Clinical Practice Guideline for the Chiropractic Treatment of Adults with Neck Pain

March 2014 Available Online: www.chiropracticcanada.ca

This material was developed by the Guidelines Development Committee (GDC) under the auspices of the Canadian Chiropractic Association and the Canadian Federation of Chiropractic Regulatory and Education Accrediting Boards, Clinical Practice Guidelines Project (The CCA·CFCREAB-CPG)

Clinical Practice Guideline for the Chiropractic Treatment of Adults with Neck Pain

Roland Bryans[1] BA, DC; Philip Decina[2] DC, FCCS (C), Martin Descarreaux[3] DC, PhD; Mireille Duranleau[4] DC; Henri Marcoux[5] DC, DABCO, FCCO(C); Brock Potter[6] BSc, DC; Rick Ruegg[7] BSc, PhD, DC; Lynn Shaw[8] BSc, MSc, PhD; Robert Watkin[9] BA, LLB; Eleanor White[10] MSc, DC on behalf of The Canadian Chiropractic Association (CCA) and the Canadian Federation of Chiropractic Regulatory and Education Accrediting Boards, Clinical Practice Guidelines Project.

[1]Guidelines Development Committee (GDC) Chairman; Chiropractor, Clarenville NL

[2]Assistant Professor and Director, Clinical Education & Patient Care, Canadian Memorial Chiropractic College Toronto, ON

[3]Professor, Département des Sciences de l'activité physique, Université du Québec à Trois Rivières, Trois Rivières QC

[4]Chiropractor, Montréal QC

[5]Chiropractor, Winnipeg MB

[6]Chiropractor, North Vancouver BC

[7]Editor, Clinical Practice Guidelines Initiative, Toronto ON

[8]Associate Professor, Faculty of Health Sciences, School of Occupational Therapy, Western University, London ON

[9]Public Member, Toronto ON

[10]Chiropractor, Markham ON

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Introduction

The annual prevalence of non–specific neck pain (also referred to as mechanical neck pain) is estimated to range between 30% and 50%.[1] Persistent or recurrent neck pain is estimated to be reported by 50% to 85% of patients 1 to 5 years after initial onset.[2] Its course is usually episodic and complete recovery is uncommon for most patients.[3] Twenty-seven percent of patients seeking chiropractic treatment report neck or cervical problems.[4] Thus treatment of neck pain is an integral part of chiropractic practice.

The aim of this clinical practice guideline is to improve the effectiveness of chiropractic care of patients with non-specific neck pain. The guideline attests to the commitment of the profession to advance evidence-based practice.

This evidence-based Clinical Practice Guideline (CPG) is a supportive tool for chiropractors and their patients. The treatment recommendations provided here are based on a systematic review and evaluation of the most recent literature. A journal version is available that describes the Guideline Development Committee (GDC)'s research and methods in detail[5]. Elements on diagnosis and patient safety are based on clinical experience and consensus of the GDC. This CPG supersedes the original Neck Pain Guideline[6] published in 2005.

The aim of this guideline is to improve the effectiveness of care for patients with non-specific neck pain. Evidence-based practice has at its core the evaluation of evidence from clinical research and the application of this knowledge to clinical settings. This guideline is not intended to include all possible methods of care for patients with neck pain presenting to a chiropractor or all clinically relevant criteria for choosing to use a specific treatment. Limitations exist in the published evidence. If a treatment modality is not mentioned in this guideline, it is because there is no clinically significant or high quality research evidence available upon which to comment. This clinical practice guideline is not intended to be used as a standard of care.

The GDC encourages practitioners to use their clinical judgment in making an accurate diagnosis in light of a patient's specific clinical situation and to decide on the use of specific treatments. Practitioners know from clinical experience that not all patients benefit from the same physical or manual therapies in exactly the same manner.

Key Points for the Clinician

- This guideline is a resource for the delivery of chiropractic care for patients with non-specific neck pain. It is a "living document" and subject to revision with the emergence of new evidence. It is not a substitute for a practitioner's clinical experience and expertise.
- The treatment recommendations in this guideline are limited to those for non-specific neck pain.
- Neck pain conditions resulting from serious local pathologies, systemic diseases, whiplash-associated disorders or a radicular source are not included.
- A thorough history and physical examination is necessary for diagnosis and the identification of possible risk factors.
- A multi-modal approach to treatment including the modalities of spinal manipulative therapy, mobilization, exercise and massage can be recommended for both acute, and chronic neck pain.
- Spinal manipulative therapy, defined as high velocity low amplitude (HVLA) thrusts, delivered to the spine or exercise can be recommended for the management of chronic neck pain.

