Table 1. Summary of studies comparing the effects of HIIT vs MICT

Study	Population	Intervention	Interval Parameters	Program	Outcomes of HIIT compared to MICT
Rognmo et al., (2004)[21]	21 stable coronary artery disease patients HIIT (n=8), MICT (n=9)	Uphill treadmill walking HIIT- 4 x 4 min intervals (85-95% PHR), 3 min recovery (65-75% PHR), 33 mins MICT- 65-75% PHR, 41 mins	Ratio:4/3 MI:80% Amplitude: 25%	Supervised 3x/week 10 weeks	$\Uparrow$ VO_2peak
Roditis et al., (2007)[23]	21 stable CHF patients HIIT (n=11), MICT (n=10)	Electromagnetically braked cycle ergometer HIIT – 30 sec intervals (120% pWR), 30 sec recovery (0% pWR), 40 mins	Ratio:1/1 MI:60% Amplitude: 72%	Supervised 3x/week 12 weeks	$\Leftrightarrow$ VO_2peak

Study	Population	Protocol		Training	Outcomes
		MICT – 60% pWR, 40 mins			
Wisloff et al., (2007)[20]	27 stable postinfarction heart failure patients HIIT (n=9), MICT (n=9), C (n=9)	Uphill treadmill walking HIIT- 4 x 4 min intervals (90-95% PHR), 3 min recovery (50-70%), 38 mins MICT- 70-75% PHR, 47 mins C- standard PA advice	Ratio: 4/3 MI: 76% Amplitude: 43%	2x/week supervised, 1x/week unsupervised for 12 weeks HIIT and MICT groups	⇑ VO$_2$peak ⇑ LVEF ⇑ LV remodelling ⇑ EF ⇑ mitochondrial function ⇑ QOL
Schjerve et al., (2008)[26]	40 obese patients, BMI >30 kg/m^2 HIIT (n=14), MICT (n=13), strength training (n=13)	Treadmill walking or running HIIT- 4 x 4 min intervals (85-95% PHR), 3 min recovery (50-60% PHR), 38 mins MICT- 60-70% PHR, 47 mins Strength- abdominal, back leg	Ratio: 4/3 MI: 80% Amplitude: 25%	2x/week supervised 1x/week unsupervised 12 weeks all groups	⇑ VO$_2$peak ⇑ peak O$_2$ pulse ⇑ PGC-1a ⇑ sarcoplasmic reticulum Ca^{2+} uptake

		strength programme			⇑ FMD
					⇔ artery diameter, shear rate
					⇓ LDL and body weight in MICT
Tjonna et al., (2008)[31]	32 patients with metabolic syndrome HIIT (n=12), MICT (n=10), C (n=10)	Uphill treadmill walking/running HIIT- 4 x 4 min intervals (90% PHR), 3 min recovery (70%), 40 mins MICT- 70% PHR, 47 mins C- followed advice from family physician	Ratio:4/3 MI:80% Amplitude: 25%	Supervised 3x/week 16 weeks	⇑ VO$_2$max ⇑ PGC-1a ⇑ sarcoplasmic reticulum Ca2+ uptake ⇑ EF ⇑ insulin action ⇑ lipogenesis

Moholdt et al., (2009)[22]	59 CABG HIIT (n=23), MICT (n=25)	Treadmill walking HIIT- 4 x 4 min intervals (90% PHR), 3 min recovery (70%), 37 min MICT- 70% PHR, 46 min	Ratio:4/3 MI:80% Amplitude: 25%	Supervised 5x/week 4 weeks. Unsupervised until 6mth time point	After 4 weeks: $\Leftrightarrow$ VO$_2$peak After 6 months: $\Uparrow$ VO$_2$ peak $\Uparrow$ HR recovery after 6 months. $\Leftrightarrow$ QOL
Fu et al. (2011)[28]	45 CHF HIIT (n=15), MICT (n=15), control (n=15)	Cycle ergometer HIIT- 5 x 3 min intervals (80% VO$_2$peak), 3 min recovery (40% VO$_2$peak), 33 minMICT- 60% VO$_2$peak, 36 min	Ratio: 1 MI: 60% Amplitude: 67%	Supervised 3x/week 12 weeks.	$\Uparrow$ VO$_2$peak $\Uparrow$ CO $\Uparrow$ TPR $\Uparrow$ LVEF $\Downarrow$ BNP, MPO, IL-6 $\Uparrow$ QOL

Freyssin et al., (2012)[24]	26 stable CHF patients HIIT (n=12), MICT (n=14)	Uphill treadmill walking and cycle ergometer HIIT – 3 x (12 x 30 sec intervals, 60 sec complete rest), 80% pWR, 5 mins rest between sets, 54 mins MICT – 45 mins, intensity at 1st ventilator threshold	Ratio:1/2 MI: Amplitude:	Supervised 6x/week 8 weeks	⇑ VO_2peak ⇑ exercise test duration ⇑ oxygen pulse ⇑ VO2 at 1st ventilator threshold
Iellamo et al., (2012)[27]	16 post-infarction HF HIIT (n=8), MICT (n=8)	Uphill treadmill walking HIIT – 4 x 4 min intervals (75-80% HRR), 3 min recovery (45-50% HRR), 20-34MICT – 45-60% HRR, 30-45 min, 30-45	Ratio: 4/3 MI: 62.5% Amplitude: 48%	Supervised 2x/week progressing to 5x/week 12 weeks	⇔ VO_2peak ⇔ CO, SV, LVEF ⇔ lipids, HOMA-IR

| Molmen-Hansen et al., (2012)[25] | 88 patients with essential hypertension stage 1-2, SBP 140-170 mmHg and DBP 90-109 mmHg

HIIT (n=25), MICT (n=23), C (n=25) | Treadmill walking

HIIT – 4 x 4 min intervals (90-95% PHR), 3 min recovery (60-70%), 38 mins

MICT – 70% PHR, 47 mins

C – standard recommendations for hypertension, including light-moderate exercise without supervision | Ratio: 4/3

MI: 75.25%

Amplitude: 40.5% | Supervised 3x/week, 12 weeks | ⇑ VO$_2$peak

⇑ heart rate recovery

⇑ endothelial function

⇑ EF, SV

⇓ 24 hour SBP

⇔ LV mass, TPR

⇑ QOL |

Ratio = relationship between duration of interval and recovery. MI = Mean intensity between high intensity interval and recovery. Amplitude = difference between interval and recovery intensities, divided by the mean intensity. 1-RM = 1 repetition maximum for plantar flexion, SaO2 = oxygen saturation, ABI = ankle brachial index, FMD = flow mediated dilatation, LV = left ventricular, EF = ejection fraction, QOL = quality of life, SV = stroke volume, TPR = total peripheral resistance * No within group differences, BNP = brain natriuretic peptide, MPO = myeloperoxidase, IL-6 = interleukin-