The E-LITE lifestyle coach, a registered dietitian certified to deliver the GLB program, and a contracted fitness instructor jointly taught all the classes at the participating clinic
Nilsen 2011 (49) 22117618	The IIG program was interdisciplinary (dietitian, physiotherapist, ergonomist, nurse and physician).	The IIG program was interdisciplinary (dietitian, physiotherapist, ergonomist, nurse and physician).
Oldroyd 2006 (23,86) 16297488	The physiotherapist assessed participants' level of physical activity and readiness to change at baseline and provided a graded physical activity plan, tailored to the participant's lifestyle and designed to enable them to achieve 20–30 min of aerobic activity at least once a week.	The dietitian used motivational interviewing to develop an individual action plan for behaviour change
Patrick 2013 (88) 23759410	See Diet Counselor	Participants in the website-only intervention group received a phone call from a health consultant if he or she did not log on to the web program after repeated email reminders. Participants in the website, monthly group sessions, and follow-up calls intervention group attended monthly 90 min group sessions of 5–10 adolescents and their parents where they discussed the behavioral skills from the web tutorials. Participants in this condition also received brief (~20 min) bimonthly phone calls from the health counselor reviewing concepts presented in the web tutorial and reinforcing behavioral strategies such as goal setting and problem solving of barriers/solutions. Participants in the website and short message service intervention group could communicate via text message with a health counselor if they had any questions. Participants in the usual care group were encouraged to attend three 1 h group nutrition sessions at Rady Children's Hospital of San Diego during the first 6 weeks.
Penn 2009 (24,89) 19758428	Behavioral interventions consisted of regular individual advice from a dietitian and physiotherapist trained in motivational interviewing	Behavioral interventions consisted of regular individual advice from a dietitian and physiotherapist trained in motivational interviewing

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Penn 2013 (57) 24227871	NLNY trainers delivered a 10-week programme. Each NLNY session comprised a supervised PA or, on two or three occasions within each 10-week programme, a cookery session, followed by a reflective discussion that covered PA, nutrition, weight management and strategies for behaviour change. Sessions were leisure centre based, but also included trainer-led walks. The supported cookery sessions were designed to encourage healthy eating and to demonstrate the ease with which healthy food could be prepared. Nutritional information incorporated the importance of reading food labels with advice based on the Eat-well plate, including reduction in fat and increase in fibre intake, in line with the DPS protocol and NICE guidance. The trainers introduced behaviour change strategies (including goal setting, action planning, barrier identification, social support, self-monitoring, advance planning for relapse prevention and contingent rewards), as the need arose, with regular repetition during the supported sessions.	See Physical Activity Counselor
Roumen 2008 (29,100,118) 18445174	Individual advice is given on how to increase daily physical activity (walking, cycling, swimming), and goals are set. Furthermore, subjects are encouraged to participate in an exercise program, especially designed for this study, including components of aerobic exercise training and components of resistance training. Subjects have free access to these training sessions, and are stimulated to participate for at least 1 h a week.	Dietary advice is given at regular intervals by a skilled dietitian on an individual basis after consideration of a 3 days food record
Saito 2011 (50) 21824948		Irrespective of the assigned groups, all the participants were individually instructed to reduce total energy intake and increase physical activity, aiming at a 5% reduction in body weight, through the help of nurses, dietitians, physical therapists, and physicians. We used existing human and material resources of each local study center as much as possible. Nurses and dietitians were mainly involved in the intervention at most local study centers, although it depended on the personnel situation at each center
Sakane 2011 (30,34) 21235825		When needed, the study nurse could ask a part-time dietitian for diet counseling.
Savoye 2014 (102) 24062325	The exercise component was facilitated by an exercise physiologist or physical therapist.	The behavior modification component, primarily facilitated by the dietitian, used techniques such as self-awareness, goal setting, stimulus control, coping skills training, cognitive behavior strategies, and contingency management.

Study Year PMID*	Physical Activity Counselor	Diet Counselor
Sepah 2014 (51) 24723130	See Diet Counselor	Each group of participants was led by a professional health coach, who was trained in a manner consistent with CDC DPRP standards for lifestyle coaches. Health coaches served an important moderating and personalizing function by communicating with participants via private messages or telephone calls. Health coaches kept participant discussions on track, provided feedback on food logs and physical activity progress, and provided individualized counseling using techniques such as motivational interviewing.
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	Supervised, progressive, individually tailored, circuit-type resistance-training sessions were also offered with the aim of improving the functional capacity and strength of the large muscle groups; subjects were instructed to perform a moderate to high number of repetitions and to take a break of 15 to 60 seconds between the stations on the circuit.	Each subject in the intervention group had seven sessions with a nutritionist during the first year of the study and one session every three months thereafter.
Vermunt 2011 (31,108) 21775759	Individual consultations were supported by five group meetings to give more detailed information on diet and exercise. These 1-h meetings were conducted by trained dietitians (meetings 1, 2, 4, and 5) and physiotherapists (meeting 3).	Individual consultations were supported by five group meetings to give more detailed information on diet and exercise. These 1-h meetings were conducted by trained dietitians (meetings 1, 2, 4, and 5) and physiotherapists (meeting 3).
Vojta 2013 (110) 23498291	In each session, a trained Lifestyle Coach at the local YMCA teaches strategies for incorporating physical activity and healthy eating into daily life, changing behavior, and identifying and overcoming barriers that may inhibit success and participant progress. The Lifestyle Coach monitors program outcomes including attendance, weight, and weekly tracking of food consumption and physical activity during each session.	

* Of primary study.

