Sixty four children (M age 7.9±1.5yrs) participated in the study.

**METHODS**

Research in TD children suggests that up to 70% of the variability of performance across a range of motor skills could be due to muscular strength and physical development variables. When compared to their peers, children with low movement proficiency (LMP), exhibit poor motor skills and movement difficulties that interfere with daily activities. Additionally, a recent review by Rivilis and colleagues (2011) demonstrated that cardiorespiratory fitness, anaerobic capacity, muscle strength and endurance, power, and body composition are all negatively affected by poor motor proficiency.

Given the links between motor proficiency and muscle strength the aim of this study was to investigate muscle strength across tasks of varied complexity in children across a spectrum of motor proficiency.

**RESULTS**

Analyses of variance between groups revealed RTSBc scores to be significantly different (F(2,61)=13.179, p<0.001), with TD children scoring significantly higher than those at risk of movement difficulties (LMP1; p= 0.021) and those with significant difficulties (LMP2; p=0.001). 5RM scores were also significantly different between groups (F(2,61)=5.618, p=0.006), but only between TD children and the LMP2 group. No differences were found between groups for isometric or isokinetic measures of strength.

**DISCUSSION**

- Results demonstrate that strength profiles of children screened using the MABC-2 change along with the complexity of the task.  
- No differences were observed in strength between TD children and those at risk (LMP1) or those with significant movement difficulties (LMP2) for limb-isolated tasks such as the Biodex, however tasks requiring more motor planning and control, such as 5RM and RTSBc elicited a significant difference.
- Children with significant movement difficulties often performed poorly compared to TD children or even children ‘at risk’ of difficulties.

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**REFERENCES:**


**TRANSLATION TO PRACTICE:**

These findings suggest that interventions targeting children with motor impairments should target functional strength and coordination, rather than isometric or isolated strengthening exercises.