

Appendix 3 (as supplied by the authors): Characteristics of included studies

Study	Anderssen 1995 [1]; Companion paper: ODES Investigators [2]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Andrews 2001 [4] England
Objective	To investigate whether increased physical activity has effects on glycaemia, blood pressure, lipid profile, insulin resistance, and insulin secretion in addition to those yielded by intensified dietary intervention or usual care in individuals with newly diagnosed T2D
Methods	<p>Design: RCT</p> <p>Selection: searching records databases of 217 general practices in southwest England, and of community-based education programs, and by direct advertising</p> <p>Inclusion criteria: diagnosed with diabetes in past 5-8 months; >30 years at diagnosis</p> <p>Exclusion criteria: >80 years; HbA1c >10%; blood pressure >180/100 mmHg; LDL-C >4 mmol/L; BMI <25; weight >180 kg; use of weight-loss drugs; taking sulfonylurea at maximum dose; unstable angina; myocardial infarction in previous 3 months; inability to increase physical activity; pregnant or planning to become pregnant</p>
Participants	<p>Sample: 593</p> <p>Intervention 1 (diet) n=248; Intervention 2 (diet + exercise) n=246; Control n=99</p> <p>Age, Mean (SD) years: Intervention 1: 60.1 (10.2); Intervention 2: 60.0 (9.7); Control: 59.5 (11.1)</p> <p>Gender [Female n (%)]: Intervention 1 n=90 (36%); Intervention 2 n=81 (33%); Control n=37 (37%)</p> <p>Race/Ethnicity: 94-97% of participants (by group) were white</p> <p>Co-morbidities: Diabetes</p> <p>Loss to follow-up: Intervention 1 n=2; Intervention 2 n=6; Control n=6</p>
Intervention	<p>Description of intervention 1 (diet): intensive, goal-oriented/motivation-based, non-prescriptive diet with dietary advice and goal setting reinforcement provided by regular sessions with dietitians and study nurses</p> <p>Description of intervention 2 (diet + exercise): same diet conditions plus 5 days/week 30 minutes of brisk walking in addition to current physical activities, also given pedometers and written materials (motivating literature and exercise diaries)</p> <p>Description of control: standard dietary and exercise advice</p> <p>Duration of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>

Study/Location	Appel 2011 [5] US
Objective	To examine the effects of two behavioural weight-loss interventions in obese patients with at least one cardiovascular risk factor
Methods	<p>Design: RCT</p> <p>Selection: recruited from 8 primary care practices in Baltimore metropolitan area physician referral, brochures, and targeted mailing</p> <p>Inclusion criteria: obese adults belonging to one of the included practices; ≥ 21 years of age; ≥ 1 cardiovascular risk factors (hypertension, hyper-cholesterolemia, or diabetes); regular access to a computer; basic computer skills</p> <p>Exclusion: lost $\geq 5\%$ body weight recently; medication that causes/prevents weight loss</p>
Participants	<p>Sample: 415</p> <p>Intervention 1 (remote) n=139; Intervention 2 (in-person) n=138; Control n=138</p> <p>Age, Mean (SD) years: Overall: 54.0 (10.2); Intervention 1: 55.8 (9.7); Intervention 2: 53.3 (10.5); Control: 52.9 (10.1)</p> <p>Gender [Female n (%]): Intervention 1 n=88 (63.3%); Intervention 2 n=88 (63.85); Control n=88 (63.8%)</p> <p>Race/Ethnicity [White n (%]): Intervention 1: 83 (59.7%); Intervention 2: 78 (56.5%); Control: 72 (52.2%)</p> <p>SES [College graduate n (%]): Intervention 1: 81 (58.3%); Intervention 2: 90 (65.2%); Control: 75 (54.3%)</p> <p>Co-morbidities: high risk for CVD</p> <p>Loss to follow-up: n=23</p>
Intervention	<p>Description of intervention 1 (remote): provided patients with weight-loss support remotely via telephone, a study-specific Website, and e-mail</p> <p>Description of intervention 2 (in-person): provided in-person support during group and individual sessions, along with the 3 remote means of support</p> <p>Description of control: met with weight-loss coach at the time of randomization and, if desired, after final data-collection visit, at 24 months; received brochures and a list of recommended Web sites promoting weight loss</p> <p>Duration of intervention: 24 months</p> <p>Length of follow-up: immediate post</p>
Study	Bakris 2002 [6]
Comments	See United States Preventive Services Task Force Review [69] for details

Study/Location	Balducci 2010 [7] Italy
Objective	To investigate effect of exercise modalities on high sensitivity-C reactive protein and other inflammatory markers in patients with T2D and metabolic syndrome (MS)
Methods	Design: RCT Inclusion: T2D and MS; no known CVD; aged 40-75; diabetes duration >1 year; BMI 27-40; ability to walk without assistance; eligibility after cardiovascular evaluation
Participants	Sample: 82 Intervention 1 n=20; Intervention 2 n=20; Intervention 3 n=22; Control n=20 Age, Mean (SD) years: Intervention 1: 62.5 (7.1); Intervention 2: 64.3(8.1); Intervention 3: 60.6(9.3); Control: 61.1(7.1) Gender [Female n (%): Intervention 1 n=9 (45%); Intervention 2 n=8 (40%); Intervention 3 n=8 (36%); Control n=9 (45%) Co-morbidities: Diabetes Loss to follow-up: 6.1%
Intervention	Description of intervention 1: structured exercise counseling Description of intervention 2: prescribed and supervised aerobic activity only Description of intervention 3: aerobic and resistance exercise Description of control: remain sedentary Duration of intervention: 12 months Length of follow-up: immediate post
Study/Location	Bennett 2012 [8] US; Companion paper: Greaney [9]
Objective	To evaluate the effectiveness of a behavioural intervention that emphasized weight loss and hypertension medication adherence among primary care patients
Methods	Design: RCT Selection: urban community health centers serving racial/ethnic minority patient populations, using electronic medical record or automated scheduling system Inclusion: BMI of 30–50 (and weighing <400 pounds); being treated for hypertension; ≥21 years of age; a patient at one of the participating CHC; read and speak English or Spanish; provide informed consent; willing to change diet, physical activity and weight
Participants	Sample: 365 Intervention n=180; Control n=185 Age, Mean (SD) years: Intervention: 54.58 (10.77); Control: 54.67 (11.03) Gender [Female n (%): Intervention n=128 (71.1%); Control n=122 (65.9%)

	<p>Race/Ethnicity: Intervention: non-Hispanic Black 71.7%; Control: non-Hispanic Black 70.8%</p> <p>SES (High school or less): Intervention: 58.9%; Control: 66.5%</p> <p>Co-morbidities: Hypertension</p> <p>Loss to follow-up: Intervention 10.3%; Control 17.8%</p>
Intervention	<p>Description of intervention: health educators delivered monthly counseling (year 1) and bimonthly (year 2) group sessions; primary care provider delivered ≥ 1 brief standard messages about importance of the intervention and tailored behavioural skills training materials, walking kits with pedometers</p> <p>Description of control: standard of care offered by the CHC; received the Aim for a Healthy Weight self-help booklet at baseline and 12 months later; providers used usual prevention, weight management, and CVD management strategies</p> <p>Length of intervention: 104 weeks</p> <p>Length of follow-up: immediate post</p>
Study	Berne 2005 [10]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Broom 2002a [11]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Broom 2002b [12]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Burke 2005 [13]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Burtscher 2012 [14 Austria; Companion paper: Burtscher [15]
Objective	To study the effects of a supervised exercise program on serum gamma-glutamyl transferase, glycemic control and cardiovascular risk factors in pre-diabetic patients with isolated impaired fasting glucose and those with IFG + impaired glucose tolerance
Methods	<p>Design: RCT</p> <p>Selection: recruited by family physicians primarily through screening for high-risk groups, such as first-degree relatives of patients with T2D and overweight individuals (BMI >25) aged 40-65 years.</p> <p>Inclusion criteria: impaired fasting glucose (IFG - fasting plasma glucose concentration of 100–125 mg/dL) and/or impaired glucose tolerance (IGT - plasma glucose</p>

	<p>concentration of 140–199 mg/dL after 2h of a 75 g glucose load)</p> <p>Exclusion criteria: diagnosis of diabetes mellitus; any indication of alcohol abuse; the presence of chronic disease rendering 3-year survival unlikely, and cardiopulmonary or musculoskeletal diseases not compatible with the planned exercise program.</p>
Participants	<p>Sample: 60</p> <p>Intervention 1 (IFG) n=12; Intervention 2 (IFG+IGT) n=12; Control (IFG) n=18; Control (IFG+IGT) n=18</p> <p>Age, Mean (SD) years: Intervention 1: 57.8 (6.5); Intervention 2: 54.0 (8.0); Control 1: 57.8 (7.9); Control 2: 57.6 (5.8)</p> <p>Gender [Female n (%): Intervention n=16 (66.7%); Control n=18 (50%)</p> <p>Loss to follow-up: no loss</p>
Intervention	<p>Description of interventions: participants informed about their risk for developing T2D and associated health problems by family physicians; instructed about preventive effectiveness of changing lifestyle, especially losing weight and regular physical activity by health promotion and exercise physiology specialists; exercise group offered progressive, individually tailored aerobic exercise programs and circuit-type resistance-training sessions for 1 h twice a week</p> <p>Description of controls: participants informed about their risk for developing T2D and associated health problems by family physicians; instructed about preventive effectiveness of changing lifestyle, especially losing weight and regular physical activity by health promotion and exercise physiology specialists</p> <p>Length of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study	Christian 2008 [16]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Cohen 1991[17]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Davidson 1999 [18]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Dekkers 2011 [19] The Netherlands; Companion papers: van Wier [20,21]
Objective	To investigate lifestyle intervention effects on cardiovascular risk factors in healthy overweight employees