Supplemental Table 6. Participant characteristics

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Absetz 2007 (59,60) 17586741	DPA	352	25	59 (4)	ND	32.2 (5.0)	ND	ND	Education: Elementary 64% Secondary 23% High school 10% Employment: Employed 38% Unemployed 14% Retired 47%
Ackermann 2008 (42) 18779029	DPA	46	50	56.5 (9.7)	Hispanic 2% African American 4% White 93% Other 2%	32.0 (4.8)	ND	ND	ND
	Control	46	39	60.1 (10.5)	Hispanic 4% African American 20% White 71% Other 9%	30.8 (5.1)	ND	ND	ND
Ackermann 2014 (35) 24740868	More intensive	159	15	46.9 (11.3)	White 77% Black 18% Hispanic 4%	35.1 (5.7)	ND	ND	Household income: <$25,000/y: 10.5% $25-$75,000/y: 49.2% >$75,000: 40.3%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Less intensive	155	20	46.5 (11.3)	White 77% Black 17% Hispanic 2%	36.1 (6.0)	ND	ND	Household income: <$25,000/y: 5.3% $25-$75,000/y: 59.5% >$75,000: 35.1%
Admiraal 2013 (52,73,109) 23894322	DPA	177	50	44.7 (10.6)	ND	28.1 (3.8)	ND	ND	Educational level: Low 10.4% Middle 67.1% High 22.0%
	Control	158	51	45.0 (9.5)	ND	27.2 (3.8)	ND	ND	Educational level: Low 12.8% Middle 67.9% High 19.2%
Bhopal 2014 (32) 24622752	DPA	85	46	52.8 (10.2)	Indian 34% Pakistani 66%	30.6 (5.0)	ND	ND	Education: No qualifications 38% School level 27% Further or higher 35%
	Control	86	45	52.2 (10.3)	Indian 33% Pakistani 67%	30.5 (4.6)	ND	ND	Education: No qualifications 28% School level 30% Further or higher 42%
Cezaretto 2012 (36) 21538199	DPA	97	ND	56.1 (11.4)	ND	31.5 (5.7)	ND	ND	ND
	Control	80	ND	53.8 (13.3)	ND	30.5 (5.6)	ND	ND	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Cole 2013 (43) 23589326	More intensive	34	59	61.2 (8.4)	Caucasian 67% African American 15% Hispanic 18%	30.3 (5.0)	ND	100	Education: High school or GED 13% Some college 35% Bachelor's degree 26% Postgraduate degree 26%
	Less intensive	31	49	55.0 (9.9)	Caucasian 62% African American 19% Hispanic 19%	31.4 (4.8)	ND	100	Education: High school or GED 26% Some college 37% Bachelor's degree 30% Postgraduate degree 7%
Costa 2012 (26) 22322921	DPA	333	32	62.2 (8.0)	ND	31.2 (4.7)	ND	By WHO criteria: 44	ND
	Control	219	36	62.0 (7.9)	ND	31.3 (4.7)	ND	By WHO criteria: 47	ND
De la Rosa (64) 2008 No PMID	DPA	30	ND	ND	ND	ND	ND	ND	ND
	Control	28	ND	ND	ND	ND	ND	ND	ND
Dunbar 2010 (44) No PMID	More intensive	85	22.4	57.1 (1.0)	ND	32.6 (0.7)	ND	ND	Education 11.8 (0.5) y
	Less intensive	79	34.2	56.5 (0.9)	ND	32.1 (0.6)	ND	ND	Education 12.2 (0.4) y
Eriksson 1991 (22,69) 1778354	DPA	181	ND	ND	ND	26.6 (3.1)	ND	ND	ND
	Control	79	ND	ND	ND	26.7 (4.0)	ND	ND	ND
Gagnon 2011 (45,61) 21489843	More intensive	22	41	54.8 (11.7)	ND	36.0 (6.3)	ND	100	ND
	Less intensive	26	55	58.4 (10.7)	ND	34.1 (4.3)	ND	100	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Gilis-Januszewska 2011 (70) No PMID	DPA	175	21.7	"middle-aged"	ND	31.7 (5.0)	ND	ND	ND
Gillison 2015 (55) 25592314	More intensive	54	ND	ND	ND	96.6 (14.0) kg	ND	ND	ND
	Control	52	ND	ND	ND	97.6 (12.8) kg	ND	ND	ND
Iqbal Hydrie 2012 (27) 22888411	DPA	114	ND	43.1 (10.1)	SE Asian 100%	26.1 (4.7)	ND	ND	ND
	Control	108	ND	44.2 (10.9)	SE Asian 100%	27.0 (5.7)	ND	ND	ND
Islam 2014 (54) 24852392	DPA	76	39	46.3 (11.6)	SE Asian 100%	28.2 (4.0)	30.6	ND	Education: <High school 16.2% High school/some college 58.1% College graduate 25.7% Speaks English not well or not at all 37.8%
	Control	50	42	47.8 (9.5)	SE Asian 100%	28.6 (3.0)	34.0	ND	Education: <High school 8.2% High school/some college 85.7% College graduate 6.1% Speaks English not well or not at all 52.0%
Janus 2012 (53) 22929458	DPA	38	44.7	64.2 (7.5)	ND	31.4 (4.82)	ND	ND	Income: Low 54.1% Medium 40.5% High 5.4%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Control	42	23.8	65.0 (6.0)	ND	30.1 (4.19)	ND	ND	Income: Low 74.4% Medium 23.1% High 2.6%
Jiang 2013 (46) 23275375	DPA	2553	25.5	18-<40 yo 28.6 40-<50 yo 30.3 50-<60 yo 25.3 ≥60 yo 15.8	Native American 100%	35.8 (7.3)	ND	ND	Education: <HS 14% HS graduate 21% Some college 45% ≥College graduate 19% Annual household income: 0-14,999 19% 15,000-29,999 22% 30,000-49,999 30% ≥50,000 29% Employment: Employed 74% Unemployed 16% Retired 8% Student 3%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Kanaya 2012 (37) 22698027	DPA	113	27	55 (17)	African American 23% Non-Hispanic White 22% Latino 35% Asian 18% Native American/Pacific Islander 1% Multiethnic/mixed 2%	30.1 (5.3)	50	ND	Education: < High school 21% High school/GED 20% Some college/tech 27% Bachelor's degree 32%
	Control	117	26	58 (16)	African American 23% Non-Hispanic White 23% Latino 39% Asian 13% Native American/Pacific Islander 1% Multiethnic/mixed 1%	29.9 (6.1)	44	ND	Education: < High school 25% High school/GED 11% Some college/tech 22% Bachelor's degree 42%
Katula 2013 (56,75) 23498294	More intensive	151	42.4	57.3	African American 25.8% White 73.5% Other/refused 0.7%	32.8 (3.9	ND	ND	Education: High school or less 29% Associate degree or other 49% Bachelor's degree 37% Beyond Bachelor's degree 36%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Less intensive	140	42.7	58.5	African American 23.3% White 74.0% Other/refused 2.7%	32.6 (4.1)	ND	ND	Education: High school or less 32% Associate degree or other 47% Bachelor's degree 37% Beyond Bachelor's degree 34%
Knowler 2002 (6,65,66,67,72,90,91,95,111,113) 11832527	DPA	1079	32	50.6 (11.3)	White 50.8% African American 18.9% Hispanic 16.5% American Indian 5.6% Asian 5.3%	33.9 (6.8)	ND	ND	ND
	Control	1082	31	50.3 (10.4)	White 54.2% African American 20.3% Hispanic 15.5% American Indian 5.5% Asian 4.5%	34.2 (6.7)	ND	ND	ND
Knowler 2009 (9,87,92,116) 19878986	DPA	910	32	55.3 (11)	ND	Men 30.4 (6.3) Women 33.7 (7.3)	ND	ND	ND
	Control	932	31	54.8 (10)	ND	Men 31.9 (5.9) Women 34.7 (7.1)	ND	ND	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Kosaka 2005 (47) 15649575	More intensive	102	ND	Age (year) 30s: 5.2% 40s: 32.9% 50s: 53.9% 60s: 8.1%	Japanese 100%	24.0 (2.3)	ND	ND	ND
	Less intensive	356	ND	Age (year) 30s: 3.9% 40s: 32.3% 50s: 56.9% 60s: 6.9%	Japanese 100%	23.8 (2.1)	ND	ND	ND
Kulzer 2009 (38) 19509014	DPA	ND	ND	ND	ND	31.0 (4.7)	ND	ND	ND
	Control	ND	ND	ND	ND	32.0 (5.7)	ND	ND	ND
Kyrios 2009 (76) 19351299	DPA	108	ND	ND	ND	29.7 (5.5)	ND	ND	ND
Laatikainen 2007 (77) 17877832	DPA	311	ND	57.0 (9)	ND	34.1 (6.4)	ND	ND	Years of education: 11.4 (3.2)
Liao 2002 (48,62) 12196418	More intensive	32	37	55.8 (1.8)	Japanese 100%	25.6 (0.8)	ND	ND	ND
	Less intensive	32	53	52.2 (1.8)	Japanese 100%	26.6 (0.8)	ND	ND	ND
Ma 2013 (28,114,119) 23229846	More intensive	81	54.3	51.8 (9.9)	Non–Hispanic white 79.0% Asian/Pacific Islander 17.3% Latino/Hispanic 2.5%	31.7 (4.7)	ND	51.9	Income: <$75 000: 10.3% $75 000-%124 999: 19.2% $125 000-$149 999: 17.9% ≥$150 000 52.6%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Less intensive	79	51.9	54.6 (11.0)	Non–Hispanic white 77.2% Asian/Pacific Islander 16.5% Latino/Hispanic 5.1%	31.8 (5.1)	ND	57.0	Income: <$75 000: 14.3% $75 000-$124 999: 32.5% $125 000-$149 999: 15.6% ≥$150 000: 37.7%
	Control	81	54.3	52.5 (10.9)	Non–Hispanic white 77.8% Asian/Pacific Islander 17.3% Latino/Hispanic 4.9%	34.2 (6.3)	ND	54.3	Income: <$75 000: 11.5% $75 000-$124 999: 28.2% $125 000-$149 999: 6.4% ≥$150 000 53.9%
Makrilakis 2010 (83,84) 20536519	DPA	191	40	56.3 (10.8)	ND	32.3 (5.0)	ND	ND	ND
Moore 2011 (39,63) 20945253	DPA	208	ND	ND	ND	29.7	ND	ND	ND
	Control	99	ND	ND	ND	29.8	ND	ND	ND
Nilsen 2011 (49) 22117618	More intensive	109	47	47.0 (11)	ND	37.7 (6)	ND	ND	High school or university: 29%
	Less intensive	104	53	45.9 (11)	ND	35.9 (6)	ND	ND	High school or university: 27%
Ockene 2012 (40,85) 22390448	DPA	163	28	51.4 (10.9)	ND	33.6 (5.1)	ND	ND	<High school education: 60.6%
	Control	150	23	52.4 (11.6)	ND	33.2 (5.9)	ND	ND	<High school education: 57.1%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Oldroyd 2006 (23,86) 16297488	DPA	39	46	58.2 (41-75)	ND	ND	ND	ND	ND
	Control	39	69	57.5 (41-73)	ND	ND	ND	ND	ND
Pan 1997 (8,10,71,78) 9096977	DPA	126	56	44.4 (9.2)	Chinese 100%	26.3 (3.9)	ND	ND	ND
	Control	133	55	46.5 (9.3)	Chinese 100%	26.2 (3.9)	ND	ND	ND
Patrick 2013 (88) 23759410	More intensive	24	14.3	12-16	White 8% African-American 13% Native American 4% Asian or Pacific Islander 0% Multiethnic or other 0% Said preferred not to state 17% Did not state 58%	z score: 2.2 (0.07)	ND	ND	ND
	Less intensive 1: “Weight loss ”	26	14.3	12-16	White 23% African-American 8% Native American 0% Asian or Pacific Islander 8% Multiethnic or other 4% Said preferred not to state 15% Did not state 42%	z score 2.2 (0.07)	ND	ND	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Less intensive 2: "Weight loss"	26	14.1	12-16	White 27% African-American 15% Native American 0% Asian or Pacific Islander 4% Multiethnic or other 4% Said preferred not to state 23% Did not state 27%	z score 2.2 (0.07)	ND	ND	ND
	Control	25	14.5	12-16	White 12% African-American 28% Native American 0% Asian or Pacific Islander 4% Multiethnic or other 4% Said preferred not to state 16% Did not state 36%	z score 2.2 (0.07)	ND	ND	ND
Penn 2009 (24,89) 19758428	DPA	51	41.2	56.8 (40-72)	ND	34.1 (5.5)	ND	ND	Socio-economic status by type of work: Manual 23% Non-manual 19% Data unavailable 9%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Control	51	39.2	57.4 (38-74)	ND	33.5 (4.6)	ND	ND	Socio-economic status by type of work: Manual 26% Non-manual 19% Data unavailable 6%
Penn 2013 (57) 24227871	DPA	218	31	53.6 (6)	ND	33.5 (5.9)	ND	ND	ND
Ramachandran 2006 (25,94,103) 16391903	DPA	133	78	Age 35–39: 14% 40–44: 26% 45–49: 28% 50–55: 32%	SE Asian 100%	25.7 (3.3)	31.6	ND	Occupation: (Un)skilled workers 60% Executive/business class 29% Household jobs 10% Education: No formal education 7% School 62% College 24% Technical 7% Monthly income (rupees): ≤5,000 26% (27.1) 5,000–10,000: 49% >10,000: 26%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Control	136	76	Age 35–39: 19% 40–44: 24% 45–49: 32% 50–55: 25%	SE Asian 100%	26.3 (3.7)	32.4	ND	Occupation: Unskilled/skilled workers 60% Executive/business class 31% Household jobs 9% Education No formal education 4% School 56% College 32% Technical 8% Monthly income (rupees) ≤5,000: 29% 5,000–10,000: 50% >10,000: 21%
Ramachandran 2009 (93) 19277602	DPA	204	87	45.1 (6.1)	SE Asian 100%	26.0 (3.5)	36	ND	ND
	Control	203	86	45.5 (6.3)	SE Asian 100%	26.2 (3.3)	35	ND	ND
Ramachandran 2013 (33) 24622367	DPA	271	ND	45.9 (4.8)	SE Asian 100%	25.8 (3.3)	ND	ND	Occupation: Unskilled 3% Skilled 61% Clerical or executive 36%
	Control	266	ND	46.1 (4.6)	SE Asian 100%	25.8 (3.0)	ND	ND	Occupation: Unskilled 4% Skilled 64% Clerical or executive 32%
Roumen 2008	DPA	52	52	54.2 (5.8)	ND	29.6 (3.8)	ND	ND	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
(29,100,118) 18445174	Control	54	56	58.4 (6.8)	ND	29.2 (3.3)	ND	ND	ND
Saaristo 2010 (96,97,98,99,101,117) 20664020	DPA	2798	33	55 (10)	ND	31.3 (5)	ND	ND	ND
Saito 2011 (50) 21824948	More intensive	311	72	50 (44-54)	Japanese 100%	26.9 (2.6)	ND	ND	ND
	Less intensive	330	71	48 (41-54)	Japanese 100%	27.1 (2.6)	ND	ND	ND
Sakane 2011 (30,34) 21235825	DPA	152	49	51 (7)	Japanese 100%	24.8 (3.6)	ND	ND	ND
	Control	152	50	51 (6)	Japanese 100%	24.5 (3.2)	ND	ND	ND
Savoye 2014 (102) 24062325	DPA	38	31.6	12.7 (1.9)	Non-Hispanic 31.6% Hispanic white 39.5% Black 29% Other 0%	32.1 (5.2)	ND	100	ND
	Control	37	37.8	13.2 (1.8)	Non-Hispanic 35.1% Hispanic white 32.4% Black 27.0% Other 5.4%	34.6 (6.8)	ND	100	ND
Sepah 2014 (51) 24723130	DPA	220	17	43.6 (12.4)	White 50% Black 39% Hispanic 11% Other 10%	36.6 (7.5)	ND	ND	Education: <College graduate 48% ≥College graduate 52% Income: <50,000 48% ≥50,000 52%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Swanson 2012 (104) 22068253	DPA	221	33	62 (11)	White 88%	31.2 (5.6)	ND	ND	ND
Tate 2003 (41) 12684363	DPA	46	8	49.8 (9.3)	White 89%	32.5 (3.8)	ND	ND	Education: High school 15% Some college 33% College degree 26% Graduate degree 26%
	Control	46	11	47.3 (9.5)	White 89%	33.7 (3.7)	ND	ND	Education: High school 15% Some college 37% College degree 31% Graduate degree 15%
Tuomilehto 2001 (7,11,68,74,79,80,81,82,105,106,112) 11333990	DPA	265	34	55 (7)	ND	31.0 (4.5)	ND	ND	ND
	Control	257	32	55 (7)	ND	31.3 (4.6)	ND	ND	ND
Vanderwood 2010 (107) 20805260	DPA	816	20	52.3 (11.6)	ND	99.2 (20.7) kg	ND	ND	ND
Vermunt 2011 (31,108) 21775759	DPA	305	ND	ND	ND	29.0 (4.4)	ND	ND	ND
	Control	330	ND	ND	ND	28.5 (4.1)	ND	ND	ND
Vojta 2013 (110) 23498291	DPA	2369	ND	ND	ND	ND	ND	ND	ND

