

**Table 3: Weight and Body Composition after High-Intensity Intermittent and Sprint Interval Training**

Reference	Baseline Population	Protocol	Weight & Body Composition
54	8 adults (sex n.r.), type 2 diabetes, 63±8 years, BMI 32±6, VO <sub>2peak</sub> n.r.	<b>HIIT:</b> 10 x 1 min intervals at ~90% HR <sub>max</sub> with 1 min rest periods 3/wk x 2 wk	BW n.s.
9, 40, 15	4 men & 7 women, metabolic syndrome, 55±13 years, BMI 30±2, VO <sub>2max</sub> 34±3	<b>HIIT:</b> 4 x 4 min incline treadmill walking at 90-95% HR <sub>max</sub> with 3 min recovery periods at 70% HR <sub>max</sub> 3/wk x 16 wk	BW ↓2.5%
	4 men & 4 women, metabolic syndrome, 52±11 years, BMI 29±2, VO <sub>2max</sub> 36±3	<b>CME:</b> 47 min at 70% HR <sub>max</sub> 3/wk for 16 wk (matched for energy expenditure with HIIT)	BW ↓3.9%
	5 men & 4 women, metabolic syndrome, 50±9 years, BMI 32±1, VO <sub>2max</sub> 32±3	<b>CON:</b> no intervention	BW n.s.
23	11, metabolic syndrome, 50±10 years, BMI 31±4, VO <sub>2peak</sub> 34±10	<b>HIIT:</b> treadmill walking/running at 90-95% HR <sub>peak</sub> for 4 min x 4 bouts with active recovery periods of 3 min at 70% HR <sub>peak</sub> x 3/wk x 12 wk	BW n.s.; FM ↓7% vs. baseline; FFM n.s.
	11, metabolic syndrome, 51±8 years, BMI 32±4, VO <sub>2peak</sub> 32±5	<b>RET:</b> 3 sets of 8-12 repetitions x 3-5 exercises x 3/wk x 12 wk	BW n.s.; FM ↓6% vs. baseline; FFM n.s.
	10, metabolic syndrome, 53±10 years, BMI 30±4, VO <sub>2peak</sub> 28±6	<b>HIIT+RET:</b> HIIT as above 2/wk, 3 resistance exercises for 8-12 repetitions 1/wk, all for 12 wk	BW & FM n.s.; FFM ↑ n.r. vs. baseline
	11, metabolic syndrome, 47±10 years, BMI 32±4, VO <sub>2peak</sub> 34±10	<b>CON:</b> no exercise	BW & FM n.s.; FFM ↑ n.r. vs. baseline
26	9 men & 5 women, chronic heart failure, 68±6 years, BMI 24±n.r., VO <sub>2peak</sub> 16±4	<b>HIIT:</b> 5 x 3 min cycling intervals at 80% VO <sub>2peak</sub> with 3 active recovery periods at 40% VO <sub>2peak</sub> x 3/wk x 12 wk	BW n.s.
	8 men & 5 women, chronic heart failure, 66±8 years BMI 24±n.r., VO <sub>2peak</sub> 16±3	<b>CME:</b> 30 min cycling at 60% VO <sub>2peak</sub> x 3/wk x 12 wk	BW n.s.
	9 men & 4 women, chronic heart failure, 68±9 years, 25±n.r., VO <sub>2peak</sub> 21±5	<b>CON:</b> usual care with advice for home-based physical activity	BW n.s.

Reference	Baseline Population	Protocol	Weight & Body Composition
12, 13	25 men & 5 women, post myocardial infraction, 57±10 years, BMI 27±3, VO <sub>2peak</sub> 32±6	<b>HIIT:</b> 4 x 4 min incline treadmill walking at 90-95% HR <sub>max</sub> with 3 min recovery periods at 70% HR <sub>max</sub> 3/wk x 12 wk	BW n.s. At 6 months: BW n.s. At 30 months: BW n.s.
	49 men & 10 women, post myocardial infraction, 58±9 years, BMI 27±4, VO <sub>2peak</sub> 32±7	<b>Group session:</b> 10 min warmup, 35 min aerobic exercise (walking/jogging/lunges), 15 min cooldown, stretching & relaxation 3/wk x 12 wk	BW n.s. At 6 months: BW n.s. At 30 months: BW n.s.