Diagnosis

See Figure 1.

Diagnosis is supported by a thorough history and examination.

- Conduct a thorough patient history and physical examination to establish the nature of the condition and to identify any red flags including, but not limited to, any dissection related or stroke risk factors or symptoms.
- Ask probing questions to understand the key features of the patient's history and symptoms.
- Physical examination includes range of motion, orthopedic testing, palpatory examination, and a full neurological examination.

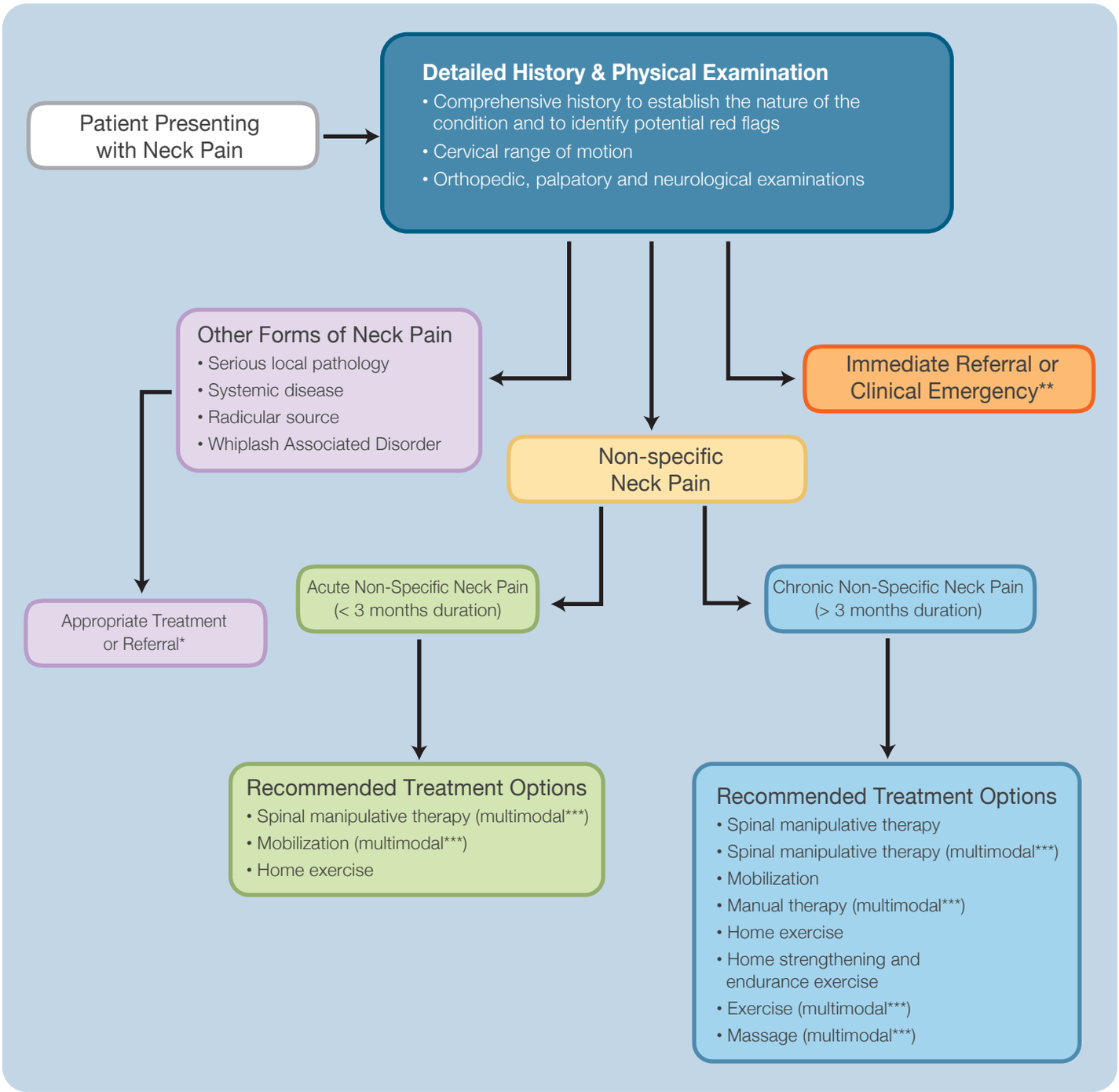
Should a patient show signs or symptoms of neurovascular impairment e.g. unilateral facial paraesthesia, objective cerebellar signs (ataxia, dysdiadokokinesia), lateral medullary signs (dysphagia, dysarthria) and/or visual defects (diplopia) they should be referred for immediate emergency care.

