

scale (SO group: -2.50 [-4.00 , -1.00]; CT group: -3.50 [-5.25 , -1.75]) and the Shoulder Pain and Disability Index (SO group: -38.85 [-61.32 , -16.37]; CT group: -36.00 [-52.01 , -19.99]). No adverse events occurred.

Of note, a true control, which would have provided a baseline to compare the effectiveness of each treatment plan, was not used in this study. Another limitation of this study was the low number of patients, which could be addressed by expanding inclusion criteria, as patients with contributing factors, such as cervical spine symptoms, were excluded. The types of injuries present in each experimental group can also confound the data; in this study, 50% of the SO group and 70% of the CT group had a chronic shoulder injury. The osteopathic manipulative treatment approach to shoulder pain is similar to the CT approach provided in the experimental group by treating the shoulder and adjacent regions. Similar research should be conducted to assess the effectiveness of the osteopathic approach vs shoulder mobilization only. (doi:10.7556/jaoa.2018.105)

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Manipulation Under Anesthesia Thaws Frozen Shoulder

Tsvieli O, Atoun E, Consigliere P, et al. Manipulation under anaesthetic for frozen shoulder using Codman's paradox: a safe and early return of function. *International Orthopaedics (SICOT)*. 2018;42:339-344.

Frozen shoulder, or *adhesive capsulitis*, is often self-limiting over the course of 2 to 3 years,

though it can last longer or recur. Osteopathic manipulative treatment has been shown to improve pain and function related to frozen shoulder.¹ Manipulation under anesthesia (MUA) has been used for refractory cases by osteopathic physicians.² However, MUA is not without risks, and potential complications include fractures, dislocations, and nerve injuries. Researchers and surgeons from the United Kingdom aimed to limit complications during MUA by using the Codman paradox, a series of mobilizations that prevent direct rotational torque at the shoulder joint.

The study assessed 212 consecutive patients (224 shoulders; 85 males [88 shoulders] and 127 females [136 shoulders]) with a mean age of 52.4 years. Of the 224 shoulders, 39 were diabetic frozen shoulders, 62 frozen shoulders resulted from minor trauma or strain, and 123 were idiopathic frozen shoulders. Patients were referred to the study after nonsurgical modalities, including analgesic medication, corticosteroid injections, or physiotherapy, were unsuccessful. All patients received the same MUA with the Codman paradox in the supine position under general anesthesia and interscalene nerve block.

Patients were evaluated clinically before and after MUA, 3 weeks after MUA, and 3 months after MUA using Constant-Murley functional shoulder score, pain score, range of motion, patient satisfaction, subjective shoulder value, and return to previous activities. After MUA, significant improvement was recorded in all parameters being measured ($P < .001$) at both 3 weeks and 3 months. In addition, 71% of patients returned to work and full activity at 3 weeks, and 79% returned at 3 months. No fractures, dislocations, nerve injuries, or other adverse effects were reported.

Although there was no control group and no other manipulation being compared with MUA with the Codman paradox, this study demonstrated significant improvements for all patients with frozen shoulder, regardless of cause.

Furthermore, the level of safety and reproducibility reported in this study surpasses previous reports on MUA. A prospective randomized clinical trial comparing other manual therapies, arthroscopic release, and MUA is underway.³ (doi:10.7556/jaoa.2018.106)

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Treating Patients With Low Back Pain: Evidence vs Practice

Foster NE, Anema JR, Cherkin D, et al; Lancet Low Back Pain Series Working Group. Prevention and treatment of low back pain: evidence, challenges, and promising directions [published online March 20, 2018]. *Lancet.* doi:10.1016/S0140-6736(18)30489-6

Low back pain (LBP) is the third-most common cause of visits to ambulatory clinics in the United States.¹ With a lifetime prevalence reaching 84% and numerous contributory factors adding to diagnostic and treatment complexity,² expert panels, medical specialty societies, professional associations, and government regulatory bodies around the world have established guidelines in attempts to optimize resources and treat-

ment outcomes. However, it is unclear whether these “best practices” guidelines are upheld or followed by practicing clinicians.

Because of this growing problem, researchers from the United Kingdom, the United States, and the Netherlands investigated global LBP management guidelines, including provider compliance and efforts to improve compliance. They used PubMed and Scopus to search for relevant research and directly contacted experts and researchers in countries where data were limited. A majority of the guidelines recommend improving function through exercise and nonpharmacologic therapies, including acupuncture, spinal manipulation, Tai Chi, and yoga. Strong focus was also placed on addressing patients’ biopsychosocial needs.

What was seen in clinical practice was far from current recommendations. In the United States, exercise was prescribed for about 50% of patients with chronic LBP, opioids were prescribed for 61%, and long-term opioid therapy was prescribed for 18%. Spinal fusion, facet injections, and neurectomies were used frequently even though evidence supporting these modalities is limited. Also in the United States, only 12% of patients with LBP and comorbid depression had seen a mental health professional within the past year. These current practices drain health care resources and can adversely affect patients, including exposure to unnecessary radiation and interventions.

Some cited factors contributing to physician noncompliance include poor guideline education, short consultation times, fear of litigation, and the desire to maintain strong relationships with patients. Efforts to increase physician compliance have had varying degrees of success, with the strongest evidence supporting programs with continuous reminders of guidelines.

This study was limited by the amount of data from low- and middle-income countries, an unclear article selection process, and vague research methods without additional data