



# Australian Association of Musculoskeletal Medicine

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## A Gold Standard Evaluation of the "Discogenic Pain" Diagnosis as Determined by Provocative Discography.

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### **Abstract:**

**Study Design.** This is a prospective study of the validity of a positive test result in provocative lumbar discography for the diagnosis of "discogenic pain."

**Objective.** To investigate the hypothesis that provocative discography by strict criteria accurately identifies a low back pain illness due to a primary disc lesion.

**Summary and Background Data.** According to the Sackett and Haynes criteria for establishing diagnostic test validity, no test without a gold standard external standard can be meaningfully applied. Provocative discography as a test for determining "discogenic pain" has, to date, not been compared against a gold standard. Absent a gold standard reference, there can be no validity assessment or systematic improvement of test accuracy. This is the first study to apply an external gold standard evaluation of the diagnostic validity of discography in any manner.

**Methods.** Over a 5-year period using a strict enrollment protocol, 32 patients with low back pain and a positive single-level low-pressure provocative discogram, underwent spinal fusion. Subjects with known patient selection comorbidities were excluded. Generic surgical limitations/morbidity were controlled by comparison to the clinical outcomes of a strictly-matched cohort of 34 patients having a well-accepted single-level lumbar pathology (unstable spondylolisthesis). Treatment success was compared between groups.

**Results.** In the control-spondylolisthesis group, 23 of 32 patients (72%) met the highly effective success criteria compared with 8 of 30 in the presumed discogenic pain cohort (27%). The proportion of patients who met the "minimal acceptable outcome" was 29 of 32 (91%) in the spondylolisthesis group and 13 of 30 (43%) in the presumed discogenic pain group. Adjusting for surgical morbidity and dropout failure, by either criteria of success, the best-case positive predictive value of discography was calculated to be 50% to 60%.

**Conclusions.** Positive discography was not highly predictive in identifying bona fide isolated intradiscal lesions primarily causing chronic serious LBP illness in this first study comparing discography results to a gold standard.