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| **SDC 5. Summary Study Characteristics of Included Concurrent Exercise Training and Control or Comparison Group Intervention (*k*=76)** | | | | | | | | | | | | |
|  | Baseline Sample Characteristics | | | Features of the Concurrent Training Intervention and Control Comparison Condition | | | BP Change pre- to post- for CE, CON, and CE vs CON (mmHg)^ | | Methodological Measures | | | |
| First Author, Year | N Sample (W) | Resting SBP/DBP (mmHg) | BP and Health Status (% sample) | Length (wks) | Aerobic Exercise | Resistance Exercise | SBP | DBP | Reported Study Outcome | Randomized? | | Study Quality (Items satisfied out of 33 \*100) |
| Abdelaal et al. 2014(2) | N=39(21)  CE=20(11)  Con=19(10) | CE  145.5±1.91/94.0±0.86& | T2DM (100) | 12 | F: 3 d·wk-1  I: Moderate  T: NR  T: Circuit training | F: 3 d·wk-1  I: Moderate  T: NR  T: Circuit training | CE  -3.1  CE vs Con  -1.6  Con  +2.2 | CE  +0.9  CE vs Con  -1.8  Con  +3.4 | BP, Obesity Indices | Yes | 58 | |
| Con  145.0±2.94/94.0±1.63& | T2DM (100) | 12 | Con  Received regular drug therapy | |
| Bateman et al. 2011(3) | N=25(12)  CE=25(12) | CE  118.0±14.6/77.8±8.36 | MetS (100) | 32 | F: 12 miles·wk-1  I: 65-80% VO2max  T: 12 miles per week  T: walking or jogging | F: 3 d·wk-1  I: 65-80% VO2max  T: 3 sets, 8-12 reps  T: free weights or machines | CE  -2.5 | CE  -4.1 | MetS criteria, CVD risk factors | Yes | 82 | |
| CON  118.0±14.6/77.8±8.36 | MetS (100) | 32 | Con  Non-exercise control session, crossover design trial | |
| Bouchonville et al. 2013(4) | N=107(67)  CE=26(16)  Con=27(18) | CE  131.2±11.7/70.9±8.3 | CVD (30) | 52 | F: 3 d·wk-1  I: 65-75% HRmax  T: 90 min·ses-1, 30 min·ses-1 aerobic exercise  T: Treadmill, stationary cycling, stair stepping | F: 3 d·wk-1  I: 65-85% 1RM  T: 90 min·ses-1, 30 min·ses-1 resistance training, 1-2 sets of 8-12 reps  T: weight machines | CE  -0.1  CE vs Con  +1.7  Con  -2.4 | CE  -3.3  CE vs Con  -3.9  Con  +0.1 | Insulin Sensitivity Index (ISI) | Yes | 64 | |
| Con  133.3±18.6/71.5±10.7 | CVD (27) | 52 | Con  Educational information about healthy diet habits, monthly visits | |
| Bunchen et al. 2013(6) | N=32(17)  CE=18(9)  Con=14(8) | CE  132.2±13.0/85.0±9.0 | Healthy (100) | 10 | F: 3 d·wk-1  I: CPET threshold  T: 30 min·ses-1  T: walking, running | F: 3 d·wk-1  I: 50% 1RM  T: 2 sets of 12 reps  T: resistance exercise for upper and lower limbs | CE  +1.6  CE vs Con  +0.0  Con  +1.5 | CE  -3.1  CE vs Con  -3.1  Con  +0.0 | Quality of Life | Yes | 39 | |
|  |  |  |  |  |
| Con  127.2±19.0/85.3±10.0 | Healthy (100) | 10 | Con  Non-exercise control | |
| Chang Ho-Ha et al. 2012(16) | N=16(16)  CE=7(7)  Con=9(9) | CE  113.7±11.22/76.4±6.1 | Healthy (100) | 12 | F: 3 d·wk-1  I: 60-80% HRR  T: 60 min·ses-1  T: Treadmill running | F: 3 d·wk-1  I: 10-15RM  T: 30 min·ses-1, 3 sets of 10-15  T: Resistance exercises | CE  -5.4  CE vs Con  -7.1  Con  +1.7 | CE  -10.6  CE vs Con  -11.3  Con  +0.1 | Body Comp and MetS Factors | Yes | 58 | |
| Con  114.3±11.2/69.1±5.4 | Healthy (100) | 12 | Con  Non-exercise control | |
| Cortez-Cooper et al. 2008(5) | N=37(27)  CE=12(9)  Con=12(8) | CE  118.0±3.0/ 68.0±2.0& | Healthy (100) | 13 | F: 2 d·wk-1  I: 60-75%HRR  T: 30-45 min·ses-1  T: walking, cycle ergometer | F: 2 d·wk-1  I: 70%1-RM  T: 30-45min·ses-1  T: 10 exercises, 1 set of 8-12 reps, weight machines | CE  -1.0  CE vs Con  Con | CE  0.0  CE vs Con  Con | Central arterial compliance | Yes | 67 | |
| Con  122.0±4.0/87.0±3.0& | Healthy (100) | 13 | Con  F: 3 d·wk-1  I: NR  T: 30-40 min·ses-1  T: mild stretching for major muscle groups | |
| do Rego et al. 2011(67) | N=41(41)  CE=26(26)  Con=15(15) | CE  135.4±17.0/74.6±9.1 | Healthy (100) | 18 | F: 2 d·wk-1  I: Weak to moderate  T: 35 min·ses-1  T: “aerobic endurance exercise” | F: 2 d·wk-1  I: Weak to moderate  T: 35 min·ses-1  T: “muscle strengthening exercise” | CE  -5.5  CE vs Con  -5.0  Con  -0.1 | CE  -1.7  CE vs Con  +0.0  Con  -2.0 | BP | Yes | 55 | |
| Con  138.8±23.6/77.5±5.8 | Healthy (100) | 18 | Con  Non-exercise control | |
| Dobrosielski et al. 2012(7) | N=140(59)  CE=70(29)  Con=70(30) | CE  126.9±1.6/71.1±1.1& | T2DM (100) | 26 | F: 3 d·wk-1  I: 60-90% HRmax  T: 45 min·ses-1  T: Treadmill, stationary bike, or stair stepper | F: 3 d·wk-1  I: 50% 1RM  T: 2 sets, 7 exercises, 10-15 reps  T: weight machines | CE  +0.0  CE vs Con  +0.0  Con  -1.9 | CE  +0.0  CE vs Con  +1.6  Con  -0.1 | BP | Yes | 67 | |
| Con  126.7±1.6/72.4±1.1& | T2DM (100) | 26 | Con  Monthly visits, BP monitoring,  Education information on dietary guidelines, Education information on exercise guidelines,  Subjects were asked to not change diet or exercise | |
