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Changes in blood glucose among trained normoglycemic adults during a mini-trampoline exercise session.

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Abstract

BACKGROUND: Blood glucose changes response during and after exercise are modulated by the post-absorptive state, intensity and duration of exercise, and the level of physical fitness as well. This study focused on the idea that high-intensity interval exercise, as mini-trampoline class, can reduce blood glucose. Thus, we examined acute changes in blood glucose among trained normoglycemic adults during a mini- trampoline exercise session.

METHODS: Twenty-four normoglycemic adult subjects were enrolled in the study. After physical assessment they were randomly assigned to either the experimental (n=12) or the control group (n=12). The experimental group performed a 50-minute session of moderate-to-high intensity (70 to 85% HRmax) exercise on a mini-trampoline commonly used in fitness classes. The control group did not perform any exercise, and all procedures were otherwise similar to the experimental group. Capillary blood glucose was measured before and every 15 minutes during the exercise session. The effects of exercise on blood glucose levels (group; time; and group interaction) were estimated using a generalized estimating equation (GEE) followed by Bonferroni's post-hoc test ($p < 0.05$).

RESULTS: The experimental group showed a decrease in blood glucose levels from baseline (108.7 mg/dL): 26.1% reduction (15 min; $p < 0.001$), 24.2% (30 min; $p < 0.001$), and 15.7% (45 min; $p < 0.001$). Compared to the control group, blood glucose levels in the experimental group were reduced by 18.8% (15 min; $p < 0.001$), 14.3% (30 min; $p < 0.001$) and 6.9% (45 min; $p = 0.025$).

CONCLUSION: The study results provide good evidence that a prescribed exercise program on a mini-trampoline can be used for reducing blood glucose levels and thus can potentially control blood glucose.

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