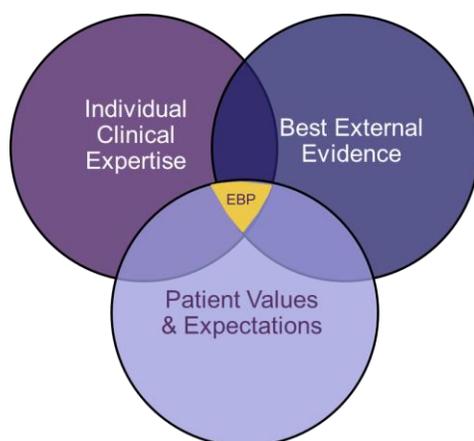


EVIDENCE-BASED CLINICAL PRACTICE

Evidence-based clinical practice is defined as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”¹ Increasingly, high-quality research evidence is the cornerstone to evidence-based healthcare decisions and is critically important to physicians, patients, policymakers and payers. This data-driven evolution will impact the chiropractic profession in important ways. It has the potential to serve as the play-field leveler that the chiropractic profession has long demanded. However, it also forces us to collect and interpret data correctly. This paper provides a very brief summary of the state of the evidence in chiropractic related to clinical outcomes, safety, cost and patient satisfaction.



Evidence-based Triad

The evidence-based triad illustrates an approach to decision making that integrates the chiropractic physician’s individual clinical expertise with the best external evidence while taking into account a patient’s values and expectations of care.

EXECUTIVE SUMMARY: WHAT CAN WE SAY BASED ON EXISTING RESEARCH?

- Chiropractic management for low back pain (LBP), neck pain, and headache is as good as or better than other forms of conservative treatment.
- There is a low risk of serious adverse events following chiropractic care.
- Patient satisfaction with chiropractic care is high.
- Chiropractic care costs no more than other conservative treatments for back and neck pain.

Clinical Outcomes

LOW BACK PAIN

- The Agency for Healthcare Research and Quality reviewed the current evidence on nonpharmacological LBP treatments and found that spinal manipulative therapy (SMT) is an effective intervention for chronic LBP.²
- A systematic review published in the Journal of the American Medical Association studying the effectiveness of SMT for the treatment of acute LBP found that “SMT was associated with modest improvements in pain and function at up to 6 weeks, with transient minor musculoskeletal harms.”³
- Research suggests that SMT plus home exercise with advice is more effective than receiving only home exercise with advice for patients with subacute and chronic back-related leg pain.⁴
- Results of a 2013 randomized controlled trial suggests that 12 sessions of SMT for chronic LBP offer the best “dose.”⁵

NECK PAIN

- In 2016, the Bone and Joint Decade Task Force on Neck Pain and Its Associated Disorders found that mobilization, manipulation, and clinical massage are all effective interventions to manage whiplash-associated disorders or neck pain and associated disorders. Electroacupuncture, strain-counterstrain, relaxation massage, and some passive physical modalities were not found to be effective.⁶

HEADACHE

- Manual therapy consisting of SMT, mobilization, soft-tissue therapy, or exercise is more effective than medication in the short term and as effective as medication long-term for muscle tension-type headaches.⁷
- Cervicogenic headaches, which may include muscle tension type headaches, can be effectively treated with SMT, mobilization, and exercise by reducing headache intensity and frequency.^{8,9}
- SMT may be as effective for Migraine headache treatment as prophylactic medication use.¹⁰

