

Combined Exercise Training Improves Health-related Physical Fitness in Obese Young Men

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Abstract

Physical inactivity is a primary cause of obesity and its comorbidities which increase risks of cardiovascular disease. The prevalence of obesity has been increasing among young adults in developing countries during recent years. Therefore, it is urgent to identify prevention strategies to reduce further risk development. The aim of this study was to determine the effects of a 12-wk combined exercise program on health-related physical fitness in obese young adults. Twenty obese men (age: 20.5 ± 1.2 years, BMI: 31.4 ± 5.2 kg/m² and %BF: 30 ± 6.5) were randomly assigned into 2 groups: 10 to the control group (CG) and the other 10 to the exercise group (EG). The EG trained 4 sessions of 60 minutes of combined aerobic, anaerobic and strengthening exercise per week for 12 weeks, expending 1825 ± 112.4 kcal/week without caloric restriction, whilst the CG remained relatively inactive. Measurements of health-related physical fitness were obtained at baseline and after the 12-wk exercise training. The results showed significant improvements in body fatness indicators: body weight ($p < .01$), BMI ($p < .01$), %BF ($p < .05$), fat mass ($p < .01$), waist circumference ($p < .01$) and waist to hip ratio ($p < .05$) after the training program. Moreover, peak oxygen consumption ($p < .01$), handgrip and leg strength ($p < .05$) after the training program were significantly increased in the EG compared to the CG. However, there was no significant difference in flexibility evaluated using sit-and-reach test. These findings suggested that obese young men achieved significant improvements in cardiorespiratory fitness and muscle strength, and reduction in body fatness indicators after the 12-wk combined exercise program without caloric restriction.

Keywords: Exercise training, Obesity, Physical fitness, $\dot{V}O_{2peak}$