Methods	<p>Design: RCT</p> <p>Selection: recruited from 7 service-sector companies in the Netherlands</p> <p>Inclusion criteria: ≥ 18 years old; BMI ≥ 25; access to Internet and know how to use it; paid employment for at least 8 hours a week; able to read and write Dutch</p> <p>Exclusion criteria: pregnancy; disorders that make physical activity difficult</p>
Participants	<p>Sample: 1,386</p> <p>Intervention 1 n=462; Intervention 2 n=464; Control n=460</p> <p>Age, Mean (SD) years: Overall: 43 (8.6); Intervention 1: 43 (8.8); Intervention 2: 43 (8.4); Control: 43 (8.7)</p> <p>Gender [Female n (%): Intervention 1 n=141 (31%); Intervention 2 n=162 (35%); Control n=154 (33%)</p> <p>SES [highly educated (≥ 5 years secondary education)]: Intervention 1 n=271 (60.1%); Intervention 2 n=281 (62.2%); Control n=255 (58.8%)</p> <p>Co-morbidities: Diabetes, Hypertension</p> <p>Loss to follow-up: Intervention 1 n=199; Intervention 2 n=217; Control n=214</p>
Intervention	<p>Description of intervention 1 (phone): self-help materials on overweight, physical activity and healthy diet; access to a lifestyle intervention program consisting of 10 workbook based modules on nutrition, physical activity and behavior modification; phone contact with personal counselor</p> <p>Intervention 2 (internet): self-help materials on overweight, physical activity and healthy diet; access to a lifestyle intervention program consisting of 10 modules on nutrition, physical activity and behavior modification strategies provided through an interactive Web site composed of personalized Web pages; contact by e-mail with personal counselor</p> <p>Description of control: self-help materials on overweight, physical activity and healthy diet</p> <p>Duration of intervention: 6 months</p> <p>Length of follow-up: 18 months</p>
Comments	Patients also took medication for angina
Study	de Mello 2012 [22]; Companion papers: Eriksson [23], Lindstrom [24], Ruusunen [25], Tuomilehto [26], Uusitupa [27]
Comments	See United States Preventive Services Task Force Review [3] (Tuomilehto [26] main paper) for details
Study	Derosa 2003 [28]
Comments	See United States Preventive Services Task Force Review [3] for details

Study/Location	Derosa 2012 [29] Italy; Companion paper: Derosa [30]
Objective	To compare the effects of orlistat and placebo on body weight, glycaemic and lipid profile and insulin resistance in patients with T2D
Methods	<p>Design: RCT</p> <p>Selection: patients identified from review of case notes and/or computerized clinic registers, contacted by investigators in person or by telephone</p> <p>Inclusion criteria: Caucasian patients with T2D aged ≥ 18, obese (BMI) ≥ 30, uncontrolled T2D on therapy with different oral hypoglycaemic agents or insulin</p> <p>Exclusion criteria: history of ketoacidosis or unstable or rapidly progressive diabetic retinopathy, nephropathy or neuropathy; impaired hepatic function [defined as plasma aminotransferase and/or gamma-glutamyltransferase level higher than the upper limit of normal (ULN) for age and sex], impaired renal function (defined as serum creatinine level higher than the ULN for age and sex) or severe anaemia; serious CVD (e.g. New York Heart Association class I–IV congestive heart failure or a history of myocardial infarction or stroke) or cerebrovascular conditions in past 6 months; GI disorders or major abdominal surgery in past 6 months; women who were pregnant or breast-feeding or of child-bearing potential and not taking adequate contraceptive precautions</p>
Participants	<p>Sample: 254</p> <p>Intervention n=126; Control n=128</p> <p>Age, Mean (SD) years: Intervention: 53 (6); Control: 52 (5)</p> <p>Gender (Female): Intervention: n=64; Control: n=62</p> <p>Race/Ethnicity: Caucasian only</p> <p>Comorbidities: Diabetes</p> <p>Loss to follow-up: 7.9%</p>
Intervention	<p>Description of intervention: Orlistat 360 mg</p> <p>Description of control: placebo</p> <p>Duration of intervention: 52 weeks</p> <p>Length of follow-up: immediate post</p>
Study/Location	Donner 2010 [31] US
Objective	To explore the metabolic effects of D-tag given daily to people with T2D
Methods	<p>Design: One group pre/post</p> <p>Selection: T2D for at least 1 year in duration</p>
Participants	<p>Sample: 8</p> <p>Age, Mean (SD) years: Overall: 50.7 (10.9)</p> <p>Gender (Female): 50%</p>

	Co-Morbidities: Diabetes Loss to follow-up: see comments
Intervention	Description of intervention: after 2-month run-in period, given 15-g packages of D-tag to be taken 3/day with nonstandardized meals; D-tag dissolved in liquids, used in baking, or added to prepared foods; encouraged not to otherwise alter diet; remained physically inactive Description of control: NA Duration of intervention: 52 weeks Length of follow-up: immediate post
Comments	Four of the 12 initially screened subjects were excluded from analysis because they did not complete the study; analysis performed on the 8 subjects who completed study
Study	The Diabetes Prevention Program (DPP) 1999 [32]; Companion papers: Ackermann [33], Crandall [34], Diabetes Prevention Program Research Group [35], Florez [36], Goldberg [37], Haffner [38], Knowler [39], Krakoff [40], Orchard [41], Price [42], Ratner [43], Rubin [44], West [45]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Finer 2000 [46]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Fontbonne 1996 [47]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Foster-Schubert 2012 [48] US; Companion papers: Mason [49–51], Imayama [52,53], Campbell [54], Kong [55]
Objective	To determine the effects of a calorie-reduced, low-fat diet, a moderate-intensity, facility-based aerobic exercise program, or the combination of both interventions vs. a no-lifestyle-change control on change in body weight and composition
Methods	Design: RCT Selection: mass mailings, media publicity and community outreach Inclusion criteria: age 50-75; BMI \geq 25 (Asian-American \geq 23); <100 minutes/week of moderate or vigorous intensity physical activity; post-menopausal; not taking hormone replacement therapy for past 3 months; no history of breast cancer, heart disease, diabetes or other serious medical conditions; fasting glucose <126 mg/dL; not smoking; alcohol intake <2 drinks/day; able to attend sessions; normal exercise tolerance test
Participants	Sample: 439 Intervention 1 (calorie-reduced diet) n=118; Intervention 2 (aerobic exercise) n=117; Intervention 3 (aerobic exercise + calorie-reduced diet) n=17; Control n=87

	<p>Age, Mean (SD) years: Overall: 58.0 (5.0); Intervention 1: 58.1 (6.0); Intervention 2: 58.1 (5.0); Intervention 3: 58.0 (4.5); Control: 57.4 (4.4)</p> <p>Gender (Female): 100%</p> <p>Race/Ethnicity [non-Hispanic white n (%)]: Intervention 1: 101 (85.5%); Intervention 2: 98 (83.8); Intervention 3: 100 (85.5%); Control: 74 (85.1)</p> <p>SES [college graduate n (%)]: Intervention 1: 76 (64.4%); Intervention 2: 70 (59.9); Intervention 3: 82 (70.1); Control: 59 (67.8%)</p> <p>Loss to follow-up: 9%</p>
Intervention	<p>Description of intervention 1: diet only, calorie-reduced, low-fat.</p> <p>Description of intervention 2: exercise only (moderate-intensity, aerobic exercise)</p> <p>Description of intervention 3: exercise and diet combined</p> <p>Description of control: no lifestyle change.</p> <p>Length of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study	Haapala 2009 [56]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Hanefeld 2002 [57]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Hauptman 2000 [58]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	He 2012 [59] China
Objective	To explore whether metformin-based treatment could benefit obesity-related hypertension without diabetes
Methods	<p>Design: RCT</p> <p>Selection: recruited via flyer at a hospital in Chongqing, China</p> <p>Inclusion criteria: aged 30–70 years; elevated BP; waist circumference >90cm in men or 80cm in women</p> <p>Exclusion criteria: diabetes (known history or confirmed by oral glucose tolerance test at baseline); known allergy or hypersensitivity to trial drugs; heart failure, myocardial infarction or cerebro-vascular accident in past year; acute infections; tumor; severe arrhythmia, mental disease, drug or alcohol abuse; history of hepatitis or cirrhosis or severe kidney disease; pregnant or lactating; enrolled in other trials in past 3 months</p>

Participants	<p>Sample: 360</p> <p>Intervention n=180; Control n=180</p> <p>Age, Mean (SD) years: Intervention: 58 (7.0); Control: 57 (7.0)</p> <p>Gender [Female n (%)] : Intervention 118 (65.7%); Control 108 (60.0%)</p> <p>Co-morbidities: Hypertension</p> <p>Loss to follow-up: Intervention 16.7%; Control 13.9%</p>
Intervention	<p>Description of intervention: low-dose metformin (500 mg/day) and simultaneously one of the three antihypertensive drugs: candesartan 8 mg/day, telmisartan 80 mg/day, or amlodipine 5 mg/day; provided with general lifestyle guidelines</p> <p>Description of control: placebo and simultaneously one of the three antihypertensive drugs; provided with general lifestyle guidelines</p> <p>Length of intervention: 24 weeks</p> <p>Length of follow-up: immediate post</p>
Study	Hollander 1998 [60]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Janney 2010 [61] USA
Objective	To assess the effects of exercise and BMI on the pattern of injuries/illnesses attributed to exercise over time and to identify predictors of time to first injury/illness
Methods	<p>Design: RCT</p> <p>Selection: participants enrolled in one of two randomized clinical trials that emphasized exercise as part of a weight loss or weight gain prevention program</p> <p>Inclusion criteria: BMI 25-39.9 weight loss study; 25-29.9 weight gain prevention study</p> <p>Exclusion criteria: history of myocardial infarction; medications that alter heart rate or blood pressure during exercise (e.g. b-blockers) or affect metabolism or weight loss (e.g. thyroid medication); treatment for psychological conditions; pregnant, pregnant in past 6 months, planning to become pregnant; medical conditions that could affect metabolism or body weight (e.g. diabetes); reported weight loss >5% or participated in weight loss or physical activity study during the previous 12 months; reported exercising regularly for ≥ 20 minutes/day on ≥ 3 days/week over past 3 months</p>
Participants	<p>Sample: 397</p> <p>Intervention 1 n=64; Intervention 2 n=172; Intervention 3 n=84; Control n=77</p> <p>Age, Mean (SD) years: Intervention 1: 44.2 (8.4); Intervention 2: 44.0 (8.3); Intervention 3: 45.3 (8.3); Control: 44.4 (8.0)</p> <p>Gender [Female n (%)] : Intervention 1: 59 (92%); Intervention 2: 134 (78%); Intervention 3: 77 (92%); Control: 70 (91%)</p> <p>Race/Ethnicity [White n (%)] : Intervention 1: 50 (79%); Intervention 2: 117 (68%);</p>