GUIDELINES

- A guideline from the American College of Physicians recommends nondrug treatment including SMT for acute or subacute LBP. For chronic LBP, nondrug treatment should also initially be selected including interventions such as exercise, acupuncture, mindfulness-based stress reduction, yoga, low-level laser therapy, cognitive behavioral therapy, and SMT.¹¹
- A guideline for chiropractic care for LBP recommends a treatment schedule of 2-3x/week for 2-4 weeks for acute or subacute pain. For recurrent or flare-up episodes, 1-3x/week for 1-2 weeks. For chronic pain, 1-3x/week for 2-4 weeks. Reevaluations should occur between 1-4 weeks, depending on the stage of pain.¹²
- In a guideline for chiropractic care for neck pain, SMT is recommended in combination with conservative treatments such as mobilization and exercise in both the short and long-term for the acute stage. For chronic, SMT is recommended as a sole treatment option as well as in combination with other conservative treatments in the short and long-term.¹³
- SMT is recommended for treating patients with cervicogenic and migraine headaches, according to a guideline for chiropractic care for headache.¹⁴

Risks

- Most of the adverse events reported in studies of SMT include mild and transient symptoms such as aggravation of complaints, radiating pain, stiffness, muscle spasm, and fatigue.^{3,15,16}
- A 2016 systematic review of the literature on cervical artery dissection following SMT found no causal link.¹⁷ These findings are consistent with previous studies which have concluded that increased risks of VBA stroke associated with both chiropractic and primary care are likely due to patients seeking care because they are experiencing symptoms of headache and neck pain due to ongoing VBA dissection.^{18,19}
- A review studying serious adverse events related to SMT in the low back concluded that any recorded events are anecdotal in nature and causality has not been established.²⁰

Costs

The most definitive article to date investigating costs associated with chiropractic care found that chiropractic users with neck and back problems have the same or slightly lower levels of overall healthcare spending when compared to medical users in a nationally representative sample.²¹

Patient Satisfaction

A Palmer study found that chiropractic patients are more satisfied than medical patients with their back care providers after 4 weeks of treatment.²² This is consistent with previous findings that back pain patients are generally more satisfied with chiropractic care than with medical care.²³⁻²⁶

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REFERENCES

1. Sackett DL. Evidence-based medicine. *Spine (Phila Pa 1976)*. 1998;23:1085-1086.
2. Chou R, Deyo R, Friedly J, Skelly A, Hashimoto R, Weimer M, et al. Nonpharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline. *Ann Intern Med*. 2017;166:493-505.
3. Paige NM, Miake-Lye IM, Booth MS, Beroes JM, Mardian AS, Dougherty P, et al. Association of Spinal Manipulative Therapy With Clinical Benefit and Harm for Acute Low Back Pain: Systematic Review and Meta-analysis. *JAMA*. 2017;317:1451-1460.
4. Bronfort G, Hondras MA, Schulz CA, Evans RL, Long CR, Grimm R. Spinal manipulation and home exercise with advice for subacute and chronic back-related leg pain: a trial with adaptive allocation. *Ann Intern Med*. 2014;161:381-391.
5. Haas M, Vavrek D, Peterson D, Polissar N, Neradilek MB. Dose-response and efficacy of spinal manipulation for care of chronic low back pain: a randomized controlled trial. *Spine J*. 2013.
6. Wong JJ, Shearer HM, Mior S, Jacobs C, Cote P, Randhawa K, et al. Are manual therapies, passive physical modalities, or acupuncture effective for the management of patients with whiplash-associated disorders or neck pain and associated disorders? An update of the Bone and Joint Decade Task Force on Neck Pain and Its Associated Disorders by the OPTIMA collaboration. *Spine J*. 2016;16:1598-1630.
7. Mesa-Jimenez JA, Lozano-Lopez C, Angulo-Diaz-Parreno S, Rodriguez-Fernandez AL, De-la-Hoz-Aizpurua JL, Fernandez-de-Las-Penas C. Multimodal manual therapy vs. pharmacological care for management of tension type headache: A meta-analysis of randomized trials. *Cephalalgia*. 2015;35:1323-1332.
8. Chaibi A, Russell MB. Manual therapies for cervicogenic headache: a systematic review. *J Headache Pain*. 2012;13:351-359.
9. Racicki S, Gerwin S, Diclaudio S, Reinmann S, Donaldson M. Conservative physical therapy management for the treatment of cervicogenic headache: a systematic review. *J Man Manip Ther*. 2013;21:113-124.
10. Chaibi A, Tuchin PJ, Russell MB. Manual therapies for migraine: a systematic review. *J Headache Pain*. 2011;12:127-133.

