

SUPPLEMENTARY DATA

**Supplementary Table 1.** Search strategy for PsycINFO

1.	Exp diabetes mellitus
2.	(type 2 diab* or T2D or T2DM or Type II Diab*).tw.
3.	non-insulin dependent diabetes mellitus
4.	(non insulin dependent diabetes mellitus or NIDDM).tw.
5.	(insulin dependent diab* or insulin-dependent diab* or IDDM).tw.
6.	1 or 2 or 3 or 4 or 5
7.	exp exercise/
8.	exp physical activity
9.	exp recreation
10.	7 or 8 or 9
11.	6 and 10

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**Supplementary Table 2.** Summary of Included RCTs

Study ID, country of origin and setting	Details of Sample	Details of Intervention(s)	Mode of delivery	Interventionist	Assessment periods	Outcome Measures
Balducci et al 2010 <sup>21</sup>  Italy  Diabetes Outpatient Clinic	N = 606  % male = 58%  Mean age (SD): 58.8 years (8.6)  Time since diagnosis: average of 6 years  Management: Diet +/- Oral hypoglycaemic agent (OHA) = 88% Insulin = 12%	Intervention: Supervised aerobic and resistance exercise sessions and structured counselling targeting physical activity  n=303  Duration: 12 months  Intensity: Two supervised sessions per week for 12 months and structured counselling targeting physical activity (reinforced every three months)  Supervized PA/Exercise Component: Yes  Theory: Social Cognitive Theory  Usual care: n=303	Individual face to face sessions	Physicians and exercise specialists	Baseline and 12 months	HbA1c  Self-reported physical activity: MET-h/wk (Minnesota Leisure Time Questionnaire)  BMI
Balducci et al 2010 <sup>22</sup>  Italy  Setting not explicitly stated	N = 82  % Male = 59%  Mean age range: 60.6 to 64.3  Time Since Diagnosis: on average this ranged from 7.8 to 10.1 years  Management: Diet = not reported OHA = 80% Insulin = 15%	Usual care (Group A): n=20  Intervention (Group B): Structured exercise counselling to perform aerobic physical activity of low-intensity  n=20  Intensity: Not reported  Intervention (Group C): Structured exercise counselling and supervised aerobic exercise  n=20  Intensity: Supervised aerobic exercise (60 minutes; 70-80% Vo2Max) twice per week. Intensity of structured counselling was not reported.  Intervention (Group D): Structured exercise counselling and supervised aerobic and resistance exercise	Individual face to face sessions (Groups, A, B, C & D)  Group sessions (Groups C & D)	Physician-delivered counseling  It was unclear who supervised the exercise sessions in groups C and D	Baseline, 3, 6, 9, and 12 months	HbA1c  Self-reported physical activity: MET-h/wk (Minnesota Leisure Time Questionnaire)  BMI

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		<p>n=22</p> <p>Intensity: Supervized aerobic (40 minutes; 70-80% Vo2Max) and resistance (20 minutes; 1 repetition maximum) exercise twice per week. Intensity of structured counselling was not reported.</p> <p>Duration: 12 months</p> <p>Supervized PA/Exercise Component: Yes (Groups C and D)</p> <p>Theory: Social Cognitive Theory (groups B, C and D)</p>				
<p>Cheung et al 2009<sup>23</sup></p> <p>Australia</p> <p>Setting not explicitly stated</p>	<p>N = 40</p> <p>% Male = 32%</p> <p>Mean age = 59 years (intervention group) and 62 years (usual care)</p> <p>Time Since Diagnosis: Not reported</p> <p>Management: Diet = 8% OHA = 62% Insulin +/- OHA = 30%</p>	<p>Intervention: Supervized resistance exercise with Dynabands, which was continued at home</p> <p>n=21</p> <p>Duration: 16 weeks</p> <p>Intensity: Five supervised sessions fortnightly for the first month (and monthly for the remainder of the study) with an additional 30 minutes at home 5 days per week.</p> <p>Supervized PA/Exercise Component: Yes</p> <p>Theory: Not reported</p> <p>Usual care: n=19</p>	Group sessions	Fitness leaders and an exercise physiologist	Baseline and 4 months	<p>HbA1c</p> <p>Self-reported physical activity: minutes/wk (Active Australia Questionnaire)</p> <p>BMI</p>
<p>De Greef et al 2010<sup>24</sup></p> <p>Belgium</p> <p>Endocrinology Department</p>	<p>N = 41</p> <p>% Male = 68%</p> <p>Age range: 35 to 75 years</p> <p>Time Since Diagnosis: 1 to 5 years (n=16) and ≥ 5 years (n=25)</p> <p>Management: not reported</p>	<p>Intervention: 12-week lifestyle intervention consisting of five cognitive-behavioural group sessions of 90 minutes duration</p> <p>n=21</p> <p>Duration: 12 weeks</p> <p>Intensity: Five sessions over 12 weeks and one booster session at 23 weeks</p> <p>Supervized PA/Exercise Component: No</p> <p>Theory: Cognitive Behavioural Therapy &amp;</p>	Group sessions	A physical education movement scientist and a clinical psychologist	Baseline, 12 weeks and 1 year	<p>HbA1c</p> <p>Objectively assessed physical activity: Accelerometer minutes/day and pedometer steps/day</p> <p>BMI</p>

