ABSTRACT

Background: Substantial deficits in the performance of the hip abductor muscles are reported in females with common lower extremity conditions. In this context, the hip abductor isometric test (HAIE) test has been developed to assess the endurance of the hip abductors.

Purposes: The aims of the study were: 1) to assess the test-retest reliability of the HAIE test and 2) to determine if the HAIE test is valid for the measuring hip abductor muscle fatigue.

Design: Diagnostic accuracy of clinical tests; test retest reliability and validity

Methods: Fifty-two healthy females, aged 18-30 years, were recruited. In two identical sessions, spaced by seven days, the participants performed the HAIE test and the test-retest reliability (ICC, SEM and MDC) was calculated. In ten subjects, surface EMG was used during the test in order to observe the change in the median frequency of EMG output of the gluteus medius and to determine if decrease of the median frequency is correlated with performance on the test, in order to discern validity.

Results: The HAIE test demonstrated good test-retest reliability (ICC = 0.84, SEM = 11.5 seconds and MDC = 32.8 seconds). Significant differences were noted between the average median frequency of participants for the last four fifteen second intervals (p = 0.02). Moderate correlation between MFslope and endurance time (r = 0.56, p = 0.008) and strong correlation between MFslope75s and endurance time (r = 0.71, p = 0.001) were found.

Conclusion: The results from this study support that the HAIE test is a reliable test for evaluating the endurance of the hip abductors. Further investigations should continue to explore the validity of the test, especially to determine which muscles limit the endurance time in healthy and unhealthy subjects.

Level of evidence: 2b

Key words: Hip abductor endurance, reliability, validity

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