Characteristics of studies

Characteristics of included studies

Arad 2015

Methods	Country: USA Design: randomized controlled trial Objectives: to determine the effect of a 14-wk HIIT intervention with weight stability on metabolic flexibility, insulin sensitivity, and cardiorespiratory fitness in sedentary, premenopausal, nondiabetic, overweight/obese African American (AA) women. Study site: not specified Methods of analysis: independent t-test, 2x2 time repeated measurements-ANOVA
Participants	Randomized: 28 Intervention: 14 Control: 14 Age: 20-40 yr Gender: African-American women Obesity criteria: premenopausal, sedentary (exercise frequency/duration, 3 times/wk, 60 min/session), nondiabetic (fasting blood glucose, 110 mg/dl), overweight/obese (BMI, 25 kg/m2) Co-morbidities: patients with diabetes were excluded. Participant exclusion reasons: 1) weight change > +/- 2 kg within the past 3 months, 2) taking any medications that might affect insulin or fat metabolism (including oral anticonceptives), 3) smoking within the post 6 months, 4) consuming > 2 oz ethanol per day, 5) having irregular menstrual cycles (skipping > 2 monthly cycles per year)
Interventions	Setting: After a 10-day controlled feeding period, patients were randomized to HIIT or control group. HIIT completed a supervised endurance training intervention while CON maintained their normal level of physical activity. Both groups received careful monitoring and dietary counseling by a registered dietitian to ensure weight stability throughout the course of the study. Intervention description: HIIT sessions were performed 3 times per week for 14 weeks, All sessions were supervised by an exercise physiologist. The total duration of each session was 24 min. Each HIIT session began with 6 min of warm-up cycling at 50% HRR after which four work intervals (30-60s at 75-90% HRR) were performed with recovery intervals (180-210s at 50% HRR) interspersed. Following the final work interval, 5 min of ‘cool-down’ cycling was performed. Control description: normal level of physical activity. Not specified. Duration of the intervention: 14 weeks Intervention delivered by: not specified
Outcomes	Pre-specified outcomes: metabolic flexibility, insulin sensitivity, VO2peak, gas exchange threshold (GET), lactate threshold (LT) and exercise tolerance Follow-up period: no follow up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomization mentioned, but the method of randomization is not described
Allocation concealment (selection bias)	Unclear risk	Not described
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible
Blinding of outcome assessment (detection bias)	Unclear risk	Not described
Incomplete outcome data (attrition bias)	High risk	Drop-outs were excluded from analysis. No information is available about missing/incomplete data
Selective reporting (reporting bias)	Unclear risk	No enough information to judge reorting bias
Other bias	Unclear risk	

Cheema 2015

Methods	Country: Australia Design: a parallel group design that randomized participants to a boxing group or brisk walking (control) group was utilized. Objectives: to assess the feasibility and effectiveness of a 12-week boxing training (HIIT) intervention compared with an equivalent dose of brisk walking (MCIT) in adults with abdominal obesity. Study site: recruited over a nine-week period by flyer advertisements, university staff email lists and social media (Facebook). Methods of analysis: intention to treat, paired t-tests, ANCOVA.
Participants	19 reviewed, 14 eligible, 2 refused to participate. Randomized: 12 Intervention:6 Control: 6 Age: 19-72 years Gender: 7 women: 5 men Obesity criteria: BMI > 25 kg/m2, abdominal obesity defined as a risk factor for cardiometabolic disease according to the international Diabetes Federation (waist circum > 94 cm in men and > 80 cm in women). Co-morbidities: patients with a history of ischaemic heart disease, cerebrovascular disease, type 2 diabetes, advanced metabolic disease (chronic kidney disease) or uncontrolled pulmonary disease were excluded. 2 patients: asthma, 3 patients: hypertension Inclusion criteria: available to complete four exercise sessions per week, able to communicate in English, willingness and cognitive ability to provide written informed consent. Participant exclusion reasons: see comorbidities. (2: medical exclusion, 2 did not meet waist circumference criteria and 1 was a regular exerciser)

Interventions	Setting: not explicitly stated Intervention description: four, 50 min sessions of supervised boxing training per week. The interval based exercises were preceded by a 5 min warm-up of continuous skipping at a self-selected intensity. Intervals were prescribed at 2: 1 (2 min of HIT, 1 min of rest). Three intervals of each of the following five exercises were performed for a total of 30 min of high intensity effort: 1) heavy bag, 2)focus mitts, 3) circular body bag, 4) footwork drills and 5) skipping. The total amount of physical activity (excluding warm-up and resting) was computed as 30 minx6 metabolic equivalents (MET) per minute = 180 MET min. During the high intensity bouts, participants were instructed to exercise at a rating of perceived exertion of 15-17/20 (hard to very hard) with the goal of achieving > 75% of age-predicted maximal heart rate (220-age) Control description: four, 50 min sessions of brisk walking per week. These sessions were unsupervised and completed in any location convenient to the participant. Patients were instructed to begin each session with a 5 min gradual warm-up and walk as quickly as possible for the remainder of the session (45 min). The total amount of physical activity (excluding warm-up) was computed as 45minx 4 MET per minute = 180 MET min. Duration of the intervention: 12 week intervention period Intervention delivered by: HIT was supervised by a boxing instructor, brisk walking was unsupervised.
Outcomes	Pre-specified outcomes: obesity outcomes (waist circumference, height and weight, BMI, skinfold sites , body fat percentage), cardiovascular outcomes (resting blood pressure, arterial stiffness, VO2max), HRQoL (The medical Outcomes Trust Short Form-36 Health Survey SF36) Follow-up period: no follow up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Randomization assignments were computer generated (www.randomization.com) and stratefied by gender by an investigator not involved in the study.
Allocation concealment (selection bias)	Low risk	Assignments were given in sealed enveloped after baseline testing.
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible.
Blinding of outcome assessment (detection bias)	Low risk	A blinded assessor collected the data.
Incomplete outcome data (attrition bias)	Low risk	2 of 6 participants in walking group were lost to follow-up, one for personal reasons and 1 due to pre-existent knee injurie. Baselineline data were carries forward for analysis (Intention to treat analysis).
Selective reporting (reporting bias)	Unclear risk	No enough information to judge reporting bias