27, 28	24 men & 4 women, following CABG, 60±7 years, BMI 26±6, VO <sub>2peak</sub> 27±5	<b>HIIT:</b> 4 x 4 min incline treadmill walking at 90-95% HR <sub>max</sub> with 3 min recovery periods at 70% HR <sub>max</sub> 5/wk x 4 wk supervised, then advised to continue at home	At 4 wk: BW n.s. At 6 months: BW n.s.
	24 men & 7 women, following CABG, 62±8 years, BMI 28±4, VO <sub>2peak</sub> 26±5	<b>CME:</b> 47 min at 70% HR <sub>max</sub> 5/wk for 4 wk (matched for energy expenditure with HIIT), then advised to continue at home	At 4 wk: BW n.s. At 6 months: BW n.s.
20	10 men, sedentary overweight/obese normoglycaemic/tensive, 32±9 years, BMI 31±4, VO <sub>2peak</sub> 33±1	<b>SIT:</b> 4-7 bouts of 30 s cycle sprints at 6.5% FFM resistance 3/wk for 2 wk (sprints/session: 4/4/5/5/6/6) with 4.5 min active at 30 W resistance	BW ↓1.1% ( <i>p</i> =0.055)
31	7 (sex distribution matched but n.r.), sedentary overweight, 41±12 years, BMI 31±3, VO <sub>2peak</sub> ~23±n.r.	<b>HIIT:</b> 10 x 1 min cycling at 90% VO <sub>2peak</sub> with 2 min recovery at 30% VO <sub>2peak</sub> x 4 sessions/wk for 8 wk, & diet education (1 hour seminar)	BW & FM n.s.
	6 (sex distribution matched but n.r., sedentary overweight, 45±17 years, BMI 30±3, VO <sub>2peak</sub> ~24±n.r.	<b>CME:</b> 50% VO <sub>2peak</sub> matched to energy expenditure of HIIT for time x 4 sessions/wk for 8 wk, & diet education (1 hour seminar).	BW & FM n.s.
	8 (sex distribution matched but n.r.), sedentary overweight, 40±13 years, BMI VO <sub>2peak</sub> ~23±n.r.	<b>Diet:</b> diet education only (1 hour seminar).	BW & FM n.s.
21	2 men & 8 women, 37±10 years, BMI 32±4, VO <sub>2peak</sub> 27±5	<b>HIIT+Diet:</b> Up to 10 x 4 minutes cycling at 90% VO <sub>2peak</sub> with 2-3 minutes rest periods, for 6 supervised sessions over 14 days. (see below for diet)	BW ↓1.1% & FM ↓2.6% vs baseline; FFM ↑2.1% vs baseline & Diet
	3 men & 6 women, 41±14 years, BMI 32±3, VO <sub>2peak</sub> 26±9	<b>Diet:</b> 75% of food record estimated requirement (35% CHO)	BW ↓2.2%, FM ↓2.4% & FFM ↓2.1% vs baseline
24	12 men, overweight/obese, 24±5 years, BMI 29±3, VO <sub>2peak</sub> 38±6	<b>HIIT:</b> 6 x 4 min cycling at 85% VO <sub>2peak</sub> , with 2 min rest x 6 sessions over 14 d.	BW n.s.; WC ↓1.4%

Reference	Baseline Population	Protocol	Weight & Body Composition
32	20 men, active, 30±5 years, BMI 23±4, VO <sub>2peak</sub> n.r.	<b>HIIT:</b> 4 x 800 m runs at ~90% age predicted HR <sub>max</sub> (220-age) with a 1:1 work-to-rest ratio 3/wk x 8 wk	BW & BF% n.s.
	16 men, active, 30±5 years, BMI 23±2, VO <sub>2peak</sub> n.r.	<b>CON:</b> no vigorous exercise	BW & BF% n.s.
17	20 men, sedentary & overweight, 25±5 years, BMI 28±1, VO <sub>2peak</sub> 34±1	<b>SIT:</b> 8 s sprints with 12 s recovery periods at a cadence of 120-130 & 40, respectively, for 20 min at 80-90% HR <sub>peak</sub> x 3/wk for 12 w	BW ↓1.7%, FM ↓6.7%, visceral fat area ↓10% vs baseline & CON
	18 men, sedentary & overweight, 25±4 years, BMI 29±1, VO <sub>2peak</sub> 29±1	<b>CON:</b> no exercise	BMI, FM & visceral fat area n.s.,
33	8 men, sedentary, 37±8 years, BMI n.r. (BW 96±11 kg), VO <sub>2peak</sub> 36±5	<b>HIIT:</b> 5 x 2 min running >95% HR <sub>max</sub> with 2 min rest periods 3/wk x 12 wk	BW & BF% n.s.
