

INTERVENTION

Typical care episode

1-2 visits weekly for 1-3 weeks (total of 4-6 sessions)
 Chronic problems: 2-3 visits weekly for 3-4 weeks (8-12 visits)

Content

1. Evidence-based examination of cervical spine and upper quarter.¹²⁻¹³
2. Tailored, combined treatment approach of the cervico-thoracic spine consisting of manual therapy, exercise (flexibility, strength and endurance), and neuromuscular re-education:

A. Manual Therapy



B. Endurance Exercise



C. Strengthening & Stretching Exercises



D. Neuromuscular Re-education



3. Education and advice emphasizing a stay-active and self-responsibility philosophy.
4. Home exercise and aerobic conditioning program.

REFERENCES

1. Linton SJ, Hellsing AL, Hallden K. A population-based study of spinal pain among 35-45-year-old individuals. Prevalence, sick leave, and health care use. *Spine* 1998;23(13):1457-63.
2. Wright A, Mayer TG, Gatchel RJ. Outcomes of disabling cervical spine disorders in compensation injuries. A prospective comparison to tertiary rehabilitation response for chronic lumbar spinal disorders. *Spine* 1999;24(2):178-83.
3. Hoving JL, Koes BW, de Vet HC, et al. Manual therapy, physical therapy or continued care by a general practitioner for patients with neck pain. A randomized, controlled trial. *Ann Intern Med* 2002;136(10):713-22.
4. Gross AR, Hoving JL, Haines TA, et al. A Cochrane review of manipulation and mobilization for mechanical neck disorders. *Spine* 2004;29(14):1541-8.
5. Koes BW, Bouter LM, van Mameren H, et al. The effectiveness of manual therapy, physiotherapy, and treatment by the general practitioner for nonspecific back and neck complaints. A randomized clinical trial. *Spine* 1992;17(1):28-35.
6. Jull G, Trott P, Potter H, et al. A randomized controlled trial of exercise and manipulative therapy for cervicogenic headache. *Spine* 2002;27(17):1835-43; discussion 43.
7. Bronfort G, Evans R, Nelson B, Aker PD, Goldsmith CH, Vernon H. A randomized clinical trial of exercise and spinal manipulation for patients with chronic neck pain. *Spine* 2001;26(7):788-97; discussion 98-9.
8. Evans R, Bronfort G, Nelson B, Goldsmith CH. 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):2383-9.
9. Korhals-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. *BMJ* 2003;326(7395):911-6.
10. Birch S, Jamison RN. Controlled trial of Japanese acupuncture for chronic myofascial neck pain: assessment of specific and nonspecific effects of treatment. *Clin J Pain* 1998;14(3):248-55.
11. Borenstein DG, Korn S. Efficacy of a low-dose regimen of cyclobenzaprine hydrochloride in acute skeletal muscle spasm: results of two placebo-controlled trials. *Clin Ther* 2003;25(4):1056-73.
12. Flynn TW, Whitman J, Magel J. *Orthopaedic Manual Physical Therapy Management of the Cervical-Thoracic Spine & Ribcage*. San Antonio, TX: Manipulations, Inc.; 2000.
13. Wainner RS, Fritz JM, Irrgang JJ, Boninger ML, Delitto A, Allison S. Reliability and diagnostic accuracy of the clinical examination and patient self-report measures for cervical radiculopathy. *Spine* 2003;28(1):52-62.

PH 812.476.0409 • TOLL FREE 866.885.9691 • WWW.PROREHAB-PC.COM

NEWEST RESEARCH • FEWER VISITS • BEST RESULTS™

Integrating Research into Practice: ProRehab's Approach to Evidence-Based Practice

PROBLEM: Neck Pain & Cervicogenic Headache

66%: Proportion of individuals who experience at least 1 bout of neck pain in their lifetime and women are affected more frequently by neck pain than men¹

Economic Burden: Second only to low back pain in annual worker's compensation costs in the United States²



ProRehab PIER

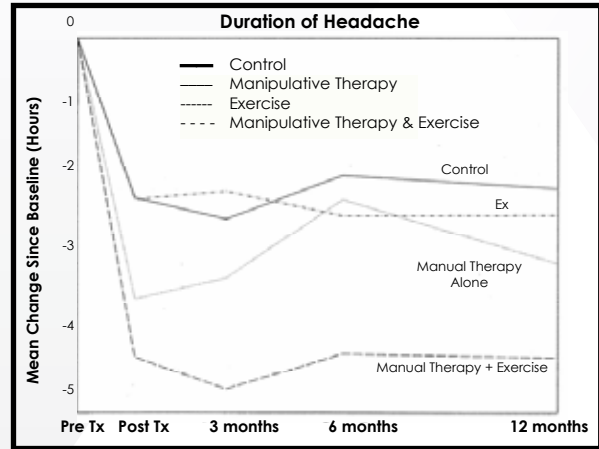
INTERVENTION:

- Manual Physical Therapy & Exercise
- Deep Neck Flexor Endurance Exercise
- Manual Traction

EVIDENCE:

