Supplementary Materials

Table legends

Table S1. Full electronic search strategy for EMBASE, MEDLINE, and Cochrane Central Register of Controlled Trials

Table S2. Description of the exercise models of included random control trials

Table S3. The risk of bias for included single-arm intervention trials

Table S4. GRADE Working Group grades of evidence for included trials

Figure legends

Figure S1. Funnel plot of RCTs included in this meta-analysis

Figure S2. Beggs test of RCTs included in this meta-analysis

Figure S3. Comparison of TIR change between physical activity treatment group and control group stratified by disease type

Figure S4. Comparison of MAGE change between physical activity treatment group and control group stratified by disease type

Figure. S5 Comparison of TAR change between physical activity treatment group and control group stratified by disease type

Figure. S6 Comparison of TBR change between physical activity treatment group and control group stratified by disease type

Figure. S7 Associated factors with the change of TIR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)

Figure. S8 Associated factors with the change of MAGE by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)

Figure. S9 Associated factors with the change of TAR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)

Figure. S10 Associated factors with the change of TBR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)

Data Base Full electronic search strategy EMBASE 'muscle strength'/exp OR 'weight lifting'/exp OR 'circuit training'/exp OR 'resistance training'/exp OR 'aerobic training'/exp OR 'kinesiotherapy'/exp OR 'exercise'/exp AND 'diabetes mellitus'/exp AND 'continuous glucose monitoring'/exp MEDLINE ((("Exercise"[Mesh] OR "Circuit-Based Exercise"[Mesh] OR "Cool-Down Exercise"[Mesh] OR "Warm-Up Exercise"[Mesh] OR "Exercise Movement Techniques" [Mesh] OR "Exercise Therapy" [Mesh] OR "Exercise Test" [Mesh] OR "Resistance Training" [Mesh] OR "Muscle Stretching Exercises" [Mesh] OR "High-Intensity Interval Training" [Mesh]) AND ("Diabetes Mellitus" [Mesh] OR "Diabetes, Gestational"[Mesh] OR "Diabetes Mellitus, Type 2"[Mesh]))) AND (continuous glucose monitoring) Cochrane Central Register "Diabetes Mellitus" or "Diabetes Insipidus" and "muscle strength" or "muscle strengthening" or "muscle-strengthening" or "weight of Controlled Trials lifting" or weightlifting or "weight bearing" or weight-bearing or "weight training" or "circuit training" or "strength exercise" or "strengthening exercise" or "strength training" or "resistance exercise" or "resistance training" or "progressive resistance" or "Physical Exercise" or "Isometric Exercise" or "aerobic exercise" or "aerobic training" or "exercise therapy" and "continuous glucose monitoring"

Table S1. Full electronic search strategy for EMBASE, MEDLINE, and Cochrane Central Register of Controlled Trials

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Author, year	Exercise duration	Mean adherence (%)	Treatment group	Specific exercise type	Relative intensity values	Exercise time/ total sets per sessions	Frequency
Paddy 24 hou 2017(1)			Light-intensity walking	Walking	NA	Sitting plus 3 min bouts of light- intensity walking at 3.2 km/h every 30 min;	NA
	24 hours	100	Simple resistance activities	Alternating half- squats, calf raises, brief gluteal contractions and knee raises	NA	Sitting plus 3 min bouts of simple resistance activities every 30 min	NA
			Control	prolonged sitting	NA	NA	NA
Jonida 24hou 2016(2)	2.41		Continous walking	Walking on the treadmill	50 %	Continous walking 40min	1 session per 24 hours
	24nours	urs NA	Split walking	Walking on the treadmill	50 %	Split walking 20min+20min	1 session per 24 hours
			Control	NA	NA	NA	NA
Jordan 2019(3)	24hours	100	Exercise	Walking on the treadmill	NA	Walking at 5.0 km/hour and 0.5%	1 session per 24

						incline; A 5-min warm up and cooldown at a pace of 3.5 km/hour and 0.0% grade were included	hours
			Control	50 min of sitting	NA	NA	1 session per 24 hours
Zheng Li 2018(4)	24hours	100	Exercise	walking on a treadmill after dinner	40%	20min	1 session per 24 hour
			control	NA	NA	NA	NA
			Reduced- exertion high- intensity interval training (REHIT)	performed on mechanically braked cycle ergometer	Exercise at a resistance equivalent to 5% of body mass	10×60 s cycling efforts interspersed with 60 s of low- intensity recovery	1 session per 24 hours
Richard 2018(5)	24hours	100	Moderate– vigorous- intensity continuous exercise 30 min (MICT)	performed on an electronically braked cycle ergometer	50%	30 min of continuous cycling a	1 session per 24 hours
			High-intensity	performed on an	85%	10×60 s cycling	1 session