| Dos Santos et al. 2014(8) | N=60(60)  ERT=20(20)  CRT=20(20)  Con= 20(20) | ERT  162.7±7.8/90.2±4.3  CRT  167.6±4.3/91.3±3.6 | HTN, Healthy (100) | 16 | ERT and CRT  F: 3 d·wk-1  I: 65-75% HRmax  T: 20 min·ses-1  T: Treadmill | CRT  F: 3 d·wk-1  I: 70-90% 10RM  T: 3 sets of 10 reps  T: traditional concentric training with free weights and machines  CE-ERT  F: 3 d·wk-1  I: 100-110% 10RM  T: 50-60 min·ses-1  T: Eccentric training with free weights and machines | ERT  -33.8  ERT vs Con  -29.4  CRT  -26.7  CRT vs Con  -37.0 | ERT  -11.9\*  ERT vs Con  -13.7  CRT  -12.1\*  CRT vs Con  -13.9 | Acute and Chronic CV Response | Yes | 69 | |
|  | Con  160.7±9.1/89.9±4.8 | HTN, Healthy (100) | 16 | Con  Non-exercise control | | Con  +1.9 | Con  +1.9 |  |  |  | |
| Dunstan et al. 1998(9) | N=21(8)  CE=11(3)  Con=10(5) | CE  126.0±3.0/73.0±2.0& | T2DM (100) | 8 | F: 3 d·wk-1  I: 3.0 MET  T: 30 seconds aerobic bout, followed by resistance training for 60 min·ses-1  T: Cycling as part of circuit training | F: 3 d·wk-1  I: 50-55% 1RM  T: 10-15 reps in 30 seconds followed by aerobic bout for 60 min·ses-1  T: Weight machines as part of circuit training | CE  +0.1  CE vs Con  +3.1  Con  -2.2 | CE  +0.0  CE vs Con  +0.0  Con  +0.0 | Glycemic Control | Yes | 55 | |
| Con  130.0±4.0/72.0±2.0& | T2DM (100) | 8 | Con  BP and glucose monitoring, instructed to not change diet, meetings fortnightly | |
| Ehsani et al. 2003(10) | N=46 (NR)  CE=22(NR)  Con=24(NR) | CE  145.3±21.0/76.8±11.0 | CVD, Frailty (100) | 36 | F: 2.61 d·wk-1  I: 70-75% HRmax  T: 69.4 min·ses-1  T: HIIT, walking, cycle, rowing | F: 2.61 d·wk-1  I: 70-75% HRmax  T: 69.4 min·ses-1  T: “muscle strengthening” | CE  -1.2  CE vs Con  +1.1  Con  -2.1 | CE  -0.1  CE vs Con  +0.1  Con  -1.5 | Cardiac Output | Yes | 57 | |
| Con  147.4±20.0/78.7±12.0 | CVD, Frailty (100) | 36 | Con  3 d·wk-1 home exercise program of stretching, yoga, relaxation, 1 d·wk-1 sessions were supervised | |
| Faulkner et al. 2013(11) | N=60(31)  CE=30(16)  Con=30(15) | CE  140.0±14.3/81.9±8.1 | CVD (87) | 8 | F: 2 d·wk-1  I: 50-85%HRmax  T: 30 min·ses-1 aerobic, 90 min·ses-1  T: cycle ergometer | F: 2 d·wk-1  I: 15 Borg RPE scale  T: 30 min·ses-1 resistance, 60 min·ses-1  T: “resistance exercises” | CE  -5.2  CE vs Con  -2.1  Con  -3.1 | CE  -4.6  CE vs Con  -3.5  Con  -1.2 | Vascular risk | Yes | 73 | |
| Con  137.9±12.0/80.4±8.0 | CVD (60) | 8 | Con  Disease management, educational pamphlets | |
| Figueroa et al. 2011(12) | N=24(24)  CE=12(12)  Con=12(12) | CE  124.0±2.9/74.0±2.0& | Healthy (100) | 12 | F: 3 d·wk-1  I: 60%HRmax  T: 20 min·ses-1 aerobic, 40 min·ses-1  T: walking | F: 3 d·wk-1  I: 60%1RM  T: 20 min·ses-1 resistance, 40 min·ses-1  T: weight machines | CE  -10.7  CE vs Con  -10.7  Con  +0.0 | CE  -10.7  CE vs Con  -8.1  Con  -2.9 | Arterial stiffness, BP, muscle strength | Yes | 69 | |
| Con  120.0±4.0/74.0±1.0& | Healthy (100) | 12 | Con  Non-exercise control | |
| Gram et al. 2013(14) | N=67(NR)  CE=32(NR)  Con=35(NR) | CE  135.0±14.0/86.0±10.0 | Healthy (100) | 12 | F: 3 d·wk-1  I: 70%VO2max  T: 20 min·ses-1  T: row, cycle ergometer | F: 3 d·wk-1  I: 60%1RM  T: 20 min·ses-1, 12 exercises  T: free weights | CE  -1.3  CE vs Con  +0.0  Con  -1.7 | CE  -1.8  CE vs Con  +0.0  Con  -2.3 | Aerobic capacity, muscle strength | Yes | 14 | |
| Con  132.0±17.0/85.0±11.0 | Healthy (100) | 12 | Con  Health education | |
| Guimaraes et al. 2010(15) | N=43(30)  CONT=16(12)  INT=16(9)  Con=11(9) | CONT  136.0±10.0/89.0±9.0  INT  134.0±11.0/90.0±8.0 | Healthy (100) | 16 | CONT  F: 3 d·wk-1  I: 60% HRR  T: 40 min·ses-1 aerobic, 60 min·ses-1  T: “treadmill”  INT  F: 3 d·wk-1  I: 50-80% HRR  T: 40 min·ses-1 aerobic, 60 min·ses-1  T: “treadmill” | CONT  F: 3 d·wk-1  I: submaximal  T: 40 min·ses-1 aerobic, 60 min·ses-1  T: “resistance exercise”  INT  F: 3 d·wk-1  I: submaximal  T: 40 min·ses-1 aerobic, 60 min·ses-1  T: “resistance exercise” | CONT  CE  -3.2  CONT vs Con  -0.4  INT  CE  -5.0  INT vs Con  -2.2  Con  -2.8 | CONT  CE  -3.0  CONT vs Con  -0.1  INT  CE  -4.6  INT vs Con  -2.1  Con  -2.5 | BP and arterial stiffness | Yes | 70 | |
| Con  134.0±13.0/89.0±11.0 | Healthy (100) | 16 | Con  Non-exercise control | |
| Ho et al. 2012(17) | N=46 (NR)  CE=25(NR)  Con=21(NR) | CE  117.7±3.3/66.4±1.5& | Healthy (100) | 12 | F: 5 d·wk-1  I: Moderate  T: 15 min·ses-1 aerobic, 30 min·ses-1  T: walking | F: 5 d·wk-1  I: Moderate  T: 15 min·ses-1 resistance, 30 min·ses-1  T: free weights, machines | CE  -3.5  CE vs Con  +2.0  Con  -5.5 | CE  -4.3  CE vs Con  -1.7  Con  -2.6 | BP, Arterial Stiffness | Yes | 22 | |
| Con  120.1±1.7/65.4±1.9& | Healthy (100) | 12 | Con  Non-exercise control | |