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		Motivational Interviewing				
De Greef et al 2011 <sup>25</sup>	N = 67 % Male = 50% Mean age (SD) = 67.4 (9.3) Time Since Diagnosis: >5 years (64.5%) and <5 years (35.5%) Management: OHA = 90.3% Combined OHA and insulin = 8.1% Insulin = 1.6%	Usual care: n=20 Intervention (Group 1): Individualised physical activity consultation using behavioral strategies n=22 Intensity: Three 15 minute consultations (one session every three weeks) Intervention (Group 2): Interactive group counselling targeting physical activity n=21 Intensity: Three 90 minute sessions (One session every three weeks) Duration: 12 weeks Supervized PA/Exercise Component: No (both intervention groups) Theory: Motivational Interviewing, Cognitive Behavioral Therapy & Social Cognitive Theory (both intervention groups) Usual care: n=24	Group 1: Individual face to face sessions Group 2: Group sessions	Group 1: A General Practitioner Group 2: A Behavioral Expert (Clinical Psychologist)	Baseline and 12 weeks	HbA1c Objectively assessed physical activity: pedometer steps/day; and self-reported physical activity: minutes/day (self-report diaries) BMI
De Greef et al 2011 <sup>26</sup>	N = 92 % Male = 69% Mean age (SD); 62 (9.0) years Time Since Diagnosis: >5 years = 82% Management: Combination of oral medication and insulin = 44%	Intervention: A pedometer-based behavioral modification program with telephone support targeting physical activity and sedentary behavior n=60 Duration: 24 weeks Intensity: One 30 minute face to face session and a supportive telephone call every 2 weeks for the first 4 weeks and every 4 weeks for the following 20 weeks Supervized PA/Exercise Component: No Theory: Motivational Interviewing, Cognitive Behavioral Therapy & Social Cognitive Theory	One individual face to face session and 7 telephone calls	Psychologist	Baseline, 24 weeks and 1 year	HbA1c Objectively assessed physical activity: pedometer steps/day; accelerometer minutes/day; and self-reported physical activity minutes/day (International Physical Activity Questionnaire [IPAQ])

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		Usual care: n=32				
Di Loreto et al 2003 <sup>27</sup>  Italy  Outpatient Diabetes Clinic	N=340  % Male = 47%  Mean age (SD); 61.6 years (intervention group); 62 years (usual care)  Time Since Diagnosis: mean 7.6 years  Management: Diet = 10% OHA = 76% Insulin = 14% Insulin and Metformin = 21%	Intervention: Structured counselling targeting physical activity  n=182  Duration: 2 years  Intensity: One 15 minute appointment every 3 months and one telephone call at one month following the first consultation  Supervised PA/Exercise Component: No  Theory: Social Cognitive Theory  Usual Care: n=158	Individual face to face sessions	Physicians	Baseline, 3 months and 2 years	HbA1c  Self-reported physical activity: hours/wk and METs per h/week (Modifiable Activity Questionnaire [MAQ])  BMI
Gram et al 2010 <sup>28</sup>  Denmark  Nordic Walking: Outdoors on forest paths  Exercise Prescription: Gymnasium	N = 68  % Male = 54%  Mean age across groups ranged from 59 to 62 years  Time Since Diagnosis: Not reported  Management: Not reported	Intervention (Group 1): Nordic Walking (NW)  n=22  Intensity: Participants trained twice per week for the first two months and once per week during the final 2 months. In total participants received between 25 and 27 sessions. Each supervised session lasted 45 minutes and included a 10-minute warm-up, 30 minutes of Nordic walking, and a 5-minute cool down. Participants were instructed to walk at a speed of at least moderate intensity (>40% of VO2max) continuously for a minimum of 30 minutes.  Intervention (Group 2): Exercise Prescription (EP)  n=24  Intensity: Participants trained twice per week for the first 2 months and once per week during the final 2 months. In total participants received between 25 and 27 sessions. Each supervised session lasted 45 minutes and included a 10-minute warm-up,	NW: Group sessions  EP: Group Sessions	Physiotherapist	Baseline, 4 and 12 months	HbA1c  Self-reported physical activity: hours spent on physical activity and activities of daily living (unvalidated questionnaire)  BMI