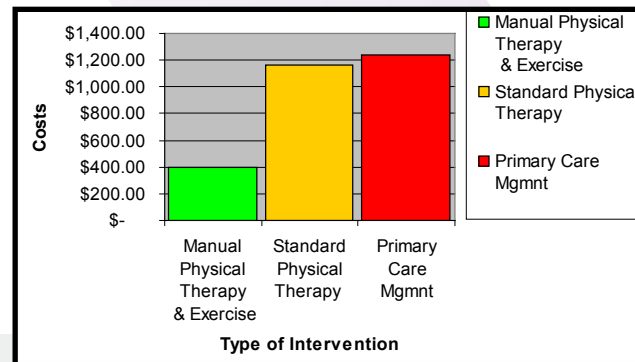
Oxford Evidence Grade= A (level 1a studies)

Evidence (CONT)



Reduction in Cervicogenic Headache Duration

Jull G, Trott P, Potter H, et al. A randomized controlled trial of exercise and manipulative therapy for cervicogenic headache. *Spine*. 2002;27:1835-1843.



Cost of Care Over a 1 Year Period

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. *BMJ*. 2003;326:911-916

Among patients with neck pain, with or without headache, **a combination of manual physical therapy and exercise is more beneficial** than primary care management (PCM), medication, manual therapy alone, a variety of exercise approaches performed alone, and "low tech" or "high tech" exercise alone, and modalities.³⁻⁵

30% of patients treated with manual therapy and exercise experience a **clinically important reduction in pain** than would have occurred otherwise if patients were receiving an alternative treatment approach.^{3,4}

10% of patients treated with manual physical therapy and exercise experience a **complete reduction in headache frequency** than would have occurred if patients were receiving an alternative treatment approach.⁶

The beneficial effects of manual therapy and exercise continue to be observed **one year later**,^{4,6,7} and **two years later** more patients remain satisfied with their care compared to alternative treatment approaches.⁸

Not only does manual therapy and exercise result in better clinical outcomes than other commonly used treatments,⁴ but evidence also demonstrates that this approach is **more cost-effective**. Over a 1 year period, patients with neck pain treated with 6 visits of manual therapy and exercise incurred an average cost of \$402.00, compared to receiving exercise alone (cost=\$1,167.00) or PCM care (cost=\$1,241.00).⁹

NUMBER NEEDED TO TREAT (NNT)

2: the NNT with manual physical therapy and exercise to achieve one additional successful outcome (a clinically important pain reduction) than would have occurred if patients were receiving an alternative treatment approach (in this case PCM, exercise alone, manual therapy alone, or modalities).⁴ This means that only 2 patients with neck pain need to be treated with manual physical therapy and exercise before realizing benefits above and beyond that compared to the alternative interventions. Would further clarification be helpful? Let's consider 2 hypothetical patients with neck pain: If both patients receive exercise without manual physical therapy and exercise, one of them would not achieve a successful outcome. However, treating both of them with manual physical therapy and exercise would result in both patients achieving a successful outcome. Low numbers needed to treat imply that the benefits of manual therapy and exercise intervention can be virtually realized almost every time you see a patient with neck pain.

3: the NNT with manual physical therapy and exercise to achieve one additional successful outcome (a clinically important reduction in the duration of headache symptoms) than would have occurred if patients were receiving an alternative treatment approach (in this case exercise alone, manual therapy alone, or no treatment).⁶

4-10: the NNT with manual physical therapy and exercise to achieve one additional successful outcome (a substantive reduction in pain) in patients with chronic neck pain than would have occurred if patients were receiving an alternative treatment approach (in this high-tech exercise alone or manual therapy alone).^{4,7} This NNT tells us that more patients with chronic neck pain will need to be treated before one additional patient realizes the added benefit of manual therapy and exercise.

Refer

Patients with neck pain of gradual or sudden onset (ie. trauma) that is provoked by movement, with or without associated headaches. There is ongoing research that will help identify the subgroup of patients with neck pain likely to benefit the most from this approach.

Based on evidence from high quality clinical trials, our manual physical therapy and exercise approach will benefit many of your patients with neck pain. However, if you are unsure, please give us the privilege of your referral or feel free to give us a call. We look forward to the opportunity to partner with you in an effort to improve the health of your patients and enable their return to optimal function during work and leisure activities.

The best way is to send a consult with the "Evaluate and Treat" option checked. You will receive a copy of your patient's initial note as well as a copy of the discharge note summarizing their outcome.

CONTRAINDICATIONS

Patients with rapidly progressing neurologic findings, suspected cerebrovascular events or complications, spinal infection, cancer, and fracture are obvious contraindications. Patients who have had moderate to major trauma may need x-rays before referral. Patients who have a previous history of cancer, significant night pain, and unexplained weight-loss should be assessed carefully, and if referred we will monitor their status closely.

MINIMALLY EFFECTIVE OR UNSUPPORTED INTERVENTIONS

Traditional passive interventions and modalities have shown only minimal to no benefit for significantly reducing neck symptoms and disability. Limited evidence suggests that neither NSAIDs¹⁰ or muscle relaxants (cyclobenzaprine)¹¹ are more effective than placebo for pain reduction.