

Title	A study of standerdization of the motor coordination test based on Eye-Head coordination reaction time
Sub Title	
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Publisher	慶應義塾大学体育研究所
Publication year	1994
Jtitle	体育研究所紀要 (Bulletin of the institute of physical education, Keio university). Vol.34, No.1 (1994. 12) ,p.131- 132
JaLC DOI	
Abstract	
Notes	Abstract
Genre	
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00135710-00340001-0131

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A Study of Standardization of the Motor Coordination Test Based on Eye-Head Coordination Reaction Time

By *Akihiko Kondo**

To clarify the motor coordination, the selective reaction time of body movement accompanied by eye-head coordination was measured in an experimental condition. We call this reaction time "Eye-Head Coordination Reaction Time (EHCRT)". The purpose of this study was to enhance the reliability of the test norm which was obtained by experiments since 1979. The subjects were elementary school, junior high school and college students.

We carried out experiments on the following conditions; One of the front arrows pointed to right or left, and one of the two arrows on both sides pointed to upwards or downwards. These arrows appeared simultaneously. Subjects were requested to react to these signals as follows; They should watch the side the front arrow pointed, then they should react by jumping or crouching.

Eye movements were registered on Electrooculogram(EOG) and body weight shifts were shown as Strain Curves. These results were put into an oscillograph, and the EHCRT was obtained.

Based on these records, we classified the EHCRT into EL(Latency of eye movement), EM(Eye movement time), De(Decision time) and Co(Contraction time).

Results were as follows; 1) The EHCRT was developed remarkably. 2) EHCRT of athlete group was shorter than non-athlete group in college students. This result suggests that daily training experience has a positive effect on athlete group. 3) Highly significant correlations were found between EHCRT and EL and De. This result suggests that the process in central nervous system played a decisive role in EHCRT.

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Based upon these results the test norm was developed. The test norm classified the performances into five grade at each age level. We could recommend to use this test norm to evaluate motor coordination.