Vertebral artery dissection is known to sometimes present as neck pain. In situations where neck pain is severe or presents with a headache, the practitioner should consider all serious pathologies that may be at cause.

Signs of neurovascular impairment

Signs of neurovascular impairment may include the 5D's And 3N's: dysarthria, dysphagia, dizziness, drop attacks, diplopia, ataxia, nystagmus, numbness, nausea.[7]

Figure 1: Neck Pain Algorithm



*Treatment recommendations for patients with whiplash associated disorder (WAD) can be found in a guide developed specifically for this condition.[28]

**Should a patient show signs or symptoms of neurovascular impairment e.g. unilateral facial paraesthesia, objective cerebellar signs (ataxia, dysdiadokokinesia), lateral medullary signs (dysphagia, dysarthria) and/or visual defects (diplopia) they should be referred for immediate emergency care.

***Multimodal: a combination of two or more treatment modalities.

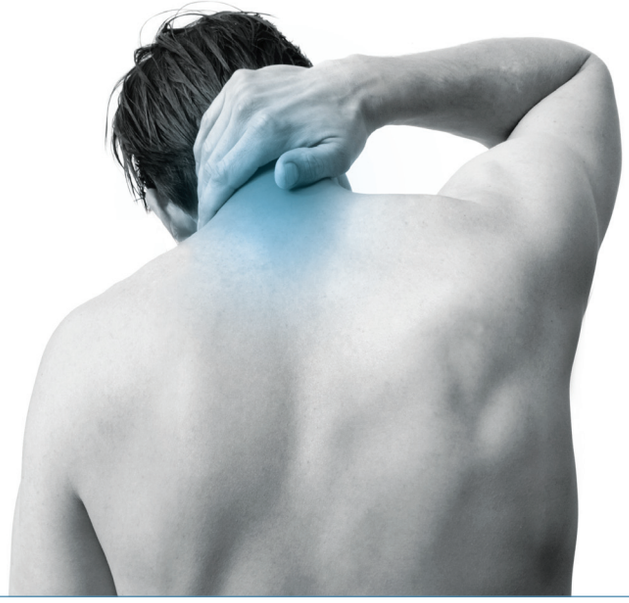
Treatment Recommendations for Acute Non-Specific Neck Pain

A journal version of this CPG describes in detail the Guideline Development Committee (GDC)'s methods for assessing the literature establishing the level of evidence and generating treatment recommendations for practice.[5]

The development of neck pain treatment recommendations is based upon studies that evaluated treatment modalities for patients in either the acute (less than 3 months) or chronic (more than 3 months) state. No recommendations have been developed for patients in the sub-acute state although some studies may have included some subjects that were identified as "sub-acute".

Acute Non-Specific Neck Pain

- Spinal manipulative therapy is recommended for the treatment of acute neck pain for both short- and long-term benefit (days to recovery, pain) when used in combination with other treatment modalities (advice, exercise, and mobilization). Three studies used several treatment sessions (4 and 5, or an average of 15) for 2 or 12 weeks, respectively.[8,9,10]
- Mobilization is recommended for the treatment of acute neck pain for short-term (up to 12 weeks) and long-term benefit (days to recovery, pain) in combination with advice and exercise.[8,9] One study used 4 treatment sessions over a 2-week period.[9]
- Home exercise with advice or training is recommended in the treatment of acute neck pain for both short and long-term benefits (neck pain). This study used a regime of daily home exercise (6-8 repetitions per day) for 12 weeks with two 1-hour advice/training sessions 1 to 2 weeks apart.[8]



The treatment recommendations support outcomes such as cervical range of motion (cROM), pain, disability, mobility, days to recovery, muscle strength, quality of life (QoL), intensity of symptoms and medication use.