	Intervention 3: 67 (80%); Control: 58 (75%) Loss to follow-up: NR
Intervention	<p>Description of intervention 1 and 2 (weight gain prevention intervention): increasing exercise and modifying eating behaviours; gradually progress to 150 or 300 minutes/week of moderate-intensity exercise</p> <p>Description of intervention 3 (weight loss intervention): increasing exercise and modifying eating behaviours; gradually progress to 200 min/week of moderate-intensity exercise and reduce energy intake to 1200-1500 kcal/day, reduce dietary fat intake to 20-30% of total energy intake</p> <p>Both the weight gain prevention and weight loss studies recommended brisk walking for exercise, 5 days/week; duration (150, 200 or 300 minutes/week) but not intensity of the recommended exercise differed among exercise groups</p> <p>Description of control: self-help manual related to exercise adoption and maintenance, printed materials related to healthy eating and exercise, and a monthly newsletter</p> <p>Duration of intervention: 18 months</p> <p>Length of follow-up: immediate post</p>
Comments	The two interventions are reported together with outcomes reported by duration of exercise (group 1: 150 min/week; group 2: 200 min/week; group 3: 300 min/week)
Study/Location	Janus 2012 [62] Australia
Objective	To report results from the preliminary phase of an evaluation of the Greater Green Triangle Diabetes Prevention Program.
Methods	<p>Design: RCT</p> <p>Selection: sources included primary healthcare practices; patients with impaired glucose tolerance or impaired fasting glucose identified and contacted, others screened opportunistically in waiting rooms; additional recruitment at community events</p> <p>Inclusion criteria: 50-75 years at high T2D risk (15 or above on AUSDRISK tool)</p> <p>Exclusion criteria: diabetes; cancer; severe mental illness; substance abuse; recent myocardial infarction; pregnancy; difficulty with English; belong to cultural group for whom AUSDRISK not calibrated, another household member involved in study</p>
Participants	<p>Sample: 92</p> <p>Intervention n=49; Control n=43</p> <p>Age, Mean (SD) years: Intervention: 64.2 (7.5); Control: 65.0 (6.0)</p> <p>Gender [Female n (%]): Intervention n=21 (55.3%); Control n=32 (76.2%)</p> <p>SES [reported as income level, n(%]): Intervention: low 20 (54.1%); medium 15 (40.5%); high 2 (5.4%); Control: low 29 (74.4%); medium 9 (23.1%); high 1 (2.6%)</p> <p>Loss to follow-up: Intervention 22.4%; Control 2.3%</p>
Intervention	Description of intervention: 6 structured group based lifestyle sessions

	<p>Description of control: usual care provided by general practitioner</p> <p>Length of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study	Kelley 2002 [63]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Kirby 2011 [64] Ireland
Objective	To investigate whether weight loss is associated with changes in serum concentrations of lutein and zeaxanthin and/or macular pigment optical density
Methods	<p>Design: RCT</p> <p>Inclusion criteria: BMI \geq 28; age \geq 18 years; no known family history of AMD; no ocular pathology</p> <p>Exclusion criteria: pregnancy; planning pregnancy; currently in a weight loss program; ocular pathology; positive family history of AMD (given the previously established comprised relationship between serum carotenoids and MPOD in this subgroup)</p>
Participants	<p>Sample: 104</p> <p>Intervention n=54; Control n=50</p> <p>Age, Mean (SD) years: Overall: 46 (11); Intervention: 47 (10); Control: 44 (11)</p> <p>Gender [Female n (%]): Intervention n=44 (81%); Control n=34 (68%)</p> <p>Loss to follow-up: Intervention n=20; Control n=16</p>
Intervention	<p>Description of intervention: Customized weight loss plan: dietary intervention, exercise intervention, motivational lectures, weekly weight checks</p> <p>Description of control: any steps necessary to achieve weight loss in a personal capacity; did not actively encourage or discourage weight loss in these subjects</p> <p>Duration of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Kopelman 2010 [65] UK
Objective	To determine the efficacy and safety of cetilistat and orlistat relative to placebo in obese patients with type 2 diabetes, on metformin
Methods	<p>Design: RCT</p> <p>Selection: NR</p> <p>Inclusion criteria: aged 18-65; T2D (diagnosis $>$3 months previously, controlled by stable dose of metformin for \geq3 months); BMI 28-45; HbA1c $>$6 and $<$10%</p>
Participants	<p>Sample: 250</p> <p>Intervention n=124; Control n=126</p>

	<p>Age, Mean (SD) years: Intervention: 54.3 (7.8); Control: 54.4 (7.6)</p> <p>Gender [Female n (%)]: Intervention n=55 (45.5%); Control n=72 (57.6%)</p> <p>Co-morbidities: Diabetes</p> <p>Loss to follow-up: Intervention n=23; Control n=22</p>
Intervention	<p>Description of intervention and control: treatment with orlistat (120 mg t.i.d.) or matching placebo, stratified on the basis of the dose of metformin (\leq or $>$1,500 mg/day), medication taken three times daily with meals</p> <p>Duration of intervention: 12 weeks</p> <p>Length of follow-up: immediate post</p>
Study	Krempf 2003 [66]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Kulzer 2009 [67]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Langford 1985 [68]; Companion paper: Wassertheil-Smoller [69]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Lim 2010 [70] Australia
Objective	To compare changes in weight and other cardiovascular risk factors in 3 isocaloric energy-restricted diets to no-intervention control after 1 year
Methods	<p>Design: RCT</p> <p>Selection: public advertisement</p> <p>Inclusion criteria: aged 20-65; \geq1CVD risk factor other than obesity; BMI 28-40</p> <p>Exclusion criteria: hypoglycemic medication that affects insulin sensitivity; history of heavy alcohol consumption; history of metabolic or coronary heart disease; diabetes; fluctuating exercise patterns and frequent dining out ($>$2/week and unable to cease)</p>
Participants	<p>Sample: 113</p> <p>Intervention 1 n=30; Intervention 2 n=30; Intervention 3 n=30; Control n=23</p> <p>Age, Mean (SD) years: Overall: 47 (10)</p> <p>Gender [Female n (%)]: 93 (82%)</p> <p>Co-morbidities: CVD</p> <p>Loss to follow-up: Intervention 1 n=13; Intervention 2 n=12; Intervention 3 n=15; Control n=4</p>
Intervention	Description of interventions: first 3 months diet groups (i.e. VLC, VLF, HUF) received intensive support to maximize dietary compliance; provided with prescriptive meal

	<p>plans and foods contributing to 65% energy of the meal plans; received individual dietary counseling every 2 weeks from qualified dietitian to monitor; advised to maintain allocated energy-restricted diet for an additional 12 months</p> <p>Description of control: attended clinic for measurements but received no intervention</p> <p>Duration of intervention: 15 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Lim 2011 [71] Australia
Objective	To determine the effect of metformin on body weight, body composition, metabolic risk factors and reproductive hormone levels in overweight or obese young women compared to placebo and comprehensive lifestyle intervention
Methods	<p>Design: RCT</p> <p>Selection: public advertisement</p> <p>Inclusion: women 17-37 years; BMI 25.1-44; access to internet; ability to attend clinic</p> <p>Exclusion: significant illnesses, including kidney disease, liver disease, malignancy, uncontrolled hypertension, self-reported diabetes or thyroid disease; pregnancy or lactation; current rapid weight loss (0.5 kg/week)</p>
Participants	<p>Sample: 297</p> <p>Intervention 1 n=98; Intervention 2 n=99; Control n=100</p> <p>Age, Mean (SD) years: Overall: 28 (0.3)</p> <p>Gender (Female): 100%</p> <p>SES (university degree): 40%</p> <p>Loss to follow-up: 35%</p>
Intervention	<p>Description of intervention 1: metformin (gradually increased to 1,500 mg/day)</p> <p>Description of intervention 2: comprehensive lifestyle program including hypocaloric high protein diet, structured exercise program and supports for behaviour modification</p> <p>Description of control: placebo</p> <p>Duration of intervention: 12 weeks</p> <p>Length of follow-up: immediate post</p>
Study	Lindgärde 2000 [72]; Companion paper: Lindgärde [73]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Ma 2013 [74] US
Objective	To evaluate two adapted Diabetes Prevention Program (DPP) lifestyle interventions

Methods	<p>Design: RCT</p> <p>Selection: recruited from single primary care clinic that is part of a large multispecialty group practice</p> <p>Inclusion criteria: ≥ 18 years; BMI ≥ 25; presence of pre-DM (defined by impaired fasting plasma glucose level of 100 to 125 mg/dL) or metabolic syndrome</p> <p>Exclusion criteria: serious medical or psychiatric conditions (e.g., stroke, psychotic disorder) or special life circumstances (e.g., pregnancy, planned move)</p>
Participants	<p>Sample: 241</p> <p>Intervention 1 n=79; Intervention 2 n=81; Control n=81</p> <p>Age, Mean (SD) years: Overall: 52.9 (10.6); Intervention 1: 54.6 (11.0); Intervention 2: 51.8 (9.9); Control: 52.5 (10.9)</p> <p>Gender [Female n (%]): Intervention 1: 38 (48.1%); Intervention 2: 37 (45.7%); Control: 37 (45.7%)</p> <p>Race/Ethnicity (White): Intervention 1: 77.2%; Intervention 2: 79.0%; Control: 77.8%</p> <p>SES [income $\geq 150,000$]: Intervention 1: 37.7%; Intervention 2: 52.6%; Control: 53.9%</p> <p>SES [\geqcollege]: Intervention 1: 93.5%; Intervention 2: 100%; Control: 97.9%</p> <p>Loss to follow-up: 19.5%</p>
Intervention	<p>Description of interventions (coach-led vs. self-directed intervention 3-month intensive intervention and 12-month maintenance; during intensive intervention received adapted, 12-session DPP lifestyle intervention; curriculum delivered in-person in 12-weekly classes to coach-led intervention participants or via a home-based DVD to self-directed intervention participants</p> <p>Description of control: usual care from primary care providers</p> <p>Length of intervention: 15 months</p> <p>Length of follow-up: immediate post</p>
Comments	<p>During the trial period, 15 of 81 participants in the usual care group reported joining a weight-loss program outside the study (12 used commercial programs, 2 used nutrition classes offered by the care delivery system, and 1 used a personal trainer), compared with 5 of 79 in the coach-led group (4 used personal trainers, and 1 used a commercial program) and 3 of 81 in the self-directed group (2 used personal trainers, and 1 used a commercial program).</p>
Study	Martin 2008 [75]; Companion paper: Davis-Martin [76]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Miles 2002 [77]

