

The Effect of Fitness Centre based Exercise and Physical Activity Counselling upon Cardiovascular Risk Factors

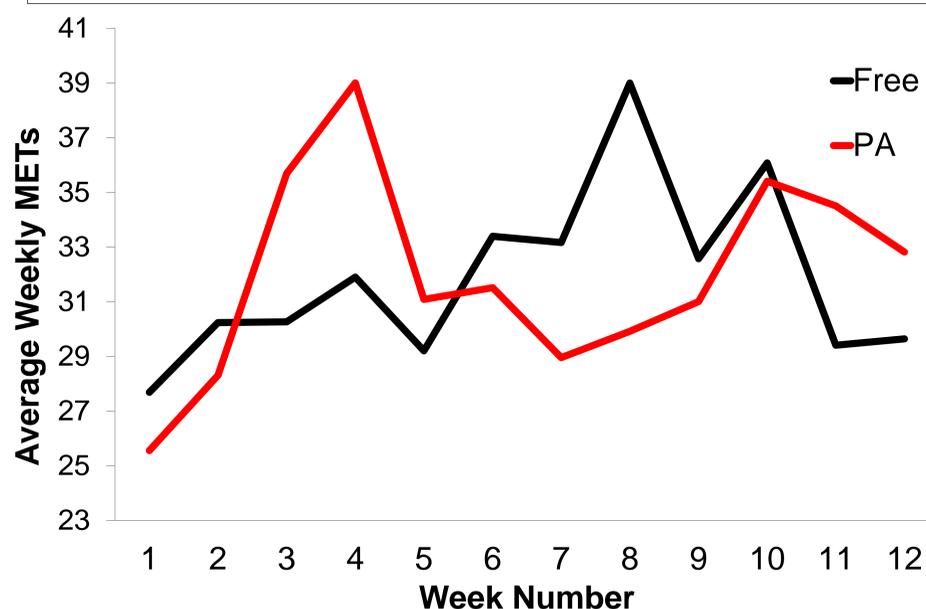
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Purpose: Worldwide obesity levels have more than doubled since 1980 and in 2008 1.5 Billion adults were overweight, many remaining averse to fitness facilities and exercise. The aim of this investigation was to examine the effect of 12 weeks fitness centre based physical activity counselling (PA) compared with unstructured fitness centre based exercise (FREE) on cardiovascular risk factors in sedentary individuals.

Methods: 33 participants (6 male, 27 female, mean: age 42.2±5.7 years, BMI 28.46±5.95 kg/m², predicted maximum oxygen uptake (VO₂) 32.01±6.07 ml/kg/min) free from chronic conditions, performed health assessments including; predicted VO₂max (Modified Blake protocol – Fitmate Pro COSMED, Italy), body composition (BODPOD), blood pressure (BP), cholesterol (LDX Cholestech), resting heart rate (RHR) and leg strength (sub-max 1repmax), before completing 12 weeks of fitness centre based physical activity counselling (PA) (n=15) or unstructured exercise (FREE) (n=18).

PA was delivered bi-weekly and based on the 5 A's method (Assess, Advise, Agree, Assist, Arrange) whilst FREE had access to fitness centre facilities and were encouraged to attend by researchers during biweekly contact, although followed no structured exercise programme.

Physical activity levels were monitored using 'mywellness key' accelerometers (Technogym) during the 12-week period. The health assessments were repeated following the 12 week intervention period.



Results: Following the intervention, significant reductions in body mass (80.3±17.76 vs 78.65±17.76 kg P<0.001), fat mass (30.91±13.75 vs 28.98±13.95 kg P<0.001), BMI (28.42±5.95 vs 27.83±5.95 kg/m² P<0.001), body fat% (37±9.28 vs 35.31±10.1 P<0.001), and RHR (77±12 vs 70.±11 bpm P<0.001) were observed. Leg strength significantly increased (88.6±24.14 vs 123.67±37.51 P<0.001) with no differences between groups. Systolic BP decreased in FREE only (129±12 vs 123±12 P<0.001), but cholesterol and diastolic BP remained unchanged. Fat free mass was maintained in both groups and VO₂ increased by 7% and 6.5% in PA and FREE respectively, although this difference was not significant (P>0.05). Average weekly METs were not significantly different between groups (PA=31.98, FREE=32.38), but increased 16.8% over 12 weeks.

Measure of Body Composition	FREE Percentage Change	PA Percentage Change
Body Mass	-1.77%*	-2.34%*
Fat Mass	-6.39%*	-8.41%*
Fat Free Mass	0.25%	0.92%
Body Mass Index	-1.77%*	-2.34%*

* Significantly (P<0.05) reduced from baseline. No difference between groups.

Conclusion: This study demonstrates that physical activity counselling delivered within a fitness centre and monitored by a commercially available accelerometer is as effective as fitness centre based exercise in improving cardiovascular disease risk factor indices in a previously sedentary cohort over a 12 week period.

These findings suggest that PAC, in combination with an accelerometer, which may function to enhance motivation, may become an effective tool in the fight against physical inactivity in exercise averse, sedentary populations.

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