

Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk

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

Categorical Outcomes

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
Admiraal 2013 23894322	Weight loss goal	>0% weight loss	1 y	Diet and PA Program	66 (37%)	177	NR	NR	Risk Difference 18.2 pct pt (8.6, 27.8)	NR
				Control	30 (19%)	158	NR	NR		
		>5% weight loss	1 y	Diet and PA Program	19 (11%)	177	NR	NR	Risk Difference 2.5 pct pt (-3.8, 8.8)	NR
				Control	13 (8%)	158	NR	NR		
Bhopal 2014 24622752	DM, incident	Progression to Type 2 DM	3 y	Diet and PA Program	12 (15%)	85	NR	NR	OR 0.68 (0.27, 1.67)	NR
				Control	17 (21%)	86	NR	NR		
	Normoglycemia	Reversion to normal glucose tolerance	3 y	Diet and PA Program	36 (44%)	85	NR	NR	OR 1.23 (0.62, 2.47)	NR
				Control	32 (39%)	86	NR	NR		
Costa 2012 22322921	DM, incident	Incident DM cases	4 y	Diet and PA Program	61 (18%)	333	NR	NR	NR	NR
				Control	63 (29%)	219	NR	NR		
De la Rosa 2008 No PMID	Weight, percent	Patients who lost $\geq 2\%$ of body weight	2 y	Diet and PA Program	17 (35%)	48	NR	NR	NR	NS

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
				Control	14 (33%)	43	NR	NR		
		Patients who gained ≥2% of body weight	2 y	Diet and PA Program	9 (19%)	48	43	NR	NR	NS
				Control	13 (30%)	43	NR	NR	NR	
Eriksson 1991 1778354	DM, incident	DM at follow-up	6 y	Diet and PA Program	11%	161	NR	NR	RR 0.37 (0.20, 0.68)	NR
				Control	29%	56	NR	NR		
Iqbal Hydrie 2012 22888411	Death, all-cause	NR	18 mo	Diet and PA Program	0	107	NR	NR	NR	NR
				Control	2	108	NR	NR		
	DM, incident	NR	18 mo	Diet and PA Program	Total for all arms: 47	107	Incidence	2.5 cases/1000 person-mo	Absolute RR 10.7 Relative RR 71 (13.7, 90.3) Risk Ratio 0.39 (0.097, 0.863)	NR
				Control		82	Incidence	8.6 cases/1000 person-mo		
Janus 2012 22929458	Weight loss goal	5% weight loss	12 mo	Diet and PA Program	12 (31.6%)	NR	NR	NR	NR	<0.001
				Control	0 (0%)	NR	NR	NR		

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms		
Knowler 2002 11832527	Death, all-cause	In first 4 y follow-up deaths are considered AEs. No deaths were considered related to the intervention.	3 y	Diet and PA Program	NR	NR	Rate	0.10 events/100 person-y	NR	NR		
				Control	NR	NR	Rate	0.16 events/100 person-y				
	Normoglycemia¹	Normal 2-h post-load glucose (<140 mg/dL)	0 y	Diet and PA Program	0%	NR	NR	NR	NR	NR	NR	
				Control	0%	NR	NR	NR				
				1 y	Diet and PA Program	51%	1079	NR	NR	NR	NR	NR
					Control	32%	1082	NR	NR			
				2 y	Diet and PA Program	48%	1079	NR	NR	NR	NR	NR
					Control	30%	1082	NR	NR			
				3 y	Diet and PA Program	40%	1079	NR	NR	NR	NR	NR
					Control	24%	1082	NR	NR			
				4 y	Diet and PA Program	38%	1079	NR	NR	NR	NR	NR
					Control	24%	1082	NR	NR			

¹ Data from figure

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms			
	Cumulative incidence of DM	NR	6 mo	Diet and PA Program	1%	1079	NR	NR	NR	NR			
				Control	4%	1082	NR	NR					
			1 y	Diet and PA Program	4%	NR	NR	NR	NR	NR	NR		
				Control	13%	NR	NR	NR					
			2 y	Diet and PA Program	5%	NR	NR	NR	NR	NR	NR		
				Control	23%	NR	NR	NR					
			3 y	Diet and PA Program	14.4%	NR	NR	NR	NR	NR	NR		
				Control	28.9%	NR	NR	NR					
			4 y	Diet and PA Program	21%	NR	NR	NR	NR	NR	<0.001		
				Control	47%	NR	NR	NR					
				CVD event, nonfatal²	NR	3 y	Diet and PA Program	NR (2.2%)	1079	Rate	9.7 events/1000 person-y	NR	NS
							Control	18 (1.7%)	1082	Rate	7.3 events/1000 person-y		
	Death, CVD	Death due to CVD event	3 y	Diet and PA Program	2	1079	NR	NR	NR	NR			
				Control	4	1082	NR	NR					

² Cumulative incidence on CVD event across all arms was nonsignificant.

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms	
	DM, incident	NR	3 y	Diet and PA Program	NR	NR	Rate	NR	NR		
				Control	NR	NR	Rate	4.8 cases/100 person-y			
	Weight loss goal	≥7% weight loss	6 mo	Diet and PA Program	50%	1078	NR	NR	NR	NR	
				Control	NR	NR	NR	NR			
				3 y	Diet and PA Program	37%	1079	NR	NR	NR	NR
					Control	NR	NR	NR	NR		
Knowler 2009 19878986	DM, incident	Incidence of DM	10 y	Diet and PA Program	NR	NR	Incidence rate	5.3 (4.8,5.8)	NR	NR	
				Control	NR	NR	Incidence rate	7.8 (7.2, 8.6)			
Ma 2013 23229846	DM, incident	NR	1.25 y	Diet and PA Program (more intensive)	1	79	NR	NR	NR	NR	
				Control	1	81	NR	NR			
				Diet and PA Program (less intensive)	0	81	NR	NR			
					Control	1	81	NR	NR		
	Weight loss goal	7% weight loss	1.25 y	Diet and PA Program (more intensive)	37%	79	NR	NR	NR	0.003	
				Control	14%	81	NR	NR			

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms			
				Diet and PA Program (less intensive)	36%	81	NR	NR	NR	0.004			
				Control	14%	81	NR	NR					
			2 y	Diet and PA Program (more intensive)	45%	79	NR	NR	NR	0.003			
			Control	17%	81	NR	NR						
			Diet and PA Program (less intensive)	30%	81	NR	NR	NR	0.14				
			Control	17%	81	NR	NR						
Oldroyd 2006 16297488	Normoglycemia	Reverted to normal glucose tolerance	6 mo	Diet and PA Program	13 (37%)	35	NR	NR	NR	NR			
				Control	13 (41%)	32	NR	NR					
			12 mo	Diet and PA Program	22%	37	NR	NR	NR	NR			
				Control	17%	32	NR	NR					
			24 mo	Diet and PA Program	20%	37	NR	NR	NR	NR			
				Control	13%	32	NR	NR					
				DM, incident	Developed DM	34 mo	Diet and PA Program	7	37	NR	NR	NR	NR
							Control	8	32	NR	NR		

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
Pan 1997 9096977	CVD event	Cumulative incidence of any first CVD event, combined intervention arms	6 y	Diet and PA Program	23 (5%)	438	Incidence	0.9 cases/100 person-y	HRR 0.96 (0.76, 1.44)	NR
				Control	7 (5%)	138	Incidence	0.9 cases/100 person-y		
	Death, all-cause	Cumulative incidence of all-cause death, combined intervention arms	6 y	Diet and PA Program	19 (4%)	438	Incidence	0.7 cases/100 person-y	HRR 1.33 (0.45, 3.92)	NR
				Control	5 (4%)	138	Incidence	0.6 cases/100 person-y		
			20 y	Diet and PA Program	110 (25%)	438	Incidence	1.4 cases/100 person-y	HRR 0.96 (0.65, 1.41)	NR
				Control	40 (29%)	138	Incidence	1.7 cases/100 person-y		
	Death, CVD	Cumulative incidence of CVD mortality, combined intervention arms	6 y	Diet and PA Program	4 (1%)	438	Incidence	0.2 cases/100 person-y	NA	NR
				Control	0 (0%)	138	Incidence	0.0 cases/100 person-y		
20 y			Diet and PA Program	55 (13%)	438	Incidence	0.6 cases/100 person-y	HRR 0.83 (0.48, 1.40)	NR	
			Control	24 (17.4%)	138	Incidence	0.9 cases/100 person-y			

