

Ann Intern Med. 2002 May 21;136(10):713-22.

**Manual therapy, physical therapy, or continued care by a general practitioner for patients with neck pain. A randomized, controlled trial.**

Hoving JL, Koes BW, de Vet HC, van der Windt DA, Assendelft WJ, van Mameren H, Devillé WL, Pool JJ, Scholten RJ, Bouter LM.

This study compared the effectiveness of manual therapy, physical therapy, and continued care by a general practitioner for neck pain. Researchers found that manual therapy was more effective than continued care, and results consistently favored manual therapy on almost all outcome measures.

Spine. 2001 Apr 1;26(7):788-97

**A randomized clinical trial of exercise and spinal manipulation for patients with chronic neck pain.**

Bronfort G, Evans R, Nelson B, Aker PD, Goldsmith CH, Vernon H.

This study demonstrates the effectiveness of a multidisciplinary approach to neck pain treatment. Patients who received both spinal manipulation and exercise treatment improved significantly over the course of the study. The study was replicated in 2002 and again showed that a combination of exercise and spinal manipulation effectively reduced patients' neck pain. The researchers recommended this multidisciplinary treatment for neck pain sufferers, especially if future cost-effectiveness studies prove positive.

British Medical Journal. 2003 Apr 26;326(7395):911.

**Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain: economic evaluation alongside a randomised controlled trial.**

Korthals-de Bos IB, Hoving JL, van Tulder MW, Rutten-van Mölken MP, Adèr HJ, de Vet HC, Koes BW, Vondeling H, Bouter LM.

This research evaluated the effectiveness of manual therapy, physiotherapy, and general practitioner care for neck pain – as well as to compare costs for the three treatment types. Manual therapy proved most effective of the three treatments, with manual therapy patients experiencing a 68% recovery rate and the lowest drug use. Most impressive, however, was that not only was manual most effective in treating neck pain, but the total costs for this treatment were about one-third of those for the other treatments.

Australasian Journal of Chiropractic and Osteopathy. 1999 Jul;8(2):61-5.

**A twelve month clinical trial of chiropractic spinal manipulative therapy for migraine.**

Tuchin PJ.

The author assessed the efficacy of spinal manipulation for migraine headache. All 32 patients in the study showed statistically significant improvements in

migraine frequency, visual pain scales, disability, and reduction of medication use. These improvements continued at the six-month follow-up.

JAMA. 2000 Nov 22-29;284(20):2640-1.

**Toward evidence-based management of migraine.**

Matchar DB, McCrory DC, Gray RN.

This influential study conducted at Duke University assessed evidence from a large number of randomized controlled trials for the effectiveness of spinal manipulation and other treatments for tension-type and cervicogenic headaches. Spinal manipulation reduced headache frequency by 69% and severity by 36%. Spinal manipulation also showed better results than did the commonly prescribed amitriptyline. The study showed that 82% of amitriptyline patients reported adverse effects from the drug, while only 4% of spinal manipulation patients reported adverse effects.

### **Chiropractic Manipulation for Chronic Spinal Pain**

The immense public health impact of chronic spinal pain syndromes, and their significant associated costs for health care budgets worldwide, underscore the need for effective long-term interventions.

In a study designed to compare the relative effectiveness of different protocols for managing chronic spinal pain, 77 patients were randomly assigned to receive one of three interventions: needle acupuncture, nonsteroidal anti-inflammatory medication (NSAIDs) or chiropractic spinal manipulation. Subjects were treated for 30 days, and symptom changes were assessed by way of the Oswestry Back Pain Disability Index, the Neck Disability Index, and three visual analog scales of local pain intensity.

After 30 days, spinal manipulation was the only intervention to achieve statistically significant improvement. Patients receiving chiropractic care demonstrated a 30.7% reduction in Oswestry scores and a 25% reduction in neck disability index scores. Visual analog measurements showed a 50% reduction for low back pain, 46% reduction for upper back pain, and 33% reduction for neck pain. Intervention by way of acupuncture or NSAIDs did not result in significant improvements in any of the outcome measures.

The authors point out several potential limitations to these results, including the short-term nature of the study and problems with managing the study due to funding difficulties. Nonetheless, they suggest that their findings demonstrate the added benefit of chiropractic manipulation over acupuncture and NSAIDs for patients with chronic pain syndromes.

Giles LG, Muller R. Chronic spinal pain syndromes: a clinical pilot trial comparing acupuncture, a nonsteroidal anti-inflammatory drug, and spinal manipulation. *Journal of Manipulative and Physiological Therapeutics*, July/August 1999;22(6), pp376-81.

