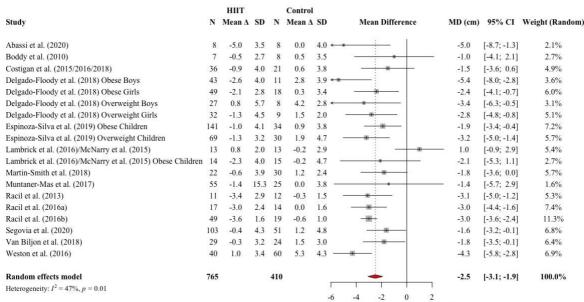
Supplement 3: Body Composition Forest Plots

1. Forest plot of high-intensity interval training versus control for waist circumference



Greater ↓ in WC Compared with Control Greater ↑ in WC Compared with Control

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in centimetres

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

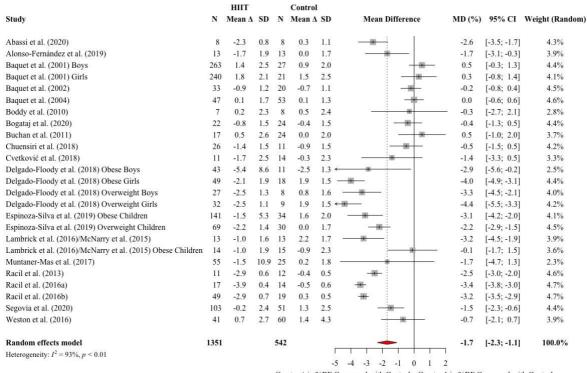
MD = mean difference between the HIIT and control groups

CI = confidence interval

WC = waist circumference

 I^2 = variation across studies due to heterogeneity rather than chance

2. Forest plot of high-intensity interval training versus control for body fat percentage



Greater ↓ in %BF Compared with Control Greater ↑ in %BF Compared with Control

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in percentage

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

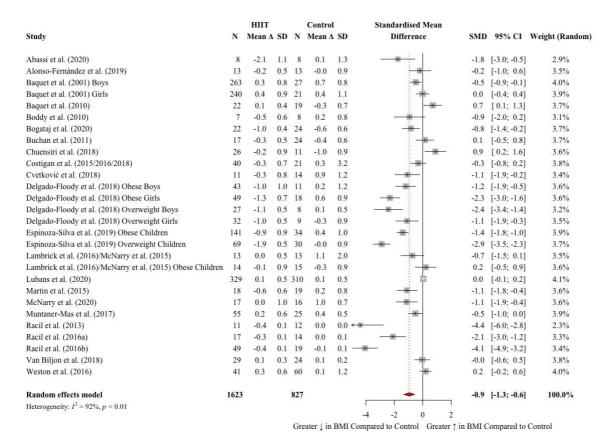
MD = mean difference between the HIIT and control groups

CI = confidence interval

%BF = percentage of body fat

 I^2 = variation across studies due to heterogeneity rather than chance

3. Forest plot of high-intensity interval training versus control for body mass index



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for numbers expressed as kg/m² and as z-scores.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

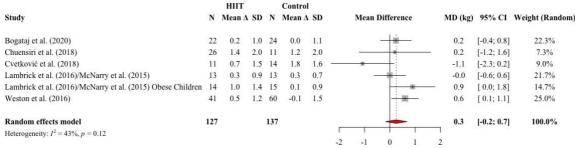
SMD = standardised mean difference between the HIIT and control groups

CI = confidence interval

BMI = body mass index

 I^2 = variation across studies due to heterogeneity rather than chance

4. Forest plot of high-intensity interval training versus control for muscle mass



 $Greater \downarrow in \ muscle \ mass \ (kg) \ Compared \ with \ Control \\ Greater \uparrow in \ muscle \ mass \ (kg) \ Compared \ with \ Control \\ Greater \uparrow in \ muscle \ mass \ (kg) \ Compared \ with \ Control \\ Greater \uparrow in \ muscle \ mass \ (kg) \ Compared \ with \ Control \ Markov \ Compared \ White \ Control \ Markov \ Compared \ Markov \ Compared \ White \ Control \ Markov \ Compared \ White \ Control \ Markov \ Ma$

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in kilograms

N = number of participants

Mean Δ = change score between pre- and post-tests

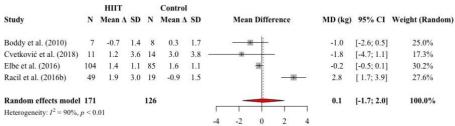
SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

