

Accuracy of Two Common Clinical Assessments of Posterior Shoulder Tightness

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Objective: Posterior shoulder tightness is often assessed either side lying or supine, by measuring the amount of humeral horizontal adduction on a stabilized, retracted scapula. It is unknown as to which method can be more accurately administered clinically. The objective of this study was to determine which method can be administered with the most accuracy and reliability. Specifically, 1) clinician accuracy, 2) scapular stabilization, and 3) intrasession and intersession reliability and precision were calculated for both methods. **Design and Settings:** A descriptive comparison of the two methods was conducted. **Subjects:** Sixteen healthy males (age=25.3 ± 4.7yrs; height=1.66 ± .14m; mass=78.9 ± 10.4kg) participated. **Measurements:** The side lying method was performed by having the participant side lie while the tester resisted scapular protraction and passively lowered the humerus into horizontal adduction, maintaining neutral humeral rotation and scapular stabilization. The distance (centimeters) between the medial epicondyle and treatment table was measured with an anthropometer. The supine method was performed similarly except horizontal adduction (in degrees) was obtained with a standard goniometer in a supine position while scapular stabilization was maintained. Clinical accuracy and scapular stabilization of both methods were obtained using an electromagnetic tracking device to track humeral and scapular protraction/retraction while the tester performed 3 trials of each assessment. Intrasession and intersession reliability and precision were established with intraclass correlations (ICC) and standard error of measurement (SEM). **Results:** For the side lying method, the average difference between the clinical result and electromagnetic tracking obtained measurement was .89 ± .63 cm. For the supine assessment, the average difference was 3.5 ± 2.8°. No significant difference ($p=.36$) existed for average scapular protraction between the side lying (4.1 ± 2.4 °) and supine method (3.1 ± 3.5 °). The side lying intrasession ICC (SEM) and intersession ICC (SEM) were .87 (.37cm) and .23 (.74 cm) respectively. For the supine method, intrasession ICC (SEM) = .93 (1.1°) and intersession ICC (SEM) = .64 (2.2°). **Conclusions:** Both the side lying and supine methods resulted in low clinician error and good precision, suggesting that both can be performed with good clinical accuracy. Both resulted in minimal scapular protraction suggesting that scapular stabilization can be achieved, which is essential for accurate measurements. The supine method can be assessed more reliably than side lying. From these results clinicians may want to consider utilization of the supine method given the higher reliability and similar clinician accuracy and scapular stabilization.