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
Weinstock 2013 (58,115) 23843020	DPA	129	22	50.7 (13.1)	White 85% African American/other races 14% Hispanic 1% Missing 1%	38.9 (7.6)	ND	ND	Employed 49% Education No HS diploma 12% HS/technical diploma 54% Associates degree 14% Bachelor's degree 10% Post-bachelor's degree 10% Household income: ≤20,000 22% 20,001-40,000 29% ≥40,001 40% Missing 10%

Author, Year, PMID*	Intervention	N	% Male	Age	Ethnicity	Body weight (BMI, kg/m^2)†	% Hypertension	% prediabetes by ADA criteria	Socioeconomic status
	Control	128	29	52.7 (12.8)	White 86% African American/other races 13% Hispanic 2% Missing 0%	39.7 (8.3)	ND	ND	Employed 44% Education No HS diploma 9% HS/technical diploma 50% Associates degree 14% Bachelor's degree 17% Post-bachelor's degree 17% Household income: ≤20,000 16% 20,001-40,000 30% ≥40,001 41% Missing 13%

* Of primary study.

† Unless otherwise indicated.

Abbreviations: ADA, American Diabetes Association; BMI, body mass index; DPA, diet and physical activity; HS, high school; kg, kilogram; ND, not documented; yo, years old

Supplemental Table 7. Meta-analyses of glycemia measures, combined diet and physical activity promotion programs vs. usual care.

7.A.1. Fasting Glucose at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Pan 1997 (8)	6	-0.590 (-1.162, -0.018)	-10.631 (-20.931, -0.330)	1.32
Tuomilehto 2001 (7)	1	-0.278 (-0.394, -0.161)	-5.00 (-7.091, -2.909)	7.56
Knowler 2002 (6)	1	-0.309 (-0.365, -0.254)	-5.57 (-6.568, -4.572)	8.97
Oldroyd 2006 (23)	1	-0.050 (-0.455, 0.355)	-0.901 (-8.191, 6.389)	2.31
Roumen 2008 (29)	1	-0.130 (-0.353, 0.093)	-2.342 (-6.362, 1.678)	4.88
Kulzer 2009 (38)	1	-0.339 (-0.536, -0.141)	-6.100 (-9.655, -2.545)	5.46
Knowler 2009 (9)	5	-0.130 (-0.202, -0.058)	-2.342 (-3.641, -1.044)	8.64
Moore 2011 (39)	0.5	-0.190 (-0.393, 0.013)	-3.423 (-7.078, 0.231)	5.33
Sakane 2011 (30)	1	0.100 (-0.037, 0.237)	1.802 (-0.667, 4.270)	7.00
Cezaretto 2012 (36)	9	-0.089 (-0.345, 0.168)	-1.600 (-6.225, 3.025)	4.21
Vermunt 2011 (31)	1.5	-0.020 (-0.082, 0.042)	-0.360 (-1.476, 0.755)	8.85
Ockene 2012 (40)	1	0.056 (-0.097, 0.208)	1.00 (-1.750, 3.750)	6.58
Kanaya 2012 (37)	1	0.028 (-0.124, 0.181)	0.510 (-2.234, 3.254)	6.59
Janus 2012 (53)	1	-0.080 (-0.276, 0.116)	-1.441 (-4.973, 2.090)	5.49
Ma 2013 (28)†	1.25	-0.244 (-0.388, -0.100)	-4.400 (-6.998, -1.802)	6.80
Admiraal 2013 (52)	1	0 (-0.180, 0.180)	0 (-3.243, 3.243)	5.87
Bhopal 2014 (32)	3	-0.130 (-0.390, 0.130)	-2.342 (-7.027, 2.342)	4.15
Overall (95% CI) (PL)		**-0.123 (-0.198, -0.049)**	**-2.220 (-3.574, -0.880)**	100
Excluding follow-up >2 years		*-0.116 (-0.205, -0.025)*	*-2.087 (-3.700, -0.445)*	

* Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 89.81 (d.f. = 16) $p < 0.001$
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 77%
Estimate of between-study variance tau-squared = 0.014 (mmol/L), 4.442 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

7.A.2. Fasting Glucose at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Pan 1997 (8)	6	-0.590 (-1.162, -0.018)	-10.631 (-20.931, -0.330)	1.65
Tuomilehto 2001 (7)	*4*	*0 (-0.397, 0.397)*	*0 (-7.161, 7.161)*	*2.89*
Knowler 2002 (6)	*4*	*-0.327 (-0.383, -0.272)*	*-5.900 (-6.898, -4.902)*	*9.43*
Oldroyd 2006 (23)	*2*	*0.130 (-0.356, 0.616)*	*2.342 (-6.410, 11.095)*	*2.14*
Roumen 2008 (29)	*4.5*	*-0.400 (-0.689, -0.111)*	*-7.207 (-12.423, -1.992)*	*4.33*
Kulzer 2009 (38)	1	-0.339 (-0.536, -0.141)	-6.100 (-9.655, -2.545)	6.19
Knowler 2009 (9)	*10*	*-0.080 (-0.231, 0.071)*	*-1.441 (-4.157, 1.274)*	*7.33*
Moore 2011 (39)	0.5	-0.190 (-0.393, 0.013)	-3.423 (-7.078, 0.231)	6.06
Sakane 2011 (30)	*3*	*0.200 (-0.001, 0.401)*	*3.604 (-0.012, 7.220)*	*6.11*
Cezaretto 2012 (36)	9	-0.089 (-0.345, 0.168)	-1.600 (-6.225, 3.025)	4.92
Vermunt 2011 (31)	*2.5*	*-0.070 (-0.137, -0.003)*	*-1.261 (-2.470, -0.052)*	*9.24*
Ockene 2012 (40)	1	0.056 (-0.097, 0.208)	1.000 (-1.750 3.750)	7.28
Kanaya 2012 (37)	1	0.028 (-0.124, 0.181)	0.510 (-2.234, 3.254)	7.29
Janus 2012 (53)	1	-0.080 (-0.276, 0.116)	-1.441 (-4.973, 2.090)	6.22
Ma 2013 (28)†	1.25	-0.244 (-0.388, -0.100)	-4.400 (-6.998, -1.802)	7.49
Admiraal 2013 (52)	1	0 (-0.180, 0.180)	0 (-3.243, 3.243)	6.60
Bhopal 2014 (32)	3	-0.130 (-0.390, 0.130)	-2.342 (-7.027, 2.342)	4.85
Overall (95% CI) (PL)		**-0.116 (-0.201, -0.030)**	**-2.082 (-3.622, -0.540)**	100

* Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 7.A.1.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 84.13 (d.f. = 16) p < 0.001
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 75%
Estimate of between-study variance Tau-squared = 0.017 (mmol/L), 5.527 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

7.B.1. 2-hour Glucose at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Pan 1997 (8)	6	-2.310 (-3.262, -1.358)	-41.622 (-58.781, -24.463)	5.54
Tuomilehto 2001 (7)	1	-0.555 (-0.914, -0.196)	-10.000 (-16.475, -3.525)	11.02
Oldroyd 2006 (23)	1	-0.832 (-1.708, 0.043)	-15.000 (-30.779, 0.779)	6.09
Roumen 2008 (29)	1	-0.999 (-1.714, -0.284)	-18.000 (-30.889, -5.111)	7.42
Kulzer 2009 (38)	1	0.050 (-0.498, 0.598)	0.900 (-8.975, 10.775)	9.05
Moore 2011 (39)	0.5	-0.580 (-1.200, 0.040)	-10.450 (-21.618, 0.717)	8.32
Sakane 2011 (30)	1	-0.500 (-0.938, -0.062)	-9.009 (-16.910, -1.108)	10.20
Vermunt 2011 (31)	1.5	-0.050 (-0.264, 0.164)	-0.901 (-4.752, 2.950)	12.32
Janus 2012 (53)	1	-0.700 (-1.484, 0.084)	-12.613 (-26.738, 1.513)	6.82
Admiraal 2013 (52)	1	-0.100 (-0.550, 0.350)	-1.802 (-9.910, 6.306)	10.08
Bhopal 2014 (32)	3	-0.031 (-0.073, 0.011)	-0.560 (-1.315, 0.195)	13.14
Overall (95% CI) (PL)		**-0.477 (-0.860, -0.174)**	**-8.591 (-15.501, -3.144)**	100
Excluding follow-up >2 years		*-0.374 (-0.655, -0.154)*	*-6.740 (-11.807, -2.774)*	

* Data from reported times closest to 1 year follow-up.

Heterogeneity chi-squared = 49.44 (d.f. = 10) p < 0.001
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 87%
Estimate of between-study variance Tau-squared = 0.171 (mmol/L), 55.667 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

7.B.2. 2-hour Glucose at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Pan 1997 (8)	6	-2.31 (-3.262, -1.358)	-41.622 (-58.781, -24.463)	5.99
Tuomilehto 2001 (7)	*4*	*0.300 (-0.761, 1.361)*	*5.405 (-13.717, 24.528)*	*5.24*
Oldroyd 2006 (23)	*2*	*0.278 (-0.672, 1.227)*	*5.000 (-12.109, 22.109)*	*6.01*
Roumen 2008 (29)	*4.5*	*-0.800 (-1.633, 0.033)*	*-14.414 (-29.417, 0.589)*	*6.97*
Kulzer 2009 (38)	1	0.050 (-0.498, 0.598)	0.900 (-8.975, 10.775)	9.96
Moore 2011 (39)	0.5	-0.580 (-1.200, 0.040)	-10.450 (-21.618, 0.717)	9.13
Sakane 2011 (30)	*3*	*-0.300 (-0.877, 0.277)*	*-5.405 (-15.809, 4.998)*	*9.62*
Vermunt 2011 (31)	*2.5*	*-0.100 (-0.324, 0.124)*	*-1.802 (-5.842, 2.238)*	*13.71*
Janus 2012 (53)	1	-0.700 (-1.484, 0.084)	-12.613 (-26.738, 1.513)	7.42
Admiraal 2013 (52)	1	-0.100 (-0.550, 0.350)	-1.802 (-9.910, 6.306)	11.16
Bhopal 2014 (32)	3	-0.031 (-0.073, 0.011)	-0.560 (-1.315, 0.195)	14.79
Overall (95% CI) (PL)		**-0.320 (-0.713, -0.017)**	**-5.767 (-12.839, -0.302)**	100

* Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 7.B.1.

Heterogeneity chi-squared = 32.85 (d.f. = 16) p < 0.001
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 82%
Estimate of between-study variance Tau-squared = 0.160 (mmol/L), 52.003 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

7.C.1. Hemoglobin A1c (%) at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), %	Weight, %
Tuomilehto 2001 (7)	1	-0.200 (-0.312, -0.088)	7.40
Oldroyd 2006 (23)	0.5	0.020 (-0.148, 0.188)	3.26
Roumen 2008 (29)	1	-0.050 (-0.191, 0.091)	4.67
Ackermann 2008 (42)	1	-0.100 (-0.312, 0.112)	2.05
Kulzer 2009 (38)	1	-0.100 (-0.203, 0.003)	8.76
Knowler 2009 (9)	5	-0.100 (-0.150, -0.050)	36.55
Ockene 2012 (40)	1	-0.060 (-0.120, 0)	26.07
Janus 2012 (53)	1	-0.050 (-0.266, 0.166)	1.99
Admiraal 2013 (52)	1	0 (-0.100, 0.100)	9.24
Overall (95% CI) (PL)		**-0.080 (-0.117, -0.037)**	100
Excluding follow-up >2 years		*-0.069 (-0.125, -0.011)*	

* Data from reported times closest to 1 year follow-up.

Heterogeneity chi-squared = 9.71 (d.f. = 7) p = 0.286
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

7.C.2. Hemoglobin A1c (%) at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), %	Weight, %
Tuomilehto 2001 (7)	*4*	*0.100 (-0.342, 0.542)*	*0.74*
Oldroyd 2006 (23)	0.5	0.0200 (-0.148, 0.188)	5.07
Roumen 2008 (29)	*4.5*	*0 (-0.191, 0.191)*	*3.93*
Ackermann 2008 (42)	1	-0.100 (-0.312, 0.112)	3.20
Kulzer 2009 (38)	1	-0.100 (-0.203, 0.003)	13.64
Knowler 2009 (9)	*10*	*-0.050 (-0.147, 0.047)*	*15.34*
Ockene 2012 (40)	1	-0.060 (-0.120, 0)	40.59
Janus 2012 (53)	1	-0.050 (-0.266, 0.166)	3.10
Admiraal 2013 (52)	1	0 (-0.100, 0.100)	14.39
Overall (95% CI) (PL)		**-0.049 (-0.087, -0.008)**	100

* Data from longest reported follow-up times. Italic rows indicate time points longer than those in Table 7.C.1.

Heterogeneity chi-squared = 3.56 (d.f. = 7) p = 0.895
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

Supplemental Table 8. Glycemia measures, more vs. less intensive combined diet and physical activity promotion programs.

8.A. Fasting Glucose

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL
Liao 2002 (48)	2	-0.110 (-0.332, 0.112)	-1.982 (-5.977, 2.013)
Dunbar 2010 (44)	1.5	0.030 (-0.109, 0.169)	0.541 (-1.957, 3.038)
Gagnon 2011 (45)	1	-0.200 (-0.561, 0.161)	-3.604 (-10.100, 2.893)
Katula 2011 (56)	1	-0.150 (-0.296, -0.005)	-2.710 (-5.339, -0.081)
Saito 2011 (50)	1	-0.111 (-0.65, 0.428)	-2.000 (-11.712, 7.712)
Nilsen 2011 (49)	1.5	0.100 (-0.166, 0.366)	1.802 (-2.995, 6.598)
Ma 2013 (28)	1.25	-0.083 (-0.211, 0.044)	-1.500 (-3.794, 0.794)
Cole 2013 (43)	1	0.167 (-0.171, 0.504)	3.000 (-3.078, 9.078)

* Data from longest reported follow-up times.

Abbreviations: CI = confidence interval.

8.B. 2-hour Glucose

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL
Liao 2002 (48)	2	-0.600 (-0.732, -0.468)	-10.811 (-13.185, -8.436)
Dunbar 2010 (44)	1.5	-0.200 (-0.768, 0.368)	-3.604 (-13.845, 6.638)
Gagnon 2011 (45)	1	-0.300 (-1.150, 0.550)	-5.405 (-20.720, 9.910)
Saito 2011 (50)	1	-0.444 (-0.708, -0.180)	-8.000 (-12.765, -3.235)

* Data from longest reported follow-up times.

Abbreviations: CI = confidence interval.

Supplemental Table 9. Meta-analyses of blood pressure, combined diet and physical activity promotion programs vs. usual care.

