SDC4-Table 2. Power Calculations Using Paired Two-Sample *t*-Tests from Existing RCTs Examining Cardiometabolic Disease Biomarker Response After versus Before Acute and Chronic Dynamic Resistance Exercise Compared to After versus Before Control to Detect a Significant Difference between Dynamic Resistance Exercise versus Control (acute *k*=6; chronic *k*=9).

Study Characteristics	Intervention Features: *F*requency, *I*ntensity, and *T*ime	Mean Change (±SD) in Cardiometabolic Disease Biomarker and the Estimated Sample Size Required to Detect Significant Exercise-Induced Changes [a]						
		SBP	DBP	TRIG	GLUCOSE	INSULIN	LDL-C	HDL-C
Acute – RCTs [b, c]								
Bermudes, 2003 (6) *(24 hr post-RE vs. baseline)*								
N = 25 M 44±5 yr 23.6±2.5 kg·m⁻²	*Wakefulness* **I:** 40% 1-RM **T:** 3 sets × 20-25 reps, 2 min between sets **T:** 10 REs	0.0±9.9 mmHg *N* = —	-1.0±7.4 mmHg *N* = 436					
	Night	-1.0±7.8 mmHg *N* = 478	-2.6±6.0 mmHg *N* = 45					
	24-hr	0.0±9.2 mmHg *N* = —	-0.7±7.1 mmHg *N* = 801					
Black, 2010 (7) *(24 hr post-RE vs. baseline)*								
N = 17 (12M/5W) 29.9±9.6 yr 30.4±5.6 kg·m⁻²	*Low* **I:** 65% 1-RM **T:** 2-4 sets × 12-15 reps (55 min) **T:** 4 UB/ 4 LB REs				-3.0±2.2 mg/dl *N* = 7	-1.2±1.2 UIU/ml *N* = 10		
	High **I:** 85% 1-RM **T:** 2-4 sets × 6-8 reps (55 min) **T:** 4 UB/ 4 LB REs				-2.7±1.1mg/dl *N* = 4	-2.9±5.3 UIU/ml *N* = 29		
Teixeira, 2011 (25) *(120 min post- vs. pre-RE)*								
N = 20 (10M/10W) 26±4 yr 22.1±2 kg·m⁻²	**I:** 50% 1-RM **T:** 3 sets × 20 reps (30 min) **T:** 3 UB/ 3 LB REs	-8.0±4.5 mmHg *N* = 5	-2.0±4.5 mmHg *N* = 42					
Tibana, 2014 (27) *(60 min post- vs. pre-RE)*								
N = 13 W 35.7±7.4 yr 28.3±5.4 kg·m⁻²	**I:** 60% 1-RM **T:** 3 sets × 10 reps **T:** 3 UB/ 3 LB REs + sit-ups (15 reps)	-2.9±13.8 mmHg* *N* = 180	-0.5±10.8 mmHg* *N* = 3,663					
Tsuchiya, 2015 (28) *(60 min post- vs. pre-RE)*								
N = 10 M 23.0±3.2 yr 23.7±6.3 kg·m⁻²	**I:** 65% 1-RM **T:** 3-4 sets × 12 reps (60 min) **T:** 6 UB/ 2 LB REs			-4.0±33.6 mg/dl* *N* = 556	-3.0±8.9 mg/dl* *N* = 72	-0.2±4.7 µU/ml* *N* = 4,280		
***N* Needed for Each Cardiometabolic Biomarker ‡**		180 (5-478)	436 (42-3663)	556	7 (4–72)	29 (10–4,280)		
***ES* for Each Cardiometabolic Biomarker ‡**		-0.21 (-0.13, -1.79)	-0.43 (-0.10, -0.46)	-0.12	-1.36 (-0.34, -2.46)	-0.55 (-0.04, -1.00)		
Chronic – RCTs								
AbouAssi, 2015 (1)								
N = 38 (20M/18W) 90% WH, 8% AA, 2% other 51.1±11.0 yr 30.0±3.0 kg·m⁻²	~32 wk (*supervised*) **F:** 2.5 d/wk (60 min/d) **I:** 8-12RM (*progressive*) **T:** 3 sets × 8-12 reps **T:** 8 REs *Adherence=83.2%*				-0.3±9.0 mg/dl *N* = 7,065	-0.2±5.0 µU/ml *N* = 4,055		