| Hordern et al. 2008(18) | N=132(NR)  CE=68(NR)  Con=64(NR) | CE  137.1±18.1/79.8±8.5 | T2DM (100) | 4 | F: 4 d·wk-1  I: 12-13 Borg RPE  T: 60 min·ses-1  T: walk, jog, cycle, step, row | F: 4 d·wk-1  I: 12-13 Borg RPE  T: 60 min·ses-1  T: weight machines, free weights, resistance bands | CE  -4.5  CE vs Con  +0.0  Con  -4.4 | CE  +3.8  CE vs Con  +0.0  Con  +3.7 | Blood glucose | Yes | 58 | |
| Con  129.2±15.3/76.9±9.0 | T2DM (100) | 4 | Con  Disease management | |
| Hsu et al. 2014(19) | N=120(120)  CE=60(60)  Con=60(60) | CE  134.4±21.2/73.6±12.9 | Healthy (100) | 12 | F: 3 d·wk-1  I: 60-80% HRmax  T: 20 min·ses-1 aerobic, 60 min·ses-1  T: walking, jog, run, cycle | F: 3 d·wk-1  I: 60-80% 1RM  T: 20 min·ses-1 resistance, 60 min·ses-1  T: weight machines | CE  -2.5  CE vs Con  -1.9  Con  -0.1 | CE  -1.0  CE vs Con  -2.6  Con  +1.6 | Body comp | Yes | 45 | |
| Con  136.4±24.7/75.4±14.6 | Healthy (100) | 12 | Con  Non-exercise control | |
| Jorge et al. 2011(20) | N=48(31)  CE=12(8)  Con=12(8) | CE  132.5±15.8/86.3±9.2 | T2DM (100) | 12 | F: 3 d·wk-1  I: lactate threshold  T: 60 30 min·ses-1  T: cycling | F: 3 d·wk-1  I: lactate threshold  T: 60 30 min·ses-1  T: 7 exercise circuit targeting large muscle groups | CE  -2.2  CE vs Con  +4.5  Con  -6.6 | CE  -7.6  CE vs Con  +1.6  Con  -9.2 | Metabolic control, inflammatory markers, adipocytokines, muscle signaling | Yes | 69 | |
| Con  135.8±16.2/85.0±6.7 | T2DM (100) | 12 | Con  Light stretching exercises designed not to elicit exercise benefits | |
| Kadoglou et al. 2007(21) | N=60(35)  CE=30(17)  Con=30(18) | CE  137.7±15.7/83.3±8.9 | T2DM (100) | 24 | F: 4 d·wk-1  I: 50-75% VO2peak  T: 30-45 min·ses-1  T: walk, jogging, cycle | F: 4 d·wk-1  I: NR  T: 30-45 min·ses-1  T: Calisthenics | CE  -12.9  CE vs Con  -2.4  Con  +10.9 | CE  -7.9  CE vs Con  -10.1  Con  +2.2 | Inflammation | Yes | 61 | |
| Con  144.2±17.0/81.0±8.2 | T2DM (100) | 24 | Con  Non-exercise control | |
| Kawano et al. 2006(22) | N=39(0)  CE=11())  Con=16(0) | CE  115.0±2.0/68.0±2.0& | Healthy (100) | 16 | F: 3 d·wk-1  I: 60% HRmax  T: 30 min·ses-1  T: cycling | F: 3 d·wk-1  I: 80% 1RM  T: 45 min·ses-1  T: free weights, machines | CE  +1.4  CE vs Con  +0.0  Con  +1.2 | CE  -8.3  CE vs Con  -1.4  Con  +5.9 | Carotid Arterial Compliance | Yes | 55 | |
| Con  118.0±2.0/68.0±2.0& | Healthy (100) | 16 | Con  Instructed to not change normal activity level | |
| Kawasaki et al. 2011(23) | N=57(35)  CE=35(24)  Con=22(11) | CE  136.6±3.2/81.0±1.6& | Healthy (100) | 24 | F: 2 d·wk-1  I: 50% VO2peak  T: 80 min·ses-1 aerobic  T: cycle ergometer, swimming | F: 2 d·wk-1  I: 50% VO2peak  T: 10 min·ses-1 resistance  T: “land-based muscle strengthening” | CE  -5.0  CE vs Con  -3.9  Con  +0.1 | CE  -3.6  CE vs Con  -7.0  Con  +0.1 | BP, Lipids, Glucose, and Balance | Yes | 48 | |
| Con  133.9±2.3/77.8±1.5& | Healthy (100) | 24 | Con  Non-exercise control | |
| Kolbe-Alexander et al. 2006(24) | N=81 (NR)  CE1=32 (NR)  CE2=27(NR)  Con=22 (NR) | CE1  148.0±13.0/90.0±10.0  CE2  143.1±14.0/92.0±10.0 | CE1: T2DM, Arthritis (43)  CE2: T2DM, Arthritis (33) | 20 | CE1  F: 2 d·wk-1  I: Low  T: 45-50 min·ses-1  T: Marching, hand clapping, clicking  CE2  F: 2 d·wk-1  I: Low  T: 45-50 min·ses-1  T: Marching, hand clapping, clicking | CE1  F: 2 d·wk-1  I: Low  T: 45-50 min·ses-1, 2 sets of 10-15 reps  T: Water bottles filled with sand acted as weights  CE2  F: 2 d·wk-1  I: Low  T: 45-50 min·ses-1, 2 sets of 10-15 reps  T: Water bottles filled with sand acted as weights | CE1  -3.0  CE1 vs Con  -5.3  CE2  -4.3  CE2 vs Con  -6.5  Con  +2.2 | CE1  -2.0  CE1 vs Con  +0.0  CE2  -3.9  CE2 vs Con  -2.0  Con  -1.9 | Quality of Life Measures | Yes | 39 | |
| Con  147.0±13.0/91.0±10.0 | T2DM, Arthritis (81) | 20 | Con  Non-exercise control | |
| Kouidi et al. 2013(25) | N=23(6)  CE=11(3)  Con=12(3) | CE  129.5±7.2/78.5±6.0 | Renal Transplant (100) | 24 | F: 4 d·wk-1  I: 50-75% VO2peak  T: 30-40 min·ses-1  T: cycling, jogging, step aerobics, calisthenics, dancing | F: 4 d·wk-1  I: 70-80% 1RM  T: 10-30 min·ses-1, 1-3 sets of 1-12 reps  T: weight stations | CE  +0.0  CE vs Con  -5.6  Con  +5.3 | CE  -0.1  CE vs Con  -6.5  Con  +6.0 | Autonomic function | Yes | 58 | |
| Con  128.8±7.4/77.4±4.6 | Renal Transplant (100) | 24 | Con  Non-exercise control | |
| Kraemer et al. 2001(26) | N=15(15)  CE=9(9)  Con=6(6) | CE  122.8±7.8/80.9±7.1 | Healthy (100) | 12 | F: 3 d·wk-1  I: 80-90% HRmax  T: 20 min·ses-1  T: Step aerobics | F: 3 d·wk-1  I: 80-90% HRmax, 1RM  T: 2.5 sets of 10 reps  T: free weights | CE  -4.2  CE vs Con  -5.8  Con  +1.6 | CE  -8.5  CE vs Con  -5.0  Con  -3.5 | Women’s health profile to resistance training | Yes | 67 | |
| Con  120.3±12.8/79.0±5.5 | Healthy (100) | 12 | Con  Non-exercise control | |
