

Age-dependent relationships between children's motor competence, physical activity, perceived motor competence, physical fitness and weight status

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Age-dependent relationships between children's motor competence, physical activity, perceived motor competence, physical fitness and weight status

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In their developmental model, Stodden et al. (2008) propose age-dependent relations between motor competence, physical activity, perceived motor competence, physical fitness, and weight status that can lead to a spiral of (dis)engagement. The goal of this study was to explore these relations in a large sample of Dutch primary school children. To our knowledge, this is the first study including all five aspects of the model and a large sample of children between four and thirteen years old. Cross-sectional data was collected in 2068 children (ages 4–13), divided over 9 age groups. During physical education classes, they completed the 4-Skills Test, a physical activity questionnaire, versions of the Self-Perception Profile for Children, Eurofit test and anthropometry measurements. Correlation coefficients per age group were calculated (full information maximum likelihood) and transformed using a Fisher's r to z transformation, after which the test-statistic z was calculated. The results show that all five factors are related to each other and that a tipping point exists at which relations emerge or strengthen. Physical fitness is related to motor competence and physical activity and these relationships strengthen with age. A relationship between BMI and the other four factors emerges in middle childhood. Although the model described that physical activity stimulates motor competence in early childhood, our data showed that at a young age, both motor competence and perceived motor competence had no relation with physical activity, while they were weakly related to each other. In middle childhood, both motor competence and perceived motor competence were related to physical activity. Our findings demonstrate that children in late childhood who have higher perceived motor competence are also more physically active, have higher physical fitness, higher motor competence and lower BMI. Our results indicate that targeting motor competence at a young age might be a feasible way to ensure continued participation in physical activities throughout childhood and adolescence. Funding source: Netherlands Organization for Scientific Research.