

Intra-rater Reliability of A Web-based, Dynamic Assessment Tool

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The Body Maptm is a web based transitional movement assessment tool used to detect muscle imbalances and generate custom exercise programs. Digital photos are taken at end range of motion (ROM) during double (DL) and single (SL) leg squats. A variety of judgments are made concerning the assessment of musculoskeletal deviations observed in the images. Corrective exercises are assigned based on movement observations addressing both rehabilitative and preventative interventions. An important aspect of any movement observation system that involves judgments, particularly with clinical application, is its within and between observer reliability. The present research focused on the within rater reliability. **PURPOSE:** The purpose of this study was to determine the assessment reliability of a novice user of the Body Map, trained using the instructional CD.

METHODS: Twenty subjects (11 females and 9 males) underwent the Body Map assessment, consisting of images taken at the end ROM (max. knee flexion) during DL and SL squat tasks. During the DL, separate images were taken from the front, back and side views. During the SL squat, images were taken from the front view as subjects performed on both the right and left leg. All images were taken by an expert to eliminate possible confounding affect of errors in testing protocol. After undergoing the instructional training as presented through the training CD, the novice rater assessed all subjects' images on two separate occasions. A total 26 possible asymmetries can be assessed from the images captured during the DL and SL squat tasks. Intra-rater reliability of each item was assessed by calculating the percent agreement and kappa coefficient for each item between the two assessment sessions.

RESULTS: Percent agreement ranged from 70-100% with a mean value of 89.81% ± 9.22% for all possible items scored on the Body Map. The Kappa coefficients ranged from moderate to excellent with more than half (65%) in the good to excellent range. The overall mean score for the twenty six possible selections was 0.683 ± 0.246 (excellent 1.00 - 0.80; good 0.79 - 0.60; moderate 0.59 - 0.40; poor 0.39 - 0.20; very poor 0.19 - .00).

CONCLUSIONS: Use of the step by step instructional CD that accompanies the Body Map Starter Kit adequately trains a novice rater to consistently and reliably assess transitional movement asymmetries based on the Body Map system. Although the within examiner ratings were quite high, some target areas were observed that are likely to be improved with more attention to introductory training materials. This is likely to increase the reliability of what appears to be a robust and potentially relevant clinical tool.