

1st World Congress on Health and Martial Arts in Interdisciplinary Approach, HMA 2015

# Rotating training simulator as an assessment tool measuring susceptibility of the body injuries during the fall caused by an external force – validation procedure

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## Abstract

**Background and Study Aim.** The aim of present study was verification of rotating training simulator (RTS) as an assessment tool of susceptibility of the body injuries during the fall caused by an external force.

**Material and Methods.** A Group of 68 students of physical education from University of Zielona Góra were tested. Appropriateness was determined by comparing results of RTS's test for different frequencies (from 0,16 Hz to 0,3 HZ) with results of I task from STBDIF test designed by Roman Maciej Kalina, adopting the same criteria and grading scale. Reliability of RTS's test results was evaluated by retesting subjects after one week, and also comparing grades given by two observers with those given by authors.

**Results.** Current results show significant correlation between STBDIF test and RTS's test for each frequency. There are very high correlations between first test and retest after one week results of RTS's test. For 31 subjects obtained results show good and excellent reliability defined by intraclass correlation coefficient (ICC).

**Conclusions.** Obtained results show that rotating training simulator is a valid and reliable tool to diagnose susceptibility of the body injuries during the fall caused by an external force and exhibits significant repeatability of results.

**Key words:** simulating falls • safe fall • motor safety • biomechanics • rotational movements

**Published online:** 17 September 2015

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**Contributor:** Andrzej Mroczkowski conceived the study design. Andrzej Mroczkowski collected the data. Andrzej Mroczkowski, Dariusz Mosler analysed the data. Andrzej Mroczkowski, Dariusz Mosler prepared the manuscript. Dariusz Mosler secured the funding.

**Funding:** Departmental sources

**Conflict of interest:** Authors have declared that no competing interest exists

**Ethical approval:** The study was conducted within the research project Academy of Physical Education in Katowice:

“Reducing vulnerability to body injuries during the fall of people categorized as group being at high risk of losing balance and falling” (Resolution No. 04/2013 Bioethics Committee at the Jerzy Kukuczka Academy of Physical Education, Katowice, Poland)

**Provenance and peer review:** Under responsibility of HMA Congress

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**Cite it:** Mroczkowski A, Mosler D. Rotating training simulator as an assessment tool measuring susceptibility of the body injuries during the fall caused by an external force – validation procedure. In: Kalina RM (ed.) Proceedings of the 1st World Congress on Health and Martial Arts in Interdisciplinary Approach, HMA 2015, 17–19 September 2015, Czeszochowa, Poland. Warsaw: Archives of Budo; 2015. p. 202

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