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Inter-Rater Agreement of the Visually Rated Single-Leg Squat Assessment

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Context: Within sports medicine, there is a need for inexpensive and reliable clinical screening tools that can be used to assess the risk of lower extremity musculoskeletal injury. The visually rated Single-Leg Squat (SLS) is a closed chain screening tool commonly used by clinicians to identify lower extremity pathomechanics. Although there has been research assessing the validity of the SLS assessment, little is known regarding its inter-rater agreement.

Objective: The purpose of this study was to assess the inter-rater agreement of the visually rated SLS.

Design and Participants: The Qualitative Scoring System (QSS), a nominal scale consisting of 10 criteria, was used to evaluate each SLS. Two certified Athletic Trainers served as raters. Each rater conducted training and a post-training test to ensure the assessment was learned in a standardized manner. Upon completion of the training, the raters were provided with left leg and right leg SLS video recordings of 30 collegiate male lacrosse players.

Main Outcome Measurement: A Kappa statistic

(k) was calculated to assess inter-rater agreement of each QSS criteria.

Results: There was, one almost perfect agreement, non-weight bearing foot contact (k= 0.848). There was, one moderate agreement, noticeable knee valgus (k= 0.702). There were, two weak agreements, arm movement (k= 0.489) and pelvic tilt/rotation (k= 0.411). There were, two minimal agreements, non-weight bearing thigh motion (k= 0.384) and significant knee valgus (k= 0.286). There were, three less than minimal agreements, trunk alignment (k= 0.183), loss of horizontal pelvic plane (k= 0.163), and weight bearing thigh adduction (k= -0.021). A Kappa statistic could not be calculated for stance leg wobble because rater two reported zero negative findings.

Conclusion: Results reveal the inter-rater agreement of the visually rated SLS is generally weak. Further research should be conducted to develop methods that improve reliability of the visually rated SLS assessment.

Key words: movement screening, assessment, and inter-rater agreement