Other bias	Unclear risk	

Cocks 2015

Methods	Country: Australia and UK Design: randomized controlled trial Objectives: to determine the effects of 4 weeks SIT and MICT on skeletal muscle microvascular density and microvascular enzymes responsible for NO bioavailability. To investigate the effects of constant workload SIT and MICT on arterial stiffness and blood pressure. Study site: not explicitly stated Methods of analysis: three-way ANOVA
Participants	Randomized: 16 Intervention: 8 Control: 8 Age: mean age MICT: 26 (+/-2), mean age SIT: 24 (+/-2) Gender: sedentary men Obesity criteria: BMI > 30 kg/m2 Co-morbidities: particpants were free of diagnosed cardiovascular and metabolic disease and other contra-indications to participating in exercise training interventions, ascertained through a medical screening process. 2 participants had impaired fasting glucose and 4 participants had a combination of impaired fasting glucose and impaired glucose tolerance. Participant exclusion reasons: see comorbidities
Interventions	Setting: not explicitly stated Intervention description: a 2 min warm up at 50W followed by repeated 30 s high intensity cycling bouts at a workload corresponding to 200% Wmax. High intensity bouts were interspersed with 120 s of cycling at 30 W for recovery. Participants completed 4 intervals for the first 3 sessions; this was increased by 1 repetition every 3 sessions. Participants did 12 sessions in total, completing 7 intervals during the final training session. Workload: 200% Wmax Control description: 40-60 min continuous cycling on a electromagnetically braked cycle ergometer at an intensity eliciting- 65% VO2 peak. Participants trained 5 times a week. Following 2 weeks of training a second incremental exercise test was conducted and workload was adjusted accordingly. The duration of the sessions was increased from 40 min during the first 7 sessions, to 50 min for sessions 8–14 and 60 min for sessions 15–20. Duration of the intervention: 4 weeks Intervention delivered by: not explicitly stated
Outcomes	Pre-specified outcomes: VO2max, arterial stiffness, microvascular filtration capacity Follow-up period: no follow-up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but method is unclear. Matched fashion based on age, BMI and VO2max
Allocation concealment (selection bias)	Unclear risk	No information about allocation is available.
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible.
Blinding of outcome assessment (detection bias)	Unclear risk	Not described.
Incomplete outcome data (attrition bias)	Unclear risk	No information about missing data ia available
Selective reporting (reporting bias)	Unclear risk	not enough information to determine risk of reporting bias.
Other bias	Unclear risk	

Hansen 2009

Methods	Country: Belgium Design: randomized controlled trial Objectives: to compare the clinical benefits of continuous LI vs HI exercise training, matched for total energy cost, in obese type 2 diabetes patients. Study site: not specified Methods of analysis: intention to treat principle, two-way ANOVA with treatment and time as the two factors. For non-time dependent variables, one-way ANOVA was applied. Pearson correlations.
Participants	Randomized: 50, Intervention: 25, Control: 25 Age: 59.8 years Gender: male Obesity criteria: BMI HI: 32.1, BMI LI: 32.7 Co-morbidities: diabetes Participant exclusion reasons: not specified Eight patients dropped out form the HI training regimen and 5 from the LI training group before completing the full 6 months of intervention.
Interventions	Setting: rehabilitation center of the hospital. All participants performed three supervised, continuous endurance-type exercise sessions per week. Intervention description: each exercise session consisted of 40 min exercise at a heart rate corresponding with exercise performed at exactly 75% of baseline VO2peak. Control description: each exercise session consisted of 55 min exercise at a heart rate corresponding with exercise performed at exactly 50% of the baseline VO2peak. Duration of the intervention: 6 months Intervention delivered by: supervised

Outcomes	Pre-specified outcomes: HbA1c, oral glucose tolerance, insulin sensitivity, blood lipid profile, body composition, exercise performance, whole body and skeletal muscle oxidative capacity, and muscle fibre type composition. Follow-up period: no follow up after 6 months of intervention.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Participants were randomly addigned to either LI or HI training regimen, but no details are given.
Allocation concealment (selection bias)	Unclear risk	Not described.
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is impossible.
Blinding of outcome assessment (detection bias)	Unclear risk	No details are given about
Incomplete outcome data (attrition bias)	High risk	Eight participants dropped out from the HI training and five from the LI training group before 6 months. This was not statistically significant, but reasons for dropp out are not described. Intention to treat principle, but no information about missing data is available.
Selective reporting (reporting bias)	Unclear risk	not enough information to determine risk of reporting bias.
Other bias	Unclear risk	

Higgins 2016

Methods	Country: USA Design: randomized controlled trial. Parallel-arm design with stratification on BMI. Objectives: to examine the effects of sprint interval training (SIT) and moderate intensity continuous cycle training (MICT) on body composition and aerobic capacity. Study site: women were recruited via email and print advertising. Methods of analysis: independent t-tests, ANCOVA. Post hoc pairwaise comparisons with Bonferroni adjustment
Participants	Randomized: 60 women (30 SIT and 30 MICT). Seven participants were excluded based on attendance <70% Age: mean age 20.4 ± 1.5 yr Gender: women Obesity criteria: BMI > 25 kg/m2. Mean BMI 30.3 ± 4.5 kg/m2 Co-morbidities: Participant exclusion reasons: current smokers, physically active, not ages 18-24years, pregnancy < 12 months. Health conditions that could exacerbate by the exercise protocols were excluded.

