

Supplementary file 11. Simple meta-regression results for changes in fat mass (kg).

Variable	Aerobic			Strength			Both		
	β_1 ($\bar{X} \pm SE$)	z(p)	95% CI	β_1 ($\bar{X} \pm SE$)	z(p)	95% CI	β_1 ($\bar{X} \pm SE$)	z(p)	95% CI
<i>Study characteristics</i>									
- Year	-0.23±0.1	-1.9(.06)	-0.5,0.01	0.09±0.30	0.31(.76)	-0.5,0.7	0.48±0.22	-2.1(.03)*	-0.9,-0.4
- Impact factor	0.16±0.27	0.58(.56)	-0.4,0.7	-0.12±0.35	-0.35(.73)	-0.8,0.6	0.25±0.28	0.91(.36)	-0.3,0.8
- Country (other vs usa)	-1.7±1.2	-1.4(.17)	-4.1,0.7	0.54±2.1	0.26(.79)	-3.5,4.6	ID	ID	ID
- Sequence generation	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Allocation conceal (unclear vs low)	-0.66±1.4	-0.46(.64)	-3.5,2.1	1.3±2.2	0.60(.55)	-2.9,5.5	-1.8±2.0	-0.92(.35)	-5.7,2.1
- Blinding (P & P)	NA	NA	NA	NA	NA	NA	NA	NA	NA
- Blinding (OA) (ref = low)									
-- High	ID	ID	ID	ID	ID	ID	ID	ID	ID
-- Unclear	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Incomplete data (ref = low)									
-- High	0.37±2.2	0.17(.87)	-4.0,4.7	1.0±3.3	0.31(.76)	-5.4,7.4	0.22±2.1	0.11(.91)	-3.9,4.3
-- Unclear	-0.69±1.3	-0.52(.61)	-3.3,1.9	1.3±2.4	.056(.58)	-3.3,6.0	-2.8±1.9	-1.5(.13)	-6.5,0.9
- Selective reporting (unclear vs. low)	-3.2±1.2	-2.6(.009)*	-5.7,-0.8	-0.68±2.8	-0.24(.81)	-6.2,4.9	-0.40±1.9	-0.21(.83)	-4.1,3.3
- Inactive (ref = low)									
-- High	0.93±2.4	0.39(.69)	-3.7,5.6	ID	ID	ID	2.4±3.4	0.72(.47)	-4.2,9.1
-- Unclear	0.15±1.5	0.10(.92)	-2.7,3.0	2.1±2.2	0.94(.35)	-2.3,6.5	0.62±2.1	0.30(.77)	-3.5,4.7
- Funding (yes vs no)	2.5±1.5	1.7(.09)	-0.4,5.5	1.7±2.4	0.69(.49)	-3.0,6.4	3.6±1.6	2.3(.02)*	0.5,6.8
- Matching	2.3±1.4	1.67(.09)	-0.4,4.9	-0.20±2.7	-0.08(.94)	-5.4,5.0	-0.47±2.0	-0.23(.82)	-4.4,3.5
- Crossover trial	ID	ID	ID	ID	ID	ID	ID	ID	ID