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms	
	DM, incident	Incident DM by WHO criteria	6 y	Diet and PA Program	58 (46%)	126	Incidence	9.6 cases/ 100 person-y	NA	<0.05	
				Control	90 (68%)	133	Incidence	15.7 cases/ 100 person-y			
	DM, incident	Cumulative incidence of DM, combined intervention arms	6 y	Diet and PA Program	187 (43%)	438	Incidence	7.9 cases/ 100 person-y	HRR 0.49 (0.33, 0.73)	NR	
				Control	91 (66%)	138	Incidence	14.1 cases/ 100 person-y			
				20 y	Diet and PA Program	324 (80%)	407	Incidence	6.9 cases/ 100 person-y	HR 0.57 (0.41, 0.81)	NR
					Control	125 (93%)	135	Incidence	11.3 cases/ 100 person-y		
Penn 2009 19758428	Normoglycemia	Reversion to normoglycemia on one occasion	3 y	Diet and PA Program	23	51	NR	NR	RR 1.1 (0.7, 1.6)	NR	
				Control	22	51	NR	NR			
		Reversion to normoglycemia on two consecutive occasions	3 y	Diet and PA Program	17	51	NR	NR	RR 1.5 (0.8, 3.0)	NR	
				Control	11	51	NR	NR			
	DM, incident	DM incidence	3 y	Diet and PA Program	5	51	Incidence	32.7/ 1000 person-y	RR 0.45 (0.2, 1.2)	NR	
				Control	1	51	Incidence	67.1/ 1000 person-y			

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
		DM incidence, less loss to follow-up	3 y	Diet and PA Program	7	51	NR	NR	RR 0.54 (0.2, 1.2)	NR
				Control	13	51	NR	NR		
Ramachandran 2013 24622367	DM, incident	NR	12 mo	Diet and PA Program	1	271	NR	NR	NR	NR
				Control	3	266	NR	NR		
Ramachandran 2006 16391903	Normoglycemia	Number of subjects with normoglycemia	3 y	Diet and PA Program	35 (36%)	120	NR	NR	NR	NR
				Control	32 (24%)	133	NR	NR		
	DM, incident	Cumulative incidence of DM at year 3	3 y	Diet and PA Program	39%	120	NR	NR	RR 28.5 (20.5, 37.3)	0.018
				Control	55%	133	NR	NR		
Roumen 2008 18445174	Death, all-cause	NR		Diet and PA Program	0	NR	NR	NR	NR	NR
				Control	1	NR	NR	NR		
	DM, incident	NR	3 y	Diet and PA Program	11 (18%)	61	NR	NR	RR 0.52 (0.25, 1.10)	0.07
				Control	19 (32%)	60	NR	NR		
			4 y	Diet and PA Program	NR	NR	NR	NR	RR 0.53 (0.29, 0.97)	0.04
				Control	NR	NR	NR	NR		

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms				
Touomilehto 2001 1133390	CVD event	incident CV events (fatal and non-fatal); include acute coronary events, CHD, stroke and HTN	11 y	Diet and PA Program	57	257	Adj HR	0.89 (0.62, 1.27)	NR	NR				
							Incidence rate	22.9 (17.7, 29.7)						
							P value	0.528						
				Control	54	248	Adj HR	0.87 (0.60, 1.27)						
							Incidence rate	22.0 (16.9, 28.7)						
							P value	0.481						
	Death, all-cause³	NR	11 y	Diet and PA Program		6	247	Adj HR	0.21 (0.09, 0.52)	NR	NR			
								Incidence rate	2.2 (1.0, 4.9)					
								P value	0.001					
					Control	10	248	Adj HR	0.39 (0.20, 0.79)					
								Incidence rate	3.8 (2.0, 7.0)					
								P value	0.009					
DM, incident	NR	1 y	Diet and PA Program		5	265	Cumulative incidence	1.9 (0.2, 3.6)	NR	NR				
				Control	16	257	Cumulative incidence	6.1 (3.2, 9.0)						
				2 y	Diet and PA Program		15	265			Cumulative incidence	3.6 (3.2, 9.2)	NR	NR

³ At 6 years, 1 participant died but it is unclear to which arm they were assigned.

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
				Control	37	257	Cumulative incidence	14.4 (9.9, 18.6)		
			3 y	Diet and PA Program	22	265	Cumulative incidence	9.1 (5.4, 12.6)	NR	NR
				Control	51	257	Cumulative incidence	20.9 (15.5, 25.9)		
			4 y	Diet and PA Program	24	265	Cumulative incidence	10.9 (6.4, 15.2)	Adj HR 0.54 (0.37, 0.78)	NR
							Incidence rate	7.4		
				Control	53	257	Cumulative incidence	23.0 (16.9, 28.6)		
							Incidence rate	4.1		
			5 y	Diet and PA Program	27	265	Cumulative incidence	20.0 (8.8, 29.8)	NR	NR
				Control	57	257	Cumulative incidence	34.4 (21.9, 44.9)		
			6 y	Diet and PA Program	27	265	Cumulative incidence	20.0 (8.8, 29.8)	Adj HR 0.4 (0.3, 0.7)	Adj <0.001
							Incidence rate	32 cases/1000 person-y	ARR 15% (7.2, 23.2)	
				Control	59	257	Cumulative incidence	42.6 (26.0, 55.5)		
							Incidence rate	78 cases/1000 person-y		
			7 y	Diet and PA Program	75	265	Incidence rate	4.3 (3.4, 5.4)	Adj HR 0.57 (0.43, 0.76)	0.0001

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
				Control	110	257	Incidence rate	7.4 (6.1, 8.9)		
			9 y	Diet and PA Program	106	265	Incidence rate	4.5 (3.8, 5.5)	HR 0.614 (0.478, 0.789)	<0.001
				Control	140	257	Incidence rate	7.2 (6.1, 8.5)	Absolute RR 19.4	
	Weight loss goal	Participants meeting the goal of a >5% reduction in weight	1 y	Diet and PA Program	43%	265	NR	NR	NR	0.001
				Control	13%	257				
Vermunt 2011 21775759	DM, incident	DM incidence	6 mo	Diet and PA Program	19	543	NR	NR	NR	NR
				Control	15	522	NR	NR		
			18 mo	Diet and PA Program	33	543	P value	0.28	NR	0.99
				Control	32	522	P value	0.14		
Pediatric RCT										
Patrick 2013 23759410	BMI	Change in z-score	6 mo	Diet and PA Program (more intense)	NR	20	NR	NR	NR	NR
				Diet and PA Program (less intense 1)	NR	19	NR	NR	NR	NR

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
				Diet and PA Program (less intense 2)	NR	19	NR	NR	NR	NR
				Control	NR	18	NR	NR	NR	NR
			12 mo	Diet and PA Program (more intense)	NR	15	NR	NR	NR	0.876
				Diet and PA Program (less intense 1)	NR	18	NR	NR	NR	0.934
				Diet and PA Program (less intense 2)	NR	17	NR	NR	NR	0.876
				Control	NR	16	NR	NR		
	BMI	Change in BMI percentile	6 mo	Diet and PA Program (more intense)	NR	20	Mean	NR	NR	NR
				Diet and PA Program (less intense 1)	NR	19	Mean	NR	NR	NR
				Diet and PA Program (less intense 2)	NR	19	Mean	NR	NR	NR
				Control	NR	18	Mean	NR	NR	NR