9.A.1 Systolic blood pressure (mmHg) at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmHg	Weight, %
Eriksson 1991 (22)	6	0.16 (-7.247, 7.567)	1.54
Tuomilehto 2001 (7)	1	-4 (-6.53, -1.47)	8.30
Knowler 2002 (6)	1	-2.5 (-3.609, -1.391)	15.58
Oldroyd 2006 (23)	0.5	-7.63 (-15.057, -0.203)	1.53
Roumen 2008 (29)	1	-0.5 (-6.227, 5.227)	2.45
Ackermann 2008 (42)	1	1.1 (-6.717, 8.917)	1.40
Kulzer 2009 (38)	1	-3.6 (-8.813, 1.613)	2.88
Knowler 2009 (9)	10	-1.7 (-2.774, -0.626)	15.79
Moore 2011 (39)	0.5	-3.97 (-9.097, 1.157)	2.97
Cezaretto 2012 (36)	0.75	-6 (-11.782, -0.218)	2.41
Kanaya 2012 (37)	1	0.07 (-4.086, 4.226)	4.19
Janus 2012 (53)	1	-6.1 (-13.45, 1.25)	1.56
Ma 2013 (28)†	1.25	-1.3 (-3.333, 0.733)	10.44
Admiraal 2013 (52)	1	2 (-0.924, 4.924)	6.95
Ramachandran 2013 (33)	1.7	0.04 (-0.955, 1.035)	16.24
Bhopal 2014 (32)	3	-1.19 (-5.5, 3.12)	3.95
Islam 2014 (54)	0.5	2.5 (-4.282, 9.282)	1.81
Overall (95% CI) (PL)		**-1.552 (-2.696, -0.537)**	100
Excluding follow-up >2 years		*-1.646 (-3.165, -0.351)*	

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 32.16 (d.f. = 16) p = 0.010
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 45%
Estimate of between-study variance Tau-squared = 1.214

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

9.A.2 Systolic blood pressure (mmHg) at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmHg	Weight, %
Eriksson 1991 (22)	6	0.160 (-7.247, 7.567)	1.89
Tuomilehto 2001 (7)	*2*	*-5.000 (-7.530, -2.470)*	*8.63*
Knowler 2002 (6)	*3*	*-2.700 (-4.086, -1.314)*	*12.89*
Oldroyd 2006 (23)	0.5	-7.630 (-15.057, -0.203)	1.88
Roumen 2008 (29)	*4.5*	*-2.000 (-7.131, 3.131)*	*3.49*
Ackermann 2008 (42)	1	1.100 (-6.717, 8.917)	1.71
Kulzer 2009 (38)	1	-3.600 (-8.813, 1.613)	3.41
Knowler 2009 (9)	10	-1.700 (-2.774, -0.626)	14.08
Moore 2011 (39)	0.5	-3.970 (-9.097, 1.157)	3.50
Cezaretto 2012 (36)	0.75	-6.000 (-11.782, -0.218)	2.88
Kanaya 2012 (37)	1	0.070 (-4.086, 4.226)	4.79
Janus 2012 (53)	1	-6.100 (-13.450, 1.250)	1.91
Ma 2013 (28)†	1.25	-1.300 (-3.333, 0.733)	10.37
Admiraal 2013 (52)	1	2.000 (-0.924, 4.924)	7.45
Ramachandran 2013 (33)	1.7	0.040 (-0.955, 1.035)	14.37
Bhopal 2014 (32)	3	-1.190 (-5.500, 3.120)	4.55
Islam 2014 (54)	0.5	2.500 (-4.282, 9.282)	2.20
Overall (95% CI) (PL)		**-1.737 (-3.004, -0.610)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 9.A.1.

† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 35.43 (d.f. = 16) p = 0.003
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 54%
Estimate of between-study variance Tau-squared = 1.862

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

9.B.1 Diastolic blood pressure (mmHg) at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmHg	Weight, %
Eriksson 1991 (22)	6	1.944 (-1.437, 5.325)	3.88
Tuomilehto 2001 (7)	1	-2.000 (-3.568, -0.432)	8.87
Knowler 2002 (6)	1	-2.710 (-3.264, -2.156)	12.82
Oldroyd 2006 (23)	0.5	-4.800 (-9.571, -0.029)	2.27
Roumen 2008 (29)	1	-3.000 (-5.581, -0.419)	5.54
Kulzer 2009 (38)	1	-2.300 (-5.833, 1.233)	3.64
Knowler 2009 (9)	10	-1.800 (-2.477, -1.123)	12.44
Moore 2011 (39)	0.5	-3.750 (-6.850, -0.650)	4.38
Cezaretto 2012 (36)	0.75	-5.300 (-8.293, -2.307)	4.59
Janus 2012 (53)	1	-0.730 (-5.336, 3.876)	2.41
Ma 2013 (28)†	1.25	-1.600 (-3.127, -0.073)	9.03
Admiraal 2013 (52)	1	0 (-1.500, 1.500)	9.14
Ramachandran 2013 (33)	1.7	-0.070 (-0.635, 0.495)	12.79
Bhopal 2014 (32)	3	-0.450 (-3.260, 2.360)	4.99
Islam 2014 (54)	0.5	1.000 (-2.843, 4.843)	3.21
Overall (95% CI) (PL)		**-1.601 (-2.496, -0.758)**	100
Excluding follow-up >2 years		*-1.844 (-2.969, -0.873)*	

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 65.71 (d.f. = 14) p < 0.001
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 73%
Estimate of between-study variance Tau-squared = 1.177

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

9.B.2 Diastolic blood pressure (mmHg) at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmHg	Weight, %
Eriksson 1991 (22)	6	1.944 (-1.437, 5.325)	3.48
Tuomilehto 2001 (7)	*2*	*-2.000 (-3.568, -0.432)*	*9.00*
Knowler 2002 (6)	*3*	*-1.940 (-2.772, -1.108)*	*13.10*
Oldroyd 2006 (23)	0.5	-4.800 (-9.571, -0.029)	1.96
Roumen 2008 (29)	*4.5*	*-2.900 (-5.716, -0.084)*	*4.58*
Kulzer 2009 (38)	1	-2.300 (-5.833, 1.233)	3.25
Knowler 2009 (9)	10	-1.800 (-2.477, -1.123)	13.93
Moore 2011 (39)	0.5	-3.750 (-6.850, -0.650)	3.97
Cezaretto 2012 (36)	0.75	-5.300 (-8.293, -2.307)	4.19
Janus 2012 (53)	1	-0.730 (-5.336, 3.876)	2.09
Ma 2013 (28)†	1.25	-1.600 (-3.127, -0.073)	9.21
Admiraal 2013 (52)	1	0 (-1.500, 1.500)	9.35
Ramachandran 2013 (33)	1.7	-0.070 (-0.635, 0.495)	14.48
Bhopal 2014 (32)	3	-0.450 (-3.260, 2.360)	4.59
Islam 2014 (54)	0.5	1.000 (-2.843, 4.843)	2.83
Overall (95% CI) (PL)		**-1.455 (-2.319, -0.705)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 9.B.1.

† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 43.68 (d.f. = 14) $p < 0.001$
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 61%
Estimate of between-study variance Tau-squared = 0.832

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

Supplemental Table 10. Meta-analyses of lipids, combined diet and physical activity promotion programs vs. usual care.

10.A.1. Total cholesterol at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Eriksson 1991 (22)	6	0.071 (-0.202, 0.343)	2.740 (-7.780, 13.260)	2.65
Tuomilehto 2001 (7)	1	-0.026 (-0.152, 0.100)	-1.000 (-5.880, 3.880)	12.30
Oldroyd 2006 (23)	1	0 (-0.317, 0.317)	0 (-12.222, 12.222)	1.96
Roumen 2008 (29)	1	-0.100 (-0.351, 0.151)	-3.861 (-13.536, 5.814)	3.13
Ackermann 2008 (42)	1	-0.655 (-1.045, -0.265)	-25.30 (-40.36, -10.24)	1.29
Kulzer 2009 (38)	1	-0.215 (-0.482, 0.052)	-8.300 (-18.616, 2.016)	2.75
Knowler 2009 (9)	10	-0.050 (-0.123, 0.023)	-1.931 (-4.741, 0.880)	37.08
Cezaretto 2012 (36)	0.75	-0.062 (-0.466, 0.341)	-2.400 (-17.97, 13.17)	1.21
Janus 2012 (53)	1	-0.150 (-0.522, 0.222)	-5.792 (-20.170, 8.587)	1.42
Ma 2013 (28)†	1.25	-0.174 (-0.347, 0)	-6.700 (-13.400, 0)	6.52
Admiraal 2013 (52)	1	0.040 (-0.150, 0.230)	1.544 (-5.791, 8.880)	5.44
Ramachandran 2013 (33)	1.7	0.010 (-0.080, 0.100)	0.386 (-3.089, 3.861)	24.26
Overall (95% CI) (PL)		**-0.047 (-0.118, -0.002)**	**-1.813 (-4.575, -0.092)**	100
Excluding follow-up >2 years ‡		*-0.070 (-0.142, 0.003)*	*-2.684 (-5.485, 0.118)*	

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.
‡ Maximum likelihood meta-analysis; profile likelihood method failed to converge.

