How Reliable Are Provocative Sacroiliac Joint Tests?

By Ronald L. Rupert

The following are the most important steps in locating biomedical information. Each step has been customized to retrieve the maximum information with a search related to the validity of diagnostic testing of patients with low back pain of sacroiliac origin.

Databases: Looking in the right place for information sounds simple, but there are many databases with different strengths and weaknesses, depending on the subject matter we are searching for. Searching the right databases will minimize cost and maximize finding of desired information. Primary database selection(s) for this subject would be Chirolars and Medline; a secondary database would be Embase.

Search Terms: Remember that medical subject headings (MeSH) developed by the National Library of Medicine are the words used for searching most biomedical databases. Some databases do provide a supplemental list of terms in addition to MeSH to enhance the capacity to search for specific information. We reduce our ability to find information if we do not use the proper search terms. Optimizing word selection also reduces the retrieval of unwanted literature. The primary headings/subheadings or "check tags" to use in searching our subject are: sacroiliac joint; low back pain; diagnosis; and reproducibility of results. Notice that "reliability" is not a MeSH term: we must substitute reproducibility of results. We must also use low back pain and not backache, lumbalgia, etc. When searching the Chirolars database we can use two additional valuable words from their supplemental thesaurus: sacroiliac syndrome, and orthopedic examination.

Search Logic (Boolean arguments): When searching online we have a lot of flexibility in the way we pose the search question to the computer. This is done with arguments which most often use the words "and," "or" or "not". The Medline search for the validity of sacroiliac joint tests could be structured as follows: low back pain "and" diagnosis "and" sacroiliac joint "and" reproducibility of results. This argument demands that all the articles selected must have all four index terms in order to be selected. The same search argument could be used for Chirolars or because of the availability of additional terms, the following argument could be made: sacroiliac syndrome "and" diagnosis "and" reproducibility of results. Using these search terms and arguments a number of quality articles were located that relate specifically to the reliability of provocative tests for evaluating pain from the sacroiliac joint. I have three abstracts here, one for

Objective: To assess the inter-rater reliability of seven pain provocation tests for pain of sacroiliac origin in low back pain patients. Summary of background data: Previous studies on the reliability of such tests have produced inconclusive and conflicting results. Methods: Fifty-one patients with low back pain, with or without radiation into the lower limb, were assessed by one examiner and another drawn from a pool of five. Percent agreement and the Kappa statistic were used to evaluate the reliability of the seven tests. Results: Percent agreement and the Kappa statistic ranged in value from 78 percent and 0.52 (P<0.001) to 94 percent and 0.88 (P<0.001), respectively, when results for all examiner pairs were pooled. However, two tests demonstrated only marginal reliability when performed by one pair of assessors that examined 43 percent of the patients. Conclusions: Five of seven tests employed in this study were reliable, the other two were potentially reliable. These tests may be used to detect a sacroiliac source of low back pain, although sensitivity and specificity studies are needed to determine their diagnostic power.


The purpose of this study was to establish the intra and interexaminer reliability for assessing relative iliac crest height, palpatory tenderness over the posterior superior iliac spines, and the sitting flexion test using two examiners and 32 asymptomatic subjects. Tenderness to palpation over the posterior superior iliac spines was the only parameter giving significant agreement above chance (p < 0.05) for both the intra and interexaminer scenarios. The Kappa values for assessing relative iliac crest and posterior superior iliac spine heights, as well as for the sitting flexion test, ranged from -0.08 to 0.29, indicating only poor-to-fair intra and interexaminer concordance. This study supports the findings of similar reports, with palpatory tenderness being one of the most reliable findings.


The purpose of this study was to examine the intertester reliability of 13 tests for sacroiliac joint (SIJ) dysfunction. Eight therapists examined 17 patients in two clinical settings. In each case, two therapists
independently examined the patients and obtained results on all 13 of the SIJ tests. Patients with lumbosacral pain and unilateral lower extremity symptoms of a duration less than one year were examined. All the therapists specialized in orthopedic physical therapy and had been trained in SIJ examination. Reliability was poor; 11 of the 13 tests resulted in less than 70 percent agreement. The two tests that relied solely on subjective patient response and imparted no information on SIJ position or mobility were within a range of 70 percent to 90 percent agreement. Our findings suggest the necessity of reviewing examination methods for the SIJ and improving reliability of clinical testing of this joint.

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