

# STATIC BALANCE MEASUREMENTS IN STABLE AND UNSTABLE CONDITIONS DO NOT DISCRIMINATE GROUPS OF YOUNG ADULTS ASSESSED BY THE FUNCTIONAL MOVEMENT SCREEN™ (FMS™)

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## ABSTRACT

**Background:** The Functional Movement Screen™ (FMS™) has been the focus of recent research related to movement profiling and injury prediction. However, there is a paucity of studies examining the associations between physical performance tasks such as balance and the FMS™ screening system.

**Purpose:** The purpose of this study was to compare measures of static balance in stable and unstable conditions between different groups divided by FMS™ scores. A secondary purpose was to discern if balance indices discriminate the groups divided by FMS™ scores.

**Study Design:** Cross-sectional study.

**Methods:** Fifty-seven physically active subjects (25 men and 32 women; mean age of  $22.9 \pm 3.1$  yrs) participated. The outcome was unilateral stance balance indices, composed by: Anteroposterior Index; Medial-lateral Index, and Overall Balance Index in stable and unstable conditions, as provided by the Biodex balance platform. Subjects were dichotomized into two groups, according to a FMS™ cut-off score of 14: FMS1 (score >14) and FMS2 (score ≤14). The independent Students t-test was used to verify differences in balance indices between FMS1 and FMS2 groups. A discriminant analysis was applied in order to identify which of the balance indices would adequately discriminate the FMS™ groups.

**Results:** Comparisons between FMS1 and FMS2 groups in the stable and unstable conditions demonstrated a higher unstable Anteroposterior index for FMS2 ( $p=0.017$ ). No significant differences were found for other comparisons ( $p>0.05$ ). The indices did not discriminate the FMS™ groups ( $p>0.05$ ).

**Conclusions:** The balance indices adopted in this study were not useful as a parameter for identification and discrimination of healthy subjects assessed by the FMS™.

**Level of evidence:** 2c.

**Key words:** Postural balance; Movement System; Physical Function; Physical Therapy Modalities.

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