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		<p>30 minutes of exercise and a 5-minute cool down. Training intensity was individually based; however, participants had to work continuously for a minimum of 30 minutes at a workload of at least moderate intensity (&gt;40% of Vo2max). Prescription included both strength training and aerobic exercise.</p> <p>Duration: 4 months</p> <p>Supervised PA/Exercise Component: Yes (both NW and EP groups)</p> <p>Theory: No</p> <p>Usual Care: n=22</p>				
<p>Kim &amp; Kang 2006<sup>29</sup></p> <p>South Korea</p> <p>Outpatient Diabetes Clinic</p>	<p>N = 73</p> <p>% Male = 53%</p> <p>Mean age (SD); 55.1 (7.42) years</p> <p>Time Since Diagnosis: mean (SD) = 7.3 (6.05) years</p> <p>Management: OHA = 68%</p>	<p>Intervention (Group 1; Web-based): Stage-based physical activity counselling intervention for use by care providers</p> <p>n=28</p> <p>Intensity: Two clinic visits during the first 2 weeks and one further visit at the midpoint during the 12-week intervention period</p> <p>Intervention (Group 2; Printed Material): As above but in printed form</p> <p>n=22</p> <p>Intensity: Two clinic visits during the first 2 weeks and one further visit at the midpoint during the 12-week intervention period</p> <p>Duration: 12 weeks</p> <p>Supervised PA/Exercise Component: No (both intervention groups)</p> <p>Theory: Transtheoretical Model (both intervention groups)</p> <p>Usual Care: n=23</p>	Individual face to face sessions	Research Nurse	Baseline and 12 weeks	<p>HbA1c</p> <p>Self-reported physical activity using a self report instrument adapted from a 7-day recall questionnaire: METs-h/wk</p>
<p>Kirk et al 2004<sup>30</sup></p> <p>UK</p>	<p>N = 70</p> <p>% Male = 50%</p>	<p>Intervention: Counselling targeting physical activity</p> <p>n=35</p>	Individual face to face sessions	Trained Research Assistant	BL, 6 and 12 months	<p>HbA1c</p> <p>Objectively assessed physical</p>

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Setting not explicitly reported	<p>Mean age (SD); 57.6 (7.9) years</p> <p>Time Since Diagnosis: Not reported</p> <p>Management: Not reported</p>	<p>Duration: 6 months</p> <p>Intensity: Two face-to-face sessions and four follow-up telephone calls at 1, 3, 7 and 9 months</p> <p>Supervised PA/Exercise Component: No</p> <p>Theory: Transtheoretical Model</p> <p>Usual Care: n=35</p>				<p>activity: Accelerometer counts and self-reported physical activity using a 7-day recall questionnaire: minutes/ wk spent active</p> <p>BMI</p>
<p>Kirk et al 2009<sup>31</sup></p> <p>UK</p> <p>University</p>	<p>N = 134</p> <p>% Male = 49%</p> <p>Mean age ranged from 59.2 to 63.2 years</p> <p>Time Since Diagnosis on average ranged from 9.8 to 12.4 years</p> <p>Management: OHA = 54% Insulin = 10% OHA and insulin = 5%</p>	<p>Intervention (Group 1; Physical Activity Counseling in person): Two 30-minute one-to-one consultations at baseline and 6 months where written physical activity packs were given to participants and used by the researcher to discuss relevant topics during the consultation</p> <p>n=47</p> <p>Intensity: Two 30 minute sessions and four 5-10 minute telephone calls at 1, 3, 6 and 9 months</p> <p>n=47</p> <p>Intervention group 2; Physical Activity Counseling in written form: A written physical activity pack was given to participants to work through in their own time</p> <p>n=52</p> <p>Intensity: Two 30 minute sessions and three 5-10 minute telephone calls at 1, 3, 6 and 9 months</p> <p>Duration: 12 months</p> <p>Supervised PA/Exercise Component: No (both intervention groups)</p> <p>Theory: Transtheoretical Model (both intervention groups)</p> <p>Usual Care: n=35</p>	Individual face to face sessions	Trained Research Assistant	Baseline, 6 and 12 months	<p>HbA1c</p> <p>Objectively assessed physical activity: Accelerometer counts/ wk and self-reported physical activity using a 7-day recall questionnaire: minutes/wk</p> <p>BMI</p>
Ligtenberg et al 1997 <sup>32</sup>	N = 58	Intervention: A 4-phase physical training programme	Group sessions	Physician and physiotherapist	Baseline, 6, 12 and 26	HbA1c

