

ORAL: EFFECTS OF CLASSROOM-BASED ACTIVE BREAKS ON COGNITION, SITTING AND ON-TASK BEHAVIOUR IN CHILDREN WITH INTELLECTUAL DISABILITY: A PILOT STUDY

*Emiliano Mazzoli¹, Jo Salmon¹, Caterina Pesce², Wei-Peng Teo^{1,3}, Nicole Rinehart⁴, Tamara May⁵, Lisa M. Barnett^{1,6}

Deakin University, Institute for Physical Activity and Nutrition, Geelong, Australia ² University of Rome "Foro Italico", Department of Movement, Human and Health Sciences, Rome, Italy ³ Nanyang Technological University, Physical Education and Sports Science (PESS) Academic Group, National Institute of Education (NIE), Singapore ⁴ Deakin University, Deakin Child Study Centre, Geelong, Australia ⁵ Monash University, Department of Paediatrics, Melbourne, Australia ⁶ Deakin University, School of Health and Social Development, Geelong, Australia

* Corresponding and presenting author: e.mazzoli@deakin.edu.au

Objective: Classroom-based active breaks can reduce sitting time, increase physical activity, and improve cognitive functions and on-task behavior in typically developing children. Yet, this strategy has not been tested in children with intellectual disability—a population who are insufficiently active. This study aimed to test the effects of a 5-week active break intervention on cognitive functions, sedentary patterns, and on-task behavior in schoolchildren with intellectual disability. **Method:** Twenty-four children, aged between 8 and 12 years (37.5% girls), from two schools were recruited. Children's cognitive functions (response inhibition, lapses of attention, interference and working memory) were measured at baseline and trial end using computer-based tests. Sitting, standing and movement patterns were assessed with inclinometers, at baseline, mid-trial, and end of trial. On-task behavior, before and after active breaks, was directly observed in the classroom. Linear regression models were used to investigate the effects of active breaks on cognitive functions and sedentary patterns. Generalized linear mixed models, clustered at the individual level, were used to analyze on-task behavior. **Results:** The active breaks did not show significant positive effects on children's cognition or on-task behavior, although large effects approaching statistical significance were observed in working memory ($B = 9.93$, 95% CI $[-0.61, 20.46]$, $d = 0.95$). Compared to the control, the intervention group showed significant positive changes in stepping time (+22 min) and step count (+1566 steps), and significant negative changes in time spent in sitting bouts greater than 5 mins (-46 mins) or greater than 20 min (-64 mins) at mid trial. **Implications:** Classroom-based active breaks can increase physical activity and reduce sedentary behavior in children with intellectual disability and might also benefit their working memory. Further research is required to clarify the effects on cognition and to investigate whether this strategy has other benefits in this population.