	9 men, sedentary, 31±6 years, BMI n.r. (86±16 kg), VO <sub>2peak</sub> 39±7	<b>CME:</b> 60 min running at 80% HR <sub>max</sub> (~65% VO <sub>2peak</sub> ) 3/wk x 12 wk	BW ↓1.2%, BF% ↓7.0% vs baseline
	8 men, sedentary, 36±6 years, BMI n.r. (95±24 kg), VO <sub>2peak</sub> 38±9	<b>RET:</b> 60 min 3-4 sets of: squat, hack squat, incline leg pres, isolated knee extension, hamstring curls, and calf raises 3/wk x 12 wk	BW ↑1.8% vs. baseline; BF% n.s.
	11 men, sedentary, 30±6 years, BMI n.r. (87±11 kg), VO <sub>2peak</sub> 39±8	<b>CON:</b> no exercise x 12 wk	BW & BF% n.s.
34	8 women, sedentary, 23±3 years, BMI 23±2, VO <sub>2peak</sub> 33±2	<b>SIT:</b> cycling 10 min total containing 2 all out sprints for 10/15/20/20/20/20 s in wk 1-6, respectively, remaining time was at 60 W	BW n.s.
	8 women, sedentary, 22±1 years, BMI 23±2, VO <sub>2peak</sub> 33±2	<b>CON:</b> no exercise	BW n.s.
	7 men, sedentary, 26±3 years, BMI 24±2, VO <sub>2peak</sub> 36±2	<b>SIT:</b> cycling 10 min total containing 2 all out sprints for 10/15/20/20/20/20 s in wk 1-6, respectively, remaining time was at 60 W	BW n.s.
	6 men, sedentary, 25±2 years, BMI 24±2, VO <sub>2peak</sub> 38±3	<b>CON:</b> no exercise	BW n.s.

Reference	Baseline Population	Protocol	Weight & Body Composition
11	15 healthy women, 22±1 years, BMI 24±2, VO <sub>2peak</sub> 29±8	<b>SIT:</b> 3 sessions/wk over 15 weeks: 8 s sprints/12 s active (20-30 rpm) recovery at 0.5 kg resistance. Progressing from 5 min sessions to 20 min sessions with 0.5 kg resistance added once 20 minutes was achieved	BW ↓2.4% vs. baseline & ↓4.4% vs CON, FM ↓11% vs baseline, ↓13% vs CME & ↓12.5% vs CON; FFM n.s.
	15 healthy women, 21±1 years, BMI 22±1, VO <sub>2peak</sub> 31±8	<b>CME:</b> 3 sessions/wk over 15 weeks: 10-20 min at 60% VO <sub>2peak</sub> for 10-20 min progressing to 40 minutes	BW & FM n.s.
	15 healthy women, 22±1 years, BMI 24±1, VO <sub>2peak</sub> 31±6	<b>CON:</b> No change in physical activity	BW n.s. & FM n.s.
16	3 men & 11 women, sedentary, 47±8 years, BMI 37±4, VO <sub>2peak</sub> 24±5	<b>HIIT:</b> 4 x 4 min treadmill walking/running at 85-95% HR <sub>max</sub> with 3 min recovery periods at 50-60% HR <sub>max</sub> 3/wk x 12 wk	BW ↓2.0% & FM ↓2.2% vs. baseline
	2 men & 11 women, 44±8 years, BMI 37±5, VO <sub>2peak</sub> 25±5	<b>CME:</b> 47 min walking/jogging at 50-60% of HR <sub>max</sub>	BW ↓3.0% & FM ↓2.5% vs. baseline
	3 men & 10 women, 46±10 years, BMI 35±1, VO <sub>2peak</sub> 25±7	<b>RET:</b> 4 sets of 5 repetitions on leg press/squat & 3 sets of 30 repetitions on unspecified abdominal & back exercises	BW & FM n.s.