			interval training (HIIT)	electronically braked cycle		efforts interspersed with 60 s of low- intensity recovery	per 24 hours
			Control	NA	NA	NA	NA
			Continuous walking	Walking on a treadmill	73%	60min	5 days per week
Kristian 2017(6)	2weeks	99%	interval walking training	Walking on a treadmill	54% and 89%	60min, alternating cycles of 3 min slow walking (54% of [•] VO ₂ peak) and 3 min fast walking (89% of VO 2peak).	5 days per week
			control	NA	NA	NA	NA
Myette- Côté	24 hours NA		Exercise	Walking	NA	50 minutes	1 session per 24 hours
2016(7)			control	NA	NA	NA	NA
Tasuku 2016(8)	u 24hours NA		Moderate- intensity continuous exercise	Exercise on a treadmill	55%	60min	1 session per 24 hours
			High-intensity interval	Exercise on a treadmill	40%-100%	60min (3 minutes at	1 session per 24

			exercise			workload	hours
						corresponding to 40%	
						1minute at workload	
						corresponding to	
						100% VO ₂ peak)	
			Control	NA	NA	NA	NA
			morning walk	continuous brisk		20min 40min and	1 session
			after breakfast	walk	NA	60min	per 24
Iennifer		100%		waik		oonnin	hours
2010(0)	24h	10070	post-meal	st-meal short physical			
2019(9)			breaks from	activity	NA	short physical activity	NA
			sitting	activity			
			control	NA	NA	NA	NA
				Walking on a			
			Morning	treadmill at 5.0		40 minutes at 5.0	lassion
			exercise	km/h with 0.5%	NA	km/h with 0.5%	per24hours
				grade.		grade.	
Matthew				Walking on a			
2020(10)	12 days	NA	Afternoon	treadmill at 5.0		40 minutes at 5.0	lession
2020(10)			Alternoon	km/h with 0.5%	NA	km/h with 0.5%	nor24hours
			exercise	grade.		grade.	per24nours
			Evening	Walking on a		40 minutes at 5.0	lsession
			evercise	treadmill at 5.0	NA	km/h with 0.5%	
			CACICISC	km/h with 0.5%		grade.	per24nours

				grade.			
			control	NA	NA	NA	NA
			Aerobic exercise	Treadmill exercise	60%	45min	2sessions per week
Ravi 2019(11)	3weeks	NA	resistance exercise	five different exercises (leg press, bench press, leg extension, leg flexion and seated row)	60-80%	60-80% three sets of 8–12 repetitions	
			control	NA	NA	NA	NA
Kamilla 2018(12)		s NA	Endurance training	Cycling	50%	40 min	3 days per week
	11weeks		High-intensity interval training	Cycling	95%	1 min intervals at 95% of peak workload interspersed by 1 min active recovery for 20 min	3 days per week
			Control	Daily activities	NA	NA	NA
Angela 2020(13)	12weeks	67%	high-intensity interval training	cycle ergometer or treadmill	60–95%peakheartrate	5 min of warm-up at60%peak heartrate 4 bouts of 4-min high- intensity intervals at	3 days per week

				85–95% HR peak	
				Three bouts of 3-min	1
				recovery intervals at	
				50–	
				70%HR peak	
 65%	control	Daily activities	NA	NA	NA

HR: heart rate; NA: not available;

Table S3. The ris	sk of bias for included r	andom control trials					
Author, year	Adequate randomization sequence generation	Adequate allocation concealment	Blinding of participants and caregivers	Binding of outcome assessors and adjudicators	Free of infrequent missing outcome data	Free of selective outcome reporting	Free of other bias
Paddy 2017(1)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Jonida Haxhi 2016(2)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Jordan L.Rees	Probably yes	Probably no Randomized,	Definitely no	Definitely yes	Probably yes	Definitely yes	Probably yes
2019(3)	Randomize	Open label	Open	v	There		Generally