5. Forest plot of high-intensity interval training versus control for lean mass



Greater ↓ in Lean Mass (kg) Compared with Control Greater ↑ in Lean Mass (kg) Compared with Control

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in kilograms

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

Cardiovascular Health Forest Plots

1. Forest plot of high-intensity interval training versus control for systolic blood pressure

Study	N	HIIT Mean Δ	SD	N	Control Mean A		Mean Difference	MD (mmHg)	95% CI	Weight (Random)
Boddy et al. (2010)	7	10	9	8	-1	14	· · · · · · ·	12	[0; 23]	2.9%
Buchan et al. (2011)	17	-6	12	24	-4	12		-2	[-9; 5]	6.1%
Chuensiri et al. (2018)	26	-8	15	11	0	15	← #	-8	[-18; 3]	3.4%
Cvetković et al. (2018)	11	-7	15	14	1	16	· · · · · · · · · · · · · · · · · · ·	-8	[-20; 4]	2.7%
Delgado-Floody et al. (2018) Obese Boys	43	-0	12	11	-7	13		6	[-2; 15]	5.0%
Delgado-Floody et al. (2018) Obese Girls	49	3	11	18	1	12		2	[-4; 9]	7.4%
Delgado-Floody et al. (2018) Overweight Boys	27	-3	14	8	1	8	← #	-5	[-13; 3]	5.6%
Delgado-Floody et al. (2018) Overweight Girls	32	2	13	9	-1	16		3	[-8; 14]	3.2%
Espinoza-Silva et al. (2019) Obese Children	141	-2	11	34	0	11		-2	[-6; 2]	12.9%
Espinoza-Silva et al. (2019) Overweight Children	69	1	15	30	-1	12		2	[-4; 7]	9.3%
Ketelhut et al. (2020)	22	-4	8	24	1	15	· • · · · ·	-5	[-12; 2]	6.8%
Martin-Smith et al. (2018)	22	-3	8	30	-2	16		-1	[-8; 6]	7.3%
Racil et al. (2016)	17	-6	8	14	0	6	← Ⅲ	-6	[-11; -1]	10.5%
Van Biljon et al. (2018)	29	-6	16	24	-3	11	← ■	-3	[-11; 4]	6.3%
Weston et al. (2016)	41	-2	12	60	1	13		-3	[-8; 2]	10.5%
Random effects model	553			319				-2	[-4; 0]	100.0%
Heterogeneity: $I^2 = 29\%$, $p = 0.14$. 2	10 -5 0 5 10 15			
							eater ↓ in SBP Greater ↑ in SBP			
						311	mer + m obs			

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in millimetres of mercury.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

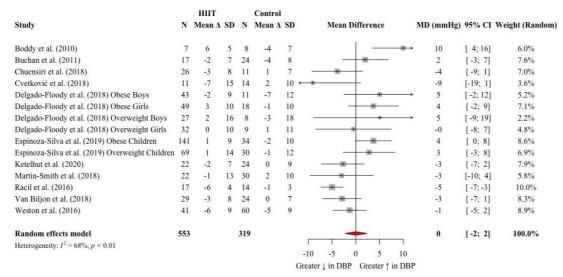
MD = mean difference between the HIIT and control groups

CI = confidence interval

SBP = systolic blood pressure

mmHg = millimetres of mercury

2. Forest plot of high-intensity interval training versus control for diastolic blood pressure



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in millimetres of mercury.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

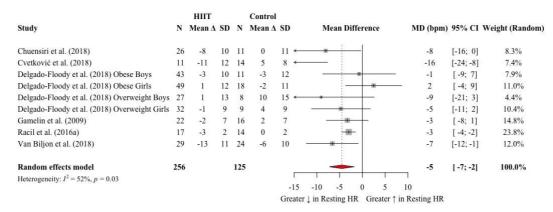
CI = confidence interval

DBP = diastolic blood pressure

mmHg = millimetres of mercury

 I^2 = variation across studies due to heterogeneity rather than chance

3. Forest plot of high-intensity interval training versus control for resting heart rate



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in beats per minute.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