35, 41	11 women, familial history of hypertension, 24±4 years, BMI 24±5, VO <sub>2max</sub> 29±4, BP 106/65	<b>HIIT:</b> walking: 1 min at 80-90% VO <sub>2max</sub> 2 min walking at 50-60% for 40 min + 15 min calisthenics 3/wk x 16 wk	BW n.s.
	11 women, familial history of hypertension, 27±5 years, BMI 24±5, VO <sub>2max</sub> 30±4, BP 105/65	<b>CME:</b> walking at 60-70% VO <sub>2max</sub> for 40 minutes + 15 min calisthenics 3/wk x 16 wk	BW n.s.
	9 women, familial history of hypertension, 25±4 years, BMI 24±4, VO <sub>2max</sub> 30±4, BP 106/62	<b>CON:</b> No intervention	BW n.s.
22	5 men & 5 women, sedentary, 18-32 years, BMI n.r. (BW 64±11 kg), VO <sub>2peak</sub> 39±9	<b>HIIT&amp;SIT:</b> 4 sessions/wk for 15 weeks with a mix of CME at 70% HRR, SIT (15-30 s intervals at 60-80% WR sustainable for 10 s) and HIIT (60-90 s intervals at 70-90% WR sustainable for 90 s) sessions. Recovery periods were based on HR returning to 120-130 bpm	BW n.s.; sum of six skinfolds ↓14.8% vs baseline & ↓9.1% vs CME
	8 men & 9 women, sedentary, 18-32 years, BW 61±13, VO <sub>2peak</sub> 37±8	<b>CME:</b> 4 sessions/wk x 20 weeks: 30-45 min at 60-85% HRR at approximately twice the E expenditure of HIIT&SIT	BW n.s.; sum of six skinfolds n.s.

Reference	Baseline Population	Protocol	Weight & Body Composition
12, 13	17 men & 3 women following percutaneous coronary intervention, 57±10 years, BMI 27±4, VO <sub>2peak</sub> 23±6	<b>HIIT:</b> 4 x 4 min incline treadmill walking at 80-90% HR <sub>max</sub> with 3 min active recovery periods at 60-70% HR <sub>max</sub> 3/wk x 26 wk	BMI ↓2.2% vs. baseline & CON
	16 men & 4 women following percutaneous coronary, 61±10 years, BMI 28±3, VO <sub>2peak</sub> 23±6	<b>CON:</b> usual care	BMI ↑1.8%
19	8 (sex n.r.), overweight/obese, 40±8 years, BMI 28±4, VO <sub>2peak</sub> n.r.	<b>HIIT:</b> cycling at 20% above AT at a 2:1 exercise/rest ratio 3/wk x 12 wk: wk 1-4 for 20, 30, 40, 50 min, respectively, then 60 min sessions for 8 wk	BMI ↓1.4 & BF% ↓2% vs. baseline
	8 (sex n.r.), overweight/obese, 40±8 years, BMI 28±2, VO <sub>2peak</sub> n.r.	<b>CME:</b> cycling at 10% below anaerobic threshold 3/wk x 12 wk: wk 1-4 for 20, 30, 40, 50 min, respectively, then 60 min sessions for 8 wk	BMI ↓1.5 & BF% ↓3% vs. baseline
18	10 men & 6 women, sedentary seniors, 72±2 years, BMI 25±1, VO <sub>2max</sub> 33±6	<b>HIIT:</b> 4 x 4 min incline treadmill walking at 90-95% HR <sub>max</sub> with 3 min recovery periods at 60-70% HR <sub>max</sub> 3/wk x 12 wk	BMI ↓1.6% vs. baseline
36	5 men & 3 women, active, 24±1 years, BMI 23±n.r., VO <sub>2peak</sub> 45±n.r.	<b>HIIT:</b> 4 min cycle intervals at ~90% VO <sub>2peak</sub> x 10 intervals with 2 min rest 3/wk x 6 wk	BW n.s.
37	35 men & 13 women, active, 24±3 years, BMI 25±n.r., VO <sub>2peak</sub> n.r. (NB: data were reported for the entire cohort only with groups matched for VO <sub>2peak</sub> & sex)	<b>SIT:</b> 4-6 bouts of 30 s cycle sprints 10% BW resistance with 4 min active recovery (no resistance) 3/wk for 2 wk (bouts/session: 4/4/5/5/6/6)	BW & BF% n.s.
