

## **Reliability and Diagnostic Accuracy of 5 Physical Examination Tests and Combination of Tests for Subacromial Impingement**

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### **Introduction**

The prevalence of shoulder pain is 7% to 27% for Adults & is increasing for women & older people. Subacromial Impingement Syndrome (SAIS) is the most frequent cause of shoulder pain but there is no consensus as to which Physical examination tests are the best ones to use to diagnose it.

### **Aims & Objectives**

This study which was a prospective blinded cohort study aimed to determine  
(1) interrater reliability of SAIS physical examination tests,  
(2) diagnostic accuracy of the SAIS physical examination tests, and  
(3) a specific cluster of tests that are optimal to confirm or rule out SAIS.

### **Methods**

Sample N=55 (47 men, 8 women), average age 40.6, average symptom duration of shoulder pain 33.8 months. Patients attended an orthopaedic surgeon's office presenting with shoulder pain.

55 patients with shoulder pain were tested by 2 clinicians (Orthopedic surgeon & a Physical Therapist) using 5 tests:

- The Neer test
- The Hawkins-Kennedy test
- The Painful arc
- The empty can test
- The external rotation resistance test

A surgeon (blinded to the physical examination findings) then did a diagnostic arthroscopy within an average of 2.6 months after the clinical examination & found the prevalence of SAIS as a primary diagnosis was 29% (16 patients).

### **Results and Conclusion**

The Reliability of all tests is acceptable for clinical use.

(1) The strength of intertestor agreement for the tests was 69% (Hawkins Kennedy), 71% (Neer), 73%

(painful arc) 76% (empty can) and 87% (External rotation resistance).

The Intertestor Kappa Reliability Coefficient was least for Hawkins-Kennedy & Neer tests

(2) To confirm SAIS, the single tests of painful arc, empty can, external rotation resistance are helpful. Previous studies & a systemic review confirm the first 2 tests but found the painful arc only of limited usefulness.

Tests useful to rule out SAIS are the Neer, painful arc and external rotation resistance tests.

(3) If 3+/5 tests are positive, it is more useful in confirming SAIS whereas less than 3+/5 is helpful in decreasing the likelihood of SAIS.