Author, Year, PMID	Outcome Name	Outcome Description	Time-point	Arm	Events	N Analyzed	Metric	Results	Between Arm Comparison	P value between arms
			12 mo	Diet and PA Program (more intense)	NR	15	Mean	NR	NR	0.985
				Diet and PA Program (less intense 1)	NR	17	Mean	NR	NR	0.614
				Diet and PA Program (less intense 2)	NR	18	Mean	NR	NR	0.953
				Control	NR	16	Mean	NR		
Savoye 2014 24062325	Normoglycemia	FBG <130 mg/dL	6 mo	Diet and PA Program	19	31	NR	NR	NR	0.003
				Control	6	21	NR	NR		
		2h OTT <120 mg/dL	6 mo	Diet and PA Program	13	31	NR	NR	NR	0.003
				Control	2	21	NR	NR		
	DM, incident	NR	6 mo	Diet and PA Program	0	38	NR	NR	NR	NR
				Control	0	37	NR	NR		

Abbreviations

adj, adjusted

AE, adverse events

CHD, coronary heart disease

CV(D), cardiovascular (disease)

DM, diabetes

mo, month

HTN, hypertension

OGTT, oral glucose tolerance test

NR, not reported

PA, physical activity

y, year

Continuous Outcomes

Author, Year, PMID	Outcome Name	Outcome Description	Timepoint	Arm (N Analyzed)	Baseline	Final	Change	P value between-arms
Admiraal 2013 23894322	2h OTT	Change in 2h OTT in mmol/L	1 y	Diet and PA Program (177)	6.3	6.3	0	0.44
				Control (158)	5.9	6.0	+0.1	
	SBP	Change in SBP in mmHg	1 y	Diet and PA Program (177)	130	132	+2	0.18
				Control (158)	129	129	0	
	DBP	Change in DBP in mmHg	1 y	Diet and PA Program (177)	84	82	-2	0.51
				Control (158)	83	81	-2	
	FPG	Change in FPG in mmol/L	1 y	Diet and PA Program (177)	5.3	4.9	-0.5	0.66
				Control (158)	5.3	4.8	-0.5	
	HbA1c	Change in HbA1c in %	1 y	Diet and PA Program (177)	5.7	5.7	0	0.99
				Control (158)	5.7	5.7	0	
	HDL-c	Change in HDL-c in mmol/L	1 y	Diet and PA Program (177)	1.26	1.36	+0.10	0.24
				Control (158)	1.29	1.36	+0.07	
	LDL-c	Change in LDL-c in mmol/L	1 y	Diet and PA Program (177)	3.26	3.28	+0.02	0.97
				Control (158)	3.12	3.15	+0.03	
Total cholesterol	Change in total	1 y	Diet and PA Program (177)	5.05	5.17	+0.12	0.67	

	cholesterol in mmol/L			Control (158)	5.00	5.07	+0.08	
Triglycerides	Change in triglycerides in mmol/L	1 y	Diet and PA Program (177)	1.26	1.26	0.0	0.55	
			Control (158)	1.25	1.21	-0.04		
Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (177)	76.3	76.1	-0.2	0.08	
			Control (158)	73.7	74.1	+0.4		
Weight, %	% change in weight	1 y	Diet and PA Program (177)	NR	NR	-0.2	0.10	
			Control (158)	NR	NR	0.6		
BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (177)	28.1	28.0	-0.1	0.09	
			Control (158)	27.2	27.4	+0.1		
Bhopal 2014 24622752	2h OTT	Change in 2h plasma glucose in mmol/L	1 y	Diet and PA Program (85)	8.21	NR	NR	NR
			Control (86)	8.33	NR	NR		
		2 y	Diet and PA Program (85)	8.21	NR	NR	NR	
			Control (86)	8.33	NR	NR		
		3 y	Diet and PA Program (85)	8.21	7.38	Adjusted mean difference - 0.56	NR	
			Control (86)	8.33	8.05	NR		
FBG	Change in FPG in mmol/L	1 y	Diet and PA Program (85)	5.77	NR	NR	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (86)	5.82	NR	NR	
		2 y	Diet and PA Program (85)	5.77	NR	NR	NR
			Control (86)	5.82	NR	NR	
		3 y	Diet and PA Program (85)	5.77	5.84	Adjusted mean difference 10.13	NR
			Control (86)	5.82	5.98	NR	
SBP	Change in SBP in mmHg	1 y	Diet and PA Program (85)	136.9	135.7	NR	NR
			Control (86)	137.0	137.0	NR	
		2 y	Diet and PA Program (85)	136.9	135.6	NR	NR
			Control (86)	137.0	135.7	NR	
		3 y	Diet and PA Program (85)	136.9	137.2	Adjusted mean difference - 1.19	NR
			Control (86)	137.0	138.8	NR	
DBP	Change in DBP in mmHg	1 y	Diet and PA Program (85)	82.7	81.6	NR	NR
			Control (86)	83.5	82.6	NR	
		2 y	Diet and PA Program (85)	82.7	80.8	NR	NR
			Control (86)	83.5	81.6	NR	
		3 y	Diet and PA Program (85)	82.7	81.3	Adjusted mean difference - 0.45	NR
			Control (86)	83.5	82.7	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

Cezaretto 2012 21538199	BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (85)	30.59	30.18	NR	NR
				Control (86)	30.49	30.39	NR	
			2 y	Diet and PA Program (85)	30.59	30.31	NR	NR
			Control (86)	30.49	30.57	NR		
			3 y	Diet and PA Program (85)	30.59	30.18	Adjusted mean difference - 0.60	NR
			Control (86)	30.49	30.65			
	SBP	Change in SBP in mmHg	9 mo	Diet and PA Program (75)	136.4	131.0	-5.4	<0.05
				Control (60)	135.8	136.2	0.6	
		DBP	Change in DBP in mmHg	9 mo	Diet and PA Program (75)	84.0	76.8	-6.0
Control (60)					80.5	80.0	-0.7	
FPG	Change in FPG in mg/dL	9 mo	Diet and PA Program (75)	98.9	95.3	-3.6	NR	
			Control (60)	99.7	98.8	-2.0		
HDL-c	Change in HDL-c in mg/dL	9 mo	Diet and PA Program (75)	43.6	47.3	3.6	NR	
			Control (60)	39.1	44.9	4.9		

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

	LDL-c	Change in LDL-c in mmHg	9 mo	Diet and PA Program (75)	128.5	122.3	-6.1	NR
				Control (60)	129.5	118.6	8.4	
	Total cholesterol	Change in total cholesterol in mmHg	9 mo	Diet and PA Program (75)	203.8	198.3	-5.5	NR
				Control (60)	200.6	195.2	-3.1	
	Triglycerides	Change in triglycerides in mmHg	9 mo	Diet and PA Program (75)	141.9	150.6	8.7	NR
				Control (60)	165.2	165.2	3.0	
	BMI	Change in BMI in kg/m ²	9 mo	Diet and PA Program (75)	31.7	30.9	-0.8	NR
				Control (60)	29.9	29.1	-0.7	
Costa 2012 22322921	BMI	Change in BMI in kg/m ²	4 y	Diet and PA Program (333)	NR	31.2	NR	NR
				Control (219)	NR	31.3	NR	
Gillison 2015 25592314	Weight, absolute	Change in weight in kg	12 mo	Diet and PA Program (54)	96.63	92.98	-3.7	0.13
				Control (52)	97.57	95.67	-1.9	
Iqbal Hydrie 2012 22888411	Weight, absolute	Change in weight in kg	9 mo	Diet and PA Program (107)	NR	NR	-0.05	NS