Treatment Recommendations for Chronic Non-Specific Neck Pain

Chronic Non-Specific Neck Pain

- Spinal manipulative therapy is recommended in the treatment of chronic neck pain for short- and long-term benefit (pain, disability). This study used 2 treatments per week for 9 weeks.[11]

- Spinal manipulative therapy is recommended in the treatment of chronic neck pain as part of a multimodal approach (including advice, upper thoracic spinal manipulative therapy, low-level laser therapy, soft tissue therapy, mobilizations, pulsed short wave diathermy, exercise, massage, and stretching) for both short- and long-term benefit (pain, disability, cROM).[12,13] Investigators used a number of treatments over several weeks, in addition to assessing the impact of a single treatment over the short term.

- Mobilization is recommended for the treatment of chronic neck pain for short-term (immediate) benefit (pain, cROM).[14-16]

- Manual therapy is recommended in the treatment of chronic neck pain for the short- and long-term benefit (pain, disability, cROM, strength) in combination with advice, stretching, and exercise.[17,18]

- Home stretching (3-5 times per week) with advice/training is recommended in the treatment of chronic neck pain for short and long-term benefits in reducing pain and analgesic intake.[17-19]

- Home strengthening and endurance exercises with advice/training/supervision are recommended for both short- and long-term benefits (neck pain, cROM) in the treatment of chronic neck pain.[13,17,20,21] In all studies, home exercises were performed daily to 3 times per week.

- Exercise (including stretching, isometric, stabilization, and strengthening) is recommended for short- and long-term benefits (pain, disability, muscle strength, QoL, cROM) as part of a multimodal approach to the treatment of chronic neck pain when combined with infrared radiation, massage, or other physical therapies.[22-25] In these studies, exercises were typically performed 2 to 5 times per week for several weeks.

- Massage is recommended for the treatment of chronic neck pain for short-term (up to 1 month) benefit (pain, disability, and cROM) when provided in combination with self-care, stretching, and/or exercise.[26,27] In both studies, 5 to 10 upper body/neck massage sessions lasting 60 - 75 minutes were provided.

Questions and Answers with the Guidelines Development Committee (GDC)

1. How did the GDC define the scope of chiropractic care for this guideline?

Chiropractic care was defined as including the most common therapies employed by practitioners and was not restricted to treatment modalities delivered only by chiropractors. A wide net was cast to include treatments that may be administered in chiropractic care as well as those which could also be delivered in the context of care by other healthcare professionals. Only those treatment modalities that could be demonstrated as providing significant benefit are recommended here.

2. What conditions would be labelled “Immediate Referral” or “Clinical Emergency”?

During the patient’s assessment for neck pain it is imperative that any red flags are identified. Neck pain caused by serious pathology (e.g. cervical fracture) would require immediate referral whereas signs of stroke or cervical dissection should be sent for emergency services.

3. If a treatment is not present in the guideline does that mean I should not use it?

If a treatment modality is not found in the guideline it is because the GDC could not find any clinically significant research upon which to comment. You should use your clinical judgement and the patient’s best interests to decide whether and how to use a treatment.

4. Does this guideline create a Standard of Care?

This guideline is not a standard set by others or a standard that is set by your regulatory board. This guideline describes treatment recommendations directly supported by the current evidence. Not all practice elements are covered in this guideline and, thus, the GDC considers that this guideline cannot be used to limit practice.

5. Do I have to follow the guideline “to the letter”?

Although practice guidelines can link the best available evidence to good clinical practice, they are only one component of an evidence-based approach to providing good care. Each guideline that the CCA•CFCREAB-CPG Project has published reflects a literature synthesis based on currently available evidence.

6. Does this guideline’s limitation to those over the age of 18 years of age mean that the chiropractic management of neck pain in patients under the age of 18 is inappropriate?

No. This guideline does not intend to restrict chiropractic care of neck pain to those over 18. Our recommendations are based on an analysis of studies that included subjects predominantly over the age of 18.

References

1. Hogg-Johnson S, van der Velde G, Carroll LJ, et al. The burden and determinants of neck pain in the general population: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Spine (Phila Pa 1976) 2008;33:S39-51.

2. Carroll LJ, Hogg-Johnson S, van der Velde G, et al. Course and prognostic factors for neck pain in the general population: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Spine (Phila Pa 1976) 2008;33:S75-82.