| Laterza et al. 2007(27) | N=42(10)  HTN=11(NR)  NBP=12(0) | HTN  145.0±2.0/94.0±84.0&  NBP  117.0±2.0/78.0±1.0& | Untreated HTN (47.8%) | 16 | CE (HTN and NBP)  F: 3 d·wk-1  I: anaerobic threshold  T: 40 min·ses-1 aerobic  T: cycle ergometer | CE (HTN and NBP)  F: 3 d·wk-1  I: NR  T: 60 min·ses-1  T: calisthenics | HTN  CE  -20.1  NBP  CE  -1.4  CE vs Con  -16.0  Con  +1.0  CE vs Con  -2.0 | HTN  CE  -13.9\*  NBP  CE  0.0  CE vs Con  -9.0  Con  +1.0  CE vs Con  +1.0 | Bareoreflex sensitivity | Yes | 69 | |
| Con  145.0±4.0/94.0±2.0& | Non-treated HTN (100%) | 16 | Con  Instructed to avoid regular exercise for study duration | |
| Lubans et al. 2013(31) | N=44(44)  CE=22(22)  Con=22(22) | CE  138.3±11.5/82.7±11.8 | Healthy (100) | 8 | F: 2 d·wk-1  I: 12-16 borg rating of perceived exertion  T: 55-75 min·ses-1  T: walking, jogging in place | F: 2 d·wk-1  I: 13-16 borg rating of perceived exertion  T: 55-75 min·ses-1, 2 sets of 10-15 reps, 1 exercises  T: body weight, resistance bands | CE  -0.1  CE vs Con  -0.1  Con  +0.0 | CE  -0.1  CE vs Con  -1.6  Con  +0.1 | Efficacy of RT program using behavioral model | Yes | 64 | |
| Con  136.1±12.9/79.1±8.4 | Healthy (100) | 8 | Con  Provided pedometer, and education session about physical activity | |
| Loimaala et al. 2003(30) | N=49 (0)  CE=24(0)  Con=25(0) | CE  142.0±17.0/NR | T2DM (100) | 52 | F: 2 d·wk-1  I: 65-75% VO2max  T: at least 30 min·ses-1  T: walking | F: 2 d·wk-1  I: 70-80% MVC  T: at least 30 min·ses-1  T: “strength training” | CE  -2.3  CE vs Con  -1.6  Con  -0.1 | NR | Baroreflex Sensitivity | Yes | 55 | |
| Con  145.0±14.0/NR | T2DM (100) |  | Con  Non-exercise control | |
| Loimaala et al. 2009(28) | N=48 (0)  CE=24(0)  Con=24(0) | CE  144.0±17.0/NR | T2DM (100) | 144 | F: 2 d·wk-1  I: 65-75% VO2max  T: 30 min·ses-1  T: walking, jogging | F: 2 d·wk-1  I: 70-80% MVC  T: 30 min·ses-1, 3 sets of 18-10 reps  T: muscle strengthening for large muscle groups | CE  -0.1  CE vs Con  +0.0  Con  +0.0 | NR | Myocardial diastolic tissue velocity | Yes | 45 | |
| Con  146.0±15/NR | T2DM (100) | 144 | Con  Non-exercise control | |
| Loimaala et al. 2009(29) | N=50(0)  CE=24(0)  Con=24(0) | CE  142.0±2.8/NR | T2DM (100) | 288 | F: 4 d·wk-1  I: 65-75% VO2max  T: 30 min·ses-1  T: walking, jogging | F: 4 d·wk-1  I: 60% MVC  T: 30 min·ses-1  T: free weights and machines | CE  -2.1  CE vs Con  -1.4  Con  -0.1 | NR | CVD risk factors, pulse wave velocity (PWV) | Yes | 45 | |
| Con  145.0±2.8/NR | T2DM (100) | 288 | Con  Non-exercise control | |  | |
| Lucio-Mazini-Filho et al. 2013(13) | N=54(54)  CE=33(33)  Con=21(21) | CE  145.3±14.3/95.8±8.6 | Healthy (100) | 16 | F: 3 d·wk-1  I: moderate  T: 25 min·ses-1 aerobic  T: walking | F: 3 d·wk-1  I: moderate, Omni scale 3-5  T: 15 min·ses-1 resistance  T: resistance bands | CE  -6.2  CE vs Con  +0.0  Con  -6.0 | CE  -11.2  CE vs Con  -9.8  Con  -1.4 | BP, Body Mass Index, Metabolic Parameters | Yes | 58 | |
| Con  147.8±12.2/92.1±7.5 | Healthy (100) | 16 | Con  Non-exercise control | |
| Luk et al. 2011(32) | N=64(16)  CE=32(8)  Con=32(8) | CE  144.0±15.0/80.0±7.0 | CVD, T2DM (100) | 8 | F: 3 d·wk-1  I: 80% HRmax  T: 60 min·ses-1  T: walking, jogging, cycling, rowing, arm ergometery | F: 3 d·wk-1  I: 80% HRmax  T: 60 min·ses-1  T: dumbbell weight training | CE  -8.1  CE vs Con  -4.2  Con  -3.9 | CE  -4.9  CE vs Con  -2.1  Con  -2.8 | Brachial flow mediated dilation | Yes | 67 | |
| Con  145.0±20.0/84.0±8.0 | CVD, T2DM (100) | 8 | Con  Non-exercise control | |
| Malin et al. 2013(33) | N=16(11)  CE=8(5)  Con=8(6) | CE  136.8±2.4/NR | Impaired glucose tolerance (100) | 12 | F: 3 d·wk-1  I: 70% HRmax  T: 45 min·ses-1  T: cycling | F: 2 d·wk-1  I: 70% 1RM  T: 2 sets of 12 reps, 6 exercises  T: whole body resistance exercises | CE  -8.8\*  CE vs Con  -5.6  Con  +2.4 | NR | CVD risk factors | Yes | 58 | |
| Con  126.1±134.5 | Impaired glucose tolerance (100) | 12 | Con  Non-exercise control | |
| McGavock et al. 2004(34) | N=18(18)  CE=11(11)  Con=7(7) | CE  133.0±15.0/76.0±9.0 | T2DM (100) | 10 | F: 3 d·wk-1  I: 70% HRR  T: 30-55 min·ses-1  T: cycle ergometer | F: 3 d·wk-1  I: 65-70% 1RM  T: 3 sets of 10-15 reps  T: weight machines | CE  +1.8  CE vs Con  +3.4  Con  -1.5 | CE  +0.0  CE vs Con  +1.8  Con  -1.6 | LV filling dynamics, arterial compliance | Yes | 48 | |
| Con  139.0±17.0/74.0±11.0 | T2DM (100) | 10 | Con  Non-exercise control | |
| McMurdo et al. 1992(35) | N=77(NR)  CE=44(NR)  Con=43(NR) | CE  143.1±18.0/88.6±11.7 | Healthy (100) | 32 | F: 3 d·wk-1  I: low  T: 45 min·ses-1  T: endurance exercise to music | F: 3 d·wk-1  I: low  T: 45 min·ses-1  T: muscle strengthening | CE  -1.6  CE vs Con  +0.1  Con  -2.5 | CE  -3.0  CE vs Con  +0.1  Con  -3.5 | Flexibility and strength | Yes | 61 | |
| Con  136.8±15.4/87.4±10.6 | Healthy (100) | 32 | Con  Health education classes on a regular schedule | |