Comments	See United States Preventive Services Task Force Review [69] for details
Study/Location	Morey 2012 [78] US
Objective	To determine whether a home-based lifestyle physical activity counseling intervention is effective in reducing glycemic measures in older outpatients with prediabetes
Methods	Design: RCT Selection: prescreened age-eligible VA clinic patients were sent recruitment packages followed by phone contact Inclusion criteria: ≥ 60 years; impaired glucose tolerance (fasting glucose 100-125 mg/dl, but no diabetes diagnosis; HbA1c $< 7\%$; BMI 25-45
Participants	Sample: 302 Intervention n=180; Control n=122 Age, Mean (SD) years: Intervention: 67.1 (6.3); Control: 67.7 (6.2) Gender [Female n (%]): Intervention n=7 (3.9%); Control n=3 (2.5%) Race/Ethnicity [White n (%]): Intervention: 129 (71.7%); Control: 83 (68.0%) SES [Some college or trade school, n (%]): Intervention: 107 (59.4); Control: 65 (53.3%) Loss to follow-up: 13.2%
Intervention	Description of intervention: in-person baseline counseling consultation with a trained health counselor, handouts on exercising and regular telephone counseling bi-weekly for 6 weeks and monthly until end of 1 year with regular encouragement by automated phone system and quarterly individualized feedback report that summarized progress toward each long-term goal of endurance and strengthening exercise Description of control: standard of care as provided in usual VA primary, women's health, or geriatrics clinic Length of intervention: 12 months Length of follow-up: immediate post
Study	Muls 2001 [79]
Comments	See United States Preventive Services Task Force Review [69] for details
Study/Location	Nakade 2012 [80] Japan
Objective	To evaluate the effects of a behavioural approach which placed emphasis on tailored behavior counseling, diet, weight loss and weight maintenance
Methods	Design: RCT Selection: recruitment by the Saku Health Dock Center; letter to potential participants Inclusion criteria: aged 40-64, visited Saku Health Dock Center from 2000 on and were

	<p>in the top 5% ($\geq 28.4 \text{ kg/m}^2$) in terms of the result of the latest BMI screening</p> <p>Exclusion criteria: psychiatric conditions or physical conditions that would preclude full participation (e.g., significant hepatic or renal dysfunction, cardiovascular diseases); current treatment for obesity, current treatments known to affect eating or weight</p>
Participants	<p>Sample: 235</p> <p>Intervention n=119; Control n=116</p> <p>Age, Mean (SD) years: Intervention: males: 53.6 (6.7), females: 55.1 (6.4); Control: males: 53.7 (6.3), females: 54.2 (6.2)</p> <p>Gender [Female n (%]): Intervention n=57 (49.6%); Control n=56 (50.5%)</p> <p>Race/Ethnicity: Japanese</p> <p>Co-morbidities: hypertension, dyslipidemia</p> <p>Loss to follow-up: Intervention 3.4%; Control 4.3%</p>
Intervention	<p>Description of intervention: 1 year lifestyle intervention for weight loss based on a behavioural approach</p> <p>Description of control: no support</p> <p>Length of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Nanchahal 2012 [81] England
Objective	To evaluate effectiveness of a structured one-to-one behaviour change program on weight loss in obese and overweight individuals.
Methods	<p>Design: RCT</p> <p>Selection: 23 of 39 general practices wrote to sample of patients meeting criteria, GPs and nurses given referral pads with study information and contact details, posters, flyers, and text messages</p> <p>Inclusion criteria: age ≥ 18 years; BMI ≥ 25; attending participating practice; willing to attend visits with CAMWELL advisor over 12 months</p> <p>Exclusion criteria: pregnancy; lactation; diagnosis of renal failure; use of pacemaker; recent diagnosis of cancer; participation in another weight management study</p>
Participants	<p>Sample: 381</p> <p>Intervention n=190; Control n=191</p> <p>Age, Mean (SD) years: Overall: 48.8 (14.8); Intervention: 48.2 (14.1); Control: 49.4 (15.5)</p> <p>Gender [Female n (%]): Intervention n=137 (71.7%); Control n=138 (72.6%)</p> <p>Race/Ethnicity (White): Intervention: 74.3%; Control: 70.6%</p> <p>SES (university degree): Intervention: 44.7%; Control: 48.7%</p>

	<p>SES: participants spread evenly across area deprivation quartiles (approximately 25% in each group)</p> <p>Loss to follow-up: Intervention 46%; Control 40%</p>
Intervention	<p>Description of intervention: lifestyle intervention; evidence based components for behaviour change and weight loss: healthier eating, regular physical activity, goal setting, food/activity diaries, self-monitoring, positive reinforcement, coping, support, advisors, motivational interviewing, weight management software, 100-calorie portions, pedometers, handouts</p> <p>Description of control: routine clinical practice</p> <p>Length of intervention: 12 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Ockene 2012 [82] US
Objective	To test the effectiveness of a community-based, literacy sensitive, and culturally tailored lifestyle intervention on weight loss and diabetes risk reduction among low-income, Spanish-speaking Latinos at increased diabetes risk
Methods	<p>Design: RCT</p> <p>Selection: recruited Latino participants (60% of Dominican origin and 40% Puerto Rican) from Lawrence, Massachusetts, who were at high risk for type 2 diabetes</p> <p>Inclusion criteria: self-reported Latino/Hispanic; ≥ 25 years; $BMI > 24$; $\geq 30\%$ likelihood of being diagnosed with diabetes in next 7.5 years (risk calculated using validated predictive algorithm based on age, gender, ethnicity, fasting blood glucose, systolic blood pressure, high-density lipoprotein cholesterol, BMI, and family history of diabetes)</p> <p>Exclusion criteria: inability to walk 5 city blocks (one quarter mile); life-limiting medical conditions; taking a medication or having a medical condition that interfered with the assessment of diabetes risk</p>
Participants	<p>Sample: 312</p> <p>Intervention n=162; Control n=150</p> <p>Age, Mean (SD) years: Intervention: 51.37 (10.9); Control: 52.37 (11.6)</p> <p>Gender [Female n (%)]: Intervention 117 (72.2%); Control 115 (76.7%)</p> <p>Race/Ethnicity: 100% Latino</p> <p>SES (<high school education): Intervention: 97 (60.6%); Control: 85 (57.1%)</p> <p>Loss to follow-up: 6%</p>
Intervention	<p>Description of intervention: 3 individual and 13 group sessions</p> <p>Description of control: usual care</p> <p>Length of intervention: 12 months</p>

	Length of follow-up: immediate post
Study	Parikh 2010 [83]
Comments	See United States Preventive Services Task Force Review [69] for details
Study/Location	Patrick 2011 [84] US
Objective	To assess the effect of a 1-year internet-based weight loss intervention for men
Methods	Design: RCT Selection: recruited from community through printed and radio advertisements, a TV news story, and flyers Inclusion/Exclusion criteria: NR
Participants	Sample: 441 Intervention n=224; Control n=217 Age, Mean (SD) years: Overall: 43.9 (8.0); Intervention: 44.9 (7.8); Control: 42.8 (8.0) Gender: 100% male Race/Ethnicity (White non-Hispanic): Intervention: 72.8%; Control: 69.1% SES [some post-secondary education]: Intervention: 90%; Control: 94% Loss to follow-up: Intervention n=70; Control n=62
Intervention	Description of intervention: initial computerized assessment to tailor recommendations for behavioural targets, weekly Web-based learning activities, individualized feedback Description of control: wait-list Duration of intervention: 6 months Length of follow-up: 6 months
Study/Location	Penn 2009 [85] UK
Objective	To test the hypothesis that T2D can be prevented by lifestyle intervention and to explore secondary outcomes in relation to diabetes incidence
Methods	Design: RCT Selection: referral by primary care physician Inclusion criteria: >40 years, BMI >25, established IGT defined as a mean 2-hour plasma glucose value ≥ 7.8 mmol/l and <11.1 mmol/l from 2 consecutive standard OGTTs (glucose load 75 g) conducted 12 weeks apart Exclusion criteria: previous diagnosis of diabetes, chronic illness that would make moderate physical activity impossible, a special diet for medical reasons
Participants	Sample: 102

	<p>Intervention n=51; Control n=51</p> <p>Age, Mean years: Intervention: 56.8; Control: 57.4</p> <p>Gender [Female n (%)] : Intervention 30 (58.8%); Control 31 (60.8%)</p> <p>Loss to follow-up: 58.8% in each arm at year 5</p>
Intervention	<p>Description of intervention: regular individual advice from dietician and physiotherapist trained in motivational interviewing; invited to group sessions, notably 'cook and eat' events; received a quarterly newsletter</p> <p>Description of control: standard health promotion advice including widely available contemporary written leaflets on healthy eating and physical activity</p> <p>Length of intervention: 60 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Ross 2012 [86] Canada; Companion paper: Ross [87]
Objective	To assess the effectiveness of a 2-year behaviourally based physical activity and diet program implemented entirely within clinical practices to reduce obesity
Methods	<p>Design: RCT</p> <p>Selection: 12 physicians supplied patient lists to the project coordinator, who created an information letter for each potential participant; physicians reviewed letters addressed removed those known to be ineligible or unable to participate for other reasons</p> <p>Inclusion criteria: 25-74 years; sedentary (planned activity for purpose of health ≤ 1 day/week); waist circumference ≥ 102 or 88 cm for men and women, respectively; ± 2 kg for 6 months before start study; BMI 25-39.9; informed consent</p> <p>Exclusion criteria: significant CVD including history of myocardial infarction, stroke, coronary bypass surgery or angioplasty in past 6 months, peripheral artery disease, unstable angina or ischaemia; insulin-dependent diabetes; pregnancy; physical impairment; plans to move from area; participating in another research study; clinically judged unsuitable for participation or adherence</p>
Participants	<p>Sample: 490</p> <p>Intervention n=249; Control n=241</p> <p>Age, Mean (SD) years: Intervention: 51.3 (11.0); Control: 52.4 (11.8)</p> <p>Gender [Female n (%)] : Intervention: 175 (70%); Control: 169 (70%)</p> <p>Loss to follow-up: Intervention 14.5%; Control 23.7%</p>
Intervention	<p>Description of intervention: individually tailored counselling based on transtheoretical model and social cognitive theory; Phase 1: health educator works one-on-one with participants (20 weeks, 15 sessions); Phase 2 (when lose 5% in waist circumference): encouraged by health educator to continue program (45-60 minutes of activity/day and health eating patterns); Phase 3: contact with health educator continues, duration of</p>

