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<AT>Self-reported physical activity does not explain differences in cardiorespiratory fitness between children with and without motor coordination problems: a longitudinal analysis
Tracking cardiorespiratory fitness and physical activity in children with and without motor coordination problems

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<ABS-HEAD>**Abstract**

<ABS-P><ST>Objectives</ST> Previous research has shown children with Developmental Coordination Disorder (DCD) have lower cardiorespiratory fitness (CRF) than typically developing (TD) children. This has been hypothesized to be due to an activity deficit, whereby poor motor functioning discourages children from participating in physical activities, but this hypothesis has not been directly tested. In this study, we use longitudinal data to measure the extent to which physical activity explains differences in CRF between children with and without motor coordination deficits.

<ABS-P><ST>Design</ST> Longitudinal observational study

<ABS-P>

<ABS-P><ST>Methods</ST> The study sample is an open cohort of children, numbering 2278 at baseline (age 9-10), that was followed for up to 5 years (to age 13-14). Motor skills were assessed once over the study period. Children scoring at or below the 5th percentile (n=103) on the Bruininks-Oseretsky Test of Motor Proficiency-Short Form were considered to have possible DCD (pDCD). CRF (estimated peak VO₂) was estimated from performance on the Léger 20m shuttle run test, and physical activity was measured with the Participation Questionnaire. Both fitness and physical activity were measured up to 7 times over the study period.

<ABS-P><ST>Results</ST> Children with pDCD had significantly lower CRF than their TD peers at each time point. CRF declined for both groups, but this decline was steeper for children with pDCD. Physical activity explained only a small part of the difference in CRF.

<ABS-P><ST>Conclusions</ST> The activity deficit did not contribute to the persistent and gradually widening gap in CRF between children with and without possible DCD. Possible reasons for this and future directions are discussed.

<KWD>Keywords: Developmental Coordination Disorder; motor skills; motor skills disorders; physical fitness; physical activity; youth

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