Interventions	Setting: mimicked cycling classes offered by commercial fitness facilities. Intervention description: SIT: 4-minute warm-up at low resistance and pedal rate. Repeated 30-second "all-out" sprints interspersed with 4 minutes active recovery at minimal resistance and pedal rate (2.5-3.5 min near maximal effort vs 16-28 min recovery). Cool-down. (5 repetitions in week 1-2, 6 repetitions in week 3-4, 7 repetitions in week 5-6) Control description: MICT: cycling continuously at an intensity of 60-70% hart-rate reserve for 20-30 min). Duration of the training increased to maintain equal estimated energy expenditure between groups. Duration of the intervention: 3/week during 6 weeks Intervention delivered by: supervised by trained staff
Outcomes	Pre-specified outcomes: body composition and aerobic capacityx Follow-up period: no follow up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomization is mentioned, but the method is not described.
Allocation concealment (selection bias)	Unclear risk	No information about allocation concealment
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible.
Blinding of outcome assessment (detection bias)	Unclear risk	No details are described
Incomplete outcome data (attrition bias)	Low risk	Seven patients were excluded because of low attendance. One patient was excluded from analysis as an outlier. Number of patients analysed for outcomes were shown
Selective reporting (reporting bias)	Low risk	All outcome parameters were shown.
Other bias	Unclear risk	

Jakicic 2003

Methods	Country: USA Design: randomized controlled trial. Patients were randomized in 4 groups: 1. Vigorous intensity/high duration exercise 2. Moderate intensity/high duration exercise 3. Moderate intensity/moderate duration exercise 4. Vigorous intensity/moderate duration exercise Objectives: to compare the effects of different durations and intensities of exercise on 12-month weight loss and cardiorespiratory fitness. Study site: university of Pittsburgh Methods of analysis

Participants	Randomised: 201 Age: 37 years Gender: women Obesity criteria: BMI had to be 27-40 kg/m2, classified as sedentary, which was defines as reporting exercising less than 3d/wk. for less than 20 min/d over the previous 6 months. Co-morbidities: a history of myocardial infarction, use of Beta-blokker, taking medicine that would affect metabolism or weight loss, being treated for psychological conditions, pregnancy or within previous 6 months, medical condition that would limit exercise participation. Participant exclusion reasons: see co-morbidities.
Interventions	Setting: All participants were enrolled into a standard behavioral weight loss intervention, which was based on a social cognitive theory. All participants were instructed to reduce energy intake to between 1200 and 1500 kcl/d, and to reduce intake of dietary fat to between 20% and 30% of total energy intake. Intervention description: participants were instructed to exercise 5d/week with walking encouraged as the primary mode of exercise. Exercise intensity was prescribed both in terms of percentage of age-predicted maximal heart rate and rating of perceived exertion based on the Borg-Scale. The exercise was to occur in bouts of at least 10 minutes. Duration of the intervention: 12 months Intervention delivered by: exercise was not supervised on site, but motorized treadmills were provided to all participants, which has been shown to be an effective behavioral strategy for enhancing exercise participation.
Outcomes	Pre-specified outcomes: weight, cardiopulmonary fitness, exercise participation, leisure time physical activity Follow-up period: no follow-up after 12 months of intervention.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but method of randomization is not described.
Allocation concealment (selection bias)	Unclear risk	Details are not given
Blinding of participants and personnel (performance bias)	High risk	Due to the type of intervention, blinding is not possible.
Blinding of outcome assessment (detection bias)	Unclear risk	No details about data collection is given
Incomplete outcome data (attrition bias)	Low risk	94% of the participants completed the studie (ex pregnancy or non-study related death). No difference in dropp-out between groups. No significant difference in baseline characteristics between completers and patients who dropped out. intention to treat analysis using baseline values carried forward.

Selective reporting (reporting bias)	Unclear risk	No judgement possible
Other bias	Unclear risk	

Jung 2015

Methods	Country: Canada Design: randomized controlled trial Objectives: to determine the utility of HIIT as an exercise strategy for promoting short-term exercise adherence in comparison to traditional MICT. Secondary objective: to compare fitness and anthropometric changes in response to HIIT or MICT to determine which type of exercise might lead to greater cardiometabolic benefits. Study site: Participants with prediabetes between the ages of 30 and 60 years were recruited from posters, online message boards, and word of mouth. After expressing interest, a phone interview was conducted to assess preliminary eligibility. Methods of analysis: per protocol analysis, ANCOVA, repeated measurements ANOVA
Participants	Randomized: 32 Intervention: 15, Control: 17 Age:30-60 years Gender: 5 men, 27 women Obesity criteria: not specified, mean BMI 32.9 kg/m2 Co-morbidities: hypertension, heart disease and previous cardiovascular events were excluded. Participant exclusion reasons: Exclusion criteria included diagnosed diabetes, glucose lowering medications, uncontrolled hypertension (blood pressure > 160/90), history of heart disease, previous myocardial infarction or stroke, and any contraindications to exercise.
Interventions	Setting: not specified Intervention description: HIIT: four intervals lasting 1 minute each at an intensity that elicited ~ 90% peak heart rate (HRpeak) separated by 1-minute of low intensity recovery and increased to 10 × 1min intervals by day 10. A 3-minute warm-up and 2 minute cooldown was incorporated into the HIIT sessions. Following the supervised training phase, participants were instructed to maintain HIIT or MICT three days per week independently (10x1 min, intensity of ~ 90%HRpeak separated by 1 minute of easy recovery with a 3-minutewarm-up and 2-minute cool down (for a total of 25 minutes of vigorous exercise)) Control description: supervised period: 20 minutes of continuous activity at ~ 65% HRpeak and gradually increased duration to 50 minutes by day 10. Following the supervised training phase, participants randomized to MICT were prescribed three sessions per week of 50- minute continuous exercise at an intensity of ~ 65% HRpeak. Duration of the intervention: 10 days supervised, after 4 weeks of independent exercise the outcome parameters were measured. Intervention delivered by: not specified.
Outcomes	Pre-specified outcomes: compliance and adherence, Cardiorespiratory fitness (VO2peak), waist circumference, BMI Follow-up period: no follow-up after 4 weeks.

Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking.
Allocation concealment (selection bias)	Unclear risk	Not specified
Blinding of participants and personnel (performance bias)	High risk	Due to the type of intervention, blinding is impossible
Blinding of outcome assessment (detection bias)	Unclear risk	No detailed information about assessment of outcome parameters are described.
Incomplete outcome data (attrition bias)	Low risk	All patients completed the intervention. But 5 patients in the HIT and 1 patient in MICT group dropped out before the 1 month follow-up. This is adequately mentioned. Intention to treat.
Selective reporting (reporting bias)	Unclear risk	No judgement is possible
Other bias	Unclear risk	

Keating 2015

Methods	Country: Australia Design: Randomized controlled trial. Inactive (exercising <3 days/week) and overweight or obese (BMI >25 kg/m2) adult (29 to 59 year-old) men and women were randomized into one of four arms involving either 8 weeks of: HI:LO, LO:HI, LO:LO, or PLA exercise intervention. Objectives: to investigate the efficacy of regular aerobic exercise at one of three doses requiring different levels of effort and time commitment vs. a sham exercise placebo control (PLA) in reducing liver fat and VAT in overweight/obese adults. Secondary: to determine the effects of these interventions on other markers of cardio metabolic risk. Study site: not specified Methods of analysis: intention to treat analysis, ANCOVA, pearson correlation coefficients
Participants	Randomized: 48 Intervention: 3x12 Control:12 Age: mean 43.6+/- 3 years Gender:17 men, 31 women Obesity criteria: average BMI 33.4 kg/m2 Co-morbidities: not specified. Participant exclusion reasons: Volunteers were excluded if taking lipid-lowering or insulin sensitizing medication, reported a high alcohol intake (>20 g/day), had secondary causes of steatohepatitis, alcoholic liver disease or viral hepatitis.

Interventions	Setting: All exercise training was supervised by an Accredited Exercise Physiologist with heart rate, RPE and blood pressure continuously monitored. Participants were blinded to the primary purpose of the study and the PLA group were instructed that the stretching/massage/ fit ball intervention was intended to reduce inflammation and abdominal fat. Intervention description: High intensity: Low volume aerobic exercise training: continuous cycling on the ergometer at an intensity of 60–70% of VO2peak for two days per week, and performed and recorded an additional brisk walk at the same intensity at home one day per week. Training progressed from 30 min at 50% VO2peak in week one to 45 min at 70% VO2peak by the third week, totaling 90–135 min per week. Low to moderate intensity: High volume aerobic exercise training: continuous cycling on the ergometer at an intensity of 50% of VO2peak for three days per week, and performed and recorded an additional brisk walk at the same intensity at home one day per week. Training progressed from 45 min in week one to 60 min by the third week, totalling 180–240 min per week. Low to moderate intensity: Low volume aerobic exercise training: continuous cycling on the ergometer at an intensity of 50% of VO2peak for two days per week, and performed and recorded an additional brisk walk at the same intensity at home one day per week. Training progressed from 30 min in week one to 45 min by the third week, totalling 90–135 min per week. Control description: Placebo. Participants in the PLA group were prescribed a stretching, self-massage and fitball program. Participants received one fortnightly supervised session which involved instructions of new exercises and a 5 min cycle at very low intensity (30W) to maintain familiarity with the cycle ergometer. When combined with home-based sessions, participants in PLA undertook the sham exercise on three days per week. Sessions were recorded in a logbook to ensure compliance. The PLA intervention was designed to elicit no cardiometabolic improvements but to control for factors such as attention and participation in a lifestyle intervention. Duration of the intervention: 8 weeks Intervention delivered by: not specified
Outcomes	Pre-specified outcomes: -primary outcomes: intrahepatic lipid, abdominal (visceral) fat -secondary outcomes: cardiorespiratory fitness (VO2peak), BMI, waist circumference, serum glucose, serum-lipids, hr-CRP, serum free fatty acids, habitual physical activity and dietary control Follow-up period: no follow-up after 8 weeks.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Particpants were randomized after baseline assessments by equally distributed pre-generated lists (computer),
Allocation concealment (selection bias)	Low risk	participants given sealed opaque envelopes containing group allocation.

Blinding of participants and personnel (performance bias)	High risk	Participants were blinded to the primary purpose of the study. Sham intervention
Blinding of outcome assessment (detection bias)	High risk	Dietician was blinded, but cardiorespiratory fitness and anthropometrics were assessed by the study physician.
Incomplete outcome data (attrition bias)	Low risk	Missing data are reported. Intention to treat analysis with group mean changes imputed for drop-outs.
Selective reporting (reporting bias)	Unclear risk	No enough information to determine reporting bias.
Other bias	Unclear risk	

Landeata-Diaz 2012

Methods	Country: Spain Design: participants were randomly assigned to a 12-week experimental intervention with either a model of hypocaloric, normoproteic Mediterranean diet (MeD) or the same diet plus moderate-to-high intensity training (MeDE) Objectives: to investigate how the different dimensions of HRQoL evolved in MetS patients after following a hypocaloric model of Mediterranean diet, combines (or not) with moderate-to high intensity training. Study site: not specified Methods of analysis: ANOVA with repeated measurement of two factors: 2x2 group and time. Tukey correction.
Participants	Randomized: 45 Intervention: 20 Control: 20 Age: 50-66 years Gender: 30 women, 15 men Obesity criteria: BMI baseline MeD 38.4, MeDE 37.05 Co-morbidities: 15/20 MeD and 17/20 MeDE were using antihypertensive drug. Participant exclusion reasons: statin therapy, type I or II diabetes, previous history of unstable angina, heart failure or stroke, and medical therapy which could modify heart frequency, age > 70, current smoker, exercise testing limited by angina or leg claudication, and neurological or orthopedic limitations
Interventions	Setting: two of the three sessions were supervised at the laboratory, other sessions was carried out at home. Intervention description: Diet: At the beginning of the intervention period, all the volunteers (in MeD and MeDE) were provided with information about the Mediterranean diet. The individual requirement of theplan was based on the restriction of 40% of normal energy intake (500 Kcal/day) in order to promote weight loss. This restriction was progressive: 20% during the first 4 weeks and 10% in each of the following 4 weeks until completion of the 12 weeks of intervention. How well the subjects kept to the diet throughout the study was assessed through a 14-item questionnaire of adherence to the traditional Mediterranean diet, 18 completed every 4 weeks. Training: A periodized training programme, including series at 80% of the maximum heart rate (HRmax) and active recovery periods of decreasing duration, was used.