| Miura et al. 2008(36) | N=98 (98)  1Day=29(29)  2Day=25(25)  Con=23(23) | CE-1 Day  126.2±14.0/73.8±7.8  CE-2 Day  123.3±13.7/73.0±9.2 | Healthy (100) | 12 | 1Day  F: 1 d·wk-1  I: 70-75% HRmax  T: 40 min·ses-1  T: Circuit training  2Day  F: 2 d·wk-1  I: 70-75% HRmax  T: 40 min·ses-1  T: Circuit training | 1Day  F: 1 d·wk-1  I: 70-75% HRmax  T: 40 min·ses-1  T: Circuit training, bands and light dumbbells  2Day  F: 2 d·wk-1  I: 70-75% HRmax  T: 40 min·ses-1  T: Circuit training, bands and light dumbbells | 1 Day  CE  -2.4  CE1 vs Con  -2.2  2 Day  CE  -3.2  CE2 vs Con  -3.3  Con  +0.0 | 1 Day  CE  -1.9  CE1 vs Con  -0.1  2 Day  CE  -4.2  CE2 vs Con  -3.3  Con  -0.1 | Arterial stiffness | Yes | 58 | |
| Con  122.9±13.7/71.7±9.1 | Healthy (100) | 12 | Con  Non-exercise control | |
| Nishijima et al. 2007(37) | N=531(327)  CE=281(166)  Con=280(161) | CE  139.3±16.4/82.3±9.7 | T2DM, Arthritis  (30.2%) | 24 | F: 2-4 d·wk-1  I: 40-70% HRmax  T: 20-40 min·ses-1 aerobic, 60-90 min·ses-1  T: cycle ergometer | F: 2-4 d·wk-1  I: mild to moderate, RPE  T: 60-90 min·ses-1, 2 sets of 20 reps, 4 exercises  T: machine weights | CE  -6.1  CE vs Con  -0.1  Con  -5.2 | CE  -6.7  CE vs Con  -1.4  Con  -5.3 | BP, LDL cholesterol, hemoglobin A1C | Yes | 76 | |
| Con  141.3±17.6/83.3±10.6 | T2DM, Arthritis (27.5%) | 24 | Con  Adhere to lifestyle guidelines, not reported | |
| Ohkubo et al. 2001(38) | N=65(32)  CE=32(16)  Con=33(16) | CE  143.0±2.1/78.7±2.4& | Healthy (100) | 25 | F: 2 d·wk-1  I: 25-60% HRR  T: 10-25 min·ses-1  T: cycle ergometer | F: 2 d·wk-1  I: 25-60%HRR  T: 3 exercises, 1 set x 20 reps  T: therabands | CE  -11.0  CE vs Con  -6.3  Con  -4.6 | CE  -2.7  CE vs Con  -1.3  Con  -1.5 | Home BP Measurements | Yes | 65 | |
| Con  144.1±2.5/81.4±2.1& | Healthy (100) | 25 | Con  Education classes unrelated to physical activity | |
| Okada et al. 2010(39) | N=38(17)  CE=21(11)  Con=17(6) | CE  129.0±21.6/74.6±11.6 | T2DM (100) | 8 | F: 3-5 d·wk-1  I: training heart rate calculated  T: 30 min·ses-1 aerobic, 75 min·ses-1  T: cycle ergometer, aerobic dance | F: 3-5 d·wk-1  I: training heart rate calculated  T: 20 min·ses-1 aerobic, 75 min·ses-1  T: “resistance exercise” | CE  +0.1  CE vs Con  -1.5  Con  +2.1 | CE  +3.2  CE vs Con  +1.2  Con  +2.0 | Incidence of CVD, vascular function | Yes | 61 | |
| Con  126.6±16.8/73.8±11.8 | T2DM (100) | 8 | Con  Received same disease management and dietary information as CE group | |
| Okamoto et al. 2007(40) | N=33(22)  BRT=11(7)  ART=11(7)  Con=11(8) | BRT  113.6±3.4/62.5±2.2&  ART  113.5±4.3/64.5±1.9& | NBP, Healthy (100) | 8 | BRT  F: 2 d·wk-1  I: 60% HRmax,  T: 20 min·ses-1  T: running  ART  F: 2 d·wk-1  I: 60% HRmax,  T: 20 min·ses-1  T: running | BRT  F: 2 d·wk-1  I: 80% 1RM  T: 5 sets of 8-10 reps, 7 exercises  T: weight machines  ART  F: 2 d·wk-1  I: 80% 1RM  T: 5 sets of 8-10 reps, 7 exercises  T: weight machines | BRT  CE  -2.0  BRT vs Con  -0.1  ART  CE  -2.2  ART vs Con  -0.1  Con  +1.1 | BRT  CE  -2.5  BRT vs Con  +0.0  ART  CE  -7.6  ART vs Con  -5.2  Con  +1.1 | Vascular function pulse wave velocity | Yes | 65 | |
| Con  113.9±3.2/63.3±2.1& | NBP, Healthy (100) | 8 | Con  Non-exercise control | |
| Oliviera et al. 2012(66) | N=22(14)  CE=10(6)  Con=12(8) | CE  132.5±15.8/86.2±9.1 | T2DM (100) | 12 | F: 3 d·wk-1  I: lactate threshold  T: 60 min·ses-1  T: cycling | F: 3 d·wk-1  I: 50% 1RM  T: 60 min·ses-1  T: machine weights | CE  -4.3  CE vs Con  +2.3  Con  -6.6 | CE  -8.7  CE vs Con  +0.1  Con  -9.3 | Stress markers, metabolic control | Yes | 61 | |
| Con  135.8±16.2/85.0±6.7 | T2DM (100) | 12 | Con  Glycemic control monitoring, disease management, stretching classes | |
| Opdenacker et al. 2007(41) | N=180(90)  CE1=60(30)  CE2=60(30)  Con=60(30) | CE1  144.8±2.3/86.6±1.3&  CE2  148.6±2.3/87.9±1.3& | Healthy (100) | 24 | CE1  F: 2.5 d·wk-1  I: 75% HRR, moderate to vigorous  T: 60-90 min·ses-1  T: cycle ergometer, walk, cycle, step, swim  CE2  F: home-based  I: at increased heart rate  T: NR  T: cycle ergometer, walk, cycle, step, swim | CE1  F: 2.5 d·wk-1  I: moderate, 10RM  T: 60-90 min·ses-1  T: resistance bands  CE2  F: home-based  I: increased heart rate  T: NR  T: “resistance exercise” | CE1  -3.0  CE1 vs Con  -0.1  CE2  -5.9  CE2 vs Con  -3.5  Con  -2.3 | CE1  -5.9  CE1 vs Con  +0.0  CE2  -7.2  CE2 vs Con  -1.3  Con  -5.9 | CVD risk factors | Yes | 55 | |
| Con  143.1±2.2/84.5±1.2& | Healthy (100) | Con  Non-exercise control | |
| Opperman et al. 2012(1) | N=41(0)  CE1=16(0)  CE2=16(0)  Con=9(0) | CE1  130.1±9.8/87.2±5.5  CE2  130.1±11.6/86.1±7.5 | Healthy (100) | 12 | CE1  F: 2 d·wk-1  I: 60-85% HRmax  T: 50-60 min·ses-1  T: “aerobic exercise”  CE2  F: 4 d·wk-1  I: 60-85% HRmax  T: 50-60 min·ses-1  T: “aerobic exercise” | CE1  F: 2 d·wk-1  I: 60-85% 10RM  T: 50-60 min·ses-1  T: “resistance exercise”  CE2  F: 4 d·wk-1  I: 60-85% 10RM  T: 50-60 min·ses-1  T: “resistance exercise” | CE1  -3.7  CE1 vs Con  -3.1  CE2  +0.0  CE2 vs Con  +0.0  Con  -0.1 | CE1  -10.4  CE1 vs Con  -7.6  CE2  -3.3  CE2 vs Con  -0.1  Con  -2.4 | Hemodynamic parameters | Yes | 45 | |