	<p>sessions based on waist circumference values and adoption of physical activity, those achieving targets meet health educator bimonthly for 30-minute session, those who have not achieved goals see health educator monthly for 60-minute sessions</p> <p>Description of control: advice from physicians regarding lifestyle as a strategy for obesity reduction, continue to meet with physician according to usual schedule; physicians asked not to change routine counseling approach</p> <p>Duration of intervention: 24 months</p> <p>Length of follow-up: immediate post</p>
Study	Rossner 2000 [88]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Seifarth 2013 [89] Germany
Objective	To examine the effectiveness of metformin as a weight reducing drug in obese and overweight patients with regard to their degree of insulin resistance
Methods	<p>Design: CCT</p> <p>Selection: patients screened at endocrinology practice</p> <p>Inclusion criteria: BMI \geq 27</p> <p>Exclusion criteria: overt diabetes, impaired glucose tolerance or already taking anti-diabetic drugs (including metformin); on steroid or antipsychotic medication; depression; drug addiction; pregnant and nursing women</p>
Participants	<p>Sample: 199</p> <p>Intervention n=154; Control n=45</p> <p>Age, Mean (SD) years: Intervention: 37.8 (12.9); Control: 40.3 (11.4)</p> <p>Gender (Female): Intervention n=138; Control n=41</p> <p>Loss to follow-up: no loss</p>
Intervention	<p>Description of interventions: metformin, dosage slowly uptitrated starting with 500 mg per day during the first week, then weekly increased by 500 mg daily to final dose; patients with BMI <30 received 1,500 mg final dose per day, patients with a BMI \geq30 but <35 received 2,000 mg and patients with a BMI \geq35 received 2,500 mg</p> <p>Description of control: untreated patients</p> <p>Length of intervention: 6 months</p> <p>Length of follow-up: immediate post</p>
Study	Sjostrom 1998 [90]
Comments	See United States Preventive Services Task Force Review [3] for details

Study/Location	Smith 2011 [91] US and Sweden
Objective	To determine if a 24 week weight loss program with orlistat 60 mg in overweight subjects would produce a greater change in visceral adipose tissue compared to placebo
Methods	Design: RCT Inclusion criteria: 18–60 years; normal eating habits; BMI 25–34.9; waist circumference for females >88 cm (35 inches) or for males >102 cm (40 inches) Exclusion criteria: pregnancy; recent weight loss; prescription drugs that could interfere with weight or intestinal transit time; taking cyclosporine, warfarin, or amiodarone HCL; history of GI diseases, diabetes, uncontrolled hypertension, or heart disease
Participants	Sample: 131 Intervention n=65; Control n=66 Age, Mean (SD) years: Overall: 43.4 (10.40); Intervention: 42.9 (9.03); Control: 43.8 (11.68) Gender [Female n (%]): Intervention: 51 (82.3%); Control: 51 (83.6%) Race/Ethnicity [White n (%]): Intervention: 43 (69.4%); Control: 51 (83.6%) Loss to follow-up: Intervention 16.9%; Control 19.7%
Intervention	Description of intervention: met with registered dietitian for nutrition counseling and instructed to consume a hypocaloric, low-fat diet containing 50% carbohydrate, 30% fat and 20% protein; encouraged to exercise (e.g., a 30-45 min walk, five/week); received educational material; one capsule with each main meal three times a day and a multivitamin daily at least 2 h before or after taking the study medication. Description of control: Same as intervention group but with placebo. Duration of intervention: 24 weeks Length of follow-up: immediate post
Study	Stevens 1993 [92]; Companion papers: Whelton [93], Hypertension Prevention Collaborative Research Group [94], Satterfield [95]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Stevens 2001 [96]; Companion papers: Hypertension Prevention Collaborative Research Group [97], Hollis [98]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Swinburn 2005 [99]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	ter Bogt 2011 [100] The Netherlands; Companion papers: ter Bogt [101–103], Driehuis [104]
Objective	To examine the 1-year effects of lifestyle counselling by nurse practitioner on physical activity and diet, compared with usual care from general practitioner

Methods	<p>Design: RCT</p> <p>Selection: 12 general practice locations (varying from one to seven general practitioners and one to three nurse practitioners in the northern part of the Netherlands)</p> <p>Inclusion criteria: BMI 25-40; either hypertension or dyslipidaemia, or both</p> <p>Exclusion criteria: diabetes; hypothyroidism; pregnancy; liver or kidney disease; current treatment for malignancy; severely shortened life expectancy; mental illness; addiction to alcohol or drugs</p>
Participants	<p>Sample: 457</p> <p>Intervention n=225; Control n=232</p> <p>Age Mean (SD) years: Intervention: 55.2 (7.7); Control: 57.1 (7.7)</p> <p>Gender [Female n (%]): Intervention n=87 (51.5%); Control n=94 (54.7%)</p> <p>Co-morbidities: hypertension; dyslipidemia</p> <p>Loss to follow-up: Intervention n=54; Control n=36</p>
Intervention	<p>Description of intervention: in first year, the lifestyle intervention of the Nurse Practitioner consisted of 4 individual visits (at 1, 2, 3 and 8 months after baseline) and one feedback session by telephone (5 months after baseline)</p> <p>Description of control: offered one visit with GP to discuss results from screening and thereafter received usual GP care</p> <p>Duration of intervention: 36 months</p> <p>Length of follow-up: immediate post</p>
Study/Location	Thomas 2011 [105] UK
Objective	To determine whether 60 mg orlistat is effective as a weight loss option in a free-living community population with minimal professional input.
Methods	<p>Design: Pre/Post</p> <p>Selection: poster advertising in local area and Clinical Imaging Centre volunteer panel</p> <p>Inclusion criteria: Aged 18-60 years; BMI 25-34.9; WC >88 cm (female), >102 (male)</p> <p>Exclusion criteria: recent history of weight loss or taking prescription drugs that affect body weight or metabolism</p>
Participants	<p>Sample: 27</p> <p>Age, Mean (SD) years: Overall: 39.8 (8.7)</p> <p>Gender [Female n (%]): 7 (26%)</p> <p>Race/Ethnicity (Caucasian): n=17</p> <p>Loss to follow-up: 3</p>
Intervention	Description of intervention: 4-week supply of alli (60 mg orlistat), educational materials included in the US starter kit and access to the US alli web site

	<p>Description of Control: NA</p> <p>Duration of intervention: 12 weeks</p> <p>Length of follow-up: immediate post</p>
Study	Torgerson 2004 [106]; Companion paper: Torgerson [107]
Comments	See United States Preventive Services Task Force Review [3] for details
Study/Location	Tsai 2010 [108] US
Objective	To evaluate the effect of using medical assistants (MAs) as weight loss counselors
Methods	<p>Design: RCT</p> <p>Selection: recruited through flyers, direct referrals from PCPs, and word-of-mouth</p> <p>Inclusion criteria: BMI 27-50; willingness to keep food and activity records</p> <p>Exclusion criteria: medical conditions that contraindicated weight loss; use of medications associated with weight gain or loss of $\geq 5\%$ (e.g., systemic steroids, weight loss medications); substance abuse; or serious psychiatric illness including bipolar disorder, schizophrenia, or severe depression (score of ≥ 29 on the Beck Depression Inventory)</p>
Participants	<p>Sample: 50</p> <p>Intervention n=24; Control group n=26</p> <p>Age, Mean (SD) years: Intervention: 51.3 (2.3); Control: 47.6 (2.5)</p> <p>Gender (Female): 88%</p> <p>Race/Ethnicity (African American): Intervention: 79%; Control: 81%</p> <p>SES [education years (SD)]: Intervention: 14.4 (0.5); Control: 13.3 (0.4)</p> <p>Loss to follow-up: 6.0%</p>
Intervention	<p>Description of intervention: same schedule of Primary Care Practitioner visits, same materials as control participants; series of 8 brief (15–20 min) individual visits with a MA at weeks 0, 2, 4, 8, 12, 16, 20, and 24. Visits conducted by MAs using handouts adapted from the Diabetes Prevention Program</p> <p>Description of control: quarterly meetings with PCPs during study; provided 1–2 page handouts developed by the Weight-Control Information Network of the National Institutes of Health, a calorie counter, a pedometer, and a sample meal plan; weight management component of visit lasted about 2–3 min; PCPs instructed to encourage patients to lose weight, using materials provided, but did not give specific behavioural strategies for weight management</p> <p>Duration of intervention: 52 weeks</p> <p>Length of follow-up: immediate post</p>

Study	Van Gaal 1998 [109]
Comments	See United States Preventive Services Task Force Review [69] for details
Study/Location	Vissers 2010 [110] Belgium
Objective	To determine the effect of whole body vibration combined with caloric restriction on weight
Methods	Design: RCT Selection: recruited in outpatient clinics and through media advertising Exclusion criteria: diabetes; pregnancy; treatment with tricyclic antidepressants; joint replacement surgery; use of weight loss drugs; BMI >40, weight loss >5% in past 6 weeks; unable to swallow or unable/unwilling to participate in physical activity
Participants	Sample: 58 Intervention1 (Diet) n=2; Intervention 2 (Fitness) n=20; Intervention 3 (Vibration) n=18; Control n=21 Age, Mean (SD) years: Intervention 1: 45.5 (13.1); Intervention 2: 44.7 (13.0); Intervention 3: 43.3 (9.6); Control: 44.8 (11.4) Gender (Female): 74.7% Loss to follow-up: Intervention 1 n=8; Intervention 2 n=1; Intervention 3 n=5; Control n=4
Intervention	Description of intervention 1: diet only Description of intervention 2: diet and aerobic exercise Description of intervention 3: diet and non-aerobic exercise Description of control: NR Duration of intervention: 6 months Length of follow-up: 6 months
Study/Location	Wadden 2011 [111] US
Objective	To compare weight loss during a 2-year period in response to three lifestyle interventions, all delivered by PCPs in collaboration with auxiliary health professionals (lifestyle coaches) in their practices
Methods	Design: RCT Selection: multiple methods of recruitment, including PCP referral and self-referral in response to in-clinic advertisements at six primary care practices selected from a total of 27 on the basis of providing care to 2,000 or more adults and having at least two physicians and two auxiliary health providers on staff Inclusion: age \geq 21 years; BMI 30-50; at least two of five components of the metabolic