	Such periodization aimed as a goal to reach a 30-min continuous exercise session at 80% of Hrmax by the end of the intervention period. The at home training programme included increases in both exercise volume and intensity and its goal was to reach a 60-min continuous exercise session at 75% of HRmax by the end of the intervention period. Control description: only Mediterranean diet Duration of the intervention: 12 weeks Intervention delivered by: not specified.
Outcomes	Pre-specified outcomes: health related quality of life (HRQol, E_VAS, EQ-5D), VO2max, body composition, biochemical parameters (glucose, LDL, HDL and triglyceride) Follow-up period: no follow up after 12 weeks
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but no details are described.
Allocation concealment (selection bias)	Unclear risk	No details are described.
Blinding of participants and personnel (performance bias)	High risk	No blinding due to the intervention.
Blinding of outcome assessment (detection bias)	Unclear risk	No blinding of assessment was reported.
Incomplete outcome data (attrition bias)	High risk	Reasons for drop-out were reported, but no information available about missing data.
Selective reporting (reporting bias)	Unclear risk	No enough information
Other bias	Unclear risk	

Lunt 2013

Methods	Country: New Zealand Design: participants were randomized 1:1:1 to one of three parallel exercise groups: 1. walking based low intensity exercise training (WALK); 2. aerobic interval training (AIT); 2. maximal volitional intensity training (MVIT). Objectives: to extend and translate the HIIT concept into a real world community setting, by undertaking a randomized controlled trial (RCT) feasibility study. Hypothesis:interval training using either a) four minute repetitions of aerobic interval training aiming to get to 85 to 95% of maximal heart rate, or b) maximal volitional exercise using 30 seconds of 'all out' exercise, could reduce the amount of exercise time required to achieve an improvement in VO2max when compared to steady walking, in previously inactive, overweight and obese adults exercising in a community park setting. Study site: Recruitment was undertaken through advertising in the community and also at the researchers' host institutions. Inclusion criteria were assessed

	during the screening visit. Methods of analysis: non-inferiority study, intention to treat.
Participants	Randomized: 49, 17 into WALK and 16 into each of the MVIT and AIT groups. Age: 35-56 years Gender: 36 females/ 13 males Obesity criteria: BMI (body mass index) 28–40 kg/m2, no regular activity (defined as achieving less than 2x30 minutes of moderate intensity physical activity each week). Co-morbidities: 10 participants were receiving antidepressants and 7 were taking cardiovascular risk reduction medications. Two participants had type 2 diabetes. Participant exclusion reasons: not specified
Interventions	Setting: not reported. Intervention description: There were three scheduled group exercise sessions per week over the twelve weeks of study, giving a total of 36 scheduled sessions. All participants completed a 10 minute warm up and 5 minute cool down at every supervised exercise session. WALK was a walking based prescription of a 33 minute walk which aimed to achieve a HR of 65–75% HRmax (maximum heart rate) (48 minutes). The AIT group undertook 4 minutes high intensity exercise (85-95% HRmax), either fast walking or jogging depending on fitness, followed by 3 minutes at walking pace over four repetitions. (40 minutes). The MVIT group's exercise prescription was designed to progress, so that exercise overload was maintained during the course of the 12 week study. Participants started with 30 second repetitions of volitional maximal intensity walking or jogging up a slope, followed by a recovery period of four minutes walking. Initially this repetition was undertaken three times but participants were encouraged to increase the duration and number of repetitions over the 12 week study, aiming for up to six repetitions of 45 seconds of maximal volitional activity (40 minutes in last week). Duration of the intervention: 12 weeks Intervention delivered by: exercise physiologists (details not described)
Outcomes	Pre-specified outcomes: VO2max (primary outcome), BMI, waist circumference, blood pressure, insulin sensitivity(%S) and fasting lipids (total cholesterol, HDL-cholesterol and triglycerides) Follow-up period: no follow up after 12 weeks of intervention.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking
Allocation concealment (selection bias)	Unclear risk	Details are lacking

Blinding of participants and personnel (performance bias)	Unclear risk	Exercise physiologist undertaking VO2max tests, Physician, research nurses and dietician were all blinded to group allocation.
Blinding of outcome assessment (detection bias)	Low risk	Research nurses and exercise physiologist undertaking VO2max were blinded.
Incomplete outcome data (attrition bias)	Low risk	10/49 participant dropped out and 7 completed less than 70%of the program. Intention to treat and per protocol analysis was used.
Selective reporting (reporting bias)	Unclear risk	No judgement is possible
Other bias	Unclear risk	

Mezghanni 2012

Methods	Country: Tunisia Design: randomized controlled trial Objectives: to determine the efficiency of moderate-intensity (50% of HRR) and high-intensity (75% of HRR) aerobic training on abdominal obesity, body composition, insulin resistance, and lipid profile in young obese women. Study site: not reported Methods of analysis: one way ANOVA, a Scheffe's post–hoc test, paired t-tests, pearson correlation analysis
Participants	Randomized: 31 obese women were randomly assigned to one of the following groups: a moderate intensity training group (G50, exercising at 50% of the HRR, n=11), a high intensity training group (G75, exercising at 75% of HRR, n=10), and a control group (GC, completed all tests but did not train, n=10) Age: 25.2 +/- 4.8 years Gender: women Obesity criteria: body mass index (BMI) higher than 30 kg/m2 Co-morbidities: Women with diabetes mellitus and hypertension were excluded. Participant exclusion reasons: see comorbidities
Interventions	Setting: not reported Intervention description: Participants exercised 5 d/wk. The exercise intensity was adjusted on an individual basis based on each woman's target heart rate (HR). Exercise progressed from 20 to 25 min during the first week to 40 min by the end of the 3rd week and 55 min from the end of the 7th week. During the third session of each week, in addition to walking or jogging, each group performed 15 min additional exercises of strength training (Abdominal exercises, back exercises and squats). These exercises consisted of 3 sets of 10 repetitions with a 30 s recovery in-between for the weeks 1 to 3. Thereafter, the number of repetitions increased to 20 from the weeks 4 to 6 and to 30 for the remaining period (weeks 7 to 12). Duration of the intervention: 12 weeks Intervention delivered by: exercise physiologist

