

Posterior Shoulder Tightness Measurement among Novice Clinicians

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Background: Posterior shoulder tightness (PST) is commonly found in the dominant arm of overhead throwing athletes and individuals with various shoulder pathologies. It is therefore necessary that there is a reliable clinical measurement technique to identify PST. Both the supine and side-lying positions have been advocated for measuring PST with acceptable reliability and validity among experienced clinicians. The most reliable position for measuring PST among novice clinicians is unknown.

Purpose: To determine the reliability and precision of PST measurement in novice clinicians.

Design and Setting: This was a cross-sectional repeated measures study completed in an outpatient musculoskeletal clinic.

Patients or Other Participants: 25 healthy individuals aged 18 to 45 without a history of neck or shoulder surgery or current symptoms of shoulder or neck pain.

Methods: Measurements of PST were made using the goniometric supine technique and carpenters square side-lying technique at two time points at least 2 days apart. Reliability and precision were determined within (intrarater) and between raters (interrater) both within one session (intrasession) and between sessions (intersession) by intraclass correlation coefficient (ICC 3,1) and standard error of measurement (SEM). A unique comparison of precision measures between the two methods was determined by expressing the ratio of the SEM of each measure by the inter-quartile range as a percentage.

Results: The ICC, SEM, and precision comparison values in side-lying are as follows: intrarater, intrasession 0.94, 7.8cm, 19.0, intrarater intersession 0.75, 15.0cm, 41.6, interrater, intrasession 0.85, 13.3cm, 27.6 and interrater, intersession 0.67, 19.0cm, 39.5. The ICC, SEM, and precision comparison values in supine are as follows: intrarater intrasession 0.96, 1.5°, 14.6, intrarater, intersession 0.65, 4.2°, 46.5, interrater, intrasession 0.71, 3.4°, 51.5 and interrater, intersession 0.77, 3.0°, 41.1.

Conclusions: The supine and side-lying technique both demonstrated moderate to excellent reliability within raters and moderate to good reliability between raters both within and between sessions. The comparison precision measure was similar between the supine and side-lying technique.

Clinical Relevance: Novice clinicians PST measurement reliability and precision is similar between the supine and side-lying technique. Both experienced and novice clinicians should utilize the PST measurement with which they feel most confident.