

Hermans J, Luime JJ, et al . Does This Patient With Shoulder Pain Have Rotator Cuff Disease? The Rational Clinical Examination. Systematic Review. JAMA. 2013;310(8):837-847.

Design: systematic review of studies of diagnostic test accuracy

Study question: are there physical examination tests which enable the diagnosis of rotator cuff disease to be made in the examining room?

Reasons not to cite as evidence:

- The spectrum of patients enrolled in the included studies is not likely to be representative of the patients who will receive the test in practice
 - o The authors' criteria for answering "yes" in the supplementary online content asks whether this means consecutive patients with shoulder complaints, except for the invasive reference test
 - o However, the included studies were only of patients referred to specialists, making the spectrum of patients representative of only a partial spectrum of patients who would receive the test in practice
 - o The authors discuss this issue as if it were a matter of verification bias, since the reference test is applied to those with more severe rotator cuff disease
 - This by definition is a form of spectrum bias
 - The spectrum of patients does not include those most likely to present initially to a primary care physician
- Even though some of the tests receive endorsement, the likelihood ratios (LR+) for a positive test are fairly small
 - o For the painful arc test, the authors report a LR+ of 3.7
 - o This is less than the value of 5 which is in the Division list of considerations of studies of diagnostic test accuracy
- There are issues with variation in diagnostic test execution which require discussion, not all of which are sufficiently clear
 - o In Figure 2, part A, the painful arc test says that the examiner brings the patient's shoulder into full abduction, but the figure depicts the patient abducting the arm
 - o The reference article for the painful arc test (Kessel & Watson 1977) has a very sparse description of the test, but appears to refer to active abduction
 - It is not clear whether the abduction is expected to take place in the plane of the scapula, the coronal plane, or some other plane
 - o The Hawkins test (Hawkins & Kennedy 1980) involves forcible internal rotation of the forward flexed arm, but neither that article nor the authors' Table 2 indicate how much internal rotation to attempt to force

- Similarly, the authors cite both Hawkins 1980 and Salaffi et al 2010 in discussion of this test
 - The two tests are not depicted in the same manner in the two articles
 - In Hawkins 1980, Figure 2, the examiner appears to be stabilizing the scapula with one hand and internally rotating the arm with the other hand placed just distal to the elbow
 - In Salaffi 2010, Figure 1, the examiner is stabilizing the elbow with one hand while internally rotating the arm at the wrist with the other hand
 - There is no reason to expect the two testing techniques to produce the same results, since it often makes a difference which part of the examinee is to be stabilized during the examination
- As happens with many discussions of clinical tests, the individual components are described piecemeal, with calculation of sensitivities and specificities for each component; the question of most interest would be the accuracy of the examination by an experienced clinician who is putting it all together after the completion of all of the separate components
- Overall, therefore, the article does not provide sufficient information to allow for the endorsement of an evidence statement for the clinical examination

References

Hawkins RJ, Kennedy JC. Impingement syndrome in athletes. *Am J Sports Med* 1980;8(3):151-158.

Kessel L, Watson M. The Painful Arc Syndrome. *JBJS Br* 1977; 59-B 166-172.

Salaffi F, Ciapetti A, et al. Clinical Value of Single Versus Composite Provocative Clinical Tests in the Assessment of Painful Shoulder. *J Clin Rheumatol* 2010;16:105-108.