**(SDC2) Table S2.** Study characteristics: author and year, sample, experimental design, resistance training prescription and outcomes assessed.

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| Author, year | Sample | Experimental Design | Resistance training prescription | Resistance training volume | Outcomes |
| Anderson et al., 1982 (2) | n= 43age: 20.7±1.8 yrsUntrained men | Between-subject | 27 sessions (9wk, 3x.wk-1);1 exercise;High load: 3 sets of 6-8RM (n= 15)Low load: 3 sets of 30-40RM (n= 16)Low load: 3 sets of 100-150RM (n= 12) | NR | Bench press 1-RM |
| Stone & Coulter, 1994 (51) | n= 50age: 23.1±3.5 yrsUntrained women | Between-subject | 27 sessions (9wk, 3x.wk-1);5 exercises;High load: 3 sets of 6-8RM (n= 17)Low load: 2 sets of 15-20RM (n= 16)Low load: 1 set of 30-40RM (n= 17) | NR | Bench press 1-RM;Squat 1-RM |
| Hisaeda et al., 1997 (37) | n= 11age: 19.8±1.8 and 20.4±1.3 yrsUntrained women | Between-subject | 24 sessions (8wk, 3x.wk-1);1 exercise;High load: 3-5 sets of 4.5RM (n= 6)Moderate load: 3-5 sets of 8-20RM (n= 5) | Knee extension volumecHigh load: range from 2.2±0.5 to 3.6±0.6 kJ Moderate load: range from 3.5±0.4 to 4.7±0.7 kJ | Quadriceps femoris CSA (MRI) |
| Campos et al., 2002 (3) | n= 32age: 22.5±5.8 yrsUntrained men | Between-subject | 16 sessions (8wk, 2x.wk-1);3 exercises;High load: 4 sets of 3-5RM (n= 9)Moderate load: 3 sets 9-11RM (n= 11)Low load: 3 sets of 20-28RM (n= 7) | NR | Squat 1-RM;Leg press 1-RM;Knee Extension 1-RM;Vastus lateralis Biopsy |
| Rana et al., 2008 (46) | n= 34age: 21.1±2.7 yrsUntrained men | Between-subject | 17 sessions (6wk, 2-3x.wk-1);3 exercises;High load: 3 sets of 6-10RM (n= 9)Low load: 3 sets of 20-30RM (n= 8) | NR | Squat 1-RM;Leg press 1-RM;Knee extension 1-RM;Fat-free mass (BodPod) |
| Mikkola et al., 2011 (42) | n= 27age: 34±9 and 36±6 yrsActive untrained men | Between-subject | ? sessions (14wk, 1-2x.wk-1);8 exercises;High load: 3 sets of 4-6RM (n= 11)Low load: 3 sets of 40-50RM (n= 6) | Leg press volumeaHigh load: range from 1,297±137 to 1,615±213 kg;Low load: NR | Leg press 1-RM;Fat-free mass (Skin fold) |
| Mitchell et al., 2012 (6) | n= 18age: 21±1 yrsActive untrained men | Within-subject | 30 sessions (10wk, 3x.wk-1);1 exercise;High load: 3 sets at 80% of 1-RM (n= 18)Low load: 3 sets of 30% of 1-RM (n= 18) | NR | Knee extension 1-RM;Quadriceps femoris volume (MRI);Vastus lateralis Biopsy |
| Schuenke et al., 2012 (49) | n= 34age: 21.1±2.7 yrsUntrained women | Between-subject | 17 sessions (6wk, 2-3x.wk-1);3 exercises;High load: 3 sets of 6-10RMLow load: 3 sets of 20-30RM | NR | Vastus lateralis Biopsy |
| Van Roie et al., 2013 (52) | n= 36age: 21.4±1.8 and 22.2±2.7 yrsUntrained men and women | Between-subject | 27 sessions (9wk, 3x.wk-1);1 exercise;Moderate load: 1 set of 10-12RM (n= 12)Low-load: 1 set of 60 reps at 20-25% of 1-RM plus 10-12 reps at 40% of 1-RM (n= 12) | NR | Knee extension 1-RM |
| Schoenfeld et al., 2014 (48) | n= 20age: 23.2±2.7 yrsMen with experience in resistance training  | Between-subject | 24 sessions (8wk, 3x.wk-1);9 exercises;High load: 7 sets of 3RM (n= 10)Moderate load: 3 sets of 10RM (n= 10) | Bench press volumeaHigh load: 4,140±49 kg;Moderate load: 3,693±47Squat volumeaHigh volume: 5,751±68 kg;Moderate volume: 6,625±85 kg | Bench press 1-RM;Squat 1-RM;Elbow flexor MT (Ultrasound) |