Table S2. The well of high for included random control trials

	d, Open label		label		were 21.1% patients with missing outcome data; The ing outcome data were generally balanced across treatment groups, with similar reasons for missing data		balanced baseline characteris tics across groups
Zheng Li 2018(4)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Richard S.Metcalfe 2018(5)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris

							tics across groups
Kristian Karstoft 2017(6)	Definitely yes Randomize d, Open label Computer generated randomization	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Probably yes There were 9.1% (1/11) patients with missing outcome data; The missing outcome data were generally balanced across treatment groups, with similar reasons for missing data	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Myette-Côté 2016(7)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Tasuku	Probably	Probably no	Definitely	Definitely yes	Definitely	Definitely	Probably

2016(8)	yes Randomize d, Open label	Randomized, Open label	no Open label		yes There were 0% missing outcome data;	yes	yes Generally balanced baseline characteris tics across groups
Jennifer 2019(9)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Matthew 2020(10)	Probably yes Randomize d, Open label a Latin square	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Probably yes There were 21.4% (3/14) patients with missing outcome data; The missing outcome data were generally balanced across treatment	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups

					groups, with similar reasons for missing data		
Ravi Reddy 2019(11)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Kamilla 2018(12)	Definitely yes Randomize d, Open label sealed envelopes	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Definitely yes There were 0% missing outcome data;	Definitely yes	Probably yes Generally balanced baseline characteris tics across groups
Angela 2020(13)	Probably yes Randomize d, Open label	Probably no Randomized, Open label	Definitely no Open label	Definitely yes	Probably yes There were 16.7% (2/12) and 20% (3/15) patients in exercise and	Definitely yes	Probably yes Generally balanced baseline characteris tics across

control groups	groups
with missing	
outcome data,	
respectively;	
missing	
outcome data	
were generally	
balanced	
across	
treatment	
groups, with	
similar reasons	
for missing	
data	
	control groups with missing outcome data, respectively; missing outcome data were generally balanced across treatment groups, with similar reasons for missing data

Table S4. GRADE Working Group grades of evidence for included trials

		Quality as	sessment	No of pat	ients		Effect					
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Physical activity	Control	Relative (95% Cl)	Absolute	Quality	Importance
MAGE (Be	MAGE (Better indicated by lower values)											
19	randomised	serious ¹	serious ²	no serious	no serious	none	303	311	-	MD 0.68 lower (1.01 to	⊕⊕OO	not
	trials			indirectness	imprecision					0.36 lower)	LOW	available
TIR (Bette	r indicated by	lower valu	ies)									
6	randomised	serious ³	no serious	no serious	no serious	none	120	112	-	MD 4.17 higher (1.11 to	⊕⊕⊕O	not
	trials		inconsistency	indirectness	imprecision					7.23 higher)	MODERATE	available
TAR (Bette	er indicated by	lower val	ues)									
19	randomised	serious ³	no serious	no serious	no serious	none	265	265	-	MD 3.54 lower (5.21 to	$\oplus \oplus \oplus O$	not
	trials		inconsistency	indirectness	imprecision					1.88 lower)	MODERATE	available
TBR (Bette	er indicated by	lower val	ues)	-	-	·		·				·
8	randomised	serious ³	serious	no serious	no serious	none	95	87	-	MD 1.54 higher (0.24	⊕⊕OO	not
	trials			indirectness	imprecision					lower to 3.32 higher)	LOW	available

¹ Lack of blinding

² Unexplained high heterogeneity of results

³ Unexplained heterogeneity of results

High quality: Further research is very unlikely to change our confidence in the estimate of effect.

Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

Very low quality: We are very uncertain about the estimate.

Figure S1. Funnel plot of RCTs included in this meta-analysis





Figure S2. Beggs test of RCTs included in this meta-analysis

Figure S3. Comparison of TIR change between physical activity treatment group and control group stratified by disease type