- Control type (other vs none)	2.6±1.9	1.4(.16)	-1.0,6.3	0.45±2.8	0.16(.87)	-5.0,5.9	1.4±1.8	0.79(.43)	-2.2,5.0
- Analysis type (abp vs itt)	0.63±1.3	0.47(.64)	-2.0,3.2	1.9±2.1	0.91(.36)	-2.3,6.2	-1.3±1.9	-0.69(.49)	-5.0,2.4
- Fidelity (design)	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Fidelity (training)	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Fidelity (delivery)	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Fidelity (receipt)	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Fidelity (enactment) (yes vs no)	-1.2±1.0	-1.2(.25)	-3.2,0.8	-1.2±1.7	-0.74(.46)	-4.5,2.0	ID	ID	ID
<i>Participant characteristics</i>									
- Age (years)	-0.02±0.26	-0.10(.92)	-0.5,0.5	-0.62±0.54	-1.1(.25)	-1.7,0.4	-0.67±0.44	-1.5(.13)	-1.5,0.2
- Gender (females vs males)	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Race ethnicity	ID	ID	ID	ID	ID	ID	ID	ID	ID
- Maturation stage	ID	ID	ID	ID	ID	ID	ID	ID	ID
<i>Exercise characteristics</i>									
- Length (weeks)	0.26±0.11	2.3(.02)*	0.04,0.48	0.07±0.22	0.33(.74)	-0.4,0.5	0.13±0.15	0.83(.41)	-0.2,0.4
- Frequency (days/week)	0.54±0.44	1.2(.22)	-0.3,1.4	-1.7±1.5	-1.2(.24)	-4.6,1.1	-1.6±0.96	-1.7(.09)	-3.5,0.2
- Intensity (high vs moderate)	-4.9±1.7	-2.9(.003)*	-8.2,1.6	ID	ID	ID	ID	ID	ID
- Duration (min/session)	0.02±0.03	0.86(.39)	-0.03,0.09	-0.02±0.06	-0.39(.69)	-0.1,.1	0.09±0.06	1.6(.11)	-0.02,0.2
- Compliance (%)	-0.07±0.02	-3.9(<0.001)*	-0.1,-0.03	-0.26±0.37	-0.72(.47)	-1.0,0.4	0.002±.03	0.06(.95)	-0.07,.07
- Minutes per week (total) ^a	0.007±0.01	0.69(.49)	-0.01,0.03	NA	NA	NA	NA	NA	NA
- Minutes per week (adjusted total) ^a	-0.006±.003	-2.1(.03)*	-0.01,-0.0006	NA	NA	NA	NA	NA	NA
- Sets ^b	NA	NA	NA	ID	ID	ID	NA	NA	NA
- Repetitions ^b	NA	NA	NA	ID	ID	ID	NA	NA	NA
- Rest between sets ^b	NA	NA	NA	ID	ID	ID	NA	NA	NA
- Number of exercises ^b	NA	NA	NA	0.10±1.2	0.08(.93)	-2.3,2.5	NA	NA	NA
- Type of resistance ^b	NA	NA	NA	ID	ID	ID	NA	NA	NA

- Type of strength program ^b (c vs t)	NA	NA	NA	-0.85±1.3	-0.65(.52)	-3.4,1.7	NA	NA	NA
- Type of strength equipment ^b	NA	NA	NA	ID	ID	ID	NA	NA	NA
- Supervision (no vs yes)	2.3±1.7	1.3(.18)	-1.1,5.6	8.1±15.3	0.53(.59)	-21.8,38.1	ID	ID	ID
- Location	2.2±1.6	1.4(.17)	-0.9,5.3	8.3±15.2	054(.59)	-21.6,38.1	ID	ID	ID
<i>Outcome characteristics</i>									
- Baseline fat mass (kg)	-0.09±0.05	-1.8(.07)	-0.2,0.007	-0.10±0.08	-1.3(.18)	-0.3,05	-0.01±0.08	-.17(.86)	-0.2,0.1
- Assessment method (ref = DEXA)									
-- MRI	-2.5±2.1	-1.2(.22)	-6.7,1.6	-1.9±3.2	-0.59(.56)	-8.1,4.3	-1.3±2.6	-0.51(.61)	-6.4,3.8
-- BI	-2.2±1.7	-1.3(.20)	-5.6,1.2	ID	ID	ID	-2.7±2.7	-0.98(.33)	-8.1,2.7
-- Skinfolds	-3.1±1.7	-1.8(.07)	-6.4,0.3	2.1±3.7	0.55(.58)	-5.3,9.4	0.65±2.8	0.23(.82)	-4.8,6.1

Notes: ^a, limited to aerobic exercise studies; ^b, limited to studies that included only strength training; NA, not applicable; ID, insufficient data to conduct analysis; P & P, participants and personnel; OA, outcome assessment; abp vs. itt, analysis-by-protocol vs intention-to-treat; c vs t, circuit versus traditional; DEXA, dual-energy x-ray absorptiometry; MRI, magnet resonance imaging; BI, bioelectrical impedance; **boldface** items indicate statistically significant findings; *, statistically significant (two-tailed $p \leq 0.05$); total number of observations for statistically significant findings from multivariate models were 32 for year of publication, selective reporting, funding, length of training and intensity of training, 10 for compliance, and 8 for adjusted minutes per week of exercise.