



# Australian Association of Musculoskeletal Medicine

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## Low-Pressure Positive Discography in Subjects Asymptomatic of Significant Low Back Pain Illness.

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### **Abstract:**

**Study Design.** Retrospective data review of positive disc injections at low pressures among subjects without chronic low back pain (LBP) illness compared to patients with chronic LBP undergoing Discography.

**Objective.** To test the hypothesis that false-positive injections during Discography can effectively be eliminated by defining the positive injection criteria to include only those discs in which pain is produced with low injection pressure injections.

**Summary of Background Data.** The use of lumbar Discography as a diagnostic tool remains controversial. Studies have shown that disc injections among subjects asymptomatic of clinical LBP will produce painful injections in a significant proportion of subjects, rendering the interpretation of positive diskograms in clinical practice problematic. It has been argued that lumbar disc injections at low pressure may be clinically different from those at higher pressure and that a guideline accepting only of low-pressure injections will effectively eliminate false positives.

**Methods.** A total of 69 volunteers with no clinically significant LBP undergoing experimental lumbar Discography were analyzed. There were 4 subgroups of this study cohort: no LBP, no chronic pain (n = 10); no LBP, chronic pain (n = 14); no LBP, previous lumbar discectomy (n = 20); and minor benign "backache" (n = 25). Pressure measurements during injection were made, and the pressure at which a significant pain response was elicited was recorded. This result was compared to the pain response and pressure profiles of 52 patients undergoing Discography for chronic LBP illness in consideration of treatment. Raters who were blinded to the subject's study group scored the studies. Diskogram morphology, pain response, and concordance, as well as magnetic resonance imaging, plain radiographs, psychometric testing (Distress and Risk Assessment Method), and compensation history were documented for each group. A low-pressure positive was defined as significant pain elicited less than 22 psi more than opening pressure.

**Results.** The number and percent of individuals with at least 1 low-pressure positive disc in the experimental group were 17 of 69 (25%) and in the clinical LBP group 14 of 52 (27%). The percentage of subjects with positive pain in the different experimental subgroups was: no LBP, no chronic pain 0/10 (0%); no LBP, chronic pain 5/14 (36%); no LBP, previous lumbar discectomy 5/20 (25%); and minor benign "backache" 7/25 (28%). Positive injections correlated with annular disruption, abnormal psychometric findings, and chronic pain states.

**Conclusions.** The analysis shows that the rate of low-pressure painful injections in subjects without chronic LBP illness is approximately 25%, and correlates with both anatomic and psychosocial factors. In certain subgroups, this may represent an unacceptable risk of false-positive results.