Outcomes	Pre-specified outcomes: body composition(BMI, Body mass, % fat mass, fat free mass), abdominal obesity (WC), insulin resistance, and lipid profile Follow-up period: no follow-up after 3 months of intervention.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Participants were randomly assigned, details are lacking.
Allocation concealment (selection bias)	Unclear risk	Details are lacking.
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention blinding of participants is not possible.
Blinding of outcome assessment (detection bias)	Unclear risk	No details about assessment are given.
Incomplete outcome data (attrition bias)	Unclear risk	No information is given about missing values or dropp-out of patients.
Selective reporting (reporting bias)	Unclear risk	No enough information to judge reporting bias.
Other bias	Unclear risk	

Nicklas 2009

Methods	Country: Design: a randomized trial comparing the effects of 1) caloric restriction alone (CR only), 2) caloric restriction plus moderate-intensity aerobic exercise (CR 1 moderate-intensity), and 3) caloric restriction plus vigorous-intensity exercise (CR 1 vigorous-intensity). Objectives: to determine whether intensity of aerobic exercise affects the loss of abdominal (both subcutaneous and visceral) adipose tissue and improvement in CVD risk factors (under controlled conditions of equal energy deficit in postmenopausal women with abdominal obesity). Study site: Women from Forsyth County, NC, and the surrounding areas were recruited through local advertisement. Methods of analysis: paired t-test, multiple stepwise linear regression analysis
Participants	Randomized: 112 34- Caloric restriction 40- Caloric restriction + moderate-intensity exercise 38- Caloric restriction + vigorous-intensity exercise Age: 50-70 years Gender: women Obesity criteria: abdominal obesity (BMI: 25–40; and waist circumference 88 cm. Other inclusion criteria: age (50–70 y), postmenopausal status (no menses for .1 y), nonsmoking (for .1 y), not on hormone replacement therapy, sedentary (,15 min exercise 2 times/wk. in the past 6 mo), and weight stable (,5% weight change) for 6 months before enrollment. Co-morbidities: 6 women were taking thyroid, 8 were taking statins and 7 were

	taking oral hypoglycemic medication Participant exclusion reasons: evidence of untreated hypertension or depression; hypertriglyceridemia; insulin dependent or uncontrolled diabetes; active cancer, liver, renal, or hematologic disease; cognitive dysfunction; or other medical disorders that could affect the results or compliance were excluded.
Interventions	Setting: not reported. Intervention description: Participants exercised 3 d/wk under the supervision of an exercise physiologist. Blood pressure and heart rate were measured before each exercise session, and participants warmed up by walking for 3–5 min at a slow pace. After flexibility exercise, women walked on a treadmill at an intensity of 45–50% (moderate-intensity) or 70–75% (vigorous-intensity) Control description: caloric restriction only. Participants in the CR-only group were asked not to alter their sedentary lifestyle throughout the course of the study. Duration of the intervention: 20 weeks Intervention delivered by: exercise physiologist
Outcomes	Pre-specified outcomes: Dietary intake, body composition, abdominal fat, VO2max, lipoprotein lipids, and glucose tolerance Follow-up period: no follow up after 20 weeks of intervention
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Randomized by random number generation.
Allocation concealment (selection bias)	Unclear risk	Details about allocation concealment are lacking.
Blinding of participants and personnel (performance bias)	High risk	Due to the type of intervention, blinding is impossible.
Blinding of outcome assessment (detection bias)	Low risk	Staff that measured the primary and secondary outcomes were blinded to group assignment.
Incomplete outcome data (attrition bias)	Low risk	95 of the 112 randomized patients returned for follow-up. Reasons are described. Missing data are adequatly adressed
Selective reporting (reporting bias)	Low risk	All mentioned outcome parameters are given in results.
Other bias	Unclear risk	

Robinson 2015

Methods	Country: Canada Design: randomized controlled trial Objectives: to examine the impact of HIIT and MICT on markers of inflammation and cardiometabolic health in individuals at elevated risk of type 2 diabetes. Study site: not stated. Methods of analysis:unpaired t-test, repeated measurements (ANOVA). Fisher LSD post-hoc tests
Participants	Randomized: 39 intervention: 20 , control: 19 Age: 52 +/- 10 years Gender: 85% female in HIIT group and 78.9% female in control group Obesity criteria: BMI > 24 kg/m2, mean BMI was 32.9 kg/m2 in HIIT group and 31.4 kg/m2 in control group Comorbidities:13 patients using antidepressants, 4 using antihypertensives and 3 using thyroid medication. Particpant exclusion reasons: diagnosed diabetes,glucose lowering medications, uncontrolled hypertension, history of heart disease, myocardial infarction or stroke, and any other contraindication for exercise.
Interventions	Setting: cycling, treadmill, outdoor walking and elliptical Intervention description: HIIT: four intervals of 1 minute at 85-90% of Wpeak and increased to 10x1 min intervals by day 10. The interval protocol had a work ratio of 1:1, with 1 min recovery intervals completed at 20% of Wpeak. MCIT: 20 minutes of continuous activity at 32.5% Wpeak and increases at the same percentage increase in estimated total work up to a duration of 50 min by day 10. Duration of the intervention: 2 weeks Intervention deliverd by:7 of the 10 exercise bouts were supervised by two trained research assistants.
Outcomes	Pre-specified outcomes: pro-and anti inflammatory cytokines, leukocyte TLR2 and 4 expression, standard cardiometabolic health markers, cardiopulmonary fitness Follow-up period: no follow up.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomization is mentioned, but details are lacking
Allocation concealment (selection bias)	Unclear risk	No information about allocation concealment.
Blinding of participants and personnel (performance bias)	High risk	Not possible due to the nature of the intervention.
Blinding of outcome assessment (detection bias)	Unclear risk	No blinding of outcome assessment mentioned.