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<p>Netherlands</p> <p>Setting not reported for supervised exercise</p> <p>Participants continued to exercise at home</p>	<p>% Male = 34%</p> <p>Mean age (SD); 61 (5.0) for usual care &amp; 63 years (5.0) for intervention group</p> <p>Time Since Diagnosis: mean (SD) = 9.4 years (7.3) for control group &amp; 6.6 years (4.6) for intervention group</p> <p>Management: Insulin = 34%</p>	<p>n=30</p> <p>Duration: 26 weeks</p> <p>Intensity: Prior to training at home, study participants trained together three times per week for 6 weeks under direct supervision. In addition they received a telephone call once every two weeks over a 6 week period</p> <p>Supervised PA/Exercise Component: Yes</p> <p>Theory: Not explicitly stated</p> <p>Usual Care: n=28</p>			<p>weeks</p>	<p>Self-reported physical activity using a validated questionnaire</p>
<p>Plotnikoff et al 2010<sup>33</sup></p> <p>Canada</p> <p>Diabetes Clinics &amp; Community</p>	<p>N=48</p> <p>% Male = 33%</p> <p>Mean age = 55 years (intervention) and 54 years (usual care)</p> <p>Time Since Diagnosis: Not reported</p> <p>Management: Not reported</p>	<p>Intervention: Home-based resistance exercise three times per week</p> <p>n=27</p> <p>Duration: 16 weeks</p> <p>Intensity: During the first 2 weeks the exercise specialist supervised all three sessions. This was reduced to twice per week during weeks 3–4, once per week during weeks 5–8 and once biweekly during the last 8 weeks. In total the exercise specialist supervised 18 of 48 sessions</p> <p>Supervised PA/Exercise Component: Yes</p> <p>Theory: Not explicitly stated</p> <p>Usual care: n=21</p>	<p>Individual face to face sessions</p>	<p>Exercise specialist</p>	<p>Baseline and 16 weeks</p>	<p>HbA1c</p> <p>Self-reported physical activity: MET minutes/wk (Godin Leisure Time Questionnaire [GLTQ])</p> <p>BMI</p>
<p>Plotnikoff et al 2011<sup>34</sup></p> <p>Canada</p> <p>Community</p>	<p>N = 96</p> <p>% Male = 40%</p> <p>Mean age (SD); 60 (27-78) years</p> <p>Time Since Diagnosis: mean (SD) = 6 (9.8)</p>	<p>Intervention: Diabetes Education Program (DEP) plus a supplemental theory based physical activity counselling intervention (DEPplusPAS)</p> <p>n=47</p> <p>Duration: 8 weeks</p> <p>Intensity: Eleven group sessions over the duration of the intervention period were delivered as part of the</p>	<p>DEP: group sessions</p> <p>Supplemental program (PAS): Individual face to face sessions</p>	<p>Diabetes Educator (DEP)</p> <p>Personal Trainer (DEPplusPAS)</p> <p>Nurse (Fitness testing)</p>	<p>Baseline, 3, 6 and 12 months</p>	<p>HbA1c</p> <p>Self-reported physical activity: MET minutes/wk (Godin Leisure Time Questionnaire [GLTQ])</p> <p>BMI</p>