| Con  135.8±15.5/87.2±8.3 | Healthy (100) | 12 | Con  Non-exercise control | |
| Pantelic et al. 2013(42) | N=60(0)  CE=30(0)  Con=30(0) | CE  130.3±16.6/80.6±9.6 | CVD (100) | 3 | F: 7 d·wk-1  I: 55-70% HRmax  T: 45-60 min·ses-1  T: cycle | F: 7 d·wk-1  I: calisthenics  T: 45-60 min·ses-1  T: calisthenics | CE  -4.0  CE vs Con  +0.0  Con  -4.3 | CE  -3.8  CE vs Con  -0.1  Con  -3.0 | Cardio respiratory fitness | Yes | 58 | |
| Con  132.0±13.0/83.3±8.0 | CVD (100) | 3 | Con  Usual drug therapy | |
| Petraki et al. 2008(43) | N=43(11)  CE=22(7)  Con=21(4) | CE  137.2±16.7/82.9±9.3 | CKD (100) | 28 | F: 3 d·wk-1  I: 13 Borg RPE scale  T: 30-60 min·ses-1  T: cycle | F: 3 d·wk-1  I: theraband MET  T: 30-60 min·ses-1  T: resistance bands | CE  -4.8  CE vs Con  -3.6  Con  -1.2 | CE  -6.3  CE vs Con  -4.9  Con  -1.4 | Baroreflex sensitivity | Yes | 58 | |
| Con  135.7±16.1/83.6±7.9 | CKD (100) | 28 | Con  Non-exercise control | |
| Puggard et al. 2000(44) | N=36(36)  CE=22(22)  Con=14(14) | CE  161.0 (130-197)/84.0(62-113)% | Healthy (100) | 32 | CE  F: 1-7 d·wk-1  I: 69% VO2max  T: NR  T: walking | CE  F: 1-7 d·wk-1  I: 69% MVC  T: NR  T: “resistance exercise” | CE  -0.1  CE vs Con  -1.8  Con  +0.1 | CE  -4.8  CE vs Con  -4.8  Con  +0.0 | Maximal oxygen uptake, muscle strength, walking speed | Yes | 39 | |
| Con  153(114-190)/77(61-92)% | Healthy (100) | 32 | Con  Non-exercise control | |
| Riess et al. 2011(45) | N=31(17)  CE=16(8)  Con=15(9) | CE  130.4±12.2/76.0±7.4 | CKD (100) | 12 | F: 2 d·wk-1  I: 85% HRmax  T: 30-60 min·ses-1  T: walking, cycle | F: 2 d·wk-1  I: 61% 1RM  T: 30-60 min·ses-1  T: weight machines | CE  -1.5  CE vs Con  +0.0  Con  -1.9 | CE  +1.3  CE vs Con  +0.4  Con  -3.2 | Exercise capacity, muscle strength, quality of life, body composition, CVD risk | Yes | 58 | |
| Con  137.3±18.0/76.6±8.9 | CKD (100) | 12 | Con  Non-exercise control | |
| Seo et al. 2010(46) | N=15(15)  CE=8(8)  Con=7(7) | CE  126.5±14.4/86.5±11.7 | Healthy (100) | 12 | F: 3 d·wk-1  I: 70% HRR  T: 60 min·ses-1  T: walking, aerobics | F: 3 d·wk-1  I: 60% 1RM  T: 60 min·ses-1, 3 sets of 8 reps, 8 exercises  T: machine weights | CE  -4.8  CE vs Con  -3.4  Con  -1.3 | CE  -2.7  CE vs Con  +0.0  Con  -2.3 | Growth Hormone | Yes | 55 | |
| Con  132.0±13.8/87.3±10.0 | Healthy (100) | 12 | Con  Flexibility exercise program, 3 d·wk-1 | |
| Seo et al. 2011(47) | N=20(20)  CE=10(10)  Con=10(10) | CE  121.2±8.0/72.8±10.7 | Healthy (100) | 12 | F: 3 d·wk-1  I: 65% HRR  T: 30 min·ses-1 aerobic, 60 min·ses-1  T: running | F: 3 d·wk-1  I: 65%HRR  T: 30 min·ses-1 resistance, 60 min·ses-1, 3 sets of 10 reps  T: resistance exercise | CE  -2.4  CE vs Con  -3.4  Con  +1.0 | CE  -5.2  CE vs Con  -6.4  Con  +1.2 | Visfatin | Yes | 61 | |
| Con  119.9±9.8/72.8±10.7 | Healthy (100) | 12 | Con  Non-exercise control | |
| Shaw et al. 2010(48) | N=25(0)  CE=13(0)  Con=12(0) | CE  131.54±9.28/NR | Healthy (100) | 16 | F: 3 d·wk-1  I: 60-75%HRmax  T: 22 min·ses-1 aerobic, 60 min·ses-1  T: treadmill, cycle ergometer, stepping | F: 3 d·wk-1  I: 60-75% 1RM  T: 22 min·ses-1 resistance, 60 min·ses-1  T: machine weights | CE  -9.9\*  CE vs Con  -1.4  Con  +4.4 | NR | Framingham Heart Risk Scores | Yes | 52 | |
| Con  122.0±5.72/NR | Healthy (100) | 16 | Con  Non-exercise control | |
| Shin et al. 2009(49) | N=60 (60)  CE=30(30)  Con=30(30) | CE  140.0±16.5/88.2±13.5 | Healthy (100) | 8 | F: 2 d·wk-1  I: 40-50% HRmax to 60-65% HRmax  T:30-50 min  T: Rhythmic movements for increasing cardiopulmonary endurance | F: 2 d·wk-1  I: 40-50% HRmax to 60-65% HRmax  T: 30-50 min  T: Rhythmic movements for strengthening muscles | CE  -4.4  CE vs Con  -3.9  Con  -0.1 | CE  -6.9  CE vs Con  -13.2  Con  +6.2 | Physical fitness, depression, self efficacy | Yes | 65 | |
| Con  139.8±19.4/138.7±19.0 | Healthy (100) | 8 | Con  Wait-list non-exercise control | |
| Sigal et al. 2007(50) | N=251 (91)  CE= 64 (24)  Con=63 (22) | CE  131.0±22.0/79.0±13.0 | T2DM (100) | 26 | F: 3 d·wk-1  I: 60-75%HRmax  T: 15-45 min·ses-1  T: treadmill, cycle ergometer | F: 3 d·wk-1  I: 7-9RM  T: 3 sets x 7 reps  T: weight machines | CE  -0.1  CE vs Con  +1.1  Con  -2.0 | CE  +0.0  CE vs Con  +0.1  Con  -0.1 | Glycemic Control | Yes | 76 | |
| Con  133±20.0/80.0±12.0 | T2DM | 26 | Con  Dietary recommendations as part of disease management for T2DM | |