Incomplete outcome data (attrition bias)	Unclear risk	One participant did not complete post-testing. This participant was removed from the analysis.
Selective reporting (reporting bias)	Unclear risk	No enough information to determine reporting bias.
Other bias	Unclear risk	

Roxburgh 2014

Methods	Country: New Zealand Design: Randomized controlled trial Objectives: to compare the impact of a 12 week intervention consisting of either CMIET (continuous moderate intensity exercise training) or CMIET combined with a single weekly bout of HIIT (CMIET + HIIT) on cardiorespiratory fitness in a group of sedentary adults at moderate risk of CVD. Study site: patients were recruited from the community in Auckland. New Zealand. Methods of analysis: general linear model (GLM) ANOVA
Participants	Randomized: 29 CMIET:6, CMIET+HIIT: 7, control: 7 9 patients withdraw from the study before completion (5 change in work/study, 2 prolonged illness of family member, 1 injurie obtained outside the study). Age: 36.25 +/- 6.87 years Gender: 10 male, 19 female Co-morbidities:. All participants were considered sedentary (i.e., one positive CVD risk factor) as defined elsewhere (ACSM, 2014). Participants met at least one or more of the following positive CVD risk factors: dyslipidemia, hypertension, impaired fasting, blood glucose, and obesity. Participant exclusion reasons: known cardiovascular, metabolic and/or respiratory disease, current cigarette smokers, or unable to perform vigorous exercise.
Interventions	Setting: treadmill and cycle ergometer, indoor. Intervention description: Participants in the CMIET group walked on a treadmill for 15 minutes and cycled on a cycle ergometer for 15 minutes, at an intensity of 45-60% heart rate reserve (HRR). Both the treadmill and cycle ergometer were incorporated into CMIET training sessions because exercise prescription in clinical practice typically utilizes multiple exercise modalities. Participants exercised at 45-55% HRR and 60% HRR for weeks 1-4 and 4-12, respectively. The CMIET + HIIT group performed four sessions of CMIET each week interspersed with one session of HIIT. The HIIT protocol involved eight, 60 second intervals at 100% VO2max, separated by 150 seconds active recovery. After four HIIT sessions, the number of repetitions increased from 8 to 10. For the last four weeks (8-12 weeks), the number of repetitions increased to 12. Recovery was held constant at 150 seconds throughout the 12 weeks. All HIIT sessions were performed on the treadmill. Control description: The control group was instructed to maintain their sedentary lifestyle and not increase physical activity levels throughout the 12 weeks. Duration of the intervention: 5 sessions per week for 12 weeks Intervention delivered by: a clinical exercise physiologist

Outcomes	Pre-specified outcomes: VO2max, anthropometric changes (weight, BMI) Follow-up period: no follow up after 12 weeks of intervention
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking
Allocation concealment (selection bias)	Unclear risk	Details are not available
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible
Blinding of outcome assessment (detection bias)	Unclear risk	No details about assessment were described.
Incomplete outcome data (attrition bias)	High risk	9 of the 29 individuals withdraw from the study. Mangement of missing data is not described.
Selective reporting (reporting bias)	Unclear risk	Post-hoc testing was performed.
Other bias	Unclear risk	

Sawyer 2016

Methods	Country: United States Design: Randomized controlled trial Objectives: to compare the effects of HIIT and MICT on endothelial function, L-FMC and maximum oxygen uptake (VO2max) in sedentary obese adults. Study site: not stated Methods of analysis:ANOVA,
Participants	Randomized: 22 subjects were enrolled in the study. Two subjects in each group dropped out. HIIT (n=9), MICT (n=9) Age: MICT: 34.8 ± 7.7 yr, HIIT: 35.6 ± 8.9 yr Gender: MICT (4 men, 5 women), HIIT (5 men, 4 women) Obesity criteria: BMI ≥ 30 kg/m^2 Co-morbidities: participants were free from known chronic disease. Participant exclusion reasons: Age men >45 yr, age women >55 yr, chronic disease, BMI < 30 kg/m^2
Interventions	Setting: All exercise training was conducted on cycle ergometers. Intervention description: HIIT: 5 min warm-up (50-60% HRmax), followed by 10x 1min intervals (90-95% HRmax) seperated by 1 min cycling at low intensity (25-50W), 5 min cool-down (50-60% HRmax). Totale energy expenditure: 180kcal for each session MICT: 5 min warm-up (50-60% HRmax), followed by 30 min of exercise at 70-75% of HRmax, 5 min cool-down (50-60% HRmax). Totale energy expenditure: 240 kcal for each session Duration of the intervention: 3/week during 8 weeks

	Intervention delivered by: supervised.
Outcomes	Pre-specified outcomes: Endothelial function (L-FMC (low flow-mediated constriction)), maximum oxygen uptake (VO2max), and biomarkers of endothelial function. Follow-up period: no follow-up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomzed, but details are lacking
Allocation concealment (selection bias)	Unclear risk	Details are lacking
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is not possible
Blinding of outcome assessment (detection bias)	Unclear risk	Blinding is not described
Incomplete outcome data (attrition bias)	Low risk	One subject in the HIIT group chose not to perform the 8-wk maximal exercise test.
Selective reporting (reporting bias)	Unclear risk	No enough information to judje reporting bias.
Other bias	Unclear risk	

Schjerve 2008

Methods	Country: Norway Design: The subjects were randomized to strength training (n=13), continuous moderate-intensity aerobic training (n=13) or high-intensity aerobic interval training (n=14) Objectives: to determine the efficiency of high-intensity aerobic training, moderate-intensity aerobic training and strength training in improving cardiovascular health in obese individuals. Study site: not reported Methods of analysis: two way ANOVA, Bonferroni
Participants	Randomized: 40 Moderate intensity (13), High intensity (14) and strength training (13) Age: > 20 years, Gender: 8 male, 32 female Obesity criteria: BMI > 30 kg/m2 Co-morbidities: see exclusion reasons. Not specified Participant exclusion reasons: unstable angina pectoris, myocardial infarction within the last 12 months, decompensated heart failure, cardiomyopathy, severe valvular heart disease, considerable pulmonary disease, uncontrolled hypertension, kidney failure, orthopaedic and/or neurological limitations to exercise, surgery during the intervention period, drug or alcohol abuse, or participation in another research study.

