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## Adverse Collateral Effects of COVID-19 Public Health Restrictions on Physical Fitness and Cognitive Performance in Primary School Children.

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► **To cite this version:**

Camille Chambonnière, Nicole Fearnbach, Léna Péliissier, Pauline Genin, Alicia Fillon, et al.. Adverse Collateral Effects of COVID-19 Public Health Restrictions on Physical Fitness and Cognitive Performance in Primary School Children.. Journée de l'école doctorales SVSAE, ED SVSAE, May 2022, Clermont-Ferrand, France. hal-03917687

**HAL Id: hal-03917687**

**<https://hal.science/hal-03917687v1>**

Submitted on 2 Jan 2023

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## BACKGROUND

The COVID-19 pandemic has resulted in a lockdown on 17 March 2020, for a total of 55 days with all primary and secondary schools closed and all teaching activities conducted online.

As a direct consequence, an alarming decline in physical activity levels and an increase in sedentary behaviors have been showed in youth. Besides, children made little or no progress while learning from home during the confinement compared to a normal academic year. We hypothesize that a decline in physical fitness (PF) could also be involved, of the association between fitness and academic achievement in children.

The aim of the present study is to evaluate whether the COVID-19-related confinement and social restrictions affected the levels of PF and academic achievement in primary school French children.