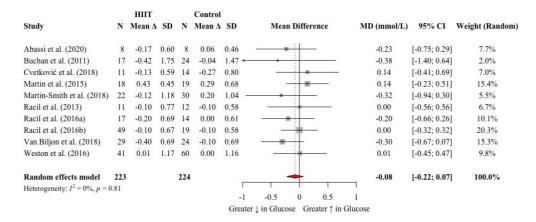
CI = confidence interval

HR = systolic blood pressure

Bpm = beats per minute

Blood Profile Forest Plots

1. Forest plot of high-intensity interval training versus control for fasting glucose



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in millimoles per litre.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

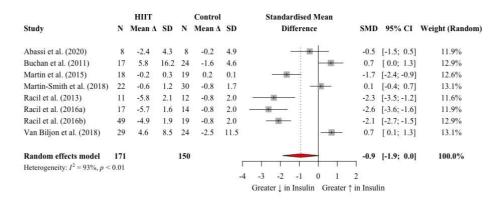
MD = mean difference between the HIIT and control groups

CI = confidence interval

Mmol/L = millimoles per litre

 I^2 = variation across studies due to heterogeneity rather than chance

2. Forest plot of high-intensity interval training versus control for fasting insulin



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different units of measurement presented.

N = number of participants

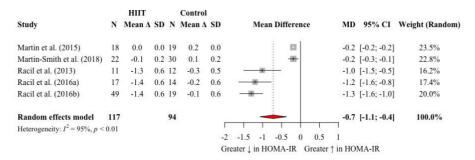
Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

SMD = standardised mean difference between the HIIT and control groups

CI = confidence interval

3. Forest plot of high-intensity interval training versus control for homeostatic model assessment – insulin resistance (HOMA-IR)



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

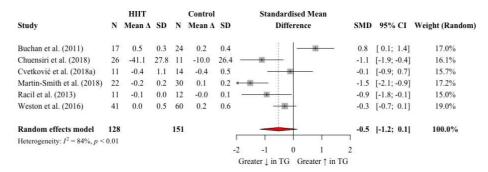
MD = mean difference between the HIIT and control groups

CI = confidence interval

HOMA-IR = homeostatic model assessment – insulin resistance

 I^2 = variation across studies due to heterogeneity rather than chance

4. Forest plot of high-intensity interval training versus control for triglycerides



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different units of measurement presented.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

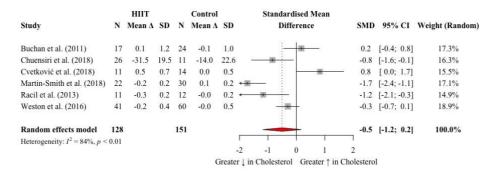
SMD = standardised mean difference between the HIIT and control groups

TG = triglycerides

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

5. Forest plot of high-intensity interval training versus control for total cholesterol



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different units of measurement presented.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

SMD = standardised mean difference between the HIIT and control groups

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

6. Forest plot of high-intensity interval training versus control for total high-density lipoprotein

		HIIT			Control		Standardised Mean			
Study	N	Mean A	SD	N	Mean A	SD	Difference	SMD	95% CI	Weight (Random)
Buchan et al. (2011)	17	0.3	1.2	24	0.7	1.2	*	-0.3	[-0.9; 0.3]	18.9%
Chuensiri et al. (2018)	26	-6.4	8.1	11	-4.0	8.5 -	*	-0.3	[-1.0; 0.4]	15.9%
Martin-Smith et al. (2018)	22	0.0	0.8	30	-0.0	0.1		0.1	[-0.5; 0.6]	22.2%
Racil et al. (2013)	11	0.1	0.1	12	0.0	0.0		0.9	[0.1; 1.8]	11.7%
Weston et al. (2016)	41	-0.2	0.4	60	-0.2	0.3		0.2	[-0.2; 0.6]	31.2%
Random effects model	117			137			-	0.1	[-0.3; 0.4]	100.0%
Heterogeneity: $I^2 = 36\%$, $p =$	0.18					-1	-0.5 0 0.5 1 1.5	2		
					G	reater	in HDL Greater ↑ in HDL			

The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different units of measurement presented.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

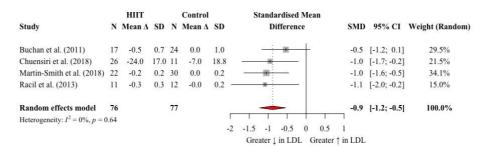
SMD = standardised mean difference between the HIIT and control groups

