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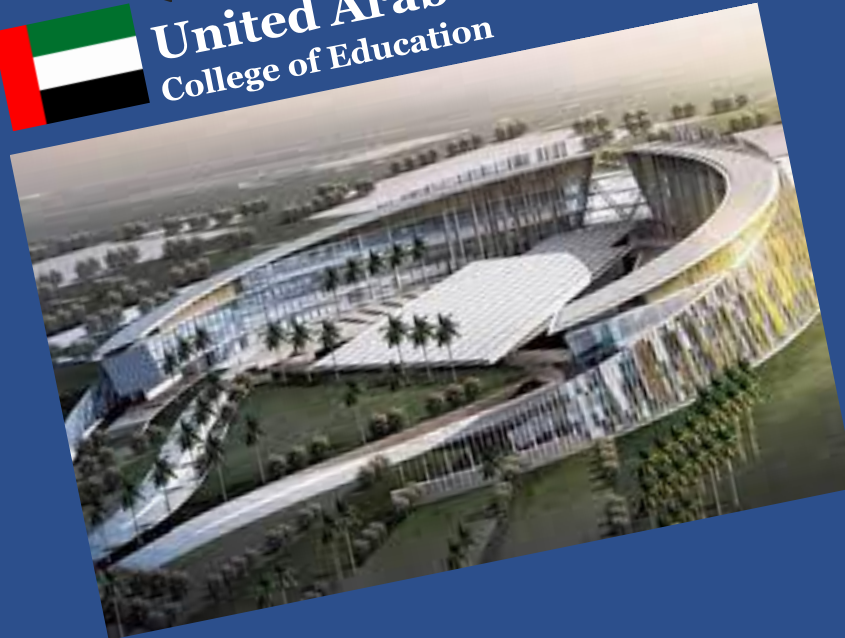
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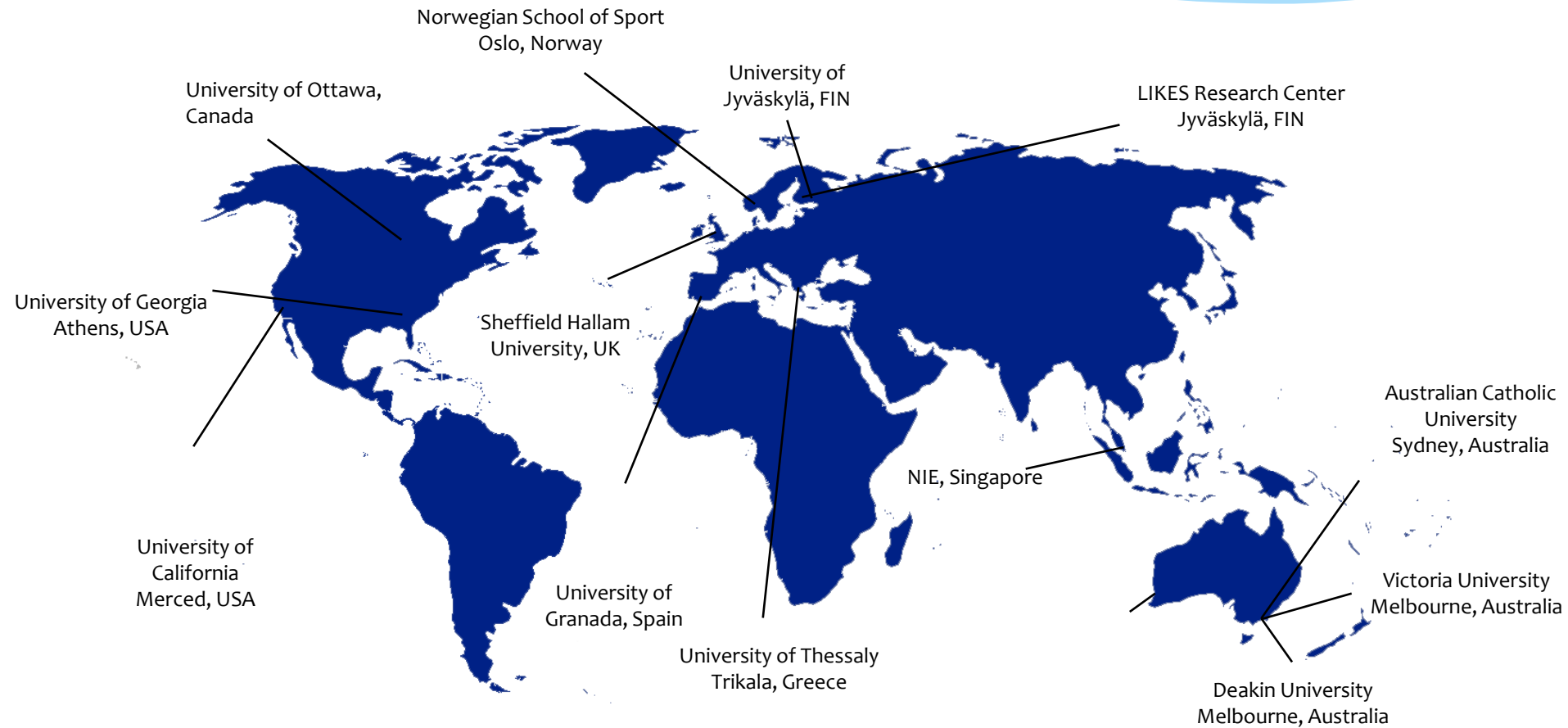


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Original research

Developmental associations of accelerometer measured moderate-to-vigorous physical activity and sedentary time with cardiorespiratory fitness in schoolchildren



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ABSTRACT

Objectives: This study examined the developmental associations of accelerometer-based moderate-to-vigorous physical activity (MVPA) and sedentary time (ST) with cardiorespiratory fitness (CRF) in schoolchildren.

Design: A three-year follow-up study.

Methods: Participants were 446 (girls 57 %) Finnish children ($M = 11.26 \pm 0.32$ years) from 17 randomly selected public schools in Finland. Accelerometer-based MVPA and ST were assessed using waist-worn activity monitors and CRF using the 20 m shuttle run test at four measurement points from 2017 to 2020. The developmental associations were tested using the Random Intercept Cross-Lagged Panel Model (RI-CLPM) reflecting MVPA, CRF, and ST overall levels and repeated measures over time.

Results: The key findings were 1) MVPA was positively associated with CRF, whereas ST was negatively associated with CRF; 2) associations between repeated measures of MVPA and ST with CRF were found only at the final time point; 3) CRF was lower in girls than boys, CRF and MVPA were lower in children with higher BMI, and vice versa; and 4) CRF was higher in children who were still experiencing or had already passed their peak growth spurt than children whose growth spurts had not yet begun.

Conclusions: The results contribute to the growing evidence of a positive developmental association between MVPA engagement and CRF. Furthermore, the inverse association between ST and CRF calls for the avoidance of excessive sedentary behaviour. More effort should be made to promote physically active lifestyles in children and youth.

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Suorin reitti ei aina ole paras.



Hyvää joulua
ja menestyksestä
uutta vuotta!