	Exercise Control					Mean Difference	Mean Difference		
Study or Subgroup	Mean [%]	SD [%]	Total	Mean [%]	SD [%]	Total	Weight	IV, Fixed, 95% CI [%]	IV, Fixed, 95% CI [%]
3.4.1 type 1 diabetes									
Angela 2020	45.5	17.6	12	46.5	12.5	15	6.7%	-1.00 [-12.80, 10.80]	_
Ravi 2018(Aerobic exercise)	60.5	22	10	55.7	25	10	2.2%	4.80 [-15.84, 25.44]	
Ravi 2018(Resistance exercise)	70.3	15	10	55.7	25	10	2.9%	14.60 [-3.47, 32.67]	
Subtotal (95% CI)			32			35	11.8%	3.87 [-5.04, 12.78]	◆
Heterogeneity: Chi ² = 2.02, df = 2 (P = 0.36); I ² = 1	%								
Test for overall effect: Z = 0.85 (P = 0.39)									
3.4.2 type 2 diabetes									
Jordan 2019	95	8.5	63	91	10.5	63	84.2%	4.00 [0.66, 7.34]	
Kamilla 2018 (Endurance training)	86	17	12	77	26	7	2.0%	9.00 [-12.53, 30.53]	
Kamilla 2018 (High-intensity interval training)	85	18	13	77	26	7	2.0%	8.00 [-13.60, 29.60]	
Subtotal (95% CI)			88			77	88.2%	4.21 [0.95, 7.46]	◆
Heterogeneity: Chi ² = 0.32, df = 2 (P = 0.85); I ² = 0)%								
Test for overall effect: Z = 2.53 (P = 0.01)									
Total (95% CI)			120			112	100.0%	4.17 [1.11, 7.23]	◆
Heterogeneity: $Chi^2 = 2.35$, $df = 5$ (P = 0.80); $l^2 = 0$)%								
Test for overall effect: Z = 2.67 (P = 0.008)									-100 -50 0 50 100
Test for subaroup differences: Chi² = 0.00. df = 1	(P = 0.95).	. I² = 0%							exercise group non-exercise control

CI: confidential interval;

	Exe	ercise		Co	ontrol			Mean Difference	Mean Difference			
Study or Subgroup	Mean [mmol/L]	SD [mmol/L]	Total	Mean [mmol/L]	SD [mmol/L]	Total	Weight	IV, Random, 95% CI [mmol/L]	IV, Random, 95% CI [mmol/L]			
3.1.2 type 2 diabetes												
Jonida 2015(Continuous walking)	3.27	2.37	9	3.39	1.36	9	2.5%	-0.12 [-1.91, 1.67]				
Jonida Haxhi 2015(Split walking)	3.39	1.14	9	3.39	1.36	9	4.6%	0.00 [-1.16, 1.16]				
Jordan 2019	4.2	1.8	63	4.5	2.2	63	7.2%	-0.30 [-1.00, 0.40]	+			
Kristian 2016 (Continuous walking training)	6.5	0.7	14	6.4	0.6	14	8.7%	0.10 [-0.38, 0.58]	+			
Kristian 2016 (Interval walking training)	5.4	0.4	14	6.4	0.6	14	9.4%	-1.00 [-1.38, -0.62]	+			
Matthew 2020 (Afternoon Exercise)	3.7	1.1	14	4.3	1.2	14	6.2%	-0.60 [-1.45, 0.25]				
Matthew 2020 (Evening Exercise)	3.8	1.2	14	4.3	1.2	14	6.0%	-0.50 [-1.39, 0.39]				
Matthew 2020 (Morning Exercise)	4	1.3	14	4.3	1.2	14	5.8%	-0.30 [-1.23, 0.63]				
Myette-Côté 2015	3.9	1.7	10	3.4	1.5	10	3.6%	0.50 [-0.91, 1.91]				
Paddy 2017(Light-intensity walking)	4.6	0.3	24	5.9	0.3	24	10.4%	-1.30 [-1.47, -1.13]	•			
Paddy 2017(Simple resistance activities)	4.3	0.3	24	5.9	0.3	24	10.4%	-1.60 [-1.77, -1.43]	•			
Richard 2018 (HIIT)	3.42	1.5	11	4.21	2.04	11	3.3%	-0.79 [-2.29, 0.71]				
Richard 2018 (MICT)	3.47	1.59	11	4.21	2.04	11	3.2%	-0.74 [-2.27, 0.79]				
Richard 2018(REHIT)	3.76	1.35	11	4.21	2.04	11	3.5%	-0.45 [-1.90, 1.00]				
Tasuku 2016(Fasting HIIT)	3.24	2.01	9	5.03	2.01	10	2.5%	-1.79 [-3.60, 0.02]				
Tasuku 2016(Fasting MICT)	3.49	2.01	8	5.03	2.01	10	2.4%	-1.54 [-3.41, 0.33]				
Tasuku 2016(Feeding HIIT)	4.77	2.01	7	5.03	2.01	10	2.2%	-0.26 [-2.20, 1.68]				
Tasuku 2016(Feeding MICT)	4.05	2.01	8	5.03	2.01	10	2.4%	-0.98 [-2.85, 0.89]				
Zheng Li 2018	2.6	1.9	29	3.1	1.6	29	5.9%	-0.50 [-1.40, 0.40]				
Subtotal (95% CI)			303			311	100.0%	-0.68 [-1.01, -0.36]	•			
Heterogeneity: Tau ² = 0.26; Chi ² = 82.23, df = 1	18 (P ≤ 0.00001); I	² =78%										
Test for overall effect: Z = 4.10 (P < 0.0001)												
Total (95% CI)			303			311	100.0%	-0.68 [-1.01, -0.36]	◆			
Heterogeneity: Tau ² = 0.26; Chi ² = 82.23, df = 1	18 (P < 0.00001); I	²= 78%										
Test for overall effect: Z = 4.10 (P < 0.0001)									-10 -5 0 5 10			
Test for subaroup differences: Not applicable									exercise group non-exercise control			
CI: confidential interval:												