| Sillanpaa et al. 2009 (women)(51) | N=30(30)  CE=18(18)  Con=12(12) | CE  125.0±17.0/75.0±8.0 | Healthy | 21 | F: 2-3 d·wk-1  I: anaerobic threshold  T: 30-90 min·ses-1 aerobic, 60-90 min·ses-1  T: cycle ergometer | F: 2-3 d·wk-1  I: 40-90% 1RM  T: 2-3 sets, 6-15 reps  T: weight machines | CE  +0.1  CE vs Con  +5.2  Con  -4.7 | CE  +2.3  CE vs Con  +5.5  Con  -3.1 | Body composition, fitness, and metabolic health | Yes | 58 | |
| Con  130.0±18.0/76.0±9.0 | Healthy | 21 | Con  Non-exercise control | |
| Sillanpaa et al. 2009 (men)(52) | N=63(0)  CE=15(0)  Con=15(0) | CE  See graph (SD NR) | Healthy (100) | 21 | F: 4 d·wk-1  I: anaerobic threshold  T: 60-90 min·ses-1  T: cycle ergometer | F: 4 d·wk-1  I: 40-90% 1RM  T: 3-4 sets, 6-20 reps  T: free weights | CE  -3.8  CE vs Con  +2.8  Con  -6.6 | CE  -2.8  CE vs Con  +2.2  Con  -4.7 | Metabolic risk factors | Yes | 58 | |
| Healthy (100) | 21 | Con  Non-exercise control | |
| Silva et al. 2002(53) | N=24(6)  CE=12(3)  Con=12(3) | CE  136.0±33.0/NR | CVD (100) | 12 | F: 3 d·wk-1  I: 60-80%HRmax  T: 30-60 min·ses-1  T: walking | F: 3 d·wk-1  I: 60-80%HRmax  T: 30-60 min·ses-1  T: calisthenics, body weight exercise | CE  -0.1  CE vs Con  -3.4  Con  +2.6 | NR | Physical capacity in heart failure | Yes | 55 | |
| Con  154.0±36.0/NR | CVD (100) | 12 | Con  Non-exercise control | |
| Sousa et al. 2013(54) | N=59(0)  CE1=20(0)  CE2=19(0)  Con=20(0) | CE1  148.5±15.1/82.8±9.6  CE2  149.4±25.1/80.4±7.6 | Healthy (100) | 32 | CE1  F: 3 d·wk-1  I: 12-13 borg scale  T: 30 min·ses-1  T: walking, jog, dance  CE2  F: 3 d·wk-1  I: moderate  T: 30 min·ses-1  T: walking, jog dance | CE1  F: 3 d·wk-1  I: 70% 1RM  T: NR  T: weight machines  CE2  F: 3 d·wk-1  I: low  T: 10 min·ses-1  T: body weight exercise | CE1  -15.1  CE1 vs Con  -14.9  CE2  -5.6  CE2 vs Con  -5.4  Con  +0.0 | CE1  -11.4  CE1 vs Con  -8.3  CE2  -7.2  CE2 vs Con  -4.1  Con  -3.1 | BP, body fat | Yes | 67 | |
| Con  138.8±15.9/81.4±8.8 | Healthy (100) | 32 | Con  Non-exercise control | |
| Spina et al. 2004(55) | N=36(19)  CE=22(11)  Con=14(8) | CE  134.0±18.0 | Healthy (100) | 156 | F: 3.0 d·wk-1  I: 82% HRmax  T: 69.4 min·ses-1  T: walk, cycle, row | F: 3.0 d·wk-1  I: 82% HRmax  T: 69.4 min·ses-1, 1-6 sets of10-12 reps  T: weight machines | CE  +0.1  CE vs Con  +0.1  Con  +0.0 | CE  -3.1  CE vs Con  -2.5  Con  -0.1 | Cardiac Output | Yes | 61 | |
| Con  143.0±21.0 | Healthy (100) | 156 | Con  Relaxation, yoga stretching performed 3 d·wk-1 | |
| Stensvold et al. 2010(56) | N=43(17)  CE=11(NR)  Con=10(NR) | CE  148.6±14.0/89.0±7.1 | MetS (100) | 12 | F: 3 d·wk-1  I: 70-95% HRmax  T: 43 min·ses-1  T: walk, jog | F: 3 d·wk-1  I: 40-50% 1RM  T: 40 min·ses-1  T: resistance exercise | CE  -2.3  CE vs Con  -2.8  Con  +0.0 | CE  +0.1  CE vs Con  +1.8  Con  -0.1 | Metabolic syndrome criteria | Yes | 76 | |
| Con  141.5±12.3/90.1±7.1 | MetS (100) | 12 | Con  Non-exercise control | |
| Stewart et al. 2005(57) | N=104(53)  CE=51(26)  Con=53(27) | CE  140.3(138.2,142.4)/76.8(74.8,78.9)$ | Healthy (100) | 24 | F: 3 d·wk-1  I: 60-90% HRmax  T: 45 min·ses-1  T: walk, cycle ergometer, stepper | F: 3 d·wk-1  I: 50% 1RM  T: 2 sets for 10-15 reps, 7 exercises  T: weight machines | CE  -5.1  CE vs Con  -2.6  Con  -2.5 | CE  -7.7  CE vs Con  -7.3  Con  +0.0 | BP | Yes | 69 | |
| Con  141.7(139.7,143.8)/76.4(73.9,78.9)$ | Healthy (100) | 24 | Con  Subjects were given recommendations for hypertension from the AHA, and National Institute on Aging | |
| Taylor-Piliae et al. 2010(58) | N=95(69)  CE=39(28)  Con=56(41) | CE  NR | T2DM, Arthritis, CVD (89.7) | 24 | F: at least 3 d·wk-1  I: Vigorous  T: 15-20 min·ses-1  T: walking | F: at least 3 d·wk-1  I: Light  T: 15-20 min·ses-1  T: calisthenics | CE  -1.9  CE vs Con  +0.0  Con  -1.9 | NR | Cognitive and physical functioning | Yes | 45 | |
| Con  NR | T2DM, Arthritis, CVD (80.3) | 24 | Con  Educational classes on health and aging, 1 d·wk-1, 90 min·ses-1 | |
| Thomas et al. 2004(59) | N=34(NR)  CE=21(NR)  Con=14(NR) | CE  126.0±14.4/NR | Healthy (100) | 12 | F: 3 d·wk-1  I: 4-6 MET  T: 30 min·ses-1 aerobic, 60 min·ses-1  T: walk | F: 3 d·wk-1  I: 4-6 MET  T: 30 min·ses-1 resistance, 60 min·ses-1  T: weight machines | CE  +0.0    CE vs Con  +0.0  Con  +0.0 | NR | Strength, flexibility, cardiorespiratory fitness | Yes | 58 | |
| Con  131.0±18.9/NR | Healthy (100) | 12 | Con  Non-exercise control | |
| Tseng et al. 2013(60) | N=20(0)  CE=10(0)  Con=10(0) | CE  130.2±2.5/82.8±1.7& | Healthy (100) | 12 | F: 5 d·wk-1  I: 55-65% HRmax  T: 60 min·ses-1  T: walking | F: 5 d·wk-1  I: 55-75% 1RM  T: 60 min·ses-1  T: machine weights | CE  -8.3  CE vs Con  -9.2  Con  +0.1 | CE  -9.5  CE vs Con  -9.2  Con  +0.0 | HDL cholesterol | Yes | 67 | |
| Con  126.0±1.3/81.7±1.6& | Healthy (100) | 12 | Con  Non-exercise control | |