		<b>SIT:</b> 4-6 bouts of 10 s cycle sprints 10% BW resistance with 4 min active recovery (no resistance) 3/wk for 2 wk (bouts/session: 4/4/5/5/6/6)	BW & BF% n.s.
		<b>SIT:</b> 4-6 bouts of 10 s cycle sprints 10% BW resistance with 2 min active recovery (no resistance) 3/wk for 2 wk (bouts/session: 4/4/5/5/6/6)	BW & BF% n.s.
		<b>CON:</b> no exercise	BW & BF% n.s.
55	12 men, active, 25±4 years, BMI n.r., BW 83±7 kg, VO <sub>2peak</sub> 44±n.r. (NB: data were reported for the entire cohort only)	<b>HIIT:</b> 8-12 1 min cycling bouts at 120% WR <sub>max</sub> x 8 sessions (bouts/session: 8/8/9/9/10/10/12/12)	BW ↓2.5% vs baseline
		<b>CME:</b> 90-120 min cycling at 65% VO <sub>2peak</sub> x 8 sessions (time/session: n.r.)	BW ↓3.3% vs baseline

Reference	Baseline Population	Protocol	Weight & Body Composition
502	7 men, active, 20-40 years, BMI 25±3, VO <sub>2peak</sub> 37±7	<b>HIIT:</b> 4 x 4 min treadmill running at 90% VO <sub>2peak</sub> with min recovery periods at 60% VO <sub>2peak</sub> 3/wk x 8 wk	BW & BF% n.s.
	8 men, active, 20-40 years, BMI 23±2, VO <sub>2peak</sub> 40±16	<b>CON:</b> no intervention	BW & BF% n.s.
35	16 men, elderly, 65±4 years, BMI 21±n.r., VO <sub>2peak</sub> 27±5	<b>HIIT:</b> 6 x 1 min cycling at VT <sub>2</sub> with active recovery at VT <sub>1</sub> 2/wk x 9 wk	BW & BF% n.s.
	19 women, elderly, 65±4 years, BMI 25±n.r., VO <sub>2peak</sub> 19±4		BW & BF% n.s.
8	17 women, BF >30%, 20±1 years, BMI 28±2, VO <sub>2peak</sub> 33±4	<b>HIIT:</b> 5 x 3 min of track running at 85% VO <sub>2max</sub> with 3 min active recovery at 50% VO <sub>2max</sub> 5/wk x 12 wk	BW ↓8.4% & FM ↓10% vs CON & CME
	16 women, BF >30%, 19±1 years, BMI 28±2, VO <sub>2peak</sub> 33±5	<b>CME:</b> 40 min walking/jogging at 50% VO <sub>2max</sub> 5/wk x 12 wk	BW ↓5.9% & FM ↓5.2% vs CON
	19 women, BF >30%, 20±1 years, BMI 29±2, VO <sub>2peak</sub> 33±4	<b>CON:</b> no exercise	BW & FM n.s.

Study population demographics (sample size by sex, health or activity description, body mass index in kg/m<sup>2</sup>, and either VO<sub>2peak</sub> or VO<sub>2max</sub> in mL/kg/min as reported by study authors in are provided as means ± standard deviation, where reported, rounded to nearest whole number. Sample sizes are based on those included in the final analysis. Results have been converted to percentage change from baseline if the change was statistically significant followed by indication if this was significant relative to comparison group(s). Results are rounded to two significant figures. Where data was reported in graph form it may not have feasible to accurately calculate percentage change so ~ is used to indicate this. The protocol column contains the core exercise but does not describe warm up and cool down protocols, which consisted predominantly of 5-10 minutes periods of light-to-moderated intensity activity. **Abbreviations:** BF%, percent body fat; BMI, body mass index (kg/m<sup>2</sup>); bpm, beats per minute; BW, body weight; CABG, coronary artery bypass graft; CON, control group; FFM, fat free mass; FM, fat mass; hr, hour or hours; HIIT, high intensity intermittent training group; min, minutes; n.r., not reported; n.s., no statistically significant change/difference; RET, resistance exercise training group; RM, repetition maximum; RPE, rate of perceived exertion; SIT, sprint interval training group; VT, ventilatory threshold; WR, work rate.