Figure S4. Comparison of MAGE change between physical activity treatment group and control group stratified by disease type

CI: confidential interval;

Figure. S5 Comparison of TAR change between physical activity treatment group and control group stratified by disease type

	Exercise			Co	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean [%]	SD [%]	Total	Mean [%]	SD [%]	Total	Weight	IV, Fixed, 95% CI [%]	IV, Fixed, 95% CI [%]
3.5.1 type 1 diabetes									
Angela 2020	48.6	17.4	12	43	15.6	15	1.7%	5.60 [-7.02, 18.22]	
Ravi 2018(Aerobic exercise)	32.9	25	10	39.1	28	10	0.5%	-6.20 [-29.47, 17.07]	
Ravi 2018(Resistance exercise)	23.1	17	10	39.1	28	10	0.7%	-16.00 [-36.30, 4.30]	
Subtotal (95% CI)			32			35	2.9%	-1.43 [-11.17, 8.30]	+
Heterogeneity: Chi ² = 3.33, df = 2 (P = 0.19); I ² =	40%								
Test for overall effect: Z = 0.29 (P = 0.77)									
3.5.2 type 2 diabetes									
Jordan 2019	4	8.5	63	7	9	63	29.6%	-3.00 [-6.06, 0.06]	-
Kamilla 2018 (Endurance training)	13	17	12	23	26	7	0.6%	-10.00 [-31.53, 11.53]	
Kamilla 2018 (High-intensity interval training)	14	20	13	23	26	7	0.6%	-9.00 [-31.12, 13.12]	
Kristian 2016 (Continuous walking training)	18.6	4.9	14	22.4	6.5	14	15.2%	-3.80 [-8.06, 0.46]	-
Kristian 2016 (Interval walking training)	18.6	5.1	14	22.4	6.5	14	14.8%	-3.80 [-8.13, 0.53]	-
Matthew 2020 (Afternoon Exercise)	6	8	14	9	7.8	14	8.1%	-3.00 [-8.85, 2.85]	
Matthew 2020 (Evening Exercise)	8	7	14	9	7.8	14	9.2%	-1.00 [-6.49, 4.49]	-
Matthew 2020 (Morning Exercise)	6	5.6	14	9	7.8	14	11.0%	-3.00 [-8.03, 2.03]	
Myette-Côté 2015	18	21	10	22	24	10	0.7%	-4.00 [-23.77, 15.77]	
Richard 2018 (HIIT)	16	9	11	25	15	11	2.6%	-9.00 [-19.34, 1.34]	
Richard 2018 (MICT)	17	20	11	25	15	11	1.3%	-8.00 [-22.77, 6.77]	
Richard 2018(REHIT)	17	13	11	25	15	11	2.0%	-8.00 [-19.73, 3.73]	
Tasuku 2016(Fasting HIIT)	14.1	30	9	33.75	30	10	0.4%	-19.65 [-46.67, 7.37]	
Tasuku 2016(Fasting MICT)	25.42	30	8	33.75	30	10	0.4%	-8.33 [-36.22, 19.56]	
Tasuku 2016(Feeding HIIT)	22.15	30	7	33.75	30	10	0.3%	-11.60 [-40.58, 17.38]	
Tasuku 2016(Feeding MICT)	24.93	30	8	33.75	30	10	0.4%	-8.82 [-36.71, 19.07]	
Subtotal (95% CI)			233			230	97.1%	-3.61 [-5.30, -1.92]	•
Heterogeneity: Chi ² = 5.51, df = 15 (P = 0.99); I ²	= 0%								
Test for overall effect: Z = 4.19 (P < 0.0001)									
Total (95% CI)			265			265	100.0%	-3.54 [-5.21, -1.88]	•
Heterogeneity: Chi ² = 9.03, df = 18 (P = 0.96); l ²	= 0%								
Test for overall effect: Z = 4.17 (P < 0.0001)									-100 -50 0 50 100
Test for subgroup differences: $Chi^2 = 0.19$ df = 1	1 (P = 0.67)	I² = 0%							exercise group non-exercise control grou

