

## Associations Between Motor Competence and Selected Body Composition Variables in Czech School-Aged Children: A Comparative Study

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**Purpose:** This study aimed to understand the associations between motor competence determined using the product-oriented Bruininks-Oseretsky Test of Motor Proficiency, Second Edition, complete form, and selected body composition variables determined using the BIA methods in Czech school-aged children.

**Methods:** The motor competence level in 601 children aged 6.0–11.0 years (46.6% girls) was evaluated using BOT-2 – Bruininks-Oseretsky Test of Motor Proficiency and variables: Total motor composite and subcategories of fine and gross motor skills: fine manual control, manual coordination, body coordination, and strength and agility. Body mass was measured using the body composition analyser InBody (*InBody Co., Ltd., Korea*), and body height using portable measuring equipment (*InBody Co., Ltd., Korea*), suitable for use in the child population. The variables analysed were body weight, body mass index, body fat percentage, and fat-free mass.

**Results:** The motor competence level was generally average. Seventy-one percent of children had at least a satisfactory level of motor competence. However, we found significantly below-average results in almost one-third of children and a prevalence of developmental coordination disorder in 7%. Body weight was: mean (M) = 30.67 kg, standard deviation (SD) = 9.02. Body mass index percentile: M = 54.05, SD = 30.57. All individuals with a BMI percentile of 100 were found to have body fat percentage in the obesity category. Below-average scores in motor competence were achieved by 10 of these children, body fat percentage: M = 16.91, SD = 8.50; fat-free mass: M = 24.95, SD = 5.33.

**Conclusion:** Low levels of motor competence and gross and fine motor skills appear to be a potential risk factor for overweight and obesity as assessed by body fat and BMI. The amount of muscle mass significantly influences performance in gross motor skills. Fine motor skills appear to be relatively independent of limitations due to excess body weight.

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