## METHODS

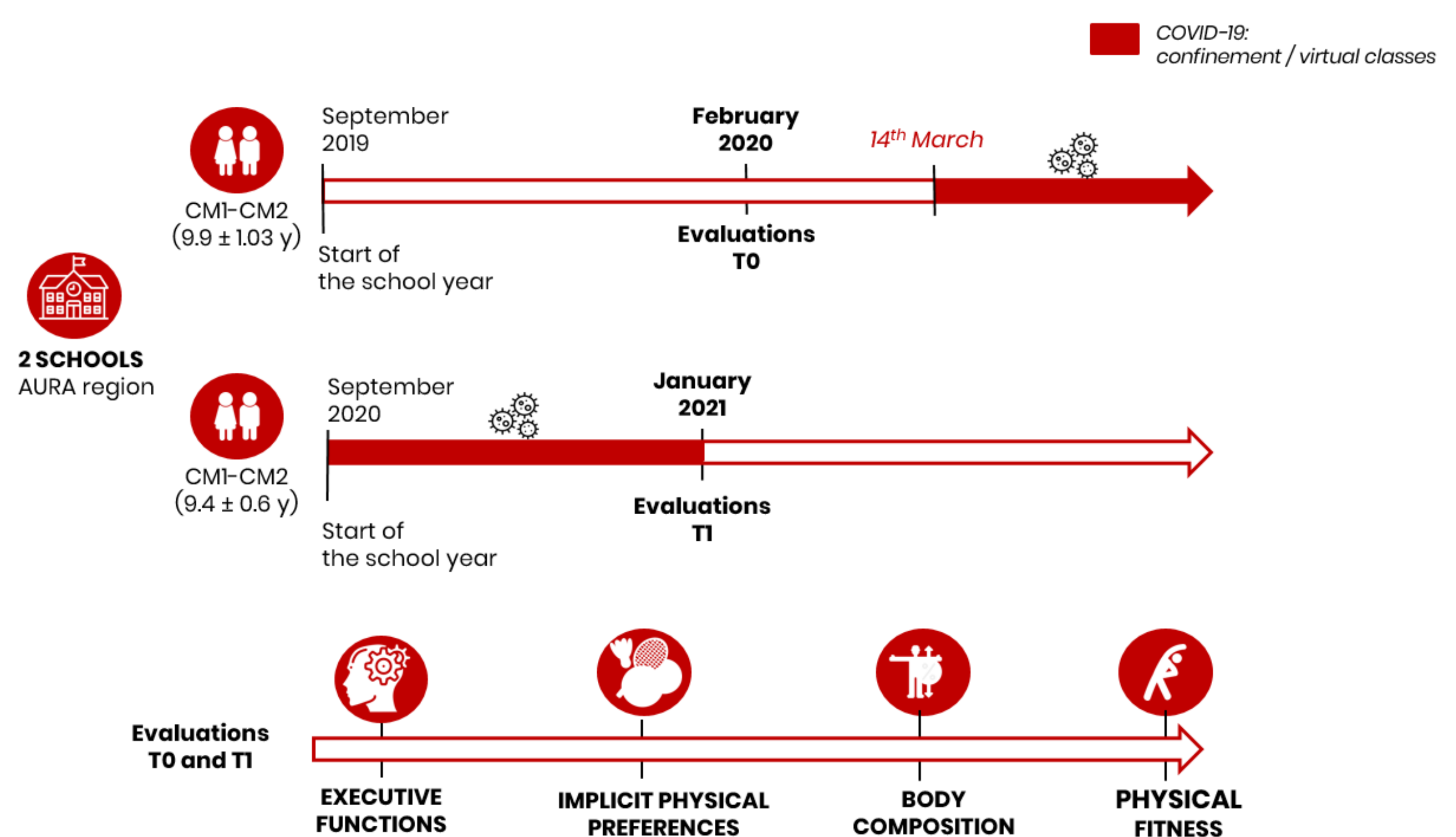


Figure 1: study design and details of evaluations

## RESULTS

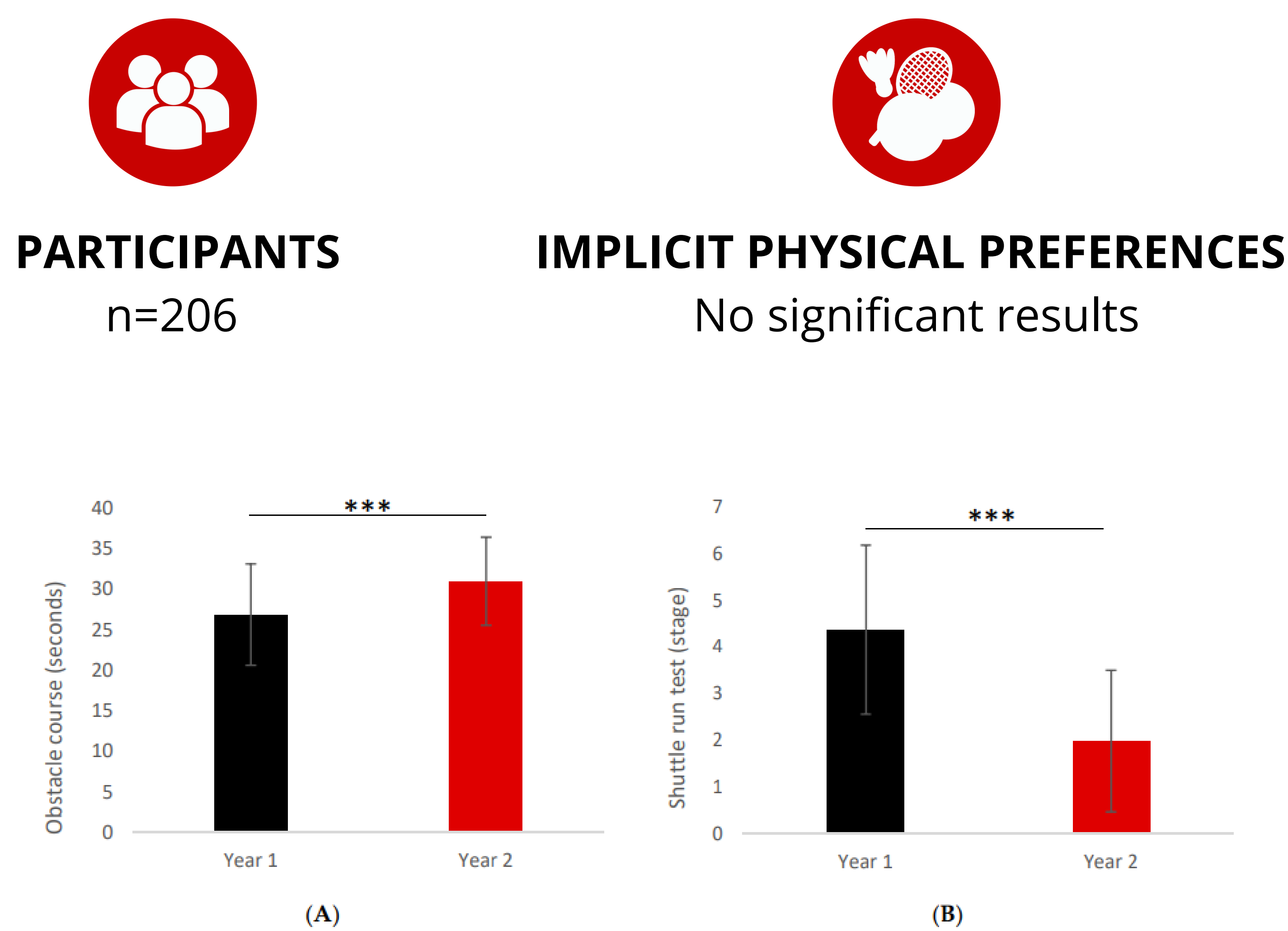


Figure 1. Performances at the Motor Skills Obstacle Course (A) and shuttle-run test (B) between T0 (year 1) and T1 (year 2). p < 0.0001.