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	years  Management: Not reported	DEP. Two face-to-face sessions and 13 supportive telephone calls were provided concurrently as part of the supplementary programme. Telephone support was offered weekly for the first two months and bi weekly for 2.5 months  Supervised PA/Exercise Component: No  Theory: Social Cognitive Theory and Transtheoretical Model  Usual care: n=49				
Samaras et al 1997 <sup>35</sup>  Australia  Community Leisure Centre	N = 26  % Male = 38%  Mean age = 60.5 years  Time Since Diagnosis: Not reported  Management: Diet and Metformin = 35% Sulfonyleurea = 39% Insulin = 27%	Intervention Group: 6 month exercise support group programme targeting physical activity  n=13  Duration: 6 months  Intensity: Monthly 1 hour sessions with the group facilitator and one other team member. The exercise sessions remained available to participants within the intervention group.  Supervised PA/Exercise Component: Yes  Theory: Precede-proceed Model  Usual Care: n=13	Group exercise with individual face to face sessions	Nurse  Exercise physiologist  Dietician  Physician  Group facilitator	Baseline, 6 and 12 months	HbA1c  Self-reported physical activity: METs (validated questionnaire)  BMI
Tudor-Locke et al 2004 <sup>36</sup>  Canada  Diabetes education centre	N = 60  % Male = 55%  Mean age (SD); 52.7 (5.2)  Time Since Diagnosis: Mean = 2.7 years  Management: Diet = 55.3% OHA = 47.4%	Intervention: The First Step Programme targeting everyday levels of physical activity  n=24  Duration: 16 weeks  Intensity: Four weekly group meetings for the first 4 weeks that included a group walk. Motivational postcards were mailed at 6 and at 10 weeks.  Supervised PA/Exercise Component: Yes  Theory: Social Cognitive Theory  Usual Care: n=23	Group sessions	Physical activity experts/diabetes educators	Baseline, 16 and 24 weeks	HbA1c  Objectively assessed physical activity: Pedometer steps/day
Wisse et al	N = 74	Intervention: Personalized exercise prescription. An	Individual face to	Physical therapist	Baseline, 1	HbA1c

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<p>2010<sup>37</sup> Netherlands Outpatient Diabetes Clinic</p>	<p>% Male = 51%  Mean age (SD): 54.3 years (intervention) and 51.3 years (usual care)  Time Since Diagnosis: Not reported  Management: Exogenous insulin treatment (100%)</p>	<p>extended version of the Physician-based Assessment and Counselling for Exercise (PACE) project.  n=38  Duration: 2 years  Intensity: Two 1-hour consultations with a physical therapist and a 15 minute telephone call at 2 and 6 weeks. Over the 2-year follow-up period, a 30-minute consultation was alternated every 6 weeks with a 15 minute telephone call.  Supervised PA/Exercise Component: No  Theory: Transtheoretical Model  Usual Care: n=36</p>	<p>face sessions</p>		<p>and 2 years</p>	<p>Self-reported physical activity: METs/wk (Tecumseh/Minnesota Scale)  BMI</p>
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**Supplementary Table 3.** Methodological quality assessment and grading within and across studies

Study ID	Power calculation (sample size achieved at final follow-up)	Attrition rate	Intention to treat	Methodological Quality Assessment						Risk of bias within studies	Outcomes				
				A	B	C	D	E	F		HbA1c	Objective physical activity	Self-reported physical activity	BMI	
Balducci et al 2010 <sup>21</sup>	Yes (Yes)	n=43 (7.1%)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Low	√	-	√	√
Balducci et al 2010 <sup>22</sup>	Yes (Yes)	n=5 (6.1%)	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear	√	-	√	√
Cheung et al 2009 <sup>23</sup>	NR (NR)	n=3 (8%)	NR	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	-	√	√
De Greef et al 2010 <sup>24</sup>	Yes (No)	n=5 (12.2%)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Low	√	√	-	√
De Greef et al 2011 <sup>25</sup>	Yes (No)	n=3 (4.5%)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Low	√	√	√	√
De Greef et al 2011 <sup>26</sup>	Yes (Yes)	n=4 (4.3%)	Yes	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	√	√	-
Di Loreto et al 2003 <sup>27</sup>	Yes (Yes)	n=3 (<1%)	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	-	√	√
Gram et al 2010 <sup>28</sup>	Yes (Yes)	n=3 (4%)	Yes	Yes	Unclear	Unclear	Yes	No	Yes	Yes	Unclear	√	-	-	√
Kim & Kang 2006 <sup>29</sup>	Yes (Yes)	NR	No	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	Unclear	√	-	√	-
Kirk et al 2004 <sup>30</sup>	Yes (Yes)	n=11 (16%)	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Unclear	√	√	√	√
Kirk et al 2009 <sup>31</sup>	Yes (Yes)	n=18 (13%)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Low	√	√	√	√
Ligtenberg et al 1997 <sup>32</sup>	NR (NR)	n=7 (12%)	NR	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	-	√	-
Plotnikoff et al 2010 <sup>33</sup>	Yes (Unclear)	n=7 (14.6%)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Low	√	-	√	√
Plotnikoff et al 2011 <sup>34</sup>	Yes (Yes)	n=8 (8.3%)	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	-	√	-
Samaras et al 1997 <sup>35</sup>	NR (NR)	NR	NR	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	Unclear	√	-	√	-
Tudor-Locke et al 2004 <sup>36</sup>	NR (NR)	n=22 (37%)	NR	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	√	√	-	-
Wisse et al 2010 <sup>37</sup>	NR (NR)	n=13 (18%)	NR	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear	√	-	√	√
											Risk of bias across studies	Unclear	Low	Unclear	Unclear

