

## **RESEARCH UPDATE: TESTS FOR DETECTING BICEP AND LABRAL LESIONS**

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Kibler WB, Sciascia AD, Hester P, et al. Clinical utility of traditional and new tests in the diagnosis of bicep tendon injuries and superior labrum anterior and posterior lesions in the shoulder.

Clinically diagnosing bicep and labral complex lesions are a challenge to the clinician. A host of special tests have been proposed in the literature with varying degrees of sensitivity and specificity and considerable discrepancies among findings in these studies. Kibler et al recently proposed two new clinical tests to detect lesions in the shoulder and compared them to common tests that have been previously proposed in the literature.

A total of 325 patients who were seen for shoulder pain underwent a clinical examination by an orthopedic surgeon. Six clinical tests that have been previously reported in the literature were used – Yergason’s, Speed’s, bear hug, belly press, O’Brien’s, and the anterior slide. Additionally, two new tests were performed, the “upper cut” and the “dynamic labral shear.” Clinical findings were correlated in those that came to surgery (101 patients). Sensitivity, specificity, accuracy, positive/negative predictive value and likelihood ratios were computed.

The impetus for the “upper cut” test stems from the physicians experience in the history of patients complaining of pain in the region with the “upper cut” motion. To perform this maneuver, the involved shoulder was in neutral with 90 degrees of elbow flexion, forearm supinated, and the patient making a fist. The patient was asked to rapidly bring the hand up toward the chin, as in a boxing “upper cut.” The examiner placed his hand over the patient’s fist to resisted the motion. A positive test was pain or a painful pop over the anterior portion of the involved shoulder.

The modified dynamic labral shear was performed with the patient in standing. It was originally described by O’Driscoll. The involved arm was flexed 90 degrees at the elbow, abducted in the scapular plane to above 120 degrees, and maximally externally rotated to tightness. It was then guided into maximal horizontal abduction. The examiner than applied a shear load to the joint, maintaining external rotation and horizontal abduction while lowering the arm from 120 to 60 degrees. A positive test was indicated by reproduction of pain and/or a painful click or catch in the joint line. The idea behind this test is that it replicates the “peel back phenomenon” of the bicep and the shearing mechanism of the posterior cuff against the posterosuperior labrum. Researchers proposed that the O’Brien’s and anterior slide tests do not produce the position of the peel back because the arm is in internal rotation.

Findings of the study were as follows:

1. The bear hug and upper cut were most sensitive for detection of bicep injury (79% and 73% respectively).

2. The modified DLS resulted in the highest ratings in all categories. It had a 72% sensitivity, 98% specificity, and 84% accuracy. O'Brien's Test was the next highest at 61% sensitivity and 84% specificity.
3. Grouping of the upper cut and Speed's tests provided fairly high clinical prediction of arthroscopic findings for labral injury, whereas the modified DLS and O'Brien's tests provided best prediction of arthroscopic findings of labral disease.