

## CAN PHYSICAL THERAPISTS CONSISTENTLY ASSESS SQUATS?

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**Background:** Knee injuries occur regularly in sport and recreational activities. Previous studies have found a correlation between poor squat mechanics and increased risk of knee injuries. Therefore, it is logical to utilize screening of squats to identify individuals exhibiting improper biomechanics. The authors of this study developed a 7-point Biomechanical Squat Assessment (BSA) as an efficient and comprehensive tool to assess squat mechanics.

**Purpose:** The purpose of this study is to determine the intra-rater and inter-rater reliability of the BSA.

**Methods:** A cross-sectional reliability study was utilized using a convenience sample from The College of St. Scholastica community. Physical therapy students analyzed the subjects' squat mechanics using the BSA. Subjects performed 8 squats; raters viewed 4 squats from a sagittal view and 4 squats from a frontal view. The trials were recorded by video camera, and one week later, the raters observed and scored the same squats.

**Analysis** Percent agreement and Kappa statistics were used to measure the inter-rater and intra-rater reliability.

**Results:** The inter-rater Fleiss kappa coefficient value ranged from 0.35 to 0.66. The combined average for inter-rater percent agreement was 66.7%. The overall combined percent agreement for intra-rater reliability was 83.7%. The intra-rater Cohen's kappa value ranged from 0.47 to 0.88.

**Conclusion:** This study demonstrates that the BSA is a moderately reliable test for individuals in their early twenties without musculoskeletal pathologies. Physical therapists could integrate the BSA into their clinical exam in order to identify and quantify squat biomechanical faults.

**Implications:** Physical therapists could use the BSA as a way of quantifying squat mechanics and communicating results between professionals. Future studies could assess the correlation between BSA scores and injury rates.