	<p>syndrome to increase likelihood of having cardiovascular risk factors</p> <p>Exclusion: recent CVD; other medical conditions contraindicating weight loss; blood pressure \geq 160/100 mmHg, medications that substantially affect body weight, substance abuse, severe psychiatric illness that could affect adherence; bariatric surgery; loss of \geq5% of body weight in the previous 6 months; pregnancy or lactation</p>
Participants	<p>Sample: 390</p> <p>Intervention 1 (brief lifestyle counseling) n=131; Intervention 2 (enhanced lifestyle counseling) n=129*; Control n=130</p> <p>Age, Mean (SD) years: Intervention: 52.0 (12.2); Control: 51.7 (12.1)</p> <p>Gender [Female n (%)]: Intervention: 110 (84.0%); Control: 98 (75.4%)</p> <p>Race/Ethnicity [White n (%)]: Intervention: 75 (57.3%); Control: 81 (62.3%)</p> <p>SES (post-secondary education): Intervention n=99 (76%); Control n=95 (73%)</p> <p>Loss to follow-up: Intervention n=19; Control n=20</p>
Intervention	<p>Description of intervention: quarterly visits with primary care provider, brief lifestyle counseling including 10 to 15 minutes each month with auxiliary health care provider (medical assistant), referred to as a lifestyle coach, who delivered treatment by following abbreviated lessons from the Diabetes Prevention Program</p> <p>Description of control: usual care (quarterly visits with primary care provider)</p> <p>Duration of Intervention: 24 months</p> <p>Length of follow-up: immediate post</p>
Comments	<p>*There was a second intervention group that was enhanced brief counseling. The enhanced component involved participants choosing to take sibutramine, orlistat or meal replacements. Outcomes were not reported by what enhanced option participants chose. Also, there was no placebo group for comparison. As a result, data was not extracted for this group.</p>
Study	Wood 1988 [112]; Companion paper: Frey-Hewitt [113]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Wood 1991 [114]; Companion paper: Kiernan [115]
Comments	See United States Preventive Services Task Force Review [3] for details
Study	Woollard 2003 [116]
Comments	See United States Preventive Services Task Force Review [3] for details

References

1. Anderssen S, Holme I, Urdal P, Hjermann I. Diet and exercise intervention have favourable effects on blood pressure in mild hypertensives: the Oslo Diet and Exercise Study (ODES). *Blood Press* 1995;4(6):343-9.
2. The Oslo Diet and Exercise Study (ODES): design and objectives. *Control Clin Trials* 1993 Jun;14(3):229-43.
3. LeBlanc ES, O'Connor E, Whitlock EP, Patnode CD, Kapka T. Screening for and management of obesity and overweight in adults. Rockville (MD): Agency for Healthcare Research and Quality (US); 2011. Report no.: 11-05159-EF-1.
4. Andrews RC, Cooper AR, Montgomery AA, Norcross AJ, Peters TJ, Sharp DJ, et al. Diet or diet plus physical activity versus usual care in patients with newly diagnosed type 2 diabetes: the Early ACTID randomised controlled trial. *Lancet* 2011;378(9786):129-39.
5. Appel LJ, Clark JM, Yeh HC, Wang NY, Coughlin JW, Daumit G, et al. Comparative effectiveness of weight-loss interventions in clinical practice. *N Engl J Med* 2011;365(21):1959-68.
6. Bakris G, Calhoun D, Egan B, Hellmann C, Dolker M, Kingma I, et al. Orlistat improves blood pressure control in obese subjects with treated but inadequately controlled hypertension. *J Hypertens* 2002;20(11):2257-67.
7. Balducci S, Zanuso S, Nicolucci A, Fernando F, Cavallo S, Cardelli P, et al. Anti-inflammatory effect of exercise training in subjects with type 2 diabetes and the metabolic syndrome is dependent on exercise modalities and independent of weight loss. *Nutr Metab Cardiovasc Dis* 2010;20(8):608-17.
8. Bennett GG, Warner ET, Glasgow RE, Askew S, Goldman J, Ritzwoller DP, et al. Obesity treatment for socioeconomically disadvantaged patients in primary care practice. *Arch Intern Med* 2012;172(7):565-74.
9. Greaney ML, Quintiliani LM, Warner ET, King DK, Emmons KM, Colditz GA, et al. Weight management among patients at community health centers: the "Bit Fit Be Well" study. *Obes Weight Manag* 2009;5(5):222-8.
10. Berne C; Orlistat Swedish Type 2 Diabetes Study Group. A randomized study of orlistat in combination with a weight management programme in obese patients with Type 2 diabetes treated with metformin. *Diabetes Med* 2005;22(5):612-8.
11. Broom I, Wilding J, Stott P, Myers N; UK Multimorbidity Study Group. Randomised trial of the effect of orlistat on body weight and cardiovascular disease risk profile in obese patients: UK Multimorbidity Study. *Int J Clin Pract* 2002;56(7):494-9.

12. Broom I, Hughes E, Dodson P, Reckless J; ORILSTAT UK Study Group. The role of orlistat in the treatment of obese patients with mild to moderate hypercholesterolaemia: consequences for coronary risk. *Brit J Cardio* 2002;9(8):460-8.
13. Burke V, Beilin LJ, Cutt HE, Mansour J, Wilson A, Mori TA. Effects of a lifestyle programme on ambulatory blood pressure and drug dosage in treated hypertensive patients: a randomized controlled trial. *J Hypertens* 2005;23(6):1241-9.
14. Burtscher M, Gatterer H, Dünwald T, Pesta D, Faulhaber M, Netzer N, et al. Effects of supervised exercise on gamma-glutamyl transferase levels in patients with isolated impaired fasting glucose and those with impaired fasting glucose plus impaired glucose tolerance. *Exp Clin Endocrinol Diabetes* 2012;120(8):445-50.
15. Khare MM, Huber R, Carpenter RA, Balmer PW, Bates NJ, Nolen KN, et al. A lifestyle approach to reducing cardiovascular risk factors in underserved women: design and methods of the Illinois WISEWOMAN Program. *J Womens Health (Larchmt)* 2009;18(3):409-19.
16. Christian JG, Bessesen DH, Byers TE, Christian KK, Goldstein MG, Bock BC. Clinic-based support to help overweight patients with type 2 diabetes increase physical activity and lose weight. *Arch Intern Med* 2008;168(2):141-6.
17. Cohen MD, D'Amico FJ, Merenstein JH. Weight reduction in obese hypertensive patients. *Fam Med* 1991;23(1):25-8.
18. Davidson MH, Hauptman J, DiGirolamo M, Foreyt JP, Halsted CH, Heber D, et al. Weight control and risk factor reduction in obese subjects treated for 2 years with orlistat: a randomized controlled trial. *JAMA* 1999;281(3):235-42.
19. Dekkers JC, van Wier MF, Ariëns GA, Hendriksen IJ, Pronk NP, Smid T, et al. Comparative effectiveness of lifestyle interventions on cardiovascular risk factors among a Dutch overweight working population: a randomized controlled trial. *BMC Public Health* 2011;11(49).
20. van Wier MF, Dekkers JC, Hendriksen IJ, Heymans MW, Ariëns GA, Pronk NP, et al. Effectiveness of phone and e-mail lifestyle counseling for long term weight control among overweight employees. *J Occup Environ Med* 2011;53(6):680-6.
21. van Wier MF, Dekkers JC, Bosmans JE, Heymans MW, Hendriksen IJ, Pronk NP, et al. Economic evaluation of a weight control program with e-mail and telephone counseling among overweight employees: a randomized controlled trial. *Int J Behav Nutr Phys Act* 2012;9:112.
22. de Mello VD, Lindström J, Eriksson J, Ilanne-Parikka P, Keinänen-Kiukaanniemi S, Sundvall J, et al. Insulin secretion and its determinants in the progression of impaired

glucose tolerance to type 2 diabetes in impaired glucose-tolerant individuals: the Finnish Diabetes Prevention Study. *Diabetes Care* 2012;35(2):211-7.

23. Eriksson J, Lindström J, Valle T, Aunola S, Hämäläinen H, Ilanne-Parikka P, et al. Prevention of Type II diabetes in subjects with impaired glucose tolerance: the Diabetes Prevention Study (DPS) in Finland. Study design and 1-year interim report on the feasibility of the lifestyle intervention programme. *Diabetologia* 1999;42(7):793-801.
24. Lindström J, Louheranta A, Mannelin M, Rastas M, Salminen V, Eriksson J, et al. The Finnish Diabetes Prevention Study (DPS): lifestyle intervention and 3-year results on diet and physical activity. *Diabetes Care* 2003 Dec;26(12):3230-6.
25. Ruusunen A, Voutilainen S, Karhunen L, Lehto SM, Tolmunen T, Keinänen-Kiukaanniemi S, et al. How does lifestyle intervention affect depressive symptoms? Results from the Finnish Diabetes Prevention Study. *Diabet Med* 2012;29(7):e126-32.
26. Tuomilehto J, Lindström J, Eriksson JG, Valle TT, Hämäläinen H, Ilanne-Parikka P, et al. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* 2001;344(18):1343-50.
27. Uusitupa M, Peltonen M, Lindström J, Aunola S, Ilanne-Parikka P, Keinänen-Kiukaanniemi S, et al. Ten-year mortality and cardiovascular morbidity in the Finnish Diabetes Prevention Study--secondary analysis of the randomized trial. *PLoS One* 2009;4(5):e5656.
28. Derosa G, Mugellini A, Ciccarelli L, Fogari R. Randomized, double-blind, placebo-controlled comparison of the action of orlistat, fluvastatin, or both on anthropometric measurements, blood pressure, and lipid profile in obese patients with hypercholesterolemia prescribed a standardized diet. *Clin Ther* 2003;25(4):1107-22.
29. Derosa G, Cicero AF, D'Angelo A, Fogari E, Maffioli P. Effects of 1-year orlistat treatment compared to placebo on insulin resistance parameters in patients with type 2 diabetes. *J Clin Pharm Ther* 2012;37(2):187-95.
30. Derosa G, Maffioli P, Salvadeo SA, Ferrari I, Gravina A, Mereu R, et al. Comparison of orlistat treatment and placebo in obese type 2 diabetic patients. *Expert Opin Pharmacother* 2010;11(12):1971-82.
31. Donner TW, Magder LS, Zarbalian K. Dietary supplementation with D-tagatose in subjects with type 2 diabetes leads to weight loss and raises high-density lipoprotein cholesterol. *Nutr Res* 2010;30(12):801-6.
32. The Diabetes Prevention Program. Design and methods for a clinical trial in the prevention of type 2 diabetes.[Erratum in *Diabetes Care* 1999;22(8):1389]. *Diabetes Care* 1999;22(4):623-34.

