This review concluded that the thigh thrust test, compression test and three or more positive stressing tests had discriminative power for diagnosing sacroiliac joint pain. Due to the possibility of missed studies and uncertainties surrounding the analysis, the authors’ conclusions should be interpreted with caution.

Authors’ objectives
To determine whether criteria for sacroiliac joint pain as proposed by the International Association for the Study of Pain (IASP) are capable of discriminating individuals with and without sacroiliac joint pain.

Searching
PubMed, EMBASE and CINAHL were searched from inception to September 2007. Full details of the search strategies were reported and included a diagnostic filter. No language restrictions were applied. Reference lists of all included studies were screened to identify additional relevant studies.

Study selection
Studies of patients aged at least 18 years with non-specific, non pregnancy-related low back pain, with or without radiation to the lower extremities or groin were eligible for inclusion. Studies needed to compare a diagnostic infiltration of the sacroiliac joint with another diagnostic test or compare any diagnostic test with one of the diagnostic criteria for sacroiliac joint pain according to IASP.

Included studies evaluated the first IASP criterion (pain mapping, pain area or pain referrals from the sacroiliac joint), second IASP criterion (pain provocation or stressing tests), role of different contributors to low back pain, clinical history and mobilisation tests, mechanical examination of the lumbar spin, pain provocation arthrography and bone scintigraphy. All studies included patients with low back pain; in some studies this was required to be chronic. Some studies were restricted to patients with pain below the level of L5-S1 or with pain in the buttock; most studies included patients with pain radiating to the groin or lower extremity.

The reference standard was contrast-enhanced intra-articular injections with local anaesthetic in all studies. Exact details of methods used varied across studies. Most studies were carried out in university hospitals and/or spine centers. Recruitment period, where reported, ranged from seven months to seven years. Patient age ranged from 18 to 87 years. The proportion of women ranged from 38% to 78%.

Two reviewers independently selected studies for inclusion. Discrepancies were resolved through discussion or referral to a third reviewer where necessary.

Assessment of study quality
Two reviewers independently assessed study quality using QUADAS (Quality Assessment of Diagnostic Accuracy Studies) criteria. Full details on criteria used to grade studies were provided. Disagreements were resolved through consensus or referral to a third reviewer where necessary.

Data extraction
Two reviewers independently extracted data using a standardised questionnaire. Data were extracted on sensitivity and specificity and used to construct 2x2 contingency tables where possible. If insufficient data were available, authors were contacted for further details.

Methods of synthesis
Diagnostic odds ratios, sensitivity and specificity together with their 95% confidence intervals (CIs) were pooled for results of provocative tests. Methods used to pool data were not reported. Heterogeneity was assessed using the X² (p<0.05 was considered statistically significant) and I² statistics.
Results of the review
Eighteen publications were included (n=1,051) and these appeared to report results of 15 studies. All studies included an appropriate patient spectrum. Most studies scored positive on at least 8 of the 14 QUADAS items. There was a possibility of partial verification bias in six studies and a possibility of differential verification bias in 10 studies. Only two studies were considered to have been adequately blinded. Seven studies did not provide sufficient details to construct a 2x2 table as they did not include a control group.

The included studies assessed a wide variety of different tests. Pooled data were reported for three tests: compression test; thigh thrust test; and three or more positive provocation tests.

Compression test: Summary sensitivity was 63% (95% CI 47% to 77%). Summary specificity was 69% (95% CI 57% to 80%). It appeared that these results were based on pooling of two studies.

Thigh thrust test: Summary sensitivity was 91% (95% CI 78% to 97%). Summary specificity was 66% (95% CI 53% to 77%). It appeared that these results were based on pooling of two studies.

Three or more positive provocation tests: Summary sensitivity was 85% (95% CI: 75% to 92%). Summary specificity was 76% (95% CI 68% to 84%). It appeared that these results were based on pooling of four studies.

Authors' conclusions
The thigh thrust test, compression test and three or more positive stressing tests had discriminative power for diagnosing sacroiliac joint pain.

CRD commentary
The review addressed a focused question supported by clearly defined inclusion criteria. The literature search encompassed relevant databases, but the inclusion of a diagnostic filter means that relevant studies may have been missed. No specific attempts were made to locate unpublished studies and so there was a possibility of publication bias. Appropriate steps were taken to minimise reviewer bias and errors during all stages of the review process. A formal quality assessment was conducted using appropriate criteria. The results of quality assessment were clearly reported. However, study quality was not considered in the synthesis of results. Methods used to pool studies were not adequately reported and so it was not possible to determine whether appropriate methods were used. Summary estimates were reported for three of the tests investigated, but it was unclear how many studies contributed to these estimates and details regarding statistical heterogeneity were lacking. Due to the possibility of missing studies and uncertainties surrounding the analysis, the authors' conclusions should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors stated that patients with at least three sacroiliac joint-selective stressing tests that reproduced their pain could be regarded as having sacroiliac joint pain. Reproduction of the patient's pain with compression or thigh thrust test indicated the need for further diagnostics.

Research: The authors stated that further research was needed on the accuracy of IASP criteria as a whole and that sources of sacroiliac joint pain other than intra-articular should be considered for further evaluation.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.