Heterogeneity chi-squared = 16.64 (d.f. = 11) p = 0.119
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.A.2. Total cholesterol at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Eriksson 1991 (22)	6	0.071 (-0.202, 0.343)	2.740 (-7.780, 13.260)	4.92
Tuomilehto 2001 (7)	*3*	*-0.200 (-0.360, -0.040)*	*-7.722 (-13.897, -1.547)*	*11.23*
Oldroyd 2006 (23)	*2*	*0.100 (-0.272, 0.472)*	*3.861 (-10.502, 18.224)*	*2.82*
Roumen 2008 (29)	*4.5*	*-0.030 (-0.327, 0.267)*	*-1.158 (-12.617, 10.301)*	*4.24*
Ackermann 2008 (42)	1	-0.655 (-1.045, -0.265)	-25.30 (-40.362, -10.238)	2.59
Kulzer 2009 (38)	1	-0.215 (-0.482, 0.052)	-8.300 (-18.616, 2.016)	5.09
Knowler 2009 (9)	10	-0.050 (-0.123, 0.023)	-1.931 (-4.741, 0.880)	24.18
Cezaretto 2012 (36)	0.75	-0.062 (-0.466, 0.341)	-2.400 (-17.974, 13.174)	2.43
Janus 2012 (53)	1	-0.150 (-0.522, 0.222)	-5.792 (-20.170, 8.587)	2.82
Ma 2013 (28)†	1.25	-0.174 (-0.347, 0)	-6.700 (-13.400, 0)	10.03
Admiraal 2013 (52)	1	0.040 (-0.150, 0.230)	1.544 (-5.791, 8.880)	8.79
Ramachandran 2013 (33)	1.7	0.010 (-0.080, 0.100)	0.386 (-3.089, 3.861)	20.86
Overall (95% CI) (PL)		**-0.075 (-0.168, -0.007)**	**-2.894 (-6.492, -0.268)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 10.A.1.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 20.14 (d.f. = 11) p = 0.043
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 29%
Estimate of between-study variance Tau-squared = 0.003 (mmol/L), 4.776 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.B.1. Low density lipoprotein (LDL) cholesterol at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Oldroyd 2006 (23)	1	0.020 (-0.303, 0.343)	0.772 (-11.682, 13.226)	5.92
Roumen 2008 (29)	1	-0.120 (-0.342, 0.102)	-4.633 (-13.207, 3.940)	12.49
Moore 2011 (39)	0.5	-0.170 (-0.433, 0.093)	-6.564 (-16.702, 3.575)	8.93
Cezaretto 2012 (36)	0.75	0.060 (-0.342, 0.461)	2.300 (-13.196, 17.796)	3.82
Kanaya 2012 (37)	1	-0.056 (-0.218, 0.106)	-2.170 (-8.425, 4.085)	23.47
Janus 2012 (53)	1	-0.230 (-0.563, 0.103)	-8.880 (-21.745, 3.984)	5.55
Ma 2013 (28)†	1.25	-0.158 (-0.335, 0.019)	-6.100 (-12.929, 0.729)	19.69
Admiraal 2013 (52)	1	-0.010 (-0.185, 0.165)	-0.386 (-7.143, 6.371)	20.12
Overall (95% CI) (PL)		**-0.086 (-0.165, -0.007)**	**-3.312 (-6.363, -0.282)**	100

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 3.18 (d.f. = 7) p = 0.867
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.B.2. Low density lipoprotein (LDL) cholesterol at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Oldroyd 2006 (23)	*2*	*0.050 (-0.299, 0.399)*	*1.931 (-11.551, 15.412)*	*5.39*
Roumen 2008 (29)	*4.5*	*0.030 (-0.264, 0.324)*	*1.158 (-10.210, 12.526)*	*7.58*
Moore 2011 (39)	0.5	-0.170 (-0.433, 0.093)	-6.564 (-16.702, 3.575)	9.53
Cezaretto 2012 (36)	0.75	0.060 (-0.342, 0.461)	2.300 (-13.196, 17.796)	4.08
Kanaya 2012 (37)	1	-0.056 (-0.218, 0.106)	-2.170 (-8.425, 4.085)	25.04
Janus 2012 (53)	1	-0.230 (-0.563, 0.103)	-8.880 (-21.745, 3.984)	5.92
Ma 2013 (28)†	1.25	-0.158 (-0.335, 0.019)	-6.100 (-12.929, 0.729)	21.00
Admiraal 2013 (52)	1	-0.010 (-0.185, 0.165)	-0.386 (-7.143, 6.371)	21.46
Overall (95% CI) (PL)		**-0.072 (-0.153, 0.01)**	**-2.773 (-5.920, 0.394)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 10.B.1.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 4.17 (d.f. = 7) p = 0.760
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.C.1. High density lipoprotein (HDL) cholesterol at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Tuomilehto 2001 (7)	1	0.0260 (-0.003, 0.055)	1.000 (-0.135, 2.135)	21.07
Oldroyd 2006 (23)	0.5	-0.0200 (-0.116, 0.076)	-0.772 (-4.487, 2.942)	1.97
Roumen 2008 (29)	1	0.010 (-0.057, 0.077)	0.386 (-2.217, 2.990)	4.00
Ackermann 2008 (42)	1	0.085 (-0.019, 0.190)	3.300 (-0.730, 7.330)	1.67
Kulzer 2009 (38)	1	0.023 (-0.039, 0.085)	0.900 (-1.496, 3.296)	4.73
Moore 2011 (39)	0.5	0.070 (-0.041, 0.181)	2.703 (-1.571, 6.976)	1.49
Cezaretto 2012 (36)	0.75	-0.034 (-0.135, 0.067)	-1.300 (-5.202, 2.602)	1.78
Kanaya 2012 (37)	1	0.039 (-0.022, 0.099)	1.500 (-0.831, 3.831)	5.00
Janus 2012 (53)	1	0.120 (0.022, 0.218)	4.633 (0.849, 8.417)	1.90
Ma 2013 (28)†	1.25	0.039 (-0.009, 0.086)	1.500 (-0.340, 3.340)	8.02
Admiraal 2013 (52)	1	0.030 (-0.015, 0.075)	1.158 (-0.579, 2.896)	8.99
Ramachandran 2013 (33)	1.7	0.033 (0.012, 0.054)	1.274 (0.444, 2.104)	39.39
Overall (95% CI) (PL)		**0.031 (0.018, 0.045)**	**1.215 (0.694, 1.736)**	100

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 8.09 (d.f. = 11) p = 0.705
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.C.2. High density lipoprotein (HDL) cholesterol at longest follow-up time

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Tuomilehto 2001 (7)	*3*	*0.030 (-0.007, 0.067)*	*1.158 (-0.259, 2.576)*	*15.01*
Oldroyd 2006 (23)	0.5	-0.020 (-0.116, 0.076)	-0.772 (-4.487, 2.942)	2.19
Roumen 2008 (29)	*4.5*	*0.060 (-0.049, 0.169)*	*2.317 (-1.875, 6.508)*	*1.72*
Ackermann 2008 (42)	1	0.085 (-0.019, 0.190)	3.300 (-0.730, 7.330)	1.86
Kulzer 2009 (38)	1	0.023 (-0.039, 0.085)	0.900 (-1.496, 3.296)	5.26
Moore 2011 (39)	0.5	0.070 (-0.041, 0.181)	2.703 (-1.571, 6.976)	1.65
Cezaretto 2012 (36)	0.75	-0.034 (-0.135, 0.067)	-1.300 (-5.202, 2.602)	1.98
Kanaya 2012 (37)	1	0.039 (-0.022, 0.099)	1.500 (-0.831, 3.831)	5.55
Janus 2012 (53)	1	0.12 (0.022, 0.218)	4.633 (0.849, 8.417)	2.11
Ma 2013 (28)†	1.25	0.039 (-0.009, 0.086)	1.500 (-0.340, 3.340)	8.91
Admiraal 2013 (52)	1	0.030 (-0.015, 0.075)	1.158 (-0.579, 2.896)	9.99
Ramachandran 2013 (33)	1.7	0.033 (0.012, 0.054)	1.274 (0.444, 2.104)	43.78
Overall (95% CI) (PL)		**0.034 (0.020, 0.048)**	**1.289 (0.735, 1.847)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 10.C.1.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 7.71 (d.f. = 11) p = 0.739
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 0%
Estimate of between-study variance Tau-squared = 0

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.D.1. Triglycerides at follow-up time closest to 1 year

Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Eriksson 1991 (22)	6	-0.655 (-1.305, -0.004)	-57.95 (-115.51, -0.40)	0.60
Tuomilehto 2001 (7)	1	-0.192 (-0.302, -0.082)	-17.000 (-26.713, -7.287)	12.65
Oldroyd 2006 (23)	0.5	-0.210 (-0.557, 0.137)	-18.584 (-49.325, 12.156)	2.02
Roumen 2008 (29)	1	-0.020 (-0.769, 0.729)	-1.770 (-68.027, 64.487)	0.46
Kulzer 2009 (38)	1	-0.374 (-0.768, 0.02)	-33.100 (-67.952, 1.752)	1.59
Knowler 2009 (9)	10	-0.020 (-0.055, 0.015)	-1.770 (-4.899, 1.359)	26.58
Moore 2011 (39)	0.5	0 (-0.487, 0.487)	0 (-43.129, 43.129)	1.06
Cezaretto 2012 (36)	0.75	0.064 (-0.167, 0.296)	5.700 (-14.796, 26.196)	4.19
Kanaya 2012 (37)	1	-0.073 (-0.260, 0.115)	-6.440 (-23.019, 10.139)	5.97
Janus 2012 (53)	1	-0.100 (-0.316, 0.116)	-8.850 (-27.929, 10.230)	4.74
Ma 2013 (28)†	1.25	-0.140 (-0.312, 0.032)	-12.400 (-27.607, 2.807)	6.85
Admiraal 2013 (52)	1	0.040 (-0.085, 0.165)	3.540 (-7.522, 14.602)	10.78
Ramachandran 2013 (33)	1.7	-0.080 (-0.135, -0.025)	-7.080 (-11.947, -2.212)	22.51
Overall (95% CI) (PL)		**-0.074 (-0.144, -0.021)**	**-6.508 (-12.731, -1.819)**	100
Excluding follow-up >2 years		*-0.088 (-0.157, -0.022)*	*-7.778 (-13.906, -1.957)*	

* Years. Data from reported times closest to 1 year follow-up.
† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 21.38 (d.f. = 12) p = 0.045
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 38%
Estimate of between-study variance Tau-squared = 0.002 (mmol/L), 17.452 (mg/dL)

Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

10.D.2. Triglycerides at longest follow-up time

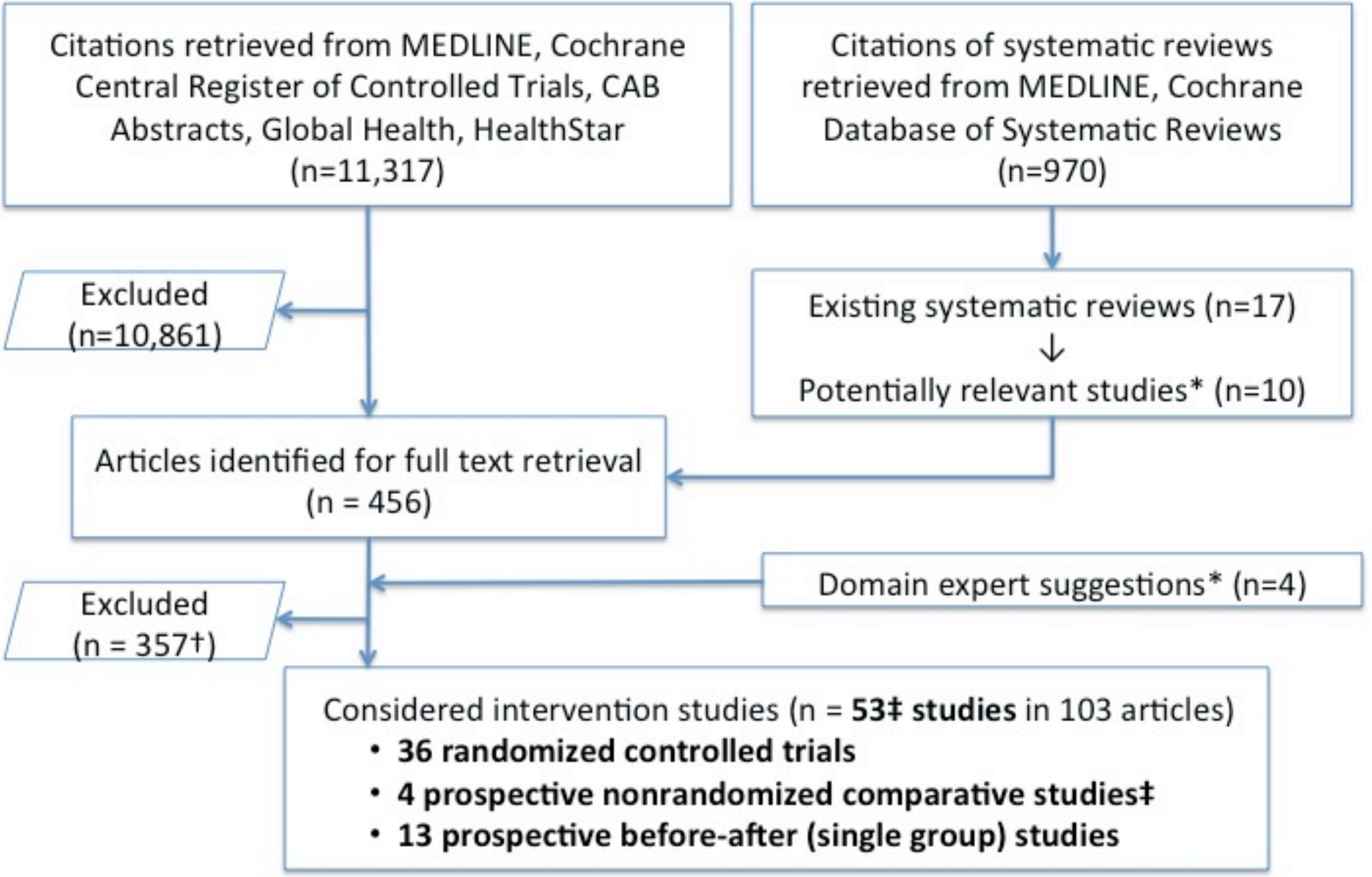
Study	Follow-up, years*	Net Difference (95% CI), mmol/L	Net Difference (95% CI), mg/dL	Weight, %
Eriksson 1991 (22)	6	-0.655 (-1.305, -0.004)	-57.953 (-115.510, -0.396)	0.32
Tuomilehto 2001 (7)	*3*	*-0.100 (-0.235, 0.035)*	*-8.850 (-20.755, 3.056)*	*6.70*
Oldroyd 2006 (23)	0.5	-0.210 (-0.557, 0.137)	-18.584 (-49.325, 12.156)	1.10
Roumen 2008 (29)	*4.5*	*-0.240 (-0.583, 0.103)*	*-21.239 (-51.603, 9.125)*	*1.12*
Kulzer 2009 (38)	1	-0.374 (-0.768, 0.02)	-33.100 (-67.952, 1.752)	0.86
Knowler 2009 (9)	10	-0.020 (-0.055, 0.015)	-1.770 (-4.899, 1.359)	41.69
Moore 2011 (39)	0.5	0 (-0.487, 0.487)	0 (-43.129, 43.129)	0.56
Cezaretto 2012 (36)	0.75	0.064 (-0.167, 0.296)	5.700 (-14.796, 26.196)	2.42
Kanaya 2012 (37)	1	-0.073 (-0.260, 0.115)	-6.440 (-23.019, 10.139)	3.63
Janus 2012 (53)	1	-0.100 (-0.316, 0.116)	-8.850 (-27.929, 10.230)	2.78
Ma 2013 (28)†	1.25	-0.140 (-0.312, 0.032)	-12.400 (-27.607, 2.807)	4.27
Admiraal 2013 (52)	1	0.040 (-0.085, 0.165)	3.540 (-7.522, 14.602)	7.65
Ramachandran 2013 (33)	1.7	-0.080 (-0.135, -0.025)	-7.080 (-11.947, -2.212)	26.90
Overall (95% CI) (PL)		**-0.054 (-0.115, -0.017)**	**-4.746 (-10.183, -1.466)**	100

* Years. Data from longest reported follow-up times. Italicized rows indicate time points longer than those in Table 10.D.1.

† To maintain independence across all included studies, the more intensive intervention arm was included and the less intensive intervention arm was omitted from meta-analysis.

Heterogeneity chi-squared = 16.46 (d.f. = 12) p = 0.171
I-squared (variation in effect size (net difference) attributable to heterogeneity) = 12%
Estimate of between-study variance Tau-squared = 0.001 (mmol/L), 4.034 (mg/dL)

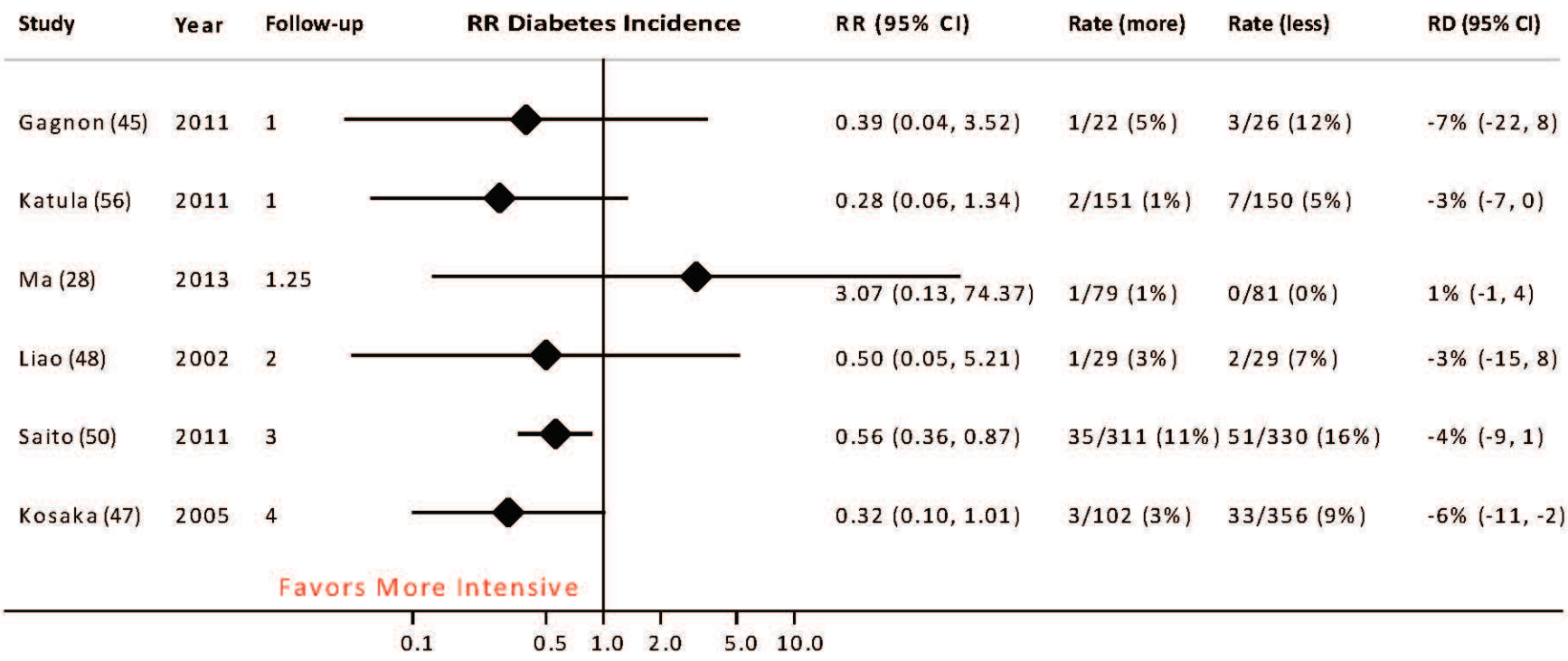
Abbreviations: CI = confidence interval, PL = profile likelihood meta-analysis.

