

Reliability of Posterior Capsule Tightness Tests

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The relationship between posterior capsule tightness and shoulder dysfunction has long been recognized clinically but never been quantified. The posterior capsule plays a significant role in controlling normal shoulder joint arthrokinematics. Research has documented that a tight PC will affect normal shoulder range of motion. PC structure includes muscles, ligaments, nerves and soft tissue. Other structures like the posterior deltoid, infraspinatus, teres minor and teres major can also play a role tightness. It is important to note that oblique translation of the humeral head may not be caused by laxity, but may infact be caused by asymmetrical tightness of the capsule. PC tightness will cause anterior-superior translation of the humeral head on the glenoid fossa, which could be causing impingement like symptoms.

Loss of shoulder ROM in sports that require overhead throwing motions has been documented. The loss of internal rotation is usually accompanied by an increase of external rotation, particularly in the dominant arm. Non-dominant arms have been shown to have a more global loss of ROM which could be due to a number of factors such as less use in ADLs or more time is allowed to pass before presenting for treatment.

Measuring PC tightness: The subject is side lying, approximately half the distance of the length of the humerus away from the edge of the table. The non testing arm is placed under the head. The spine should be as close to neutral as possible. The medial epicondyle of the humerus is marked with a skin pencil. The tester stands facing the patient and grasps the limb just distal to the epicondyle. The humerus is brought to 90 degrees of abduction with no rotation of the humerus. The scapula is grasped and retracted at the lateral boarder. While the position of the scapula is maintained the humerus is slowly lowered into a horizontal adduction position. The humerus is lowered until motion has stopped or there is humeral rotation. When the motion is finished, a measurement is taken from the table to the mark on the elbow. This was shown to have excellent reproducibility because the scapular retraction allows for a reliable starting position every time. The researchers have found that for every 4 degrees f internal rotation lost, posterior capsule tightness will increase by 1cm using the method described.

Other tests:

Supine horizontal Adduction: This measurement does not take into account GH rotation or the fine scapular movement below the skin before the scapula comes off the table. Supine testing does not put the scapula in a retracted starting position which makes it difficult to obtain a reliable starting position.

Clinical Drawer test: This test was designed to assess clinical laxity not tightness.

Internal rotation test: Internal rotation on its own does not allow for an accurate measurement of PC tightness due to the circle effect. If there is tightness of the anterior capsule, it will wind in on itself and restrict internal rotation.

The method described above will put the PC in a direct line of pull making the PC the primary restraint to further adduction.