Interventions	Setting: Research laboratory, treadmill walking or running Participants in all of the groups were encouraged to continue their normal nutritional habits during the study period. Intervention description: High-intensity training consisted of a 10 min warm-up period at 50–60% of HRmax [maximal HR (heart rate)], followed by 4×4-min intervals at 85–95% of HRmax with 3 min active breaks in between the intervals, consisting of walking or jogging at 50–60% of HRmax. The exercise session was terminated by a 5 min cool-down period. The moderate-intensity group walked continuously for 47 min at 60–70% of HRmax to ensure that the training protocols were isocaloric. Before carrying out high-intensity strength training, subjects warmed up by treadmill walking for 15 min at 40–50%of HRmax. The training regime consisted of four series with five repetitions each, at approx. 90% of 1RM (one repetition maximum), in a leg press apparatus to develop maximal strength mainly from neural adaptation with minimal weight gain due to muscular hypertrophy. In addition, during each strength training session, the subjects performed additional abdominal and back exercises, consisting of three series of 30 repetitions with a 30 s break in between each series. Duration of the intervention: 3 sessions a week, 12 weeks Intervention delivered by: two supervised sessions by the investigators in the research laboratory and one performed at home or gym.
Outcomes	Pre-specified outcomes: endothelial function (FMD), blood profile (ferritin, HDL, total cholesterol, Hb, HS-CRP, Na, K, creat, HbA1c, glucose and insulin C-peptide, oxidized LDL), VO2 max, maximal leg strength, biochemistry of muscle biopsies, body composition and Blood pressure Follow-up period: no follow-up after intervention period of 12 weeks.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking
Allocation concealment (selection bias)	Unclear risk	No information about allocation concealment is available
Blinding of participants and personnel (performance bias)	High risk	Due to the type of intervention, blinding is not possible
Blinding of outcome assessment (detection bias)	Unclear risk	Investigator who performed the ultrasound was blinded to group allocation, but it is unclear who assessed the other outcome parameters.
Incomplete outcome data (attrition bias)	Unclear risk	No data available about dropp-out or missing data.
Selective reporting (reporting bias)	Unclear risk	No enough information to judje reporting bias.

Other bias	Unclear risk	

Skleryk 2013

Methods	Country: Australia Design: subjects were randomly allocated to 2 weeks of either SIT (Sprint interval training) or TER (traditional exercise recommendations) Objectives: to compare the effects of a reduced-volume SIT model vs. TER on insulin sensitivity, and mediators of mitochondrial biogenesis (SIRT1) and glucose uptake (AS160 and Nur77) in skeletal muscle. Study site: not stated Methods of analysis: two way ANOVA
Participants	Randomized: 16 Intervention (SIT): 8, Control (TER): 8 Age: 38.7 +/- 5.5 years (26-45 years) Gender: male subjects Obesity criteria: mean BMI 33.7 +/- 5.7 kg/m^2 Co-morbidities: not reported Participant exclusion reasons: not reported
Interventions	Setting: indoor, ergometer. Intervention description: SIT (sprint interval training): 6 sessions of 8 -12 x 10s sprints Control description: TER (traditional exercise recommendations): 10 sessions of 30 min at 65% peak oxygen consumption (VO2max). Duration of the intervention: 2 weeks Intervention delivered by: not reported
Outcomes	Pre-specified outcomes: insulin sensitivity, mitochondrial biogenesis (SIRT1) and glucose uptake (AS160 and NUR77) in skeletal muscle. Body composition (BMI, waist circumference), VO2 max. Follow-up period: no follow up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking
Allocation concealment (selection bias)	Unclear risk	No details about allocation concealment is available
Blinding of participants and personnel (performance bias)	High risk	Due to the intervention, blinding is impossible
Blinding of outcome assessment (detection bias)	Unclear risk	No information about outcome assessment is available
Incomplete outcome data (attrition bias)	Unclear risk	There is no data available about dropp-out rate and missing data, but it seems that there was no dropp-out.

Selective reporting (reporting bias)	Unclear risk	No enough information available,
Other bias	Unclear risk	

Trilk 2011

Methods	Country: USA Design: Participants were randomly assigned to either a sprint interval training group or control group. Objectives: to examine the effect of SIT (sprint interval training) on circulatory function during submaximal exercise and on VO2max in sedentary, overweight/obese women. Study site: not reported Methods of analysis: t test for independent samples, one way repeated measures ANOVA
Participants	Randomised:28 Intervention: 14 Control: 14 Age: not reported in inclusion criteria, mean SIT: 30.1 years, mean control 31.4 years Gender: women Obesity criteria: BMI ≥ 25 kg/m2, sedentary (exercise ≤1 day per week). Mean BMI SIT 35.7, BMI CON 34.6 Co-morbidities: not explicitly stated Participant exclusion reasons: Women who had been clinically diagnosed with type 1 or type 2 diabetes, had a history of smoking (B6 months), hypertension, or who were on antidepressant, antianxiety, thyroid, or hypertension medication were excluded.
Interventions	Setting: not reported Intervention description: Training sessions consisted of repeated cycling sprints (4–7 bouts/session) on a Monark ergometer. Warming up (4 min with no resistance), pedaling at maximal cadence 5 s before a fixed resistance of 0.05 kg/kg (5%) body mass was applied. Participants continued pedaling as fast as possible against the resistance for 30 s. After the sprint, the resistance was removed and they continued cycling for 4 min of active recovery (low RPMs at 0% body mass). Control description: participants were instructed to maintain their baseline physical activity during the intervention period and to neither increase nor decrease their activity level. Duration of the intervention: 3 days/week, in total 4 weeks Intervention delivered by: not reported
Outcomes	Pre-specified outcomes: VO2max, HR, Respiratory exchange ratio (RER), perceived exertion (RPE), body composition, Hb, Hct, Follow-up period: no follow-up
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Randomized, but details are lacking.
Allocation concealment (selection bias)	Unclear risk	Details are lacking.
Blinding of participants and personnel (performance bias)	High risk	Due to the type of intervention, blinding is not possible.
Blinding of outcome assessment (detection bias)	Unclear risk	No information about assessment available.
Incomplete outcome data (attrition bias)	Unclear risk	No Information about drop-out or missing data is available.
Selective reporting (reporting bias)	Unclear risk	Not possible to judge
Other bias	Unclear risk	

Footnotes

Characteristics of excluded studies

Footnotes

Characteristics of studies awaiting classification

Footnotes

Characteristics of ongoing studies

Footnotes