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## Does Childhood Motor Skill Proficiency Predict Adolescent Fitness?

### APPLIED SCIENCES

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#### **Abstract:**

Purpose: To determine whether childhood fundamental motor skill proficiency predicts subsequent adolescent cardiorespiratory fitness.

Methods: In 2000, children's proficiency in a battery of skills was assessed as part of an elementary school-based intervention. Participants were followed up during 2006/2007 as part of the Physical Activity and Skills Study, and cardiorespiratory fitness was measured using the Multistage Fitness Test. Linear regression was used to examine the relationship between childhood fundamental motor skill proficiency and adolescent cardiorespiratory fitness controlling for gender. Composite object control (kick, catch, throw) and locomotor skill (hop, side gallop, vertical jump) were constructed for analysis. A separate linear regression examined the ability of the sprint run to predict cardiorespiratory fitness.

Results: Of the 928 original intervention participants, 481 were in 28 schools, 276 (57%) of whom were assessed. Two hundred and forty-four students (88.4%) completed the fitness test. One hundred and twenty-seven were females (52.1%), 60.1% of whom were in grade 10 and 39.0% were in grade 11. As children, almost all 244 completed each motor assessments, except for the sprint run ( $n = 154$ , 55.8%). The mean composite skill score in 2000 was 17.7 (SD 5.1). In 2006/2007, the mean number of laps on the Multistage Fitness Test was 50.5 (SD 24.4). Object control proficiency in childhood, adjusting for gender ( $P = 0.000$ ), was associated with adolescent cardiorespiratory fitness ( $P = 0.012$ ), accounting for 26% of fitness variation.

Conclusion: Children with good object control skills are more likely to become fit adolescents. Fundamental motor skill development in childhood may be an important component of interventions aiming to promote long-term fitness.

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