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				Control (108)	NR	NR	0.5	
			18 mo	Diet and PA Program (107)	NR	NR	-0.12	0.003
				Control (108)	NR	NR	0.93	
Islam 2014 24852392	BMI	Change in BMI in kg/m ²	6 mo	Diet and PA Program (54)	27.8	27.0	NR	0.08
				Control (48)	28.6	28.5	NR	
	SBP	Change in SBP in mmHg	3 mo	Diet and PA Program (51)	131.6	118.6	NR	NR
				Control (47)	128.0	118.4	NR	
			6 mo	Diet and PA Program (51)	131.6	118.2	NR	0.47
				Control (47)	128.0	112.1	NR	
	DBP	Change in DBP in mmHg	3 mo	Diet and PA Program (51)	83.1	78.4	NR	NR
				Control (47)	86	79.8	NR	
			6 mo	Diet and PA Program (51)	83.1	78.0	NR	0.61
				Control (47)	86	79.9	NR	
Janus 2012 22929458	2 h OTT	Change in 2h OTT in mmol/L	12 mo	Diet and PA Program	6.64	NR	-0.11	0.232
				Control	6.08	NR	0.59	
	SBP	Change in SBP in mmHg	3 mo	Diet and PA Program	135.9	NR	-6.63	NR
				Control	132.1	NR	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		12 mo	Diet and PA Program	135.9	NR	-6.55	0.126
			Control	132.1	NR	-0.45	
DBP	Change in DBP in mmHg	3 mo	Diet and PA Program	80.1	NR	1.25	NR
			Control	78.4	NR	NR	
		12 mo	Diet and PA Program	80.1	NR	0.70	0.963
			Control	78.4	NR	1.43	
FPG	Change in FPG in mmol/L	3 mo	Diet and PA Program	5.17	NR	-0.07	NR
			Control	5.17	NR	NR	
		12 mo	Diet and PA Program	5.17	NR	-0.03	0.219
			Control	5.17	NR	0.05	
HbA1c	Change in HbA1c in %	3 mo	Diet and PA Program	5.86	NR	-0.05	NR
			Control	5.89	NR	NR	
		12 mo	Diet and PA Program	5.86	NR	0.08	0.218
			Control	5.89	NR	0.13	
HDL-c	Change in HDL-c in mmol/L	3 mo	Diet and PA Program	1.43	NR	0.01	NR
			Control	1.59	NR	NR	
		12 mo	Diet and PA Program	1.43	NR	0.07	0.259
			Control	1.59	NR	-0.05	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

LDL-c	Change in LDL-c in mmol/L	3 mo	Diet and PA Program	2.89	NR	0.11	NR
			Control	2.79	NR	NR	
		12 mo	Diet and PA Program	2.89	NR	-0.12	0.207
			Control	2.79	NR	0.11	
Total cholesterol	Change in total cholesterol in mmol/L	3 mo	Diet and PA Program	4.97	NR	-0.08	NR
			Control	5.05	NR	NR	
		12 mo	Diet and PA Program	4.97	NR	-0.09	0.225
			Control	5.05	NR	0.06	
Triglycerides	Change in triglycerides in mmol/L	3 mo	Diet and PA Program	1.41	NR	-0.07	NR
			Control	1.44	NR	NR	
		12 mo	Diet and PA Program	1.41	NR	-0.09	0.227
			Control	1.44	NR	0.01	
Weight, absolute	Change in weight in kg	3 mo	Diet and PA Program	87.2	NR	-2.38	NR
			Control	81.8	NR	NR	
		12 mo	Diet and PA Program	87.2	NR	-2.65	0.844
			Control	81.8	NR	-0.60	
BMI	Change in BMI in kg/m ²	3 mo	Diet and PA Program	31.4	NR	-0.86	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control	30.1	NR	NR		
			12 mo	Diet and PA Program	31.4	NR	-0.98	<0.001
				Control	30.1	NR	-0.21	
Kanaya 2012 22698027	SBP	Change in SBP in mmHg	6 mo	Diet and PA Program (113)	126.90	NR	0.73	0.32
				Control (117)	127.58	NR	-1.17	
			12 mo	Diet and PA Program (113)	126.90	NR	0.34	0.98
		Control (117)	127.58	NR	0.27			
	FBG	Change in FBG in mg/dL	6 mo	Diet and PA Program (113)	1.05	NR	-0.70	0.41
				Control (117)	1.14	NR	0.42	
12 mo			Diet and PA Program (113)	1.05	NR	-0.88	0.72	
			Control (117)	1.14	NR	-1.39		
HDL-c	Change in HDL-c in mg/dL	6 mo	Diet and PA Program (113)	1.56	NR	1.76	0.26	
			Control (117)	1.56	NR	0.61		
		12 mo	Diet and PA Program (113)	1.56	NR	3.19	0.21	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (117)	1.56	NR	1.69	
LDL-c	Change in LDL-c in mg/dL	6 mo	Diet and PA Program (113)	2.95	NR	-6.62	0.13
			Control (117)	2.99	NR	-2.39	
		12 mo	Diet and PA Program (113)	2.95	NR	-5.78	0.50
			Control (117)	2.99	NR	-3.61	
Triglycerides	Change in triglycerides in mg/dL	6 mo	Diet and PA Program (113)	10.71	NR	-8.76	0.02
			Control (117)	8.56	NR	14.39	
		12 mo	Diet and PA Program (113)	10.71	NR	-1.57	0.45
			Control (117)	8.56	NR	4.87	
Weight, absolute	Change in weight in kg	6 mo	Diet and PA Program (113)	1.67	NR	-1.04	0.03
			Control (117)	1.67	NR	0.20	
		12 mo	Diet and PA Program (113)	1.67	NR	-0.61	0.4
			Control (117)	1.67	NR	-0.19	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

Knowler 2002 11832527	SBP	Change in SBP in mmHg	1 y	Diet and PA Program (NR)	123.7	NR	-3.4	<0.001
				Control (NR)	123.5	NR	-0.9	
			2 y	Diet and PA Program (NR)	123.7	NR	-3.4	<0.001
				Control (NR)	123.5	NR	-0.52	
			3 y	Diet and PA Program (NR)	123.7	NR	-3.27	<0.001
				Control (NR)	123.5	NR	-0.57	
DBP	Change in DBP in mmHg	1 y	Diet and PA Program (NR)	78.6	NR	-3.6	<0.001	
			Control (NR)	78.0	NR	-0.89		
		2 y	Diet and PA Program (NR)	78.6	NR	-3.33	<0.001	
			Control (NR)	78.0	NR	-1.07		
		3 y	Diet and PA Program (NR)	78.6	NR	-3.82	<0.001	
			Control (NR)	78.0	NR	-1.88		
FPG	Change in FPG in mg/dL	6mo	Diet and PA Program (NR)	106.3	101.6	-4.66	<0.001	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (NR)	106.7	106.8	0.20	
		1 y	Diet and PA Program (NR)	106.3	101.3	-4.94	<0.001
			Control (NR)	106.7	107.3	0.63	
		2 y	Diet and PA Program (NR)	106.3	104.9	NR	NR
			Control (NR)	106.7	109.3	NR	
		3 y	Diet and PA Program (NR)	106.3	106.3	NR	NR
			Control (NR)	106.7	111.1	NR	
		4 y	Diet and PA Program (NR)	106.3	108.0	NR	<0.001
			Control (NR)	106.7	114.3	NR	
HbA1c	Change in HbA1c in %	6 mo	Diet and PA Program (NR)	5.91	5.82	NR	<0.001
			Control (NR)	5.91	5.97	NR	
		1 y	Diet and PA Program (NR)	5.91	5.82	NR	<0.001
			Control (NR)	5.91	6.00	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		2 y	Diet and PA Program (NR)	5.91	5.87	NR	<0.001
			Control (NR)	5.91	6.02	NR	
		3 y	Diet and PA Program (NR)	5.91	5.95	NR	<0.001
			Control (NR)	5.91	6.10	NR	
		4 y	Diet and PA Program (NR)	5.91	5.97	NR	NR
			Control (NR)	5.91	6.12	NR	
HDL-c	Change in HDL-c in mmol/L	1 y	Diet and PA Program (NR)	1.19	1.22	NR	NR
			Control (NR)	1.15	1.18	NR	
		2 y	Diet and PA Program (NR)	1.19	1.20	NR	NR
			Control (NR)	1.15	1.16	NR	
		3 y	Diet and PA Program (NR)	1.19	1.19	0.026	<0.001
			Control (NR)	1.15	1.16	-0.002	
Triglycerides	Change in triglycerides in mmol/L	1 y	Diet and PA Program (NR)	1.84	1.56	NR	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (NR)	1.90	1.76	NR	
		2 y	Diet and PA Program (NR)	1.84	1.60	NR	NR
			Control (NR)	1.90	1.75	NR	
		3 y	Diet and PA Program (NR)	1.84	1.57	-0.296	<0.001
			Control (NR)	1.90	1.73	-0.13	
Weight, absolute	Change in weight in kg	6 mo	Diet and PA Program (NR)	94.1	NR	NR	<0.001
			Control (NR)	94.3	NR	NR	
		1 y	Diet and PA Program (NR)	94.1	NR	NR	<0.001
			Control (NR)	94.3	NR	NR	
BMI	Change in BMI in kg/m ²	6 mo	Diet and PA Program (NR)	33.9	NR	-2.41	<0.001
			Control (NR)	34.2	NR	-0.12	
		1 y	Diet and PA Program (NR)	33.9	NR	-2.42	<0.001
			Control (NR)	34.2	NR	-0.15	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

