

Re-Validation of the MoMo-test profile (Test-Retest-Reliability)

A. Hanssen-Doose¹, K. Hotz¹, S. Heinisch¹, C. Niessner², E. Schlag², A. Worth¹

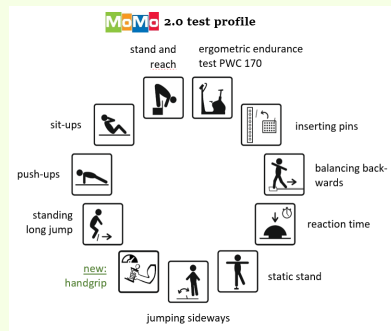
¹ Karlsruhe University of Education, Germany ² Karlsruhe Institute of Technology, Germany

Background

- Monitoring motor performance (MP) during childhood and adolescence is crucial because MP is a key indicator of health (1-2). Consequently, the assessment of MP is integrated into various health monitoring programs.
- Since 2003, the MoMo study has been monitoring MP, body composition, and physical activity among children and adolescents in Germany (3), regularly reporting population-based trends (4).
- The data are assessed by means of the 'MoMo test profile' (5), which was validated before the baseline measurement began (6). Since 2022, the study has continued as the 'MoMo 2.0 study'. Due to technological advancements and new scientific insights, the 'MoMo test profile' has undergone scrutiny, updating, and re-validation.
- Aim of this work: introduce the revised test items and present their reliability**

Methods

- ten test items from previous measurement waves were retained and one new item was introduced
- validation sample (n=105, 4-17 yrs, n σ =55, \bar{x} =50).
- reliability determined with the test-retest method (7)
- 2 measurements with intervals ranging from 14-19 days
- Statistically, reliability was analysed by combining correlations and comparing mean values in order to analyse learning effects (7)



Results

- very good or good test-retest reliability for all test items (r ranging from .765-.959)**
- very good retest reliability ($r \geq .7$ and no difference of the mean values) for 8 tests, good test-retest reliability ($r \geq .7$ and difference of the means) for 'reaction time', 'jumping sideways', 'push-ups'
- newly added 'handgrip' test shows a very high test-retest reliability ($r = .951$ and no difference).

Conclusions

- The updated version of the 'MoMo test profile' is reliable for evaluating the motor performance of children and adolescents.**



anke.hanssen-doose@ph-karlsruhe.de

1 Ortega FB, Ruiz JR, Castillo MJ, Sjostrom M. Physical fitness in childhood and adolescence: a powerful marker of health. *Int J Obes.* 2008;32(1):1-11

2 Hanssen-Doose A, Kunina-Habenschütz O, Ortwil D, Niessner C, Woll A, Worth A. Predictive value of physical fitness on self-rated health: A longitudinal study. *Scand J Med Sci Sports.* 2021;31:56-64.

3 Woll A, Kios L, Burchartz A, Hanssen-Doose A, Niessner C, Ortwil D, et al. Cohort Profile Update: The Motorik Modul (MoMo) Longitudinal Study—physical fitness and physical activity as determinants of health development in German children and adolescents. *Int J Epidemiol.* 2021;50(2):393-398.

4 Hanssen-Doose A, Niessner C, Ortwil D, Biss K, Woll A, Worth A. Population-based trends in physical fitness of children and adolescents in Germany, 2003–2017. *Eur J Sport Sci.* 2021;23(10):1204-1214.

5 Worth A, Woll A, Albrecht C, Karger C, Mewes N, Oberger J, et al. MoMo-long term study "physical fitness and physical activity as determinants of health development in children and adolescents". *KIT Scientific Reports.* 2015;7700. Karlsruhe: Karlsruhe Institute of Technology;

6 Oberger J, Romahn N, Opper E, Tittelbach S, Wank V, Woll A, Biss K. Untersuchungen zur motorischen Leistungsfähigkeit und körperlich-sportlichen Aktivität im Rahmen des Kinder- und Jugendgesundheits surveys des Robert Koch-Institutes Berlin. In: Wydra G, Winchenbach H, Schwarz M, Pfeifer K, editors. *Schriften der Deutschen Vereinigung für Sportwissenschaft: Band 158. Assessmentverfahren in Gesundheitssport und Bewegungstherapie: Messen, Testen, Beurteilen, Bewerten: Jahrestagung der dvs-Kommission Gesundheit vom 23. - 24. September 2004 in Saarbrücken.* Czwalina Verlag; 2006. p. 44-55

7 Biss K, editor. *Handbuch Motorische Tests: Sportmotorische Tests, motorische Funktionstests, Fragebögen zur körperlich-sportlichen Aktivität und sportpsychologische Diagnoseverfahren.* 3rd ed. Göttingen: Hogrefe; 2017