

Supplemental Material

Table S1. Baseline and between-group comparisons of the change from baseline to follow-up in fitness and anthropometric measures using intention-to-treat analyses.

	n	Baseline	Change from baseline (%)	Between-group difference (%)	Statistics	
		M ± SD	M ± SD	M (90 % CL)	ES (90 % CL) [§]	P
6-minute walk test (m)[†]						
Control	18	577.8 ± 60.5	-3.3 ± 9.5	12.5 (8.9)	0.81(0.58) ^{***}	0.130
Intervention	16	651.9 ± 61.6	9.2 ± 18.7			
Incremental Shuttle Walking Test (m)[†]						
Control	18	484.4 ± 156.7	3.4 ± 19.9	25.6 (16.0)	1.07 (0.57) ^{****}	0.005
Intervention	16	624.4 ± 176.4	29.0 ± 32.5			
Relative handgrip strength^{†,‡}						
Control	20	0.533 ± 0.089	5.2 ± 13.8	-1.4 (6.3)	-0.12 (0.53)	0.714
Intervention	18	0.625 ± 0.091	3.9 ± 8.7			
Arm-curl test (repetitions)[†]						
Control	19	27.6 ± 6.4	2.2 ± 19.3	7.3 (10.1)	0.39 (0.54) [*]	0.233
Intervention	18	32.1 ± 5.3	9.5 ± 16.9			
Chair-stand test (repetitions)[†]						
Control	18	24.0 ± 6.0	4.3 ± 21.6	2.0 (10.5)	0.10 (0.56)	0.754
Intervention	17	29.3 ± 5.3	6.3 ± 14.6			
Weight (kg)						
Control	20	89.6 ± 18.4	-0.3 ± 6.6	-1.8 (2.8)	-0.33 (0.53) [*]	0.289
Intervention	19	84.3 ± 11.2	-2.1 ± 3.3			
Body mass index (kg/m²)						
Control	20	30.3 ± 4.7	-0.4 ± 6.6	-1.6 (2.8)	-0.30 (0.53)	0.340
Intervention	19	28.2 ± 3.6	-2.1 ± 3.2			
Fat mass index (kg/m²)						
Control	20	9.4 ± 3.8	4.8 ± 19.8	-7.8 (11.5)	-0.36 (0.53) [*]	0.257
Intervention	19	7.2 ± 2.6	-3.0 ± 22.6			

Fat free mass index (kg/m ²)						
Control	20	20.9 ± 2.0	-1.8 ± 4.5	0.4 (2.1)	0.09 (0.53)	0.769
Intervention	19	21.1 ± 1.9	-1.4 ± 3.2			
Waist (cm) [†]						
Control	20	103.9 ± 13.0	-0.7 ± 6.5	-2.9 (2.9)	-0.62 (0.53)**	0.061
Intervention	18	97.3 ± 8.9	-3.6 ± 4.0			
Waist/height ^{0.5†}						
Control	20	0.79 ± 0.10	-0.7 ± 6.5	-2.9 (2.9)	-0.63 (0.53)**	0.059
Intervention	18	0.74 ± 0.07	-3.6 ± 4.0			
Waist/hip [†]						
Control	20	1.012 ± 0.063	-3.4 ± 4.4	-2.3 (2.1)	-0.58 (0.53)**	0.078
Intervention	18	0.981 ± 0.046	-5.8 ± 3.4			
A Body Shape Index [†]						
Control	20	0.082 ± 0.004	-0.4 ± 2.6	-1.7 (1.7)	-0.54 (0.54)**	0.096
Intervention	18	0.079 ± 0.003	-1.2 ± 3.1			

NOTES. Analyses included all randomised participants who provided baseline and follow-up data for every outcome measure. Unpaired *t*-Student's test was used for comparisons, except for Incremental Shuttle Walking Test, Waist, and Waist/height^{0.5}. Mann-Whitney *U* test was used in these cases.

[†]Missing data. All were missing data from the follow-up except for one case in which a participant refused to perform the 6-minute walk test and Incremental Shuttle Walking Test both at baseline and at follow-up. In all cases, participants refused to perform the test except one in which a participant was injured and cannot perform the 6-minute walk, Incremental Shuttle Walking, and Chair-stand tests at follow-up.