NR = Not Reported. A = adequate sequence generation; B = allocation concealment; C = blinding/masking; D = incomplete outcome data addressed; E = free of selective outcome reporting; F = study free of other problems.

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 **Supplementary Table 4.** Treatment fidelity assessment

Study ID	Treatment Fidelity Strategies				
	Design of study	Monitoring and improving provider training	Monitoring and improving delivery of treatment	Monitoring and improving receipt of treatment	Monitoring and improving enactment of treatment skills
Balducci et al 2010 <sup>21</sup>	Yes	Yes	Yes	Yes	Yes
Balducci et al 2010 <sup>22</sup>	Yes	No	Yes	Yes	Yes
Cheung et al 2009 <sup>23</sup>	Yes	No	Unclear	Yes	Yes
De Greef et al 2010 <sup>24</sup>	Yes	No	Yes	Yes	Yes
De Greef et al 2011 <sup>25</sup>	Yes	Yes	Yes	Yes	Yes
De Greef et al 2011 <sup>26</sup>	Yes	No	Yes	Yes	Yes
Di Loreto et al 2003 <sup>27</sup>	Yes	No	Yes	Yes	Yes
Gram et al 2010 <sup>28</sup>	Yes	No	Unclear	Yes	Yes
Kim & Kang 2006 <sup>29</sup>	Yes	Unclear	Yes	Yes	Yes
Kirk et al 2004 <sup>30</sup>	Yes	Unclear	Yes	Yes	Yes
Kirk et al 2009 <sup>31</sup>	Yes	Unclear	Yes	Yes	Yes
Ligtenberg et al 1997 <sup>32</sup>	Yes	No	Unclear	Yes	Yes
Plotnikoff et al 2010 <sup>33</sup>	Yes	No	Yes	Yes	Yes
Plotnikoff et al 2011 <sup>34</sup>	Yes	No	Yes	Yes	Yes
Samaras et al 1997 <sup>35</sup>	Yes	No	Yes	Yes	Yes
Tudor-Locke et al 2004 <sup>36</sup>	Yes	No	Yes	Yes	Yes
Wisse et al 2010 <sup>37</sup>	Yes	No	Yes	Yes	Yes

Yes = a treatment fidelity strategy was reported and described; Unclear = insufficient information to make a judgement about the presence or absence of a treatment fidelity strategy; No = treatment fidelity strategy not reported

