

## Is Spinal Manipulation an Effective Treatment for Low Back Pain?

### Yes: Evidence Shows Benefit in Most Patients

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Manual manipulation of the spine has been used by clinicians for thousands of years and continues to be a commonly used technique.<sup>1,2</sup> Andrew Taylor Still, the founder of osteopathy, and Daniel David Palmer, the founder of chiropractic therapy, introduced manual manipulation techniques to American medicine more than a century ago.<sup>3</sup> Currently in the United States, osteopathic physicians, chiropractors, and physical therapists practice manipulation techniques.<sup>1,2</sup> The goal of manipulation is to restore maximal, pain-free movement of the musculoskeletal system in postural balance.<sup>3</sup> In the past decade, there has been a significant growth in evidence supporting the benefits of manipulation. Most randomized controlled trials have looked at two broad categories: spinal manipulative techniques and mobilization techniques.<sup>1,2</sup>

Spinal manipulative techniques are high-velocity, low-amplitude maneuvers that force an individual vertebra against a restriction, just beyond its passive range of motion, and back into normal alignment. These techniques produce a palpable and sometimes auditory articulation.<sup>1,2</sup> Mobilization techniques are broadly defined as manual manipulation of a group of vertebrae or an individual vertebra through passive range of motion with no thrust.<sup>1,2</sup> Benefits of other common manual manipulation techniques, such as myofascial release, soft tissue techniques, or strain/counterstrain, are not as well studied.

The current evidence, which has been incorporated into clinical practice guidelines by allopathic and osteopathic organizations, shows that manual manipulation



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is an effective option for treatment of low back pain.<sup>1,2,4,5</sup> In two large systematic reviews, manipulation decreased pain and improved range of motion in patients with chronic neck pain and in patients with acute and chronic back pain.<sup>1,2</sup> Manipulation improved symptoms more effectively than placebo and was as effective as nonsteroidal anti-inflammatory drugs, home exercises, physical therapy, and back school.<sup>1,2</sup> Minimal adverse effects are a key benefit of manual manipulation, compared with the medications commonly used for back pain.<sup>2,6</sup> Furthermore, clinical studies have clearly demonstrated a significant decrease in medication use in patients who undergo manual manipulation treatments.<sup>2,6</sup>

Low back pain is a complex disease process with a wide array of available therapies. There is a large economic burden because back pain management is highly variable.<sup>4</sup> A cost-effective approach for back pain involves one physician providing both full-scope medical care and manual medicine.<sup>7,8</sup> One retrospective review of 1,556 patients demonstrated that those seen by a primary care physician who provided osteopathic manipulative therapy in addition to standard care had 38 percent more office visits than patients who received only standard care.<sup>8</sup> However, receiving osteopathic manipulative therapy by a primary care physician was associated with 18.5 percent fewer prescriptions, 74.2 percent fewer radiographs, ►

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76.9 percent fewer referrals, and 90 percent fewer magnetic resonance imaging scans, which led to reduced overall costs (an average of \$36.26 less per patient than in the standard care group).<sup>8</sup> In addition to manual manipulation, this difference may be related to higher continuity of care and consistency in the use of referrals, radiography, and medications.

Osteopathic physicians in primary care disciplines use their manual medicine skill set predominantly for musculoskeletal problems.<sup>9</sup> Manual manipulation is sometimes used to treat other conditions; however, evidence of effectiveness is limited and this is currently being explored for benefit and cost-effectiveness. To date, there are no head-to-head studies comparing osteopathic manipulative techniques, chiropractic therapy, and/or physical therapy.<sup>1,2</sup> Techniques used by osteopathic physicians, chiropractors, and physical therapists have many similarities and do not seem to vary in effectiveness.<sup>3</sup>

The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Air Force Medical Department or the U.S. Air Force at large.

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