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Body Composition and metabolic Effects of 12-Weeks High Intensity Circuit Training (HICT) in Obese Individuals without Diabetes

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Objective:
The aim of the study was to determine the effects of 12-weeks of HICT on body composition, metabolic parameters and physical fitness in obese individuals without diabetes mellitus.

Methods:
Forty participants (38.03±7.04years, BMI 31.23±2.52kg/m2) confirmed without diabetes mellitus through oral glucose tolerance test were randomly assigned to two intervention group. HICT group were required to complete 36 session of 1 hour training in 12 weeks. Control group were given lifestyle modification and home exercise advice. Baseline and after intervention body weight, body mass index (BMI), waist circumference, fat mass, muscle mass, diastolic and systolic blood pressure, glucose excursion with oral glucose tolerance test, lipid profile and physical fitness assessment were measured.

Results:
HICT group showed significant reduction in body weight (5.66±2.87 vs 1.36±1.24kg, $p<0.01$), BMI (2.23±1.14 vs 0.61±0.54kg/m2, $p<0.01$), waist circumference (10.61±4.23 vs 4.81±4.76cm, $p<0.01$), fat mass (4.01±3.41 vs 1.02±0.98kg, $p<0.01$) and systolic blood pressure (11.95±11.49 vs 2.50±6.70mmHg, $p<0.01$) compared to control group. Despite improvement in glucose excursion at 60 minutes post intervention it was not statistically significant. There were no significant changes in lipid profile in HICT group compared to control. Physical fitness was significantly improved in HICT vs control group.

Conclusion:
Our findings showed that HICT was a proven effective weight loss intervention in obese individuals. Although limited effects on glycemic and lipid parameters, a longer duration of sustained weight loss would elucidate more significant results.