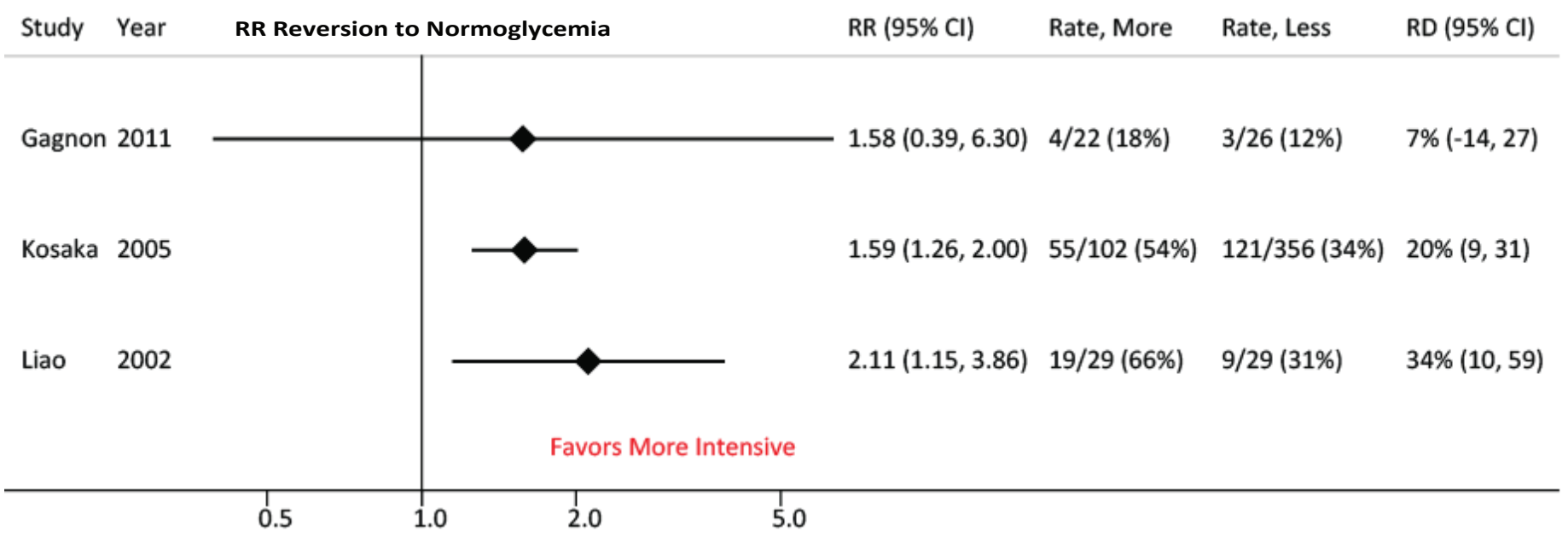


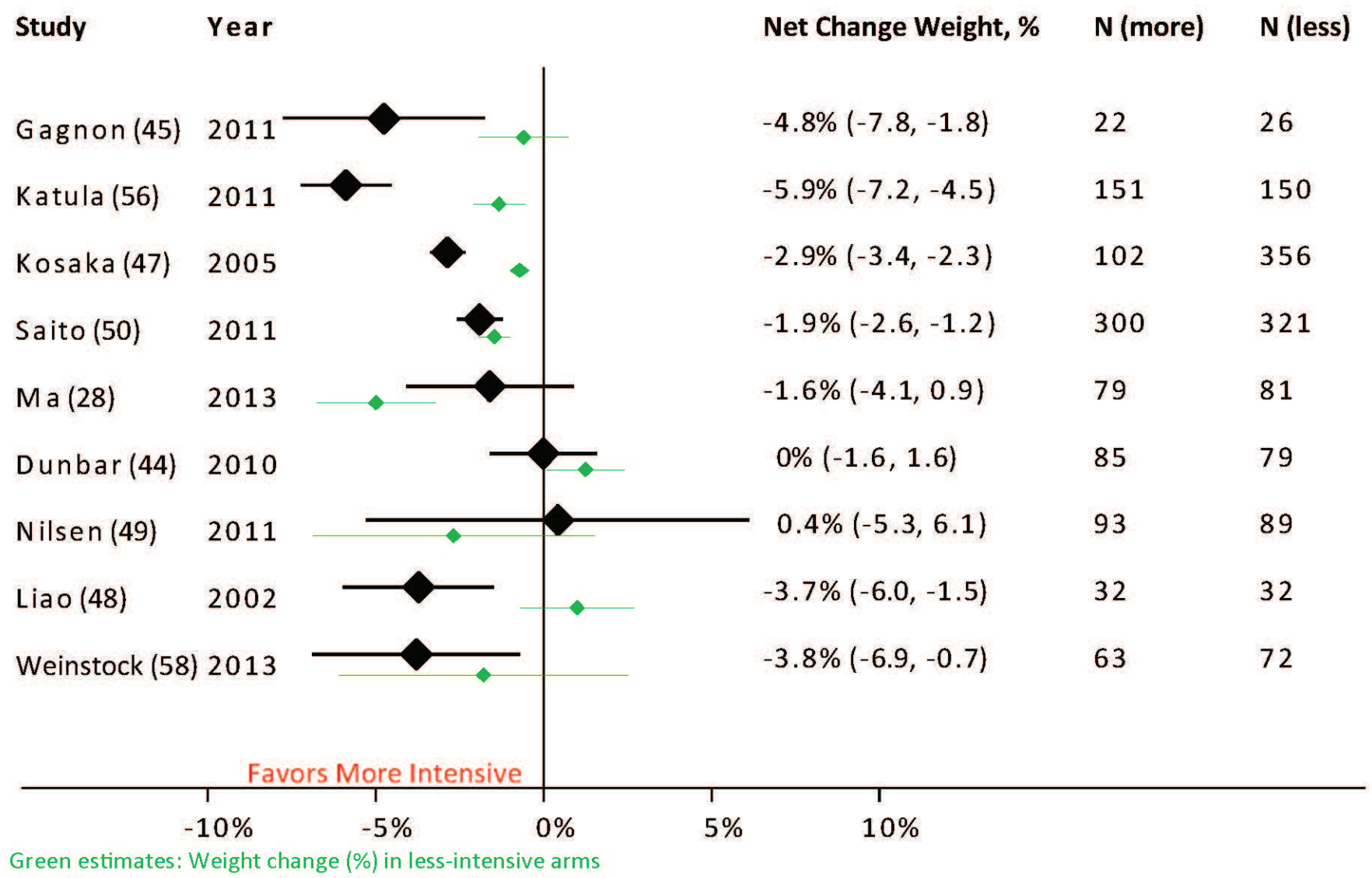
* Not already screened

† Not a population of interest (n=70), diet or physical activity alone (n=47), no outcome of interest reported (n=36), not intervention of interest (n=31), N<100—pre-post studies (n=25), protocol or baseline data only (n=21), not a primary study (n=18), no additional data compared with included article (n=18), cost-effectiveness analysis only (n=15), N<30/intervention (n=15), mixed population— >10% do not meet eligibility criteria (n=15), <3 month intervention or 1 session only (n=13), <6 month follow-up (n=13), no analyses of interest (n=10), abstract only (n=6), miscellaneous (n=4: retrospective study, retracted article, article not available).

‡ plus 1 not analyzed due to limited quality of execution.


Study
Year
Follow-up
RR Diabetes Incidence
RR (95% CI)
Rate (more)
Rate (less)
RD (95% CI)
Gagnon (45) 2011 1 0.39 (0.04, 3.52) 1/22 (5%) 3/26 (12%) -7% (-22, 8)
Katula (56) 2011 1 0.28 (0.06, 1.34) 2/151 (1%) 7/150 (5%) -3% (-7, 0)
Ma (28) 2013 1.25 3.07 (0.13, 74.37) 1/79 (1%) 0/81 (0%) 1% (-1, 4)
Liao (48) 2002 2 0.50 (0.05, 5.21) 1/29 (3%) 2/29 (7%) -3% (-15, 8)
Saito (50) 2011 3 0.56 (0.36, 0.87) 35/311 (11%) 51/330 (16%) -4% (-9, 1)
Kosaka (47) 2005 4 0.32 (0.10, 1.01) 3/102 (3%) 33/356 (9%) -6% (-11, -2)
Favors More Intensive
0.1
0.5
1.0
2.0
5.0
10.0


Study
Year
RR Reversion to Normoglycemia
RR (95% CI)
Rate, More
Rate, Less
RD (95% CI)
Gagnon 2011
1.58 (0.39, 6.30)
4/22 (18%)
3/26 (12%)
7% (-14, 27)
Kosaka 2005
1.59 (1.26, 2.00)
55/102 (54%)
121/356 (34%)
20% (9, 31)
Liao 2002
2.11 (1.15, 3.86)
19/29 (66%)
9/29 (31%)
34% (10, 59)
Favors More Intensive
0.5
1.0
2.0
5.0


Study
Year
Net Change Weight, %
N (more)
N (less)
Gagnon (45) 2011 -4.8% (-7.8, -1.8) 22 26
Katula (56) 2011 -5.9% (-7.2, -4.5) 151 150
Kosaka (47) 2005 -2.9% (-3.4, -2.3) 102 356
Saito (50) 2011 -1.9% (-2.6, -1.2) 300 321
Ma (28) 2013 -1.6% (-4.1, 0.9) 79 81
Dunbar (44) 2010 0% (-1.6, 1.6) 85 79
Nilsen (49) 2011 0.4% (-5.3, 6.1) 93 89
Liao (48) 2002 -3.7% (-6.0, -1.5) 32 32
Weinstock (58) 2013 -3.8% (-6.9, -0.7) 63 72
Favors More Intensive
-10%
-5%
0%
5%
10%
Green estimates: Weight change (%) in less-intensive arms