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The effects of using a cycling desk at school on executive functions, physical fitness and body composition in primary school children: a pilot within-subject study (BICLASS)

Camille Chambonnière, Pauline Demonteix, Mélina Bailly, Audrey Boscaro, Léna Pelissier, Terry Guirado, Alicia Fillon, Line Bonjean, Julie Siroux
Bruno Pereira , David Thivel, Lore Metz and Martine Duclos

BACKGROUND

Physical activity decreases and sedentary behaviours increase during childhood and adolescence. In order to limit the time spent in sedentary activities at school and to promote low-intensity exercise, innovative strategies have emerged in recent years, such as active desks.

The purpose of this study was to investigate the effects of a program using a Cycle Desk during school time in primary school French children on body composition, physical fitness (PF) and executive functions (EF).

METHODS

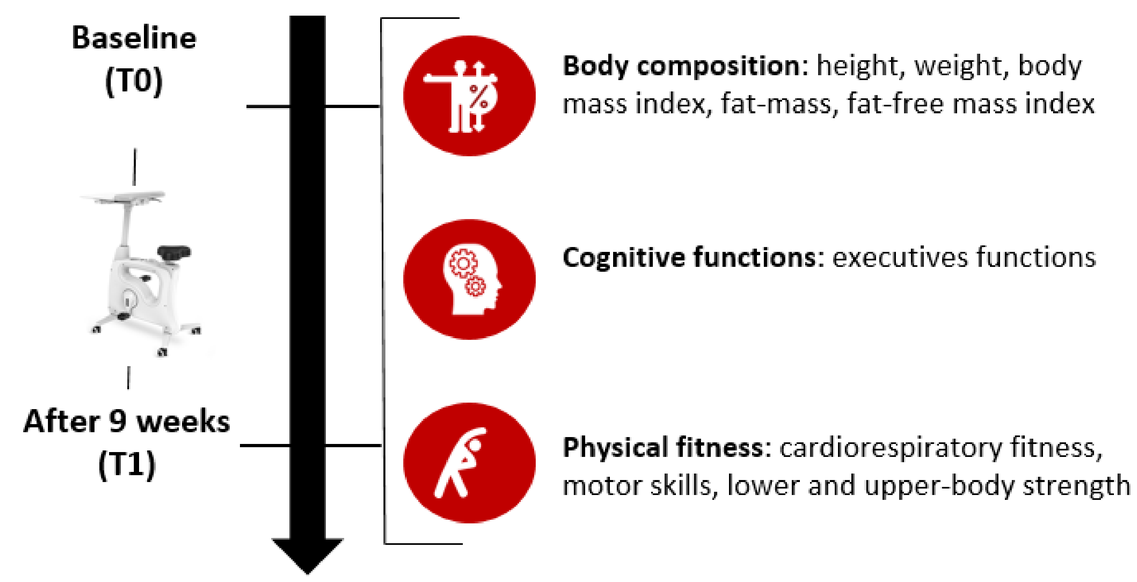

Figure 1: study design and details of evaluations.

RESULTS

PARTICIPANTS
CM1/CM2 (n=75)

SOCIO ECONOMICAL LEVEL
High (n=47) & low (n=52)

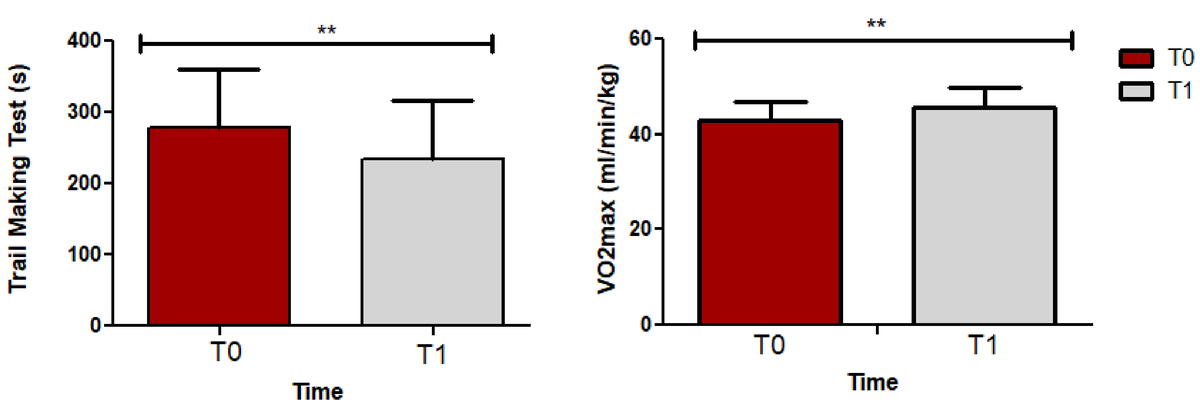

Figure 2. Results of the Trail Making Test and VO2max scores at baseline (T0) and after 9 weeks (T1) to use cycling desks

