SWACSM Abstract

Effects of Stair Stepping on Late Day Postprandial Glycemia

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ABSTRACT

Increased postprandial glycemia is problematic as chronic increases make one more susceptible to diabetes, cardiovascular disease and mortality. It is important to explore exercise interventions that are convenient and effective in reducing postprandial glycemia. **PURPOSE**: The purpose of the current study was to investigate whether the benefits of very short, single bout stair stepping established for early day food consumption extend to late day food consumption. **METHODS:** Seven participants without glycemic control abnormalities performed two standard oral glucose tolerance tests (OGTT), consuming 75g of glucose dissolved in 350mL of water followed by assessment of blood glucose response for 2 hours.Participants performed the OGTTs in the evening on two separate days. One day was the control condition, where participants remained seated throughout the entire duration of the OGTT. The other day (in randomized order) participants performed 1 min of stair stepping at a self-selected, comfortable pace 58 min after the consumption of the glucose solution. Blood glucose measurement via standard finger sticks were performed at 0, 30, 60, 70, 80, 90 and 120 min of the OGTT. Rating of perceived exertion (RPE) was assessed immediately following the stair stepping. Participants were instructed to not vary their diet or exercise during the two testing days. Diet and activity logs were collected to verify compliance.**RESULTS**:Blood glucose was not different at baseline and 30min. At the 60, 70, and 80min time points blood glucose was lower in the stair stepping compared to control conditions with narrowing margins as time progressed. At 90 and 120 min values were again not different between conditions. The change in blood glucose from baseline to peak values (60min) was statistically significantly lower in the stair-stepping (mean = 26, SD = 45 mg/dL) compared to control (mean = 63, SD = 41 mg/dL) condition ($p = .032$). All participants reported an RPE of 1 showing an overall low perception of intensity. **CONCLUSION**: A single 1-minute bout of low-intensity stair-stepping showed a marked reduction in peak postprandial blood glucose in the evening.