

Jarvik et al. Rapid Magnetic Resonance Imaging vs Radiographs for Patients with Low Back Pain. JAMA 2003;289:2810-2818.

Context: Faster MRI scanning has made MRI a potential cost-effective replacement for radiographs for patients with low back pain. However, whether rapid MRI scanning results in better patient outcomes than radiographic evaluation or a cost-effective alternative is unknown.

Objective: To determine the clinical and economic consequences of replacing spine radiographs with rapid MRI for primary care patients.

Design, Setting, and Patients: RCT of 380 patients aged 18 years or older. Primary physicians had ordered that their low back pain be evaluated by radiographs. The patients were recruited between November 1998 and June 2000 from 1 to 4 imaging centers in the Seattle, WA area, from a university-based teaching program, a nonuniversity-based teaching program, and 2 private clinics.

Intervention: Patients were randomly assigned to receive lumbar spine evaluation by rapid MRI and radiographs.

Main Outcome Measures: Back-related disability measured by the modified Roland questionnaire. Secondary outcomes included Medical Outcomes Study 36-Item Short Form Health Survey (SF-36), preference scores, satisfaction, and costs.

Results: At 12 months, primary outcomes of functional disability were obtained from 337 (89%) of 380 patients enrolled. The mean back-related disability modified Roland score for the 170 patients assigned to the radiograph evaluation group was 8.75 vs. 9.34 for the 167 patients assigned the MRI evaluation group (mean difference, -0.59; 95% CI, -1.69 to 0.87).

Conclusion: Rapid MRIs and radiographs resulted in nearly identical outcomes for primary care patients with low back pain. Although physicians and patients preferred the rapid MRI, substituting rapid MRI for radiographic evaluations in the primary care setting may offer little additional benefit to patients and may increase the costs of care because of the increased number of spine operations that patients are likely to undergo.