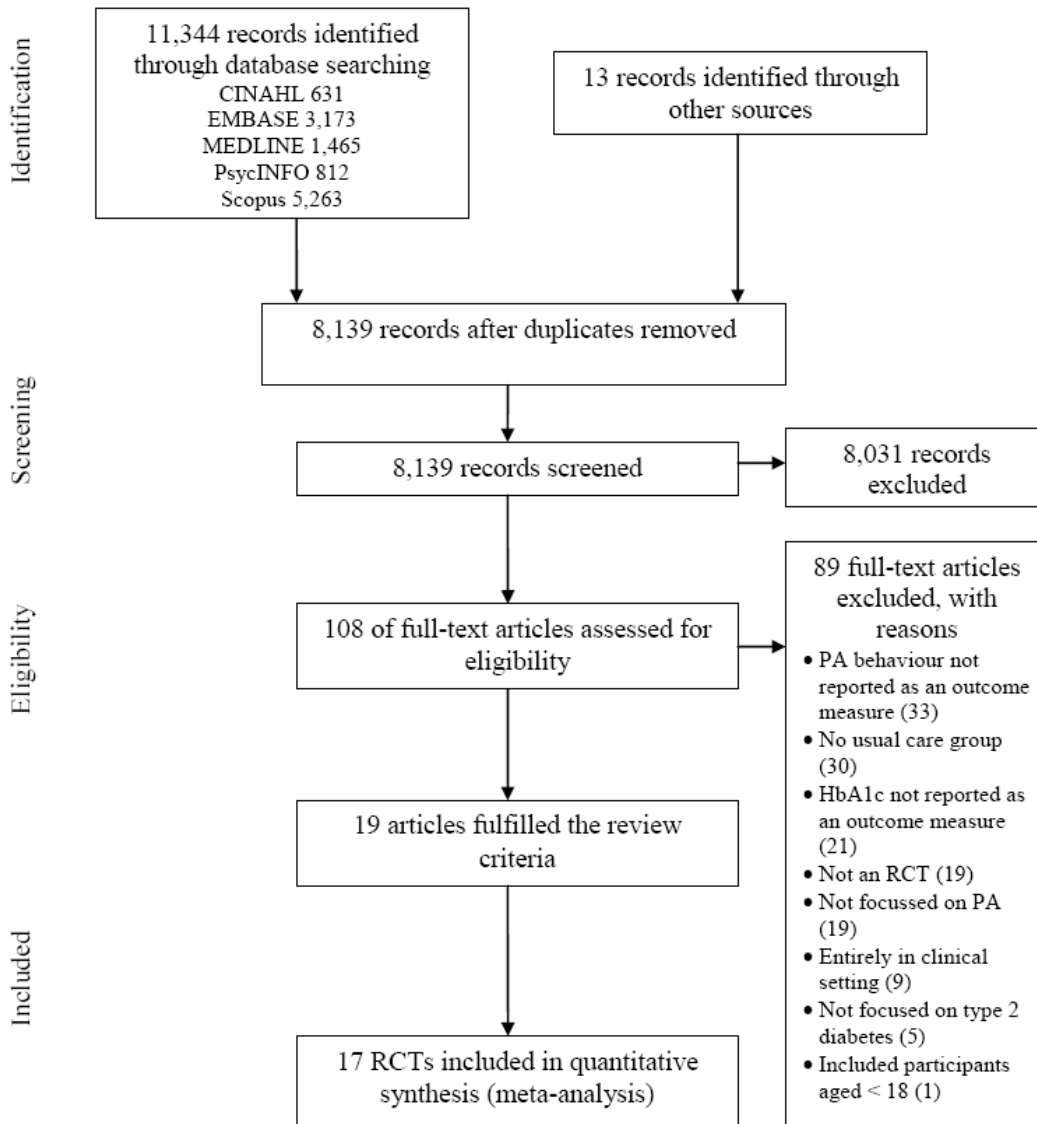
SUPPLEMENTARY DATA

**Supplementary Table 5.** Behavior change techniques utilized across 17 Randomized Control Trials targeting physical activity/exercise in adults with type 2 diabetes.

	Frequency
Goal setting (behaviour) [5]	17
Use of follow-up prompts [27]	16
Prompt self-monitoring of behaviour [16]	16
Barrier identification/problem solving [8]	15
Provide instruction on how to perform the behaviour [21]	15
Prompt review of behavioural goals [10]	14
Plan social support/social change [29]	13
Relapse prevention/coping planning [35]	11
Provide information on consequences of behaviour in general [1]	10
Set graded tasks [9]	10
Provide information on where and when to perform the behaviour [20]	10
Time management [38]	8
Provide feedback on performance [19]	7
Action planning [7]	6
Provide information on consequences of behaviour to the individual [2]	5
Prompting generalisation of a target behaviour [15]	5
Prompting focus on past success [18]	4
Teach to use prompts/cues [23]	4
Goal setting (outcome) [6]	3
Prompt rewards contingent on effort or progress towards behaviour [12]	3
Motivational interviewing [37]	3
Prompt self-monitoring of behavioural outcome [17]	2
Provide rewards contingent on successful behaviour [13]	1
Model/demonstrate the behaviour [22]	1
Prompt practice [26]	1
Provide information about others' approval [3]	0
Provide normative information about others' behaviour [4]	0
Prompt review of outcome goals [11]	0
Shaping [14]	0
Environmental restructuring [24]	0
Agree behavioural contract [25]	0
Facilitate social comparison [28]	0
Prompt identification as role model/position advocate [30]	0
Prompt anticipated regret [31]	0
Fear arousal [32]	0
Prompt self talk [33]	0
Prompt use of imagery [34]	0
Stress management/emotional control training [36]	0
General communication skills training [39]	0
Stimulate anticipation of future rewards [40]	0

