

Absent Adaptive Postural Responses in Children with Developmental Coordination Disorder: Implications for Treatments in the Primary Healthcare Settings

Shirley S.M. FONG^{1,2}, Yoyo T.Y. CHENG¹, Louisa M.Y. CHUNG², Catherine M. SCHOOLING^{1,3}, Y. GAO⁴, Y.H. BAE⁵, William W.N. TSANG⁶, Joanne W.Y. CHUNG⁶

1. School of Public Health, University of Hong Kong, Hong Kong SAR, China

2. Department of Health and Physical Education, Education University of Hong Kong, Hong Kong SAR, China

3. Graduate School of Public Health and Health Policy, City University of New York, New York, USA

4. Department of Sport, Physical Education and Health, Hong Kong Baptist University, Hong Kong SAR, China

5. Korea National Rehabilitation Center, Department of Healthcare and Public Health, Rehabilitation Research Institute, Seoul 01022, Korea

6. School of Nursing and Health Studies, Hong Kong Metropolitan University, Hong Kong SAR, China

Introduction:

- Adaptive postural control is an important yet underexamined area in children with developmental coordination disorder (DCD).
- This study aimed to compare the adaptive postural responses between children with DCD and those with typical development.

Methods:

- This was an exploratory, cross-sectional study.
- Fifty-two children with DCD (aged 6–9 years) and 52 age- and sex-matched children with typical development participated in the study.
- Their adaptive postural (motor) responses were assessed using the Adaptation Test (ADT) on a computerized dynamic posturography machine (Fig. 1). The sway energy score (SES) for each ADT testing trial and the average SES of 5 testing trials for both toes up and toes down platform inclination conditions were recorded.

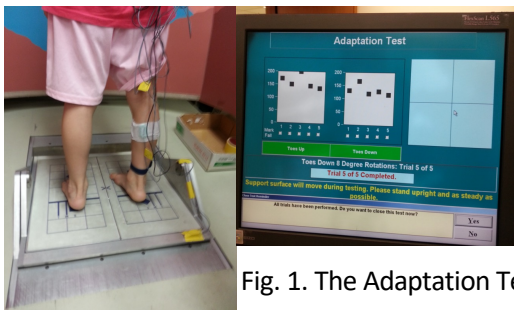


Fig. 1. The Adaptation Test

Results:

- We found SES was lower in the DCD group compared with the control group in ADT toes up trial 1 ($p = 0.009$) and on average ($p = 0.044$).
- Moreover, SES decreased from trial 1 to trial 2 in exclusively the control group for both ADT toes up ($p = 0.005$) and toes down conditions ($p < 0.001$).

Conclusions:

- Adaptive postural responses were absent in children with DCD and these children used less force (sway energy) to overcome postural instability.
- Therefore, both adaptive balance and neuromuscular training should be factored into treatments for children with DCD in the primary healthcare settings.

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Contact person:

- Shirley Fong
(smfong_2004@yahoo.com.hk)