	Weight, %	% change in weight	6 mo	Diet and PA Program (NR)	NR	NR	-7.1	<0.001
				Control (NR)	NR	NR	-0.4	
			1 y	Diet and PA Program (NR)	NR	NR	-7.1	<0.001
				Control (NR)	NR	NR	-0.4	
Knowler 2009 19878986	SBP	Change in SBP in mmHg	1 y	Diet and PA Program (862)	123.7	122	NR	NR
				Control (886)	123.5	123	NR	
			5 y	Diet and PA Program (827)	123.7	121	NR	NR
				Control (848)	123.5	121	NR	
			10 y	Diet and PA Program (910)	123.7	120.8	NR	NR
				Control (932)	123.5	122.3	NR	
	DBP	Change in DBP in mmHg	1 y	Diet and PA Program (862)	78.6	74	NR	NR
				Control (886)	78.0	75	NR	
			5 y	Diet and PA Program (827)	78.6	73	NR	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (848)	78.0	73	NR			
		10 y	Diet and PA Program (910)	78.6	74.4	NR	NR		
			Control (932)	78.0	75.6	NR			
FPG	Change in FPG in mmol/L	1 y	Diet and PA Program (862)	5.90	6.0	NR	NR		
			Control (886)	5.92	6.2	NR			
		5 y	Diet and PA Program (847)	5.90	6.03	NR	NR		
			Control (870)	5.92	6.18	NR			
		10 y	Diet and PA Program (537)	5.90	6.35	NR	NR		
			Control (558)	5.92	6.45	NR			
		HbA1c	Change in HbA1c in %	1 y	Diet and PA Program (862)	5.91	5.90	NR	NR
					Control (886)	5.91	6.02	NR	
5 y	Diet and PA Program (845)			5.91	5.9	NR	NR		
	Control (869)			5.91	6.0	NR			

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		10 y	Diet and PA Program (536)	5.91	5.97	NR	NR
			Control (558)	5.91	6.02	NR	
HDL-c	Change in HDL-c in mmol/L	1 y	Diet and PA Program (862)	1.19	1.24	NR	NR
			Control (886)	1.17	1.22	NR	
		5 y	Diet and PA Program (827)	1.19	1.32	NR	NR
			Control (848)	1.17	1.32	NR	
LDL-c	Change in LDL-c in mmol/L	1 y	Diet and PA Program (862)	3.3	3.1	NR	NR
			Control (886)	3.2	3.1	NR	
		5 y	Diet and PA Program (827)	3.3	2.7	NR	NR
			Control (848)	3.2	2.7	NR	
Total cholesterol	Change in total cholesterol in mmol/L	10 y	Diet and PA Program (910)	NR	4.92	NR	NR
			Control (921)	NR	4.97	NR	
Triglycerides	Change in triglycerides in mmol/L	1 y	Diet and PA Program (862)	1.84	1.4	NR	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (886)	1.90	1.45	NR	
		5 y	Diet and PA Program (827)	1.84	1.38	NR	NR
			Control (848)	1.90	1.4	NR	
		10 y	Diet and PA Program (910)	1.84	1.37	NR	NR
			Control (921)	1.90	1.45	NR	
Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (862)	93.5	91.4	NR	NR
			Control (886)	93.9	93.4	NR	
		5 y	Diet and PA Program (827)	93.5	91.8	NR	NR
			Control (848)	93.9	93.2	NR	
BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (862)	33.7	33.0	NR	NR
			Control (886)	34.0	33.7	NR	
		5 y	Diet and PA Program (827)	33.7	33.1	NR	NR
			Control (848)	34.0	33.6	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

Kulzer 2009 19509014	2h OTT	Change in 2h OTT in mg/dL	1 y	Diet and PA Program (91)	133.1	125.8	-7.3	0.865
				Control (91)	138.5	130.3	-8.2	
	SBP	Change in SBP in mmHg	1 y	Diet and PA Program (91)	141.8	137.2	-4.6	0.217
				Control (91)	139.1	138.1	-1.0	
	DBP	Change in DBP in mmHg	1 y	Diet and PA Program (91)	88.5	84.1	-4.4	0.255
				Control (91)	97.3	85.2	-2.1	
	FBG	Change in FBG in mg/dL	1 y	Diet and PA Program (91)	105.7	101.4	-4.3	0.001
				Control (91)	105.5	107.3	1.8	
	HDL-c	Change in HDL-c in mg/dL	1 y	Diet and PA Program (91)	55.9	54.6	-1.3	0.479
				Control (91)	53.5	51.3	-2.2	
	Total cholesterol	Change in total cholesterol in mg/dL	1 y	Diet and PA Program (91)	212.2	201.9	-10.3	0.144
				Control (91)	209.9	207.9	-2.0	
	Triglycerides	Change in triglycerides in mg/dL	1 y	Diet and PA Program (91)	156.2	120.6	-35.6	0.087

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (91)	144.1	141.6	-2.5		
Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (91)	92.1	88.3	-3.8	0.001	
			Control (91)	93.6	92.2	-1.4		
BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (91)	31.0	29.7	-1.3	0.002	
			Control (91)	32.0	31.5	-0.5		
Ma 2013 23229846	SBP	Change in SBP in mmHg	1.25 y	Diet and PA Program (more intensive)	119.8	NR	-1.2	0.21
			Control	118.4	NR	0.1		
			Diet and PA Program (less intensive)	118.2	NR	-0.4	0.61	
			Control	118.4	NR	0.1		
	DBP	Change in DBP in mmHg	1.25 y	Diet and PA Program (more intensive)	74.4	NR	-1.9	0.04
			Control	72.5	NR	-0.3		
			Diet and PA Program (less intensive)	73.9	NR	-1.1	0.29	
			Control	72.5	NR	-0.3		
	FPG	Change in FPG in mg/dL	1.25 y	Diet and PA Program	100.5	NR	-4.2	<0.001