| Herman-Montemayor et al., 2015 (36) | n= 34age: 21.1±2.7 yrsUntrained women | Between-subject | 21 sessions (8wk, 2-3x wk-1);3 exercises;High load: 3 sets of 6-10RM (n= 9)Low load: 3 sets of 20-30RM (n= 6) | NR | Vastus lateralis Biopsy |
| Mangine et al., 2015 (41) | n= 29age: 24.0±2.7 and 24.7±3.4 yrsMen with experience in resistance training | Between-subject | 38 sessions (10wk, 2-4x.wk-1);17 exercises;High load: 4 sets of 3-5RM (n= 15)Moderate load: 4 sets of 10-12RM (n= 14) | Bench press volumeaHigh load: 2,757±696 kg;Moderate load: 4,412±729 kg | Bench press 1-RM |
| Schoenfeld et al., 2015 (47) | n= 24age: 23.3±? yrsMen with experience in resistance training | Between-subject | 24 sessions (8wk, 3x.wk-1);7 exercises;Moderate load: 3 sets of 8-12RM (n= 12)Low load: 3 sets of 25-35RM (n= 12) | NR | Bench press 1-RM;Squat 1-RM;Elbow flexor MT (Ultrasound);Elbow extensor MT (Ultrasound) |
| Fink et al., 2016 (34) | n= 21age: 23.1±2.4 and 23.4±3.0 yrsUntrained men athletes | Between-subject | 24 sessions (8wk, 3x.wk-1);1 exercise;High load: 3 sets at 80% of 1-RM (n= 7)Low load: 3 sets at 30% of 1-RM (n= 7) | Biceps curl volumebHigh load: 15.3±1.6 repetitions;Low load: 75.3±12.6 repetitions | Arm CSA (MRI) |
| Morton et al., 2016 (43) | n= 49age: 23±1 yrsMen with experience in resistance training | Between-subject | 48 sessions (12wk, 4x.wk-1);10 exercises;High load: 3 sets of 8-12RM\* (n= 27)Low load: 3 sets of 20-25RM (n= 29) | Total volume per sessionaHigh load: 14,805±592 kg;Low load: 23,969±901 kg | Bench press 1-RM;Leg press 1-RM;Knee extension 1-RM;Vastus lateralis Biopsy |
| Schoenfeld et al., 2016 (7) | n= 19age: 23.2±4.2 yrsMen with experience in resistance training | Between-subject | 24 sessions (8wk, 3x.wk-1);7 exercises;High load: 7 sets of 3RM (n= 10)Moderate load: 3 sets of 8-12RM (n= 9) | Total volumeaHigh load: 25,867±3,731 kg;Moderate load: 56,049±11,101 kg | Bench press 1-RM;Squat 1-RM;Elbow flexor MT (Ultrasound);Elbow extensor MT (Ultrasound);Vastus lateralis MT (Ultrasound) |
| Cholewa et al., 2017 (32) | n= 20age: 20.3±1.5 yrsUntrained women | Between-subject | 33 sessions (11wk, 3x.wk-1);13 exercises;High load: 4 sets at 5-7 RM (n= 10)Moderate load: 2 sets at 10-14RM (n= 10) | Squat total volumea High load: range from 1,234 to 1,600 kg;Moderate load: range from 947 to 1,262kg. | Squat 1-RM;Arm and thigh CSA (Skinfold circumference) |
| Jenkins et al., 2017 (38) | n= 26age: 23.1±4.7 yrsUntrained men | Between-subject | 18 sessions (6wk, 3x.wk-1);1 exercise;High load: 3 sets at 80% of 1-RM (n= 13)Low load: 3 sets at 30% of 1-RM (n= 13) | Knee extension volumeaHigh load: 38,825±3,003 kg;Low load: 41,170±4,327 kg | Knee extension 1-RM;Quadriceps femoris MT (Ultrasound) |
| Lopes et al., 2017 (40) | n= 16age: 24.6±5.8 and 28.6±6 yrsMen with experience in resistance training | Between-subject | 24 sessions (6wk, 4x.wk-1);15 exercises;Moderate load: 6 sets of 10RM (n= 8)Low load: 3 sets of 20RM (n= 8) | Total volumeaModerate load: range from 89,029±15,297 to 106,802±14,903 kg;Low load: range from 80,460±10,721 to 97,131±11,109 kg | Bench press 1-RM;Squat 1-RM;Fat-free mass (Skin fold) |
| Ozaki et al., 2017 (45) | n= 9age: 26±1 yrsUntrained men | Within-subject | 22 sessions (8wk, 2-3x.wk-1);1 exercise;High load: 3 sets of 80% of 1-RM (n= 6)Low load: 3 sets of 30% of 1-RM (n= 6) | Elbow flexion volume per setbHigh load: range from 8.8±1.3 to 5.1±1.2 repetitions;Low load: range from 104.3±22.3 to 31.8±5.6 repetitions | Elbow flexors 1-RM;Arm CSA (MRI) |