Study Characteristics	Intervention Features: *F*requency, *I*ntensity, and *T*ime	Mean Change (±SD) in Cardiometabolic Disease Biomarker and the Estimated Sample Size Required to Detect Significant Exercise-Induced Changes [a]						
		SBP	DBP	TRIG	GLUCOSE	INSULIN	LDL-C	HDL-C
Beck, 2014 (*N*=30) (4)								
N =15 (11M/4W) 21.1±2.3 yr 27.4±5.0 kg·m^{-2}	8 wk (*supervised*) **F:** 3 d/wk **I:** 60% 1-RM **T:** 2 sets × 8-12 reps (60 min) **T:** 4 UB/ 3 LB REs	-9.0±17.3 mmHg *N* = 32	-9.0±11.0 mmHg *N* = 14					
Boyden, 1993 (*N*=88) (9)								
N = 46 W 31.4±2.9 yr 22.4±2.7 kg·m^{-2}	20 wk (*supervised*) **F:** 3 d/wk **I:** 70% 1-RM **T:** 3 sets × 8 reps (60 min) **T:** 12 REs *Adherence=85%*						-0.9±34.3 mmol/l *N* = 11,374	
Croymans, 2014 (*N*=36) (12)								
N = 28 M 21.5 (20.0-23.0) yr 30.9 (29.7-32.7) kg·m^{-2}	12 wk (*supervised*) **F:** 3 d/wk **I:** 8-15RM (*progressive*) **T:** 3 sets × 8-12 reps (60 min) **T:** 7 LB or 8 UB REs *Adherence=99.7%*	-4.0±9.5 mmHg *N* = 47						
Gelecek, 2012 (*N*=45) (17)								
N = 24 W 54.3±5.3 yr 28.0±3.7 kg·m^{-2}	12 wk (*supervised*) **F:** 3 d/wk **I:** 60% 1-RM **T:** 2 sets × 8-12 reps (50-60 min) **T:** 3 LB/3 UB REs	-4.2±9.2 mmHg *N* = 39	-1.2±4.5 mmHg *N* = 108					
Prabhakaran, 1999 (*N*=24) (22)								
N = 12 W 28.0±6.0 yr	14 wk (*supervised*) **F:** 3 d/wk **I:** 85% 1-RM **T:** 2 sets × 8 reps (45-50 min) **T:** 3 LB/ 5 UB REs *Adherence=94%*			-0.2±0.8 mmol/l *N* = 139			-0.5±1.7 mmol/l *N* = 96	0.01±0.6 mmol/l *N* = 27,323
Sarsan, 2006 (*N*=46) (23)								
N = 26 W 42.5±10.1 yr 33.7±2.9 kg·m^{-2}	12 wk (*supervised*) **F:** 3 d/wk **I:** 40-80% 1-RM (*progressive*) **T:** 1-3 sets × 10 reps **T:** 3 LB/ 3 UB REs	-10.0±14.2 mmHg *N* = 18	-5.8±10.6 mmHg *N* = 29					
Tibana, 2014 (26)								

Study Characteristics	Intervention Features: _F_requency, _I_ntensity, and _T_ime	Mean Change (±SD) in Cardiometabolic Disease Biomarker and the Estimated Sample Size Required to Detect Significant Exercise-Induced Changes [a]						
		SBP	DBP	TRIG	GLUCOSE	INSULIN	LDL-C	HDL-C
_N_ = 13 W 35.7±7.4 yr 28.3±5.4 kg·m^{-2}	~8 wk (_supervised_) **F:** 3 d/wk **I:** 60% 1-RM **T:** 3 sets × 10 reps (~30 min) **T:** 7 REs _Adherence=>85%_	0.0±10.6 mmHg*† _N_ = —	-0.5±10.4 mmHg* _N_ = 3,396					
Zavanela, 2012 (_N_=96) (30)								
_N_ = 48 M 25.4±4.0 kg·m^{-2}	24 wk (_supervised_) **F:** 3-4 d/wk **I:** 10-12RM (_progressive_) **T:** 3 sets ×8-12 reps **T:** 11-16 REs	-9.7±24.4 mmHg _N_ = 52	-7.9±17.9 mmHg _N_ = 43					
_N_ Needed for Each Cardiometabolic Biomarker ‡		39 (18-52)	43 (14–3,396)	139	7,065	4,055	5,735 (96–11,374)	27,323
_ES_ for Each Cardiometabolic Biomarker ‡		-0.46 (-0.40, -0.70)	-0.44 (-0.05, -0.82)	-0.24	-0.03	-0.04	-0.16 (-0.03, -0.29)	0.02
Summary of the _Overall_ Response to Acute and Chronic Dynamic RE ‡	_Acute_	_N_ = 72 _ES_ = -0.43	(4 – 4,280) (-0.04, -2.46)	_Chronic_		_N_ = 50 _ES_ = -0.41	(14 – 11,374) (-0.03, -0.82)	

Note. Statistics are summarized as Mean ± Standard deviation (_SD_) or Median (Range). Gray shading=Data not available for power calculations. * _SD_ calculated by assuming independence. † Blue shading=Cardiometabolic response was more favorable for Control _vs_. RE; _N_ could not be calculated. ‡ _N_ needed and _ES_ are summarized as _M_edian (Full Range=_M_inimum, _M_aximum). _Abbr._ AA=African American/Black. DBP=Diastolic blood pressure. ES=Effect size (_ES_=Mean change ÷ _SD_). HDL-C=High-density lipoprotein cholesterol. LB=Lower body. LDL-C=Low-density lipoprotein cholesterol. _k_=Number of study groups. M=Men. _N_=Sample size. RCT=Randomized controlled trial. RE=Resistance exercise. Reps=Repetitions. SBP=Systolic blood pressure. Trig=Triglycerides. UB=Upper body. W=Women. WH=White/Caucasian. [a] mean change values, and units are presented as reported by study authors for each cardiometbolic biomarker outcome. [b] Acute studies were supervised; only _I_ntensity and _T_ime are quantified (i.e., _F_requency=1 d/wk). [c] Details regarding the cardiometabolic biomarker response to AE are provided in parentheses (i.e., timing of post-assessment, min or hr; mean change calculation). Full references appear in SDC 7.