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			(more intensive)				
			Control	99.3	NR	0.2	
			Diet and PA Program (less intensive)	100.1	NR	-2.7	0.01
			Control	99.3	NR	0.2	
HDL-c	Change in HDL-c in mg/dL	1.25 y	Diet and PA Program 2.9(more intensive)	45.4	NR	4.4	0.11
			Control	46.7	NR	2.9	
			Diet and PA Program (less intensive)	46.2	NR	2.6	0.79
			Control	46.7	NR	2.9	
LDL-c	Change in LDL-c in mg/dL	1.25 y	Diet and PA Program (more intensive)	12.0	NR	4.5	0.08
			Control	108.9	NR	10.6	
			Diet and PA Program (less intensive)	104.6	NR	5.2	0.11
			Control	108.9	NR	10.6	
Total cholesterol	Change in total cholesterol in mg/dL	1.25 y	Diet and PA Program (more intensive)	192.3	NR	3.9	0.05
			Control	188.4	NR	10.6	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Diet and PA Program (less intensive)	185.7	NR	4.4	0.04	
			Control	188.4	NR	10.6		
Triglycerides	Change in triglycerides in mg/dL	1.25 y	Diet and PA Program (more intensive)	174.8	NR	-31.2	0.11	
			Control	164.0	NR	-18.8		
			Diet and PA Program (less intensive)	174.5	NR	-28.8	0.18	
			Control	164.0	NR	-18.8		
Weight, absolute	Change in weight in kg	0.25 y	Diet and PA Program (more intensive)	95.3	NR	-5.4	<0.001	
			Control	92.6	NR	-0.7		
				Diet and PA Program (less intensive)	93.6	NR	-4.5	<0.001
				Control	92.6	NR	-0.7	
		0.5 y	Diet and PA Program (more intensive)	95.3	NR	-6.6	<0.001	
			Control	92.6	NR	-0.7		
				Diet and PA Program (less intensive)	93.6	NR	-4.3	<0.001
				Control	92.6	NR	-0.7	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		1.25 y	Diet and PA Program (more intensive)	95.3	NR	-6.3	<0.001
			Control	92.6	NR	-2.4	
			Diet and PA Program (less intensive)	93.6	NR	-4.5	0.02
			Control	92.6	NR	-2.4	
		2 y	Diet and PA Program (more intensive)	95.3	NR	-5.4	NR
			Control	92.6	NR	-2.4	
			Diet and PA Program (less intensive)	93.6	NR	-4.5	NR
			Control	92.6	NR	-2.4	
Weight, %	% change in weight	0.25 y	Diet and PA Program (more intensive)	NR	NR	-5.8	<0.001
			Control	NR	NR	-0.7	
			Diet and PA Program (less intensive)	NR	NR	-4.9	<0.001
			Control	NR	NR	-0.7	
		0.5 y	Diet and PA Program (more intensive)	NR	NR	-7.2	<0.001
			Control	NR	NR	-0.9	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Diet and PA Program (less intensive)	NR	NR	-4.7	<0.001
			Control	NR	NR	-0.9	
	1.25 y		Diet and PA Program (more intensive)	NR	NR	-6.6	<0.001
			Control	NR	NR	-2.6	
			Diet and PA Program (less intensive)	NR	NR	-5.0	0.008
			Control	NR	NR	-2.6	
	2 y		Diet and PA Program (more intensive)	NR	NR	-5.8	NR
			Control	NR	NR	-2.6	
			Diet and PA Program (less intensive)	NR	NR	-4.9	NR
			Control	NR	NR	-2.6	
BMI	Change in BMI in kg/m ²	0.25 y	Diet and PA Program (more intensive)	32.4	29.9	-1.9	<0.001
			Control	32.0	31.5	-0.3	
			Diet and PA Program (less intensive)	31.8	30.2	-1.6	<0.001
			Control	32.0	31.5	-0.3	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

0.5 y	Diet and PA Program (more intensive)	32.4	29.4	-2.4	<0.001			
	Control	32.0	31.5	-0.3				
	Diet and PA Program (less intensive)	31.8	30.2	-1.5	<0.001			
	Control	32.0	31.5	-0.3				
1.25 y	Diet and PA Program (more intensive)	32.4	29.6	-2.2	<0.001			
	Control	32.0	30.9	-0.9				
	Diet and PA Program (less intensive)	31.8	30.2	-1.6	0.02			
	Control	32.0	30.9	-0.9				
2 y	Diet and PA Program (more intensive)	32.4	NR	-1.9	0.001			
	Control	32.0	NR	-0.9				
	Diet and PA Program (less intensive)	31.8	NR	-1.6	0.03			
	Control	32.0	NR	-0.9				
Moore 2011 20945253	2h OTT	Change in 2h OTT in mmol/L	6 mo	Diet and PA Program (127)	8.47	7.79	NR	<0.10
				Control (82)	8.08	7.98	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

SBP	Change in SBP in mmHg	6 mo	Diet and PA Program (81)	129.74	129.54	NR	NS
			Control (56)	128.87	132.64	NR	
DBP	Change in DBP in mmHg	6 mo	Diet and PA Program (81)	76.81	73.79	NR	<0.01
			Control (56)	74.93	75.66	NR	
FPG	Change in FPG in mmol/L	6 mo	Diet and PA Program (142)	5.87	5.66	NR	<0.05
			Control (83)	5.91	5.89	NR	
HDL-c	Change in HDL-c in mmol/L	6 mo	Diet and PA Program (114)	1.37	1.37	NR	<0.10
			Control (65)	1.45	1.38	NR	
LDL-c	Change in LDL-c in mmol/L	6 mo	Diet and PA Program (114)	2.86	2.71	NR	<0.10
			Control (64)	2.94	2.96	NR	
Triglycerides	Change in triglycerides in mmol/L	6 mo	Diet and PA Program (114)	1.71	1.52	NR	NS
			Control (64)	1.74	1.55	NR	
Weight, absolute	Change in weight in kg	6 mo	Diet and PA Program (180)	80.70	78.11	NR	<0.01

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				Control (72)	82.02	81.20	NR	
	BMI	Change in BMI in kg/m ²	6 mo	Diet and PA Program (179)	29.66	28.72	NR	<0.01
				Control (70)	29.79	29.50	NR	
Ockene 2012 22390448	FBG	Change in FBG in mg/dL	1 y	Diet and PA Program (147)	104.41	NR	Median 0.5	0.62
				Control (142)	105.61	NR	Median -1.5	
	HbA1c	Change in HbA1c in %	1 y	Diet and PA Program (147)	5.76	NR	Median -0.10	0.009
				Control (142)	5.77	NR	Median -0.04	
	Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (NR)	86.3	NR	Median-1.13	0.004
				Control (NR)	86.7	NR	Median 0.29	
	BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (147)	33.57	NR	Median -0.40	0.004
				Control (142)	34.18	NR	Median 0.11	NR
Oldroyd 2006 16297488	2h OTT	Change in 2h OTT in mmol/L	6 mo	Diet and PA Program (35)	9.15	8.5	-0.55	0.910
				Control (32)	9.22	8.8	-0.50	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		12 mo	Diet and PA Program (32)	9.15	NR	-0.63	0.534
			Control (30)	9.22	NR	0.22	
		24 mo	Diet and PA Program (30)	9.15	NR	0.23	0.564
			Control (24)	9.22	NR	-0.52	
SBP	Change in SBP in mmHg	6 mo	Diet and PA Program (35)	137.2	129.3	-7.9	NR
			Control (32)	132.8	132.6	-0.27	
DBP	Change in DBP in mmHg	6 mo	Diet and PA Program (35)	77.0	74.1	-2.9	NR
			Control (32)	75.5	77.4	1.9	
FPG	Change in PFG in mmol/L	6 mo	Diet and PA Program (35)	6.05	6.1	0.05	0.560
			Control (32)	6.16	6.3	0.18	
		12 mo	Diet and PA Program (32)	6.05	NR	0.03	0.789
			Control (30)	6.16	NR	0.08	
		24 mo	Diet and PA Program (30)	6.05	NR	0.25	0.593
			Control	6.16	NR	0.12	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

(24)							
HbA1c	Change in HbA1c in %	6 mo	Diet and PA Program (35)	5.8	6.0	0.2	NR
			Control (32)	5.9	6.0	0.18	
HDL-c	Change in HDL-c in mmol/L	6 mo	Diet and PA Program (35)	1.2	1.2	0.04	NS
			Control (32)	1.1	1.2	0.06	
Total cholesterol	Change in total cholesterol in mmol/L	6 mo	Diet and PA Program (35)	5.6	5.5	-0.16	0.860
			Control (32)	5.7	5.5	-0.18	
		12 mo	Diet and PA Program (31)	5.6	NR	-0.12	0.961
			Control (29)	5.7	NR	-0.12	
		24 mo	Diet and PA Program (29)	5.6	NR	0.04	0.587
			Control (24)	5.7	NR	-0.06	
Triglycerides	Change in triglycerides in mmol/L	6 mo	Diet and PA Program (35)	1.9	1.7	-0.22	NS
			Control (32)	2.2	2.1	-0.01	
Weight, absolute	Change in weight in kg	6 mo	Diet and PA Program	85.3	81.9	-1.1	0.010