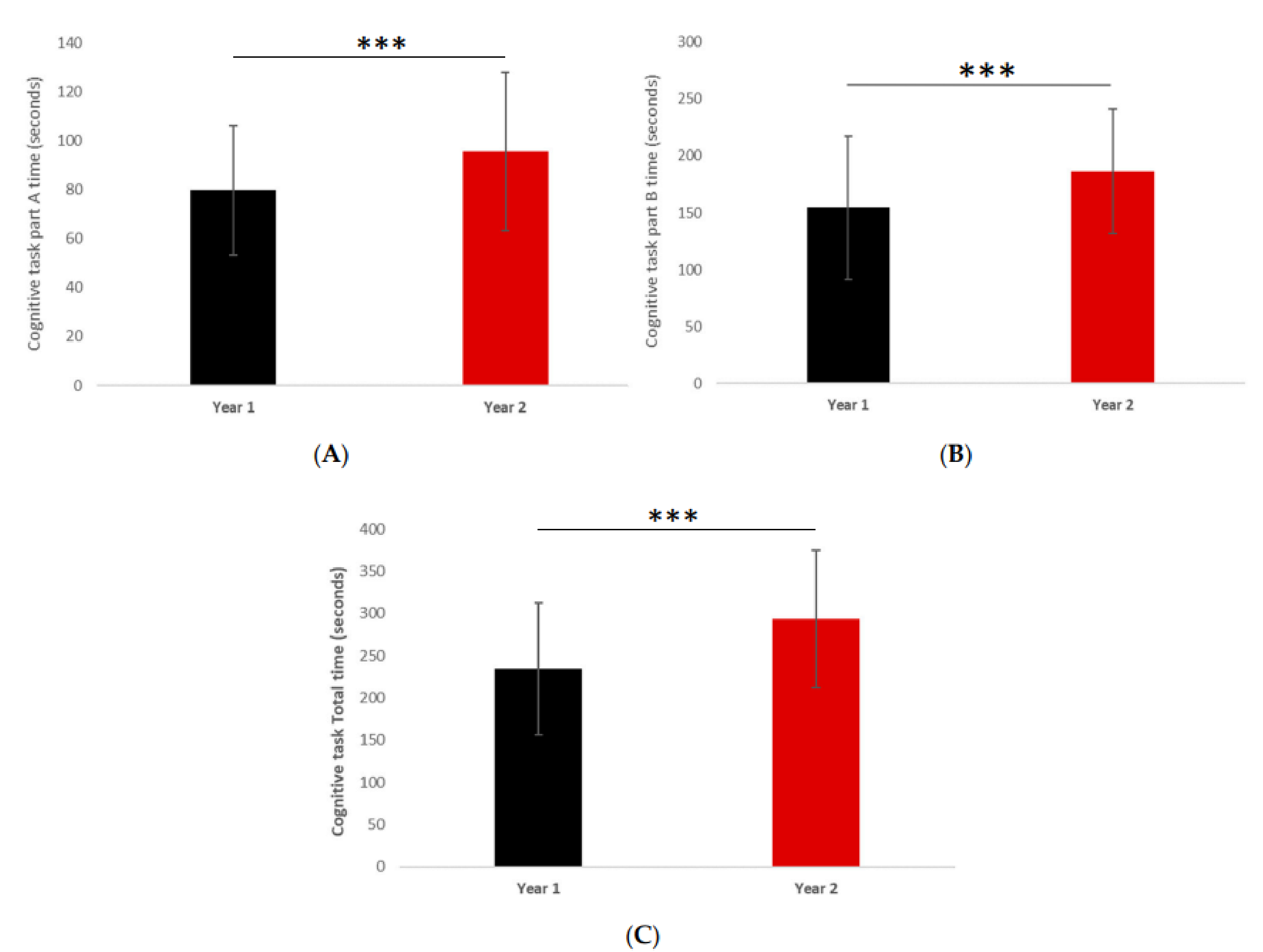


Figure 2. Results of the parts A and B (A,B) of the Trail Making Test and total score (C) at T0 (year 1) and T1 (year 2). p < 0.0001.

## CONCLUSION

↓ of executive functions could explain by the lower intellectual stimulation induced by

- ↓ in school time
- the use of virtual classes

The effects of the lockdown on movement behaviors and physical health might not be irreversible, children might be willing to re-engage in active behaviors

Body composition did not differ after 1-year confinement in youth

↓ in PF by about 25% over the last 40 years in children (Tomkinson et al., 2007). COVID-19 pandemic induced even more a ↓ in PF

We must work to encourage a healthy, active lifestyle in children in order to preserve their physical, mental, and social health during this continued public health crisis.

Reference: Tomkinson, G.R.; Olds, T.S. Secular changes in pediatric aerobic fitness test performance: The global picture. Med. Sport Sci. 2007,50, 46–66.