

ORAL: The Acute Effects of Continuous and Intermittent Cycling on Executive Function in Children

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Objective: This study assessed the effect of acute continuous and intermittent PA on children's executive function (EF). **Method:** Using a within-subjects design, twenty-four participants (14 boys $M=10.32 \pm 0.48$ years), performed a continuous (70% HRmax) and an intermittent PA cycling bout ($\geq 85\%$ HRmax; 12 bouts 30/45s), both lasting 15min. The Stroop task, Digit Span and Corsi Blocks tests were administered pre, 1min post and 30min post. **Results:** Comparing both conditions, the continuous group improved their reaction time at 1min post and 30min post (congruent stimuli only) (mean diff= $125.745\text{ms} \pm 58.65$; $p=0.047$ and mean diff= $89.151\text{ms} \pm 38.00$; $p=0.031$, respectively). Whereas the intermittent group improved for 30min post (congruent and incongruent) (mean diff= $116.491\text{ms} \pm 45.79$; $p=0.021$ and mean diff= $110.524\text{ms} \pm 49.330$; $p=0.039$, respectively) showing a delayed benefit from the PA bout and greater improvements compared to the continuous group. Verbal memory was improved for the continuous group 1min post only. No effects on visual memory were observed. **Implications:** The present study demonstrates that both PA bouts might be a time-efficient approach for enhancing EF, with intermittent PA having a delayed and greater performance effect 30min post. This suggests that this protocol might be more appropriate for implementation in school settings to promote improvements in EF.