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				(35)				
				Control (32)	85.5	86.1	0.54	
		12 mo	Diet and PA Program (32)	85.3	NR	-1.1	0.001	
				Control (30)	85.5	NR	1.5	
		24 mo	Diet and PA Program (30)	85.3	NR	-1.8	0.008	
				Control (24)	85.5	NR	1.5	
BMI	Change in BMI in kg/m ²	6 mo	Diet and PA Program (35)	30.4	29.9	-0.56	0.001	
				Control (32)	29.9	30.3	0.39	
Pan 1997 9096977	2h OTT	Change in 2h OTT in mmol/L	6 y	Diet and PA Program (126)	9.11	10.76	NR	NR
				Control (133)	9.03	12.99	NR	
	FPG	Change in FPG in mmol/L	6 y	Diet and PA Program (126)	5.67	7.15	NR	NR
				Control (133)	5.52	7.59	NR	
	Weight, absolute	Change in weight in kg	6 y	Diet and PA Program (126)	NR	NR	-2.5	NR
				Control (133)	NR	NR	-1.0	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

	BMI	Change in BMI in kg/m ²	6 y	Diet and PA Program (126)	26.3	NR	NR	NR
				Control (133)	26.2	NR	NR	
Penn 2009 19758428	Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (43)	93.4	NR	-2.3	0.007
				Control (40)	90.6	NR	0.01	
			2 y	Diet and PA Program (43)	93.4	NR	NR	NS
				Control (40)	90.6	NR	NR	
			3 y	Diet and PA Program (43)	93.4	NR	NR	NS
				Control (40)	90.6	NR	NR	
			4 y	Diet and PA Program (43)	93.4	NR	NR	NS
				Control (40)	90.6	NR	NR	
			5 y	Diet and PA Program (43)	93.4	NR	NR	NS
				Control (40)	90.6	NR	NR	
	BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (NR)	NR	NR	NR	NS

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				Control (NR)	NR	NR	NR	
		2 y		Diet and PA Program (NR)	NR	NR	NR	NS
				Control (NR)	NR	NR	NR	
		3 y		Diet and PA Program (NR)	NR	NR	NR	NS
				Control (NR)	NR	NR	NR	
		4 y		Diet and PA Program (NR)	NR	NR	NR	NS
				Control (NR)	NR	NR	NR	
		5 y		Diet and PA Program (NR)	NR	NR	NR	NS
				Control (NR)	NR	NR	NR	
Ramachandran 2013 24622367	SBP	Change in SBP in mmHg	12 mo	Diet and PA Program (271)	123.1	121.4	Mean difference 0.04	NR
				Control (266)	123.4	121.4	NR	
	DBP	Change in DBP in mmHg	12 mo	Diet and PA Program (271)	80.2	78.7	Mean difference - 0.07	NR
				Control (266)	80.2	78.8	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

HDL-c	Change in HDL-c in mmol/L	12 mo	Diet and PA Program (271)	0.90	1.0	Mean difference 0.033	NR	
			Control (266)	0.90	0.9			
Total cholesterol	Change in cholesterol in mmol/L	12 mo	Diet and PA Program (271)	4.87	4.9	Mean difference 0.010	NR	
			Control (266)	4.91	4.9			
Triglycerides	Change in triglycerides in mmol/L	12 mo	Diet and PA Program (271)	1.6	1.52	Mean difference - 0.080	NR	
			Control (266)	1.6	1.60			
BMI	Change in BMI in kg/m ²		Diet and PA Program (271)	25.8	25.0	Mean difference - 0.05	NR	
			Control (266)	25.8	25.0			
Roumen 2008 18445174	2h OTT	Change in 2h OTT in mmol/L	1 y	Diet and PA Program (52)	8.59	NR	-0.63	NR
				Control (54)	8.46	NR		
			2 y	Diet and PA Program (52)	8.59	NR	-0.21	NR
				Control (54)	8.46	NR		
			3 y	Diet and PA Program (52)	8.59	NR	-0.05	0.086
				Control (54)	8.46	NR		

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (54)	8.46	NR	0.89	
SBP	Change in SBP in mmHg	1 y	Diet and PA Program (52)	142	NR	-4.7	NR
			Control (54)	145	NR	-4.2	
	2 y	Diet and PA Program (52)	142	NR	-5.7	NR	
		Control (54)	145	NR	-5.9		
	3 y	Diet and PA Program (52)	142	NR	-3.6	1.0	
		Control (54)	145	NR	-3.5		
DBP	Change in DBP in mmHg	1 y	Diet and PA Program (52)	90	NR	-2.8	NR
			Control (54)	88	NR	0.2	
	2 y	Diet and PA Program (52)	90	NR	-4.9	NR	
		Control (54)	88	NR	-2.7		
	3 y	Diet and PA Program (52)	90	NR	-6.2	0.78	
		Control (54)	88	NR	-3.1		

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

FPG	Change in FPG in mmol/L	1 y	Diet and PA Program (52)	6.0	NR	-0.11	NR
			Control (54)	5.9	NR	0.2	
		2 y	Diet and PA Program (52)	6.0	NR	0.0	NR
			Control (54)	5.9	NR	0.40	
		3 y	Diet and PA Program (52)	6.0	NR	0.32	0.04
			Control (54)	5.9	NR	0.55	
HbA1c	Change in HbA1c in %	1 y	Diet and PA Program (Total: 99)	5.6	NR	-0.24	NR
			Control (Total: 99)	5.8	NR	-0.19	
		2 y	Diet and PA Program (Total: 99)	5.6	NR	-0.09	NR
			Control (Total: 99)	5.8	NR	-0.11	
		3 y	Diet and PA Program (Total: 99)	5.6	NR	-0.09	0.84
			Control (Total: 99)	5.8	NR	-0.10	
HDL-c	Change in HDL-c in mmol/L	1 y	Diet and PA Program (52)	1.14	NR	0.00	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (54)	1.11	NR	-0.01	
		2 y	Diet and PA Program (52)	1.14	NR	0.08	NR
			Control (54)	1.11	NR	0.05	
		3 y	Diet and PA Program (52)	1.14	NR	0.10	0.72
			Control (54)	1.11	NR	0.06	
LDL-c	Change in LDL-c in mmol/L	1 y	Diet and PA Program (Total: 96)	3.4	NR	-0.06	NR
			Control (Total: 96)	3.5	NR	0.06	
		2 y	Diet and PA Program (Total: 96)	3.4	NR	0.17	NR
			Control (Total: 96)	3.5	NR	0.22	
		3 y	Diet and PA Program (Total: 96)	3.4	NR	0.22	0.55
			Control (Total: 96)	3.5	NR	0.13	
Total cholesterol	Change in total cholesterol in mmol/L	1 y	Diet and PA Program (Total: 98)	5.2	NR	0.00	NR
			Control (Total: 98)	5.3	NR	0.10	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		2 y	Diet and PA Program (Total: 98)	5.2	NR	0.22	NR
			Control (Total: 98)	5.3	NR	0.32	
		3 y	Diet and PA Program (Total: 98)	5.2	NR	0.41	0.21
			Control (Total: 98)	5.3	NR	0.26	
Triglycerides	Change in triglycerides in mmol/L	1 y	Diet and PA Program (Total: 97)	1.56	NR	0.00	NR
			Control (Total: 97)	1.49	NR	0.20	
		2 y	Diet and PA Program (Total: 97)	1.56	NR	-0.01	NR
			Control (Total: 97)	1.49	NR	0.01	
		3 y	Diet and PA Program (Total: 97)	1.56	NR	0.06	0.023
			Control (Total: 97)	1.49	NR	0.01	
Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (52)	87.5	NR	-2.77	NR
			Control (54)	83.0	NR	-0.62	
		2 y	Diet and PA Program (52)	87.5	NR	-1.76	NR