HDL = high-density lipoprotein

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

7. Forest plot of high-intensity interval training versus control for total low-density lipoprotein



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different units of measurement presented.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

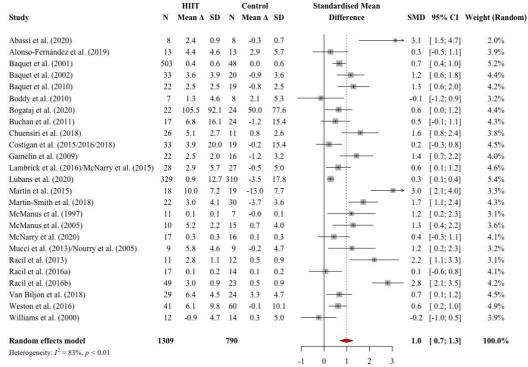
SMD = standardised mean difference between the HIIT and control groups

LDL = low-density lipoprotein

CI = confidence interval

Aerobic and Muscular Fitness Forest Plots

1. Forest plot of high-intensity interval training versus control for all measurements of cardiorespiratory fitness



Greater ↓ in CRF Compared with Control Greater ↑ in CRF Compared with Control

The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups. SMD was used to account for different measures used to quantity cardiorespiratory fitness.

N = number of participants

Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

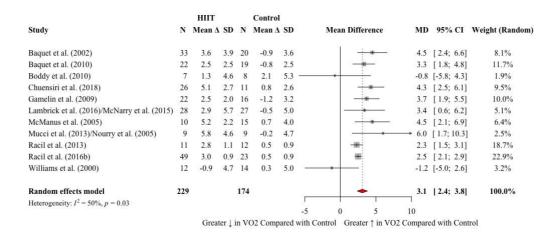
SMD = standardised mean difference between the HIIT and control groups

CI = confidence interval

CRF = cardiorespiratory fitness

 I^2 = variation across studies due to heterogeneity rather than chance

2. Forest plot of high-intensity interval training versus control for cardiorespiratory fitness measured using a metabolic cart to measure relative VO₂



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in ml/min/kg.

N = number of participants

Mean Δ = change score between pre- and post-tests

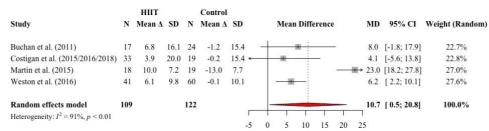
SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

 VO_2 = maximum rate of oxygen consumption

 I^2 = variation across studies due to heterogeneity rather than chance

3. Forest plot of high-intensity interval training versus control for cardiorespiratory fitness measured using number of shuttles completed in the 20 m shuttle run test



Greater ↓ in shuttles Compared with Control Greater ↑ in shuttles Compared with Control

The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in number of shuttles.

N = number of participants

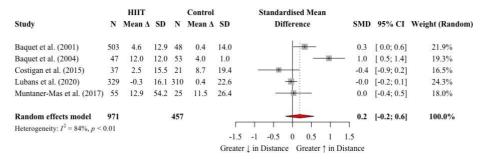
Mean Δ = change score between pre- and post-tests

SD = standard deviation of the change score

MD = mean difference between the HIIT and control groups

 I^2 = variation across studies due to heterogeneity rather than chance

4. Forest plot of high-intensity interval training versus control for standing long jump



The standardised mean difference (SMD) between the change scores for high-intensity interval training (HIIT) and the control groups.

Mean Δ = change score between pre- and post-tests

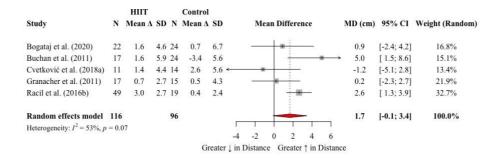
SD = standard deviation of the change score

SMD = standardised mean difference between the HIIT and control groups

CI = confidence interval

 I^2 = variation across studies due to heterogeneity rather than chance

5. Forest plot of high-intensity interval training versus control for countermovement jump



The mean difference between the change scores for high-intensity interval training (HIIT) and the control groups in centimetres

N = number of participants

Mean Δ = change score between pre- and post-tests

$$\begin{split} SD &= \text{standard deviation of the change score} \\ MD &= \text{mean difference between the HIIT and control groups} \\ CI &= \text{confidence interval} \\ I^2 &= \text{variation across studies due to heterogeneity rather than chance} \end{split}$$