33. Ackermann RT, Edelstein SL, Venkat Narayan KM, Zhang P, Engelgau MM, Herman WH, et al. Changes in health state utilities with changes in body mass in the Diabetes Prevention Program. *Obesity* 2009;17(12):2176-81.
34. Diabetes Prevention Program Research Group, Crandall J, Schade D, Ma Y, Fujimoto WY, Barrett-Connor E, et al. The influence of age on the effects of lifestyle modification and metformin in prevention of diabetes. *J Gerontol A Biol Sci Med Sci* 2006 Oct;61(10):1075-81.
35. Diabetes Prevention Program Research Group. Long-term safety, tolerability, and weight loss associated with metformin in the Diabetes Prevention Program Outcomes Study. *Diabetes care* 2012;35(4):731-7.
36. Florez H, Pan Q, Ackermann RT, Marrero DG, Barrett-Connor E, Delahanty L, et al. Impact of lifestyle intervention and metformin on health-related quality of life: the diabetes prevention program randomized trial. *J Gen Intern Med* 2012;27(12):1594-601.
37. Goldberg RB, Mather K. Targeting the consequences of the metabolic syndrome in the Diabetes Prevention Program. *Arterioscler Thromb Vasc Biol* 2012;32(9):2077-90.
38. Haffner S, Temprosa M, Crandall J, Fowler S, Goldberg R, Horton E, et al. Intensive lifestyle intervention or metformin on inflammation and coagulation in participants with impaired glucose tolerance. *Diabetes* 2005 May;54(5):1566-72.
39. Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002 Feb 7;346(6):393-403.
40. Krakoff J, Clark JM, Crandall JP, Wilson C, Molitch ME, Brancati FL, et al. Effects of metformin and weight loss on serum alanine aminotransferase activity in the diabetes prevention program. *Obesity* 2010 Sep;18(9):1762-7.
41. Orchard TJ, Temprosa M, Goldberg R, Haffner S, Ratner R, Marcovina S, et al. The effect of metformin and intensive lifestyle intervention on the metabolic syndrome: the Diabetes Prevention Program randomized trial. *Ann Intern Med* 2005 Apr 19;142(8):611-9.
42. Price DW, Ma Y, Rubin RR, Perreault L, Bray GA, Marrero D, et al. Depression as a predictor of weight regain among successful weight losers in the diabetes prevention program. *Diabetes care* 2013;36(2):216-21.
43. Ratner R, Goldberg R, Haffner S, Marcovina S, Orchard T, Fowler S, et al. Impact of intensive lifestyle and metformin therapy on cardiovascular disease risk factors in the diabetes prevention program. *Diabetes care* 2005 Apr;28(4):888-94.
44. Rubin RR, Knowler WC, Ma Y, Marrero DG, Edelstein SL, Walker EA, et al. Depression symptoms and antidepressant medicine use in Diabetes Prevention Program participants. *Diabetes care* 2005 Apr;28(4):830-7.

45. West DS, Elaine Prewitt T, Bursac Z, Felix HC. Weight loss of black, white, and Hispanic men and women in the Diabetes Prevention Program. *Obesity (Silver Spring)* 2008 Jun;16(6):1413-20.
46. Finer N, James WP, Kopelman PG, Lean ME, Williams G. One-year treatment of obesity: a randomized, double-blind, placebo-controlled, multicentre study of orlistat, a gastrointestinal lipase inhibitor. *Int J Obes Relat Metab Disord* 2000 Mar;24(3):306-13.
47. Fontbonne A, Charles MA, Juhan-Vague I, Bard JM, André P, Isnard F, et al. The effect of metformin on the metabolic abnormalities associated with upper-body fat distribution. BIGPRO Study Group. *Diabetes care* 1996 Sep;19(9):920-6.
48. Foster-Schubert KE, Alfano CM, Duggan CR, Xiao L, Campbell KL, Kong A, et al. Effect of diet and exercise, alone or combined, on weight and body composition in overweight-to-obese postmenopausal women. *Obesity (Silver Spring)* 2012;20(8):1628-38.
49. Mason C, Foster-Schubert KE, Imayama I, Kong A, Xiao L, Bain C, et al. Dietary weight loss and exercise effects on insulin resistance in postmenopausal women. *Am J Prev Med* 2011 Oct;41(4):366-75.
50. Mason C, Xiao L, Imayama I, Duggan CR, Bain C, Foster-Schubert KE, et al. Effects of weight loss on serum vitamin D in postmenopausal women. *Am J Clin Nutr* 2011 Jul;94(1):95-103.
51. Mason C, Foster-Schubert KE, Imayama I, Xiao L, Kong A, Campbell KL, et al. History of weight cycling does not impede future weight loss or metabolic improvements in postmenopausal women. *Metabolism* 2013;62(1):127-36.
52. Imayama I, Alfano CM, Kong A, Foster-Schubert KE, Bain CE, Xiao L, et al. Dietary weight loss and exercise interventions effects on quality of life in overweight/obese postmenopausal women: a randomized controlled trial. *Int J Behav Nutr Phys Act* 2011;8:118.
53. Imayama I, Ulrich CM, Alfano CM, Wang C, Xiao L, Wener MH, et al. Effects of a caloric restriction weight loss diet and exercise on inflammatory biomarkers in overweight/obese postmenopausal women: a randomized controlled trial. *Cancer Res* 2012;72(9):2314-26.
54. Campbell KL, Foster-Schubert KE, Alfano CM, Wang CC, Wang CY, Duggan CR, et al. Reduced-calorie dietary weight loss, exercise, and sex hormones in postmenopausal women: randomized controlled trial. *J Clin Oncol* 2012;30(19):2314-26.
55. Kong A, Beresford SA, Alfano CM, Foster-Schubert KE, Neuhouser ML, Johnson DB, et al. Self-monitoring and eating-related behaviors are associated with 12-month weight loss in postmenopausal overweight-to-obese women. *J Acad Nutr Diet* 2012;112(9):1428-35.
56. Haapala I, Barengo NC, Biggs S, Surakka L, Manninen P. Weight loss by mobile phone: a 1-year effectiveness study. *Public Health Nutr* 2009 Dec;12(12):2382-91.

57. Hanefeld M, Sachse G. The effects of orlistat on body weight and glycaemic control in overweight patients with type 2 diabetes: a randomized, placebo-controlled trial. *Diabetes Obes Metab* 2002 Nov;4(6):415-23.
58. Hauptman J, Lucas C, Boldrin MN, Collins H, Segal KR. Orlistat in the long-term treatment of obesity in primary care settings. *Arch Fam Med* 2000 Feb;9(2):160-7.
59. He H, Zhao Z, Chen J, Ni Y, Zhong J, Yan Z, et al. Metformin-based treatment for obesity-related hypertension: a randomized, double-blind, placebo-controlled trial. *J Hypertens* 2012;30(7):1430-9.
60. Hollander PA, Elbein SC, Hirsch IB, Kelley D, McGill J, Taylor T, et al. Role of orlistat in the treatment of obese patients with type 2 diabetes. A 1-year randomized double-blind study. *Diabetes care* 1998 Aug;21(8):1288-94.
61. Janney CA, Jakicic JM. The influence of exercise and BMI on injuries and illnesses in overweight and obese individuals: a randomized control trial. *Int J Behav Nutr Phys Act* 2010;7:1.
62. Janus ED, Best JD, Davis-Lameloise N, Philpot B, Hernan A, Bennett CM, et al. Scaling-up from an implementation trial to state-wide coverage: results from the preliminary Melbourne Diabetes Prevention Study. *Trials* 2012;13:152.
63. Kelley DE, Bray GA, Pi-Sunyer FX, Klein S, Hill J, Miles J, et al. Clinical efficacy of orlistat therapy in overweight and obese patients with insulin-treated type 2 diabetes: a 1-year randomized controlled trial. *Diabetes care* 2002 Jun;25(6):1033-41.
64. Kirby ML, Beatty S, Stack J, Harrison M, Greene I, McBrinn S, et al. Changes in macular pigment optical density and serum concentrations of lutein and zeaxanthin in response to weight loss. *Br J Nutr* 2011 Apr;105(7):1036-46.
65. Kopelman P, Groot GH, Rissanen A, Rossner S, Toubro S, Palmer R, et al. Weight loss, HbA1c reduction, and tolerability of cetilistat in a randomized, placebo-controlled phase 2 trial in obese diabetics: comparison with orlistat (Xenical). *Obesity* 2010 Jan;18(1):108-15.
66. Krempf M, Louvet JP, Allanic H, Miloradovich T, Joubert JM, Attali JR. Weight reduction and long-term maintenance after 18 months treatment with orlistat for obesity. *Int J Obes Relat Metab Disord* 2003 May;27(5):591-7.
67. Kulzer B, Hermanns N, Gorges D, Schwarz P, Haak T. Prevention of diabetes self-management program (PREDIAS): effects on weight, metabolic risk factors, and behavioral outcomes. *Diabetes care* 2009 Jul;32(7):1143-6.
68. Langford HG, Blaufox MD, Oberman A, Hawkins CM, Curb JD, Cutter GR, et al. Dietary therapy slows the return of hypertension after stopping prolonged medication. *JAMA* 1985 Feb 1;253(5):657-64.

69. Wassertheil-Smoller S, Langford HG, Blaufox MD, Oberman A, Hawkins M, Levine B, et al. Effective dietary intervention in hypertensives: sodium restriction and weight reduction. *J Am Diet Assoc* 1985 Apr;85(4):423-30.
70. Lim SS, Noakes M, Keogh JB, Clifton PM. Long-term effects of a low carbohydrate, low fat or high unsaturated fat diet compared to a no-intervention control. *Nutr Metab Cardiovasc Dis* 2010;20(8):599-607.
71. Lim SS, Norman RJ, Clifton PM, Noakes M. The effect of comprehensive lifestyle intervention or metformin on obesity in young women. *Nutr Metab Cardiovasc Dis* 2011 Apr;21(4):261-8.
72. Lindgärde F. The effect of orlistat on body weight and coronary heart disease risk profile in obese patients: the Swedish Multimorbidity Study. *J Intern Med* 2000 Sep;248(3):245-54.
73. Lindgärde F. Orlistat with diet was effective and safe for weight loss and coronary risk reduction in obesity. *Therapeutics* 2000 Sep;54(6).
74. Ma J, Yank V, Xiao L, Lavori PW, Wilson SR, Rosas LG, et al. Translating the Diabetes Prevention Program lifestyle intervention for weight loss into primary care: a randomized trial. *JAMA Intern Med* 2013;173(2):113-21.
75. Martin PD, Dutton GR, Rhode PC, Horswell RL, Ryan DH, Brantley PJ. Weight loss maintenance following a primary care intervention for low-income minority women. *Obesity (Silver Spring)* 2008 Nov;16(11):2462-7.
76. Davis-Martin P, Rhode PC, Dutton GR, Redmann SM, Ryan DH, Brantley PJ. A primary care weight management intervention for low-income African-American women. *Obesity (Silver Spring)* 2006 Aug;14(8):1412-20.
77. Miles JM, Leiter L, Hollander P, Wadden T, Anderson JW, Doyle M, et al. Effect of orlistat in overweight and obese patients with type 2 diabetes treated with metformin. *Diabetes care* 2002 Jul;25(7):1123-8.
78. Morey MC, Pieper CF, Edelman DE, Yancy WS, Green JB, Lum H, et al. Enhanced fitness: A randomized controlled trial of the effects of home-based physical activity counseling on glycemic control in older adults with prediabetes mellitus. *J Am Geriatr Soc* 2012;60(9):1655-62.
79. Muls E, Kolanowski J, Scheen A, Van Gaal L., ObelHyx Study Group. The effects of orlistat on weight and on serum lipids in obese patients with hypercholesterolemia: a randomized, double-blind, placebo-controlled, multicentre study. *Int J Obes Relat Metab Disord* 2001 Nov;25(11):1713-21.
80. Nakade M, Aiba N, Suda N, Morita A, Miyachi M, Sasaki S, et al. Behavioral change during weight loss program and one-year follow-up: Saku Control Obesity Program (SCOP) in Japan. *Asia Pac J Clin Nutr* 2012;21(1):22-34.