### **Neck Pain: Manipulation Plus Exercise Better Than Either Alone**

Neck pain afflicts roughly 70% of adults at some point in their lives; for nearly 14%, the pain is chronic. This randomized clinical trial studied the effectiveness of spinal manipulation alone compared to the combination of spinal manipulation plus rehabilitative exercises and to a high-tech rehabilitative exercise program for treating neck pain.

The study involved 20- to 65-year-old subjects with mechanical neck pain of at least 12 weeks duration. All patients completed 20 one-hour appointments over an 11-week period. The 191 patients were randomized into three groups, as follows:

- \* **Spinal Manipulation Therapy (SMT) Alone:** Spinal manipulation and light soft-tissue massage from experienced chiropractic clinicians.
- \* **Manipulation Plus Rehabilitative Exercise:** Spinal manipulation as described above, plus rehabilitative exercise from trained exercise therapists. Sessions included warm-up, stretching and dynamic neck exercises consisting of extension, flexion and rotation movements while wearing headgear with 1.25- to 10-pound weight attachments.
- \* **Rehabilitative Exercise:** Warm-up stretching exercise and neck exercises using a variable resistance, cervical extension and rotation machine.

Subjects were evaluated by self-report questionnaires, neck range of motion, neck strength and neck muscle endurance at baseline and five and 11 weeks after beginning treatment. At three, six, 12 and 24 months following treatment, subjects completed self-report questionnaires, such as the Neck Disability Index and the SF-36 D form, on pain, satisfaction with care and disability. Satisfaction was determined on a seven-point scale, ranging from "completely satisfied" to "completely dissatisfied."

Patient-rated pain differed between groups, in favor of the two exercise groups. SMT plus exercise provided greater satisfaction than SMT alone or exercises, however. The advantage of both SMT/exercise and exercise over manipulation alone continued over the two-year follow-up period. Overall, the exercise groups benefited more regarding pain, disability, improvement and health status.

The researchers admit that the pain results fall slightly short of clinical

significance, yet note that clinically significant differences favoring SMT plus exercise over both other treatments were seen for patient satisfaction.

Evans R, Bronfort G, et al. Two-year follow-up of a randomized clinical trial of spinal manipulation and two types of exercise for patients with chronic neck pain. *Spine* 2002;27(21), pp. 2383-2389. [www.spinejournal.com](http://www.spinejournal.com)

## **Manual Therapy More Effective Than Physiotherapy, Drugs for Neck Pain**

Neck problems account for considerable pain and stiffness that can lead to work absenteeism, disability and use of health care resources. Various conservative interventions have been proposed for treating neck pain, but few scientific evaluations have included any analysis of their cost-effectiveness.

This randomized, controlled trial compared the efficacy of manual therapy, physiotherapy and general practitioner care in reducing neck pain. One hundred eighty-three patients with neck pain of at least two weeks' duration were randomly assigned to one of three groups: manual therapy (spinal mobilization); physiotherapy (mainly exercise); or general practitioner care (counseling, education and analgesics). Manual therapy consisted of a range of interventions: muscular mobilization, specific articular mobilization, coordination or stabilization. Spinal mobilization was defined as low-velocity, passive movements within or at the limit of joint range of motion.

Outcome measures included perceived recovery, intensity of pain, functional disability and quality of life; direct and indirect costs were measured to determine mean costs between groups, overall cost-effectiveness, and cost-utility ratios. Patients completed cost diaries for one year, providing data on direct health care costs of practitioner care; additional visits to other health care providers; drugs; professional home care; and hospitalization. Direct non-health care costs included out-of-pocket expenses; paid and unpaid help; and travel expenses. Indirect costs (lost of production attributable to work absenteeism or days of inactivity for those with or without a job) also were evaluated.

**Results:** Manual therapy was the most effective of the three treatments, with 68% of patients demonstrating recovery after seven weeks, compared to 51% in the physiotherapy group and 36% in the general practitioner group. These differences were significant at six-month follow-up. Manual therapy also proved significantly more cost-effective than the other two interventions at one year, with total costs approximately one-third the costs of either physiotherapy or general practitioner care.

Korthals-de Bos IB, Hoving JL, van Tulder MW, et al. Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain:

economic evaluation alongside a randomised controlled trial. *British Medical Journal*, April 26, 2003:326. [www.bmj.com](http://www.bmj.com)