[‡]Handgrip strength/body mass, both in kg.

[§]Threshold values for Cohen's effect size (ES) were trivial (0.0–0.19), small (0.20–0.59), moderate (0.60–1.19), large (1.20–1.99), and very large (≥ 2.00). The numbers of asterisks (*) indicate the likelihood for the between-groups differences to be substantial, with 1 symbol referring to possible difference, 2 to likely, 3 to very likely, and 4 to almost certain differences.

Significant when $P < 0.004$ (i.e., $0.05/13$ comparisons = 0.004).

Appendix 1. Detailed training methods used in the exercise program.

Twenty-seven out of the 36 completed sessions (75%) were conducted in the gymnasium, including 15 sessions with resistance circuit training and 12 with strength, cycling, and walking training. The remaining 9 sessions (25%) were conducted in an external recreational area of the prison and consisted of aerobic and strength games, of which 3 sessions also included circuit training. The same training method was used in a maximum of 2 consecutive sessions.

Resistance circuit training consisted of 3 sets of 8-10 stations of resistance exercises, interspersing 45 seconds to exercise and 15 seconds to change from one station to the next, and 3 minutes of rest between sets. Exercise and transition intervals were controlled by motivational fast-tempo and melodic slow-tempo music, respectively, which were interspersed in audio tracks created by the researchers according to the participants' preferred songs. The exercise stations were arranged in a circle, in alternating upper-body and lower-body exercises, and clearly differentiated by posters with layouts of each exercise placed on the wall. At each station, participants, who were distributed in pairs or with a supervisor if odd-numbered, were asked to select one of the two load levels proposed by the supervisors that better represented a low-intensity load (~30-60% of one repetition maximum) and to perform as many repetitions per exercise as their physical capabilities allowed so that a moderate-to-vigorous exercise intensity was maintained throughout the training. Although they varied each week, the stations typically included exercises such as chest press, shoulder press, squats, bent-over row, arm curls, wall ball, and sit-ups using dumbbells, bars and discs, elastic bands, Swiss balls, and 3 kg-medicine balls. In the 15 resistance circuit training sessions, the relative load and number of sets remained unchanged, but the set duration increased gradually (4 sessions of 8 minutes per set, 3 of 10 minutes, 2 of 12 minutes, 3 of 15 minutes, 2 of 18 minutes, and 2 of 20 minutes). Participants started the second and third sets at the station where they had finished the preceding set. Participants re-started the exercise cycle when sets were longer than 10 minutes.

In the resistance, cycling, and walking training sessions, the group was divided into three subgroups and performed each type of exercise separately. Resistance training consisted of 3 sets of 6 repetitions of a 12-repetition maximum load (~75% of one repetition maximum) at the maximal intended concentric velocity in 3 to 6 (from week 9 onward) of the aforementioned resistance exercises, and 3 minutes of recovery time between sets/exercises. Until week 8, cycling

training consisted of moderate-intensity continuous pedalling on a stationary bicycle. From week 9 onward, cycle training consisted of high-intensity interval training with 3 sets of all-out effort of 10, 15, 20, 15, and 10 seconds interspersed with 40-second recovery periods of pedalling at low-intensity. Walking training consisted of walking-up and down a 10-meter course marked by cones. Participants started by performing 1-minute sets of varied walking tasks, such as normal walking, walking with lunges, walking with coordinating varied legs and hands movements, walking quickly, without recovery between sets. These sets were followed by an incremental exercise from medium to fast walking speed (reducing the time by 1 second each or a total of two minutes for the time required to complete a course, starting at 8 seconds and using a stopwatch). Both activities were executed with external, gradually increasing loads from week 6 onwards (using weighted discs of 0.5 up to 5 kg). Resistance and cycling training sessions were always conducted simultaneously by the same supervisor (JBA) and walking training by the other (MAOC). The total duration of each training mode was the same and the session length increased gradually (15 minutes at first, 18 minutes from week 5, and 20 minutes from week 9).

Circuit training consisted of 3 sets of 12 minutes each, interspersing 60 seconds of aerobic exercises with 30 seconds of resistance exercises without external loads, and 3 minutes of rest between sets. Intervals of resistance exercises and aerobic exercises were controlled by motivational fast-tempo and melodic slow-tempo music, respectively, as previously explained.