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				Control (54)	83.0	NR	-0.11	
		3 y		Diet and PA Program (52)	87.5	NR	-1.08	0.045
				Control (54)	83.0	NR	-0.16	
BMI	Change in BMI in kg/m ²	1 y		Diet and PA Program (52)	29.6	NR	-0.94	NR
				Control (54)	29.2	NR	-0.20	
		2 y		Diet and PA Program (52)	29.6	NR	-0.61	NR
				Control (54)	29.2	NR	-0.02	
		3 y		Diet and PA Program (52)	29.6	NR	-0.36	0.047
				Control (54)	29.2	NR	0.08	
Sakane 2011 21235825	2h OTT	Change in 2h OTT in mmol/L	1 y	Diet and PA Program (123)	9.2	8.0	NR	0.083
				Control (131)	9.0	8.3	NR	
		3 y		Diet and PA Program (103)	9.2	8.4	NR	0.553
				Control (110)	9.0	8.5	NR	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

	FPG	Change in FPG in mmol/L	1 y	Diet and PA Program (123)	5.9	5.8	NR	0.698
				Control (131)	6.1	5.9	NR	
			3 y	Diet and PA Program (103)	5.9	6.0	NR	0.481
				Control (110)	6.1	6.0	NR	
	Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (123)	64.9	63.5	NR	0.023
				Control (131)	63.9	63.1	NR	
			3 y	Diet and PA Program (103)	64.9	63.1	NR	0.069
				Control (110)	63.9	62.5	NR	
	BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (123)	24.8	24.2	NR	0.022
				Control (131)	24.5	24.2	NR	
			3 y	Diet and PA Program (103)	24.8	24.3	NR	0.051
				Control (110)	24.5	24.4	NR	
Touomilehto, 2001 1133390	2h OTT	Change in 2h plasma glucose in mg/dL	1 y	Diet and PA Program (256)	159	NR	-15	0.003

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (250)	159	NR	-5	
		2 y	Diet and PA Program (256)	159	NR	-14	0.0002
			Control (250)	159	NR	0	
		3 y	Diet and PA Program (231)	159	NR	-0.5	0.0664
			Control (203)	159	NR	-0.1	
SBP	Change in SBP in mmHg	1 y	Diet and PA Program (256)	140	NR	-5	0.007
			Control (250)	136	NR	-1	
		2 y	Diet and PA Program (256)	86	NR	-5	0.0005
			Control (250)	86	NR	0	
DBP	Change in DBP in mmHg	1 y	Diet and PA Program (256)	86	NR	-5	0.02
			Control (250)	86	NR	-3	
		2 y	Diet and PA Program (256)	86	NR	-5	0.0125
			Control (250)	86	NR	-3	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

FPG	Change in FPG in mg/dL	1 y	Diet and PA Program (256)	109	NR	-4	<0.001		
			Control (250)	110	NR	1			
		2 y	Diet and PA Program (256)	109	NR	-2	0.0001		
			Control (250)	110	NR	4			
		3 y	Diet and PA Program (231)	109	NR	0 mmol/L	0.0664		
			Control (203)	110	NR	0.1 mmol/L			
HbA1c	Change in HbA1c in %	1 y	Diet and PA Program (256)	5.7	NR	-0.1	0.0003		
			Control (250)	5.6	NR	0.1			
		3 y	Diet and PA Program (231)	5.7	NR	-0.2	0.002		
			Control (203)	5.6	NR	0.0			
		HDL-c	Change in HDL-c in mg/dL	1 y	Diet and PA Program (256)	46	NR	2	0.06
					Control (250)	47	NR	1	
2 y	Diet and PA Program (256)			46	NR	4	0.2003		
	Control (250)								

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

			Control (250)	47	NR	3	
		3 y	Diet and PA Program (231)	46	NR	0.14 mmol/L	0.1354
			Control (203)	47	NR	0.11 mmol/L	
Total cholesterol	Change in total cholesterol in mg/dL	1 y	Diet and PA Program (256)	215	NR	-5	0.62
			Control (250)	215	NR	-4	
		2 y	Diet and PA Program (256)	215	NR	-4	0.1834
			Control (250)	215	NR	0	
		3 y	Diet and PA Program (231)	215	NR	-0.1 mmol/L	0.0712
			Control (203)	215	NR	0.1 mmol/L	
Triglycerides	Change in triglycerides in mg/dL	1 y	Diet and PA Program (256)	154	NR	-18	0.001
			Control (250)	258	NR	-1	
		2 y	Diet and PA Program (256)	154	NR	-18	0.0026
			Control (250)	258	NR	0	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

		3 y	Diet and PA Program (231)	154	NR	-0.1 mmol/L	0.024	
			Control (203)	258	NR	0.0 mmol/L		
Weight, absolute	Change in weight in kg	1 y	Diet and PA Program (256)	86.7	NR	-4.2	<0.001	
			Control (250)	85.5	NR	-0.8		
		2 y	Diet and PA Program (256)	86.7	NR	-3.5	0.0001	
			Control (250)	85.5	NR	-0.8		
		3 y	Diet and PA Program (NR)	86.7	NR	-3.5	<0.0001	
			Control (NR)	85.5	NR	-0.9		
		7 y	Diet and PA Program (265)	86.7	84.3	NR	NR	
			Control (257)	85.5	85.6	NR		
	BMI	Change in BMI in kg/m ²	1 y	Diet and PA Program (256)	31.4	NR	-1.6	<0.0001
				Control (250)	31.1	NR	-0.4	
		3 y	Diet and PA Program (231)	31.4	NR	-1.3	<0.0001	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

				Control (203)	31.1	NR	-0.3	
Savoye 2014 24062325	2h OTT	Change in 2h OTT in mg/dL	6 mo	Diet and PA Program (31)	153.6	NR	-27.2	0.005
				Control (27)	148.6	NR	-10.1	
	FPG	Change in FPG in mg/dL	6 mo	Diet and PA Program (31)	92.9	92.4	-0.5	0.16
				Control (27)	148.6	NR	-2.5	
	SBP	Change in SBP in mmHg	6 mo	Diet and PA Program (31)	118.5	NR	-6.2	0.005
				Control (27)	123.3	NR	-0.7	
	DBP	Change in DBP in mmHg	6 mo	Diet and PA Program (31)	67.3	NR	-0.9	0.09
				Control (27)	67.8	NR	8.3	
	HbA1c	Change in HbA1c in %	6 mo	Diet and PA Program (31)	5.7	NR	-0.16	0.19
				Control (27)	5.6	NR	-0.05	
	HDL-c	Change in HDL-c in mg/dL	6 mo	Diet and PA Program (31)	40.1	NR	-2.8	0.60
				Control (27)	39.8	NR	-3.9	

Diabetes Prevention and Control: Combined Diet & Physical Activity Programs– Evidence Table, Results of Programs vs. Controls

LDL-c	Change in LDL-c in mg/dL	6 mo	Diet and PA Program (31)	88.3	NR	-1.3	0.37
			Control (27)	92.5	NR	3.5	
Total cholesterol	Change in total cholesterol in mg/dL	6 mo	Diet and PA Program (31)	151.1	NR	-10.8	0.24
			Control (27)	159.2	NR	-2.1	
Triglycerides	Change in triglycerides in mg/dL	6 mo	Diet and PA Program (31)	1.6	NR	38.9	0.005
			Control (27)	1.8	NR	-17.3	
BMI	Change in the BMI z score	6 mo	Diet and PA Program (31)	2.2	NR	-0.05	<0.001
			Control (27)	2.3	NR	0.04	

Abbreviations

BMI, body mass index

DBP, diastolic blood pressure

FPG, fasting plasma glucose

HDL-c, high density lipoprotein cholesterol

LDL-c, low-density lipoprotein cholesterol

mo, month

NR, not reported

OGTT, oral glucose tolerance test

SBP, systolic blood pressure;

y, year