TAR: time above range; CI: confidential interval;

Figure. S6 Comparison of TBR change between physical activity treatment group and control group stratified by disease type

	Exercise Cont				ntrol			Mean Difference	Mean Difference
Study or Subgroup	Mean [%]	SD [%]	Total	Mean [%]	SD [%]	Total	Weight	IV, Random, 95% CI [%]	IV, Random, 95% CI [%]
3.6.1 type 1 diabetes									
Angela 2020	5.9	4	12	10.5	9.4	15	8.4%	-4.60 [-9.87, 0.67]	
Ravi 2018(Aerobic exercise)	3.17	9.83	10	1.86	7.15	10	5.5%	1.31 [-6.22, 8.84]	
Ravi 2018(Resistance exercise)	3.63	6.07	10	1.86	7.15	10	7.5%	1.77 [-4.04, 7.58]	
Subtotal (95% CI)			32			35	21.4%	-0.89 [-5.22, 3.44]	•
Heterogeneity: Tau ² = 5.00; Chi ² = 3.03, df = 2 (f	P = 0.22); P =	= 34%							
Test for overall effect: Z = 0.40 (P = 0.69)									
3.6.2 type 2 diabetes									
Kamilla 2018 (Endurance training)	1	2	12	0	0.001	7	16.1%	1.00 [-0.13, 2.13]	-
Kamilla 2018 (High-intensity interval training)	1	3	13	0	0.001	7	15.4%	1.00 [-0.63, 2.63]	
Kristian 2016 (Continuous walking training)	5.3	2.2	14	2.8	1.2	14	15.8%	2.50 [1.19, 3.81]	-
Kristian 2016 (Interval walking training)	0	0.001	14	2.8	1.2	14	16.6%	-2.80 [-3.43, -2.17]	•
Myette-Côté 2015	2.1	3.2	10	0.1	0.3	10	14.7%	2.00 [0.01, 3.99]	
Subtotal (95% CI)			63			52	78.6%	0.69 [-1.78, 3.15]	•
Heterogeneity: Tau ² = 7.41; Chi ² = 85.05, df = 4	(P < 0.0000	1); l² = 9!	5%						
Test for overall effect: Z = 0.55 (P = 0.58)									
Total (95% CI)			95			87	100.0%	0.36 [-1.79, 2.51]	•
Heterogeneity: Tau ² = 7.13; Chi ² = 88.08, df = 7	(P < 0.0000	1); I² = 9;	2%						
Test for overall effect: Z = 0.33 (P = 0.74)									
Test for subaroup differences: Chi ² = 0.38. df =							exercise group non-exercise control		

TBR: time below range; CI: confidential interval;

Figure. S7 Associated factors with the change of TIR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)



HbA1c: Hemoglobin A1c; BMI: body mass index; TIR: time in range;

Figure. S8 Associated factors with the change of MAGE by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)



HbA1c: Hemoglobin A1c; BMI: body mass index; MAGE: mean amplitude of glycemic excursion;

Figure. S9 Associated factors with the change of TAR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)



HbA1c: Hemoglobin A1c; BMI: body mass index; TAR: time above range;

Figure. S10 Associated factors with the change of TBR by meta-regression analysis. Associated factors: Baseline HbA1c (A), Baseline BMI (B), Baseline age (C), Baseline male percentage (D), and Disease duration (E)



HbA1c: Hemoglobin A1c; BMI: body mass index; TBR: time below range;

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