11. Qaseem A, Wilt TJ, McLean RM, Forcica MA. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med.* 2017;166:514-530.
12. Globe G, Farabaugh RJ, Hawk C, Morris CE, Baker G, Whalen WM, et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. *J Manipulative Physiol Ther.* 2016;39:1-22.
13. Bryans R, Decina P, Descarreaux M, Duranleau M, Marcoux H, Potter B. Evidence-based guidelines for the chiropractic treatment of adults with neck pain. *J Manipulative Physiol Ther.* 2014;37.
14. Bryans R, Descarreaux M, Duranleau M, Marcoux H, Potter B, Ruegg R, et al. Evidence-based guidelines for the chiropractic treatment of adults with headache. *J Manipulative Physiol Ther.* 2011;34:274-289.
15. Rubinstein SM. Adverse events following chiropractic care for subjects with neck or low-back pain: do the benefits outweigh the risks? *J Manipulative Physiol Ther.* 2008;31:461-464.
16. Walker BF, Hebert JJ, Stomski NJ, Clarke BR, Bowden RS, Losco B. Outcomes of usual chiropractic. The OUCH randomized controlled trial of adverse events. *Spine (Phila Pa 1976).* 2013;38.
17. Church EW, Sieg EP, Zalatimo O, Hussain NS, Glantz M, Harbaugh RE. Systematic Review and Meta-analysis of Chiropractic Care and Cervical Artery Dissection: No Evidence for Causation. *Cureus.* 2016;8:e498.
18. Kosloff TM, Elton D, Tao J, Bannister WM. Chiropractic care and the risk of vertebrobasilar stroke: results of a case-control study in U.S. commercial and Medicare Advantage populations. *Chiropr Man Therap.* 2015;23:19.
19. Cassidy JD, Boyle E, Cote P, He Y, Hogg-Johnson S, Silver FL, et al. Risk of vertebrobasilar stroke and chiropractic care: results of a population-based case-control and case-crossover study. *Spine.* 2008;33:S176-S183.
20. Hebert JJ, Stomski NJ, French SD, Rubinstein SM. Serious Adverse Events and Spinal Manipulative Therapy of the Low Back Region: A Systematic Review of Cases. *J Manipulative Physiol Ther.* 2015;38:677-691.
21. Dagenais S, Brady O, Haldeman S, Manga P. A systematic review comparing the costs of chiropractic care to other interventions for spine pain in the United States. *BMC Health Serv Res.* 2015;15:474.
22. Goertz CM, Long CR, Hondras MA, Petri R, Delgado R, Lawrence DJ, et al. Adding chiropractic manipulative therapy to standard medical care for patients with acute low back pain: results of a pragmatic randomized comparative effectiveness study. *Spine (Phila Pa 1976).* 2013;38:627-634.
23. Hertzman-Miller RP, Morgenstern H, Hurwitz EL, Yu F, Adams AH, Harber P, et al. Comparing the satisfaction of low back pain patients randomized to receive medical or chiropractic care: results from the UCLA low-back pain study. *Am J Public Health.* 2002;92:1628-1633.
24. Carey TS, Garrett J, Jackman A, McLaughlin C, Fryer J, Smucker DR. The outcomes and costs of care for acute low back pain among patients seen by primary care practitioners, chiropractors, and orthopedic surgeons. The North Carolina Back Pain Project. *N Engl J Med.* 1995;333:913-917.
25. Kane RL, Olsen D, Leymaster C, Woolley FR, Fisher FD. Manipulating the patient. A comparison of the effectiveness of physician and chiropractor care. *Lancet.* 1974;1:1333-1336.
26. Hurwitz EL. The relative impact of chiropractic vs. medical management of low back pain on health status in a multispecialty group practice. *J Manipulative Physiol Ther.* 1994;17:74-82.