The Effect of Exercise on Executive Control in Overweight Children

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Evidence provides support for the beneficial effects of exercise on the cognition of overweight children. The current study evaluates whether exercise benefits children’s executive control (EC), processes which include inhibition and management of conflicting information. EC was assessed using an antisaccade task (requiring suppression of a prepotent glance to a cue and the generation of a glance to the cue’s mirror image) and an Eriksen flanker task (requiring a response to a central stimulus in the presence of congruent or incongruent peripheral stimuli). A prosaccade task (requiring a glance to a target) was also used as a baseline to evaluate antisaccade performance. Participants were sedentary, overweight (BMI ≥ 85\textsuperscript{th} percentile) children ages 8 – 11 years old. Participants were placed randomly into either an attention control group (N=37 at time 1), who engaged in instructor-led sedentary activities, or an exercise intervention group (N=38 at time 1), who participated in aerobic training for 40 minutes/day, 5 days/week over the entire school year. It was hypothesized that exercise would improve performance on both antisaccade and flanker tasks. Data were collected at three time points: at start, at 9 weeks, and at 18 weeks. Data will be collected from a final testing in April when the impact from the full training complement can be evaluated.