| Lasevicius et al., 2018 (4) | n= 30age: 24.5±2.4 yrsActive untrained men | Within-subject | 24 sessions (12wk, 2x.wk-1);2 exercises;High load: 4 sets at 80% of 1-RM (n= 10)Moderate load: 5 sets at 60% of 1-RM (n= 10)Low load: 4 sets at 40% of 1-RM (n= 10)Low load: 3 sets at 20% of 1-RM (n= 30) | Leg press volumeaHigh load: 160,005±36,054 kg;Moderate load: 160,900±30,997 kg;Low load: 153,946±28,285 and 163,043±34,695 kgElbow flexion volumeaHigh load: 20,543±3,480Moderate load: 20,822±3,644 Low load: 21,919±3,028 and 21,674±2953 kg | Leg press 1-RM;Elbow flexors 1-RM;Vastus lateralis CSA (Ultrasound);Elbow flexor CSA (Ultrasound) |
| Nobrega et al., 2018 (44) | n= 32age: 23.0±3.6 yrsUntrained men | Within-subject | 24 sessions (12wk, 2x.wk-1);1 exercise;High load: 3 sets at 80% of 1-RM (n= 14)Low load: 3 sets at 30% of 1-RM (n= 13) | Knee extension volumeaHigh load: range from 12,795±3,654 to 13,899±3,236 kg;Low load: range from 9,923±3,144 to 11,191±3,346 kg | Knee extension 1-RM;Vastus lateralis CSA (Ultrasound) |
| Dinyer et al., 2019 (33) | n= 23age: 21.2±2.2 yrsUntrained women | Between-subject | 24 sessions (12wk, 2x.wk-1);4 exercises;High load: 2-3 sets at 80% of 1-RM (n= 12)Low load: 2-3 sets at 30% of 1-RM (n= 11) | Knee extension volumeaHigh load: 14,845 kg;Low load: 11,755 kgSeated military pressaHigh load: 4,366 kg;Low load: 4,030 kg | Knee extension 1-RM;Seated military press 1-RM;Bone- and fat-free mass (DXA) |
| Franco et al., 2019 (35) | n= 32age: 23.0±3.3 and 24.3±4.8 yrsUntrained women | Between-subject | 18 sessions (9wk, 2x.wk-1);3 exercises;Moderate Load: 3 sets of 8-10RM (n= 18)Low load: 3 sets of 30-35RM (n=14) | Total volumeaHigh load: 2,993±561 kg;Low load: 5,190±731 kg | Knee extension 1-RM;Leg bone- and fat-free mass (DXA) |
| Lasevicius et al., 2019 (39) | n= 32age: 23.8±4.9 and 24.3±4.8 yrsActive untrained men | Within-subject | 16 sessions (8wk, 2x.wk-1);1 exercise;High load: 3 sets at 80% of 1-RM (n= 13)Low load: 3 sets at 30% of 1-RM (n= 12) | Knee extension volumeaHigh load: 34,853±8,020 kgLow load: 34,576±16,372 kg | Knee extension 1-RM;Quadriceps femoris CSA (Ultrasound) |
| Lim et al., 2019 (5) | n= 21age: 23±1 and 24±2 yrsUntrained men | Between-subject | 30 sessions (10wk, 3x.wk-1);3 exercises;High load: 3 sets at 80% of 1-RM (n= 7)Low load: 3 sets at 30% of 1-RM (n= 7) | Knee extension volumeaHigh load: 1,117±463 kgLow load: 1,571±476 kg | Knee extension 1-RM;Vastus lateralis Biopsy |
| Stefanaki et al., 2019 (50) | n= 13age: 29.7±4.7 yrsUntrained women | Within-subject | 12 sessions (6wk, 2x.wk-1);2 exercises;High load: 1 set at 80% of 1-RM (n= 13)Low load: 1 set at 30% of 1-RM (n=13) | Elbow flexors volumeaHigh load: range from 274 to 459 kg; Low load: range from 459 to 874 kgKnee extensionaHigh load: 97 – 123 kg;Low load: 199 – 255 kg | Elbow flexors 1-RM;Knee extension 1-RM;Elbow flexor MT (Ultrasound);Vastus lateralis MT (Ultrasound) |
| Vargas et al., 2019 (53) | n= 25age:28.4±6.4 yrsMen with experience in resistance training | Between-subject | 32 sessions (8wk, 4x.wk-1);16 exercises;High load: 3 sets of 6-8RM (n= 10)Low load: 3 sets of 20-25RM (n= 10) | NR | Lean body mass (DXA) |

\*, Corresponding 75-90% of 1-RM as reported by authors; a, Product of sets, repetitions and load; b, Average total number of repetitions; c, Product of training load, distance and repetitions; 1-RM, one repetition maximum; CSA, cross-sectional area; DXA, dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging; MT, muscle thickness; wk, weeks.