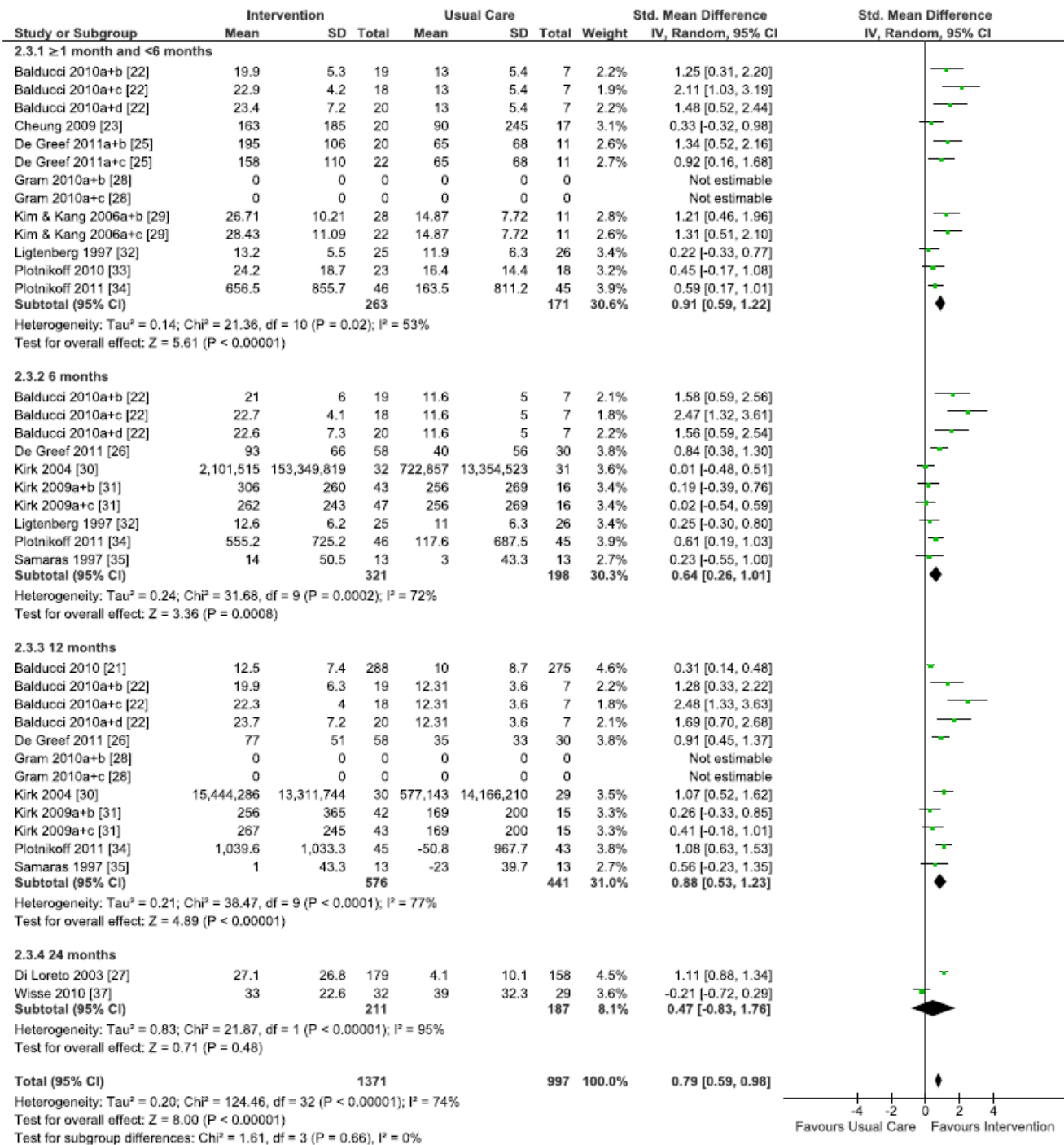
NB: The frequencies for BCTs include those from each intervention arm compared with the usual care arm across all 17 RCTs. Number in squared brackets corresponds with the code assigned to each behavior change technique described in the taxonomy <sup>(19)</sup>

**Supplementary Figure 1.** PRISMA Diagram showing the process used to identify RCTs



SUPPLEMENTARY DATA

Supplementary Figure 2. Forest plot for self-reported physical activity and exercise.



SUPPLEMENTARY DATA

Supplementary Figure 3. Forest plot for Body Mass Index (BMI).