81. Nanchahal K, Power T, Holdsworth E, Hession M, Sorhaindo A, Griffiths U, et al. A pragmatic randomised controlled trial in primary care of the Camden Weight Loss (CAMWEL) programme. *BMJ Open* 2012;2(3):e000793.
82. Ockene IS, Tellez TL, Rosal MC, Reed GW, Mordes J, Merriam PA, et al. Outcomes of a Latino community-based intervention for the prevention of diabetes: the Lawrence Latino Diabetes Prevention Project. *Am J Public Health* 2012;102(2):336-42.
83. Parikh P, Simon EP, Fei K, Looker H, Goytia C, Horowitz CR. Results of a pilot diabetes prevention intervention in East Harlem, New York City: Project HEED. *Am J Public Health* 2010 Apr 1;100(Suppl 1):S232-9.
84. Patrick K, Calfas KJ, Norman GJ, Rosenberg D, Zabinski MF, Sallis JF, et al. Outcomes of a 12-month web-based intervention for overweight and obese men. *Ann Behav Med* 2011 Dec;42(3):391-401.
85. Penn L, White M, Oldroyd J, Walker M, Alberti KG, Mathers JC. Prevention of type 2 diabetes in adults with impaired glucose tolerance: the European Diabetes Prevention RCT in Newcastle upon Tyne, UK. *BMC Public Health* 2009;9:342.
86. Ross R, Lam M, Blair SN, Church TS, Godwin M, Hotz SB, et al. Trial of prevention and reduction of obesity through active living in clinical settings: a randomized controlled trial. *Arch Intern Med* 2012;172(5):414-24.
87. Hoerni B. [Evidence based medicine][French]. *Rev Med Suisse* 2008 Jul 16;4(165):1688.
88. Rössner S, Sjöström L, Noack R, Meinders AE, Nosedá G. Weight loss, weight maintenance, and improved cardiovascular risk factors after 2 years treatment with orlistat for obesity. European Orlistat Obesity Study Group. *Obes Res* 2000 Jan;8(1):49-61.
89. Seifarth C, Schehler B, Schneider HJ. Effectiveness of metformin on weight loss in non-diabetic individuals with obesity. *Exp Clin Endocrinol Diabetes* 2013;121(1):27-31.
90. Sjöström L, Rissanen A, Andersen T, Boldrin M, Golay A, Koppeschaar HP, et al. Randomised placebo-controlled trial of orlistat for weight loss and prevention of weight regain in obese patients. European Multicentre Orlistat Study Group. *Lancet* 1998 Jul 18;352(9123):167-72.
91. Smith SR, Stenlof KS, Greenway FL, McHutchison J, Schwartz SM, Dev B, et al. Orlistat 60mg reduces visceral adipose tissue: a 24-week randomized, placebo-controlled, multicenter trial. *Obesity* 2011;19(9):1796-803.
92. Stevens VJ, Corrigan SA, Obarzanek E, Bernauer E, Cook NR, Hebert P, et al. Weight loss intervention in phase 1 of the Trials of Hypertension Prevention. The TOHP Collaborative Research Group. *Arch Intern Med* 1993 Apr 12;153(7):849-58.
93. Welton PK, Hebert PR, Cutler J, Applegate WB, Eberlein KA, Klag MJ, et al; Trials of Hypertension Prevention Collaborative Research Group. Baseline characteristics of

participants in phase I of the Trials of Hypertension Prevention. *Ann Epidemiol* 1992;2:295-310.

94. Trials for the Hypertension Collaborative Research Group. The effects of nonpharmacologic interventions on blood pressure of persons with high normal levels. Results of the Trials of Hypertension Prevention, Phase I.[Erratum in *JAMA* 1992 May 6;267(17):2330]. *JAMA* 1992 Mar 4;267(9):1213-20.
95. Satterfield S, Cutler JA, Langford HG, Applegate WB, Borhani NO, Brittain E, et al. Trials of hypertension prevention. Phase I design. *Ann Epidemiol* 1991;1(5):455-71.
96. Stevens VJ, Obarzanek E, Cook NR, Lee IM, Appel LJ, Smith WD, et al. Long-term weight loss and changes in blood pressure: results of the Trials of Hypertension Prevention, phase II. *Ann Intern Med* 2001 Jan 2;134(1):1-11.
97. Effects of weight loss and sodium reduction intervention on blood pressure and hypertension incidence in overweight people with high-normal blood pressure. The Trials of Hypertension Prevention, phase II. The Trials of Hypertension Prevention Collaborative Research Group. *Arch Intern Med* 1997 Mar 24;157(6):657-67.
98. Hollis JF, Satterfield S, Smith F, Fouad M, Allender PS, Borhani N, et al. Recruitment for phase II of the Trials of Hypertension Prevention. Effective strategies and predictors of randomization. Trials of Hypertension Prevention (TOHP) Collaborative Research Group. *Ann Epidemiol* 1995 Mar;5(2):140-8.
99. Swinburn BA, Carey D, Hills AP, Hooper M, Marks S, Proietto J, et al. Effect of orlistat on cardiovascular disease risk in obese adults. *Diabetes Obes Metab* 2005 May;7(3):254-62.
100. ter Bogt NC, Milder IE, Bemelmans WJ, Beltman FW, Broer J, Smit AJ, et al. Changes in lifestyle habits after counselling by nurse practitioners: 1-year results of the Groningen Overweight and Lifestyle study. *Public Health Nutr* 2011 Jun;14(6):995-1000.
101. ter Bogt NC, Bemelmans WJ, Beltman FW, Broer J, Smit AJ, van der Meer K. Preventing weight gain by lifestyle intervention in a general practice setting: three-year results of a randomized controlled trial. *Arch Intern Med* 2011 Feb 28;171(4):306-13.
102. ter Bogt NC, Bemelmans WJ, Beltman FW, Broer J, Smit AJ, van der Meer K. Preventing weight gain: one-year results of a randomized lifestyle intervention. *Am J Prev Med* 2009 Oct;37(4):270-7.
103. ter Bogt NC, Bemelmans WJ, Beltman FW, Broer J, Smit AJ, van der Meer K. Preventing weight gain: one-year results of a randomized lifestyle intervention. *Am J Prev Med* 2009 Oct;37(4):270-7.
104. Driehuis F, Barte JC, ter Bogt NC, Beltman FW, Smit AJ, van der Meer K, et al. Maintenance of lifestyle changes: 3-year results of the Groningen Overweight and Lifestyle study. *Patient Educ Couns* 2012;88(2):249-55.

105. Thomas EL, Makwana A, Newbould R, Rao AW, Gambarota G, Frost G, et al. Pragmatic study of orlistat 60 mg on abdominal obesity. *Eur J Clin Nutr* 2011;65(11):1256-62.
106. Torgerson JS, Hauptman J, Boldrin MN, Sjöström L. XENical in the prevention of diabetes in obese subjects (XENDOS) study: a randomized study of orlistat as an adjunct to lifestyle changes for the prevention of type 2 diabetes in obese patients. *Diabetes care* 2004 Jan;27(1):155-61.
107. Torgerson JS, Arlinger K, Käppi M, Sjöström L. Principles for enhanced recruitment of subjects in a large clinical trial. the XENDOS (XENical in the prevention of Diabetes in Obese Subjects) study experience. *Control Clin Trials* 2001 Oct;22(5):515-25.
108. Tsai AG, Wadden TA, Rogers MA, Day SC, Moore RH, Islam BJ. A primary care intervention for weight loss: results of a randomized controlled pilot study. *Obesity* 2010 Aug;18(8):1614-8.
109. Van Gaal LF, Broom JI, Enzi G, Toplak H. Efficacy and tolerability of orlistat in the treatment of obesity: a 6-month dose-ranging study. Orlistat Dose-Ranging Study Group. *Eur J Clin Pharmacol* 1998 Apr;54(2):125-32.
110. Vissers D, Verrijken A, Mertens I, Van Gils C, Van de Sompel A, Truijien S, et al. Effect of long-term whole body vibration training on visceral adipose tissue: a preliminary report. *Obes Facts* 2010;3(2):93-100.
111. Wadden TA, Volger S, Sarwer DB, Vetter ML, Tsai AG, Berkowitz RI, et al. A two-year randomized trial of obesity treatment in primary care practice. *N Engl J Med* 2011 Nov 24;365(21):1969-79.
112. Wood PD, Stefanick ML, Dreon DM, Frey-Hewitt B, Garay SC, Williams PT, et al. Changes in plasma lipids and lipoproteins in overweight men during weight loss through dieting as compared with exercise. *N Engl J Med* 1988 Nov 3;319(18):1173-9.
113. Frey-Hewitt B, Vranizan KM, Dreon DM, Wood PD. The effect of weight loss by dieting or exercise on resting metabolic rate in overweight men. *Int J Obes* 1990 Apr;14(4):327-34.
114. Wood PD, Stefanick ML, Williams PT, Haskell WL. The effects on plasma lipoproteins of a prudent weight-reducing diet, with or without exercise, in overweight men and women. *N Engl J Med* 1991;325:461-6.115. Kiernan M, King AC, Stefanick ML, Killen JD. Men gain additional psychological benefits by adding exercise to a weight-loss program. *Obes Res* 2001 Dec;9(12):770-7.
116. Woollard J, Burke V, Beilin LJ, Verheijden M, Bulsara MK. Effects of a general practice-based intervention on diet, body mass index and blood lipids in patients at cardiovascular risk. *J Cardiovasc Risk* 2003 Feb;10(1):31-40.