| Van Vilsteren et al. 2004(68) | N=103(31)  CE=60(19)  Con=43(13) | CE  145.0±23.2/81.0±14.2 | CKD dialysis dependent (100) | 12 | F: 2-3 d·wk-1  I: Borg RPE, moderate  T: 20-30 min·ses-1  T: cycle ergometer | F: 5 d·wk-1  I: Borg RPE, moderate  T: 20-30 min·ses-1  T: calisthenics | CE  -2.1  CE vs Con  +0.0  Con  -1.7 | CE  -0.1  CE vs Con  +1.9  Con  -2.6 | Behavior change, physical fitness and quality of life | Yes | 65 | |
|  |  | Con  150.0±23.0/83.0±15.0 | CKD dialysis dependent (100) | 12 | Con  Disease Management, Dialysis | |
| Vianna et al. 2011(61) | N=70 (46)  CE=35(36)  Con=35(20) | CE  142.3±18.3/81.4±6.0 | Healthy (100) | 12 | F: 2 d·wk-1  I: 55-65% HRmax  T: 60 min·ses-1  T: walking, hydrogymnastics | F: 1 d·wk-1  I: 55-65% HRmax  T: 60 min·ses-1  T: muscle strengthening exercises | CE  -5.0  CE vs Con  -5.8  Con  +0.1 | CE  -3.3  CE vs Con  -9.8  Con  +6.5 | BP | Yes | 67 | |
| Con  141.1±17.9/82.3±7.7 | Healthy (100) | 12 | Con  Monthly phone calls to subjects with study updates | |
| Viecili et al. 2008(63) | N=88(54)  CE=48(33)  Con=40(21) | CE  144.0±20.0/88.0±15.0 | T2DM, hypercholesterolemia (29) | 12 | F: 3 d·wk-1  I: 70% VO2max  T: 90 min·ses-1  T: walking | F: 3 d·wk-1  I: 40% MVC  T: 90 min·ses-1  T: “muscle strengthening exercise” | CE  -7.4  CE vs Con  -5.9  Con  -1.5 | CE  -4.6  CE vs Con  -2.4  Con  -2.2 | Exercise Frequency | Yes | 58 | |
| Con  140.0±13.0/87.0±9.0 | T2DM, hypercholesterolemia (30) | 12 | Con  BP monitoring |  |  |  |  |  |  | |
| Vincente-Campos et al. 2012(62) | N=43(25)  CE=22(12)  Con=21(13) | CE  135.2±4.4/81.1±6.8 | Healthy (100) | 28 | F: 2-3 d·wk-1  I: 55% HRmax  T: 50 min·ses-1 aerobic, T: “aerobic activity” | F: 2-3 d·wk-1  I: 65% HRmax  T: 50 min·ses-1  T: “strengthening exercise” | CE  -5.7  CE vs Con  -5.5  Con  +0.0 | CE  -3.0  CE vs Con  -5.2  Con  +2.2 | Cerebral vasoreactivity | Yes | 58 | |
| Con  135.7±5.5/81.2±4.2 | Healthy (100) | 28 | Con  Non-exercise control |  |  |  |  |  |  | |
| Wescott et al. 2011(64) | N=52(48)  CE=18(NR)  Con=(NR) | CE  124.3±16.8/68.6±6.4 | Healthy (100) | 36 | F: 2-3 d·wk-1  I: moderate  T: 25 min·ses-1 aerobic, 60 min·ses-1  T: cycle ergometer | F: 2-3 d·wk-1  I: moderate  T: 25 min·ses-1 resistance, 60 min·ses-1  T: machine weights | CE  -1.4  CE vs Con  -4.2  Con  +2.8 | CE  +2.5  CE vs Con  -5.4  Con  +8.0 | Lean weight, BP | Yes | 39 | |
| Con  117.1±9.5/68.0±6.8 | Healthy (100) | 36 | Con  Non-exercise control | |  |  |  |  |  | |
| Wood et al. 2001(65) | N=36(19)  CE=9(5)  Con=6(3) | CE  128.7±13.8/76.6±8.3 | Healthy (100) | 12 | F: 3 d·wk-1  I: 65% HRR  T: 30 min·ses-1 aerobic, 55 min·ses-1  T: walk, cycle  Con  Non-exercise control | F: 3 d·wk-1  I: 75% 5RM  T: 25 min·ses-1 resistance, 55 min·ses-1, 1 set of 10 reps, 8 exercises  T: weight machines | CE  +1.4  CE vs Con  +2.9  Con  -1.4 | CE  +1.3  CE vs Con  -1.1  Con  +2.4 | Battery of tests for physical fitness in older adults | Yes | 58 | |
| Con  133.5±22.4/78.3±6.9 | Healthy (100) | 12 |
|  |  |  |  |  |  |  |  |  |  |  |  | |
| *Note*: Abbr. ART=after resistance training. BP= blood pressure. BRT= before resistance training. CE=concurrent exercise. CI=confidence interval. CKD= chronic kidney disease. Comp=composition. Con=control or comparison group. CONT=continuous. CV=cardiovascular. CVD=cardiovascular disease. CRT= concentric resistance training. DBP= diastolic blood pressure. ERT=eccentric resistance training. FITT= frequency, intensity, time and type of exercise. HRmax= maximum heart rate. HRR=heart rate reserve. HDL=high-density lipoprotein cholesterol. HTN=hypertension (>140/>90 mmHg). INT= interval training. *k*=number of observations. MET=metabolic equivalents. MetS=metabolic syndrome. MVC=maximal voluntary contraction. N=number of participants. NBP=normal blood pressure (<120/<80 mmHg) NR=not reported. PreHTN=prehypertension (120-139/80-89 mmHg). SBP=systolic blood pressure. T2DM= type 2 diabetes mellitus. VO2max=maximal oxygen consumption. RM=repetition maximum. RPE=rating of perceived exertion. W=number of women. Wks=weeks. Data are presented as mean ± standard deviation unless otherwise specified. Study quality was assessed using a modified version of the Downs and Black Methodological checklist. A score of total items satisfied out 33 is given and converted into a percent score, taking the total score divided by the total possible score (33) multiplied by 100.  \*blood pressure was significantly reduced pre- to post intervention (*p*<0.05)  &data are presented as mean ± standard error  $data are presented as mean (95% confidence interval). An interval which does not contain zero indicates a significant reduction in blood pressure.  %data are presented as mean (range)  ^data are presented as within-group effect sizes (CE and Con) and between group effect sizes (CE vs Con) for the individual studies, converted into the raw BP changes in mmHg | | | | | | | | | | | | |