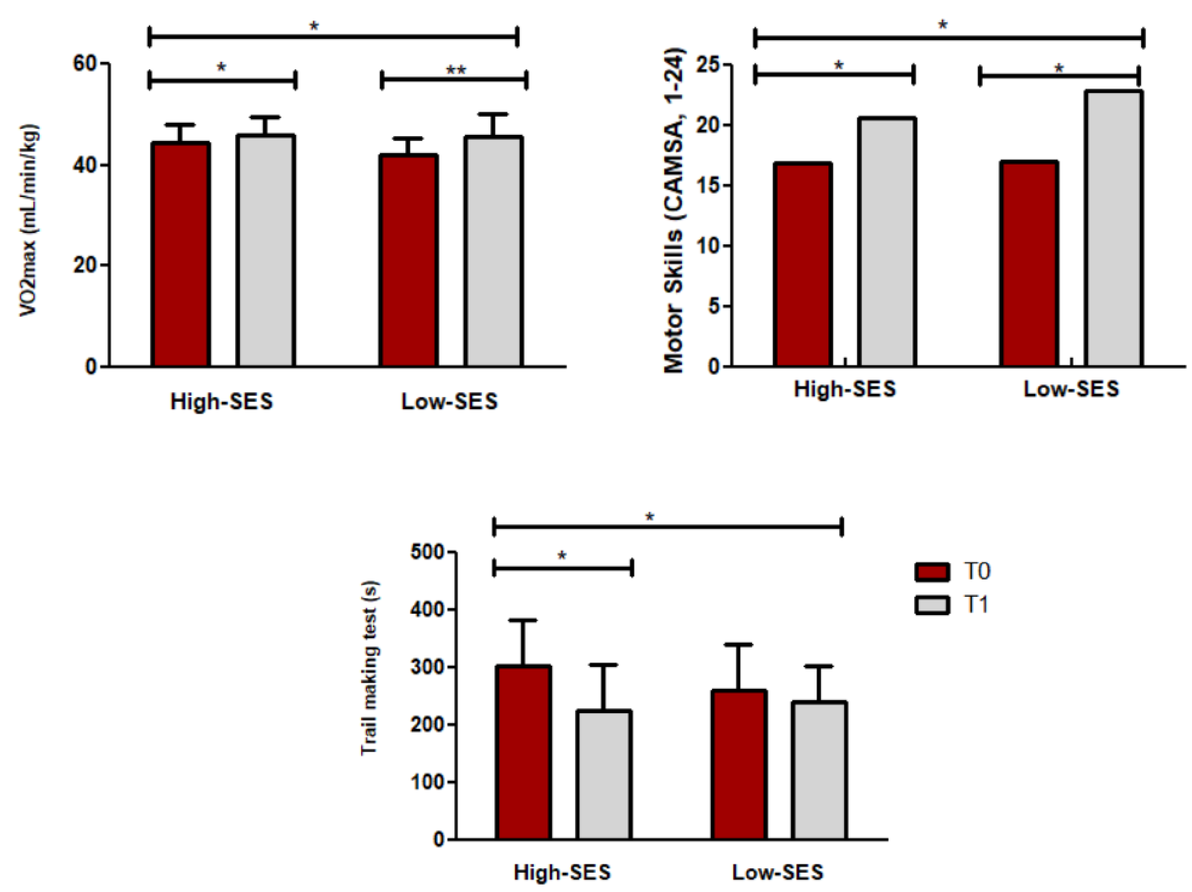

Figure 3. Comparison of EF, motor skills and cardiorespiratory performances according to socioeconomical statut (SES) at baseline (T0) and after 9 weeks (T1) to use cycling desks.

CONCLUSION

Promoting active learning with cycling desks at school should be a major goal of school policy for main reasons:

↓ the negative effects of children's SES on body composition, PF and EF

Not negatively interfere the modifications of body composition, PF and EF

Good feasibility of implementing cycling desks at schools