3. Guzman J, Hurwitz EL, Carroll LJ, et al. A new conceptual model of neck pain: linking onset, course, and care: the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Spine (Phila Pa 1976) 2008;33:S14-23.

4. Coulter ID, Shekelle PG. Chiropractic in North America: a descriptive analysis. J Manipulative Physiol Ther 2005;28:83-9.

5. Bryans R, Decina P, Descarreaux M, Duranleau M, Marcoux H et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults with Neck Pain. J Manipulative Physiol Ther 2014;37(1):42-63.

6. Anderson-Peacock E, Blouin JS, Bryans R, et al. Chiropractic clinical practice guideline: evidence-based treatment of adult neck pain not due to whiplash. J Can Chiropr Assoc 2005;49:158-209.

7. Terrett AGJ. Current concepts in vertebrobasilar complications following spinal manipulation. 2nd ed. NCMIC Group Inc. West Des Moines, Iowa 2001.

8. Bronfort G, Evans R, Anderson AV, Svendsen KH, Bracha Y, Grimm RH. Spinal manipulation, medication, or home exercise with advice for acute and subacute neck pain: a randomized trial. Annals of internal medicine. 2012;156:1-10.

9. Leaver AM, Maher CG, Herbert RD, Latimer J, McAuley JH, Jull G, et al. A randomized controlled trial comparing manipulation with mobilization for recent onset neck pain. Archives of physical medicine and rehabilitation. 2010;91:1313-1318.

10. Puentedura EJ, Landers MR, Cleland JA, Mintken PE, Huijbregts P, Fernandez-de-Las-Penas C. Thoracic spine thrust manipulation versus cervical spine thrust manipulation in patients with acute neck pain: a randomized clinical trial. The Journal of orthopaedic and sports physical therapy. 2011;41:208-220.

11. Muller R, Giles LG. Long-term follow-up of a randomized clinical trial assessing the efficacy of medication, acupuncture, and spinal manipulation for chronic mechanical spinal pain syndromes. Journal of manipulative and physiological therapeutics. 2005;28:3-11.

12. Dunning JR, Cleland JA, Waldrop MA, Arnot CF, Young IA, Turner M, et al. Upper cervical and upper thoracic thrust manipulation versus nonthrust mobilization in patients with mechanical neck pain: a multicenter randomized clinical trial. The Journal of orthopaedic and sports physical therapy. 2012;42:5-18.

13. Walker MJ, Boyles RE, Young BA, Strunce JB, Garber MB, Whitman JM, et al. The effectiveness of manual physical therapy and exercise for mechanical neck pain: a randomized clinical trial. Spine. 2008;33:2371-2378.

14. Aquino RL, Caires PM, Furtado FC, Loureiro AV, Ferreira PH, Ferreira ML. Applying Joint Mobilization at Different Cervical Vertebral Levels does not Influence Immediate Pain Reduction in Patients with Chronic Neck Pain: A Randomized Clinical Trial. The Journal of manual & manipulative therapy. 2009;17:95-100.

15. Kanlayanaphotporn R, Chiradejnant A, Vachalathiti R. Immediate effects of the central posteroanterior mobilization technique on pain and range of motion in patients with mechanical neck pain. Disability and rehabilitation. 2010;32:622-628.

16. Schomacher J. The effect of an analgesic mobilization technique when applied at symptomatic or asymptomatic levels of the cervical spine in subjects with neck pain: a randomized controlled trial. The Journal of manual & manipulative therapy. 2009;17:101-108.

17. Hakkinen A, Kautiainen H, Hannonen P, Ylinen J. Strength training and stretching versus stretching only in the treatment of patients with chronic neck pain: a randomized one-year follow-up study. Clinical rehabilitation. 2008;22:592-600.

18. Ylinen J, Kautiainen H, Wiren K, Hakkinen A. Stretching exercises vs manual therapy in treatment of chronic neck pain: a randomized, controlled cross-over trial. Journal of rehabilitation medicine : official journal of the UEMS European Board of Physical and Rehabilitation Medicine. 2007;39:126-132.

19. Hakkinen A, Kautiainen H, Hannonen P, Ylinen J. Strength training and stretching versus stretching only in the treatment of patients with chronic neck pain: a randomized one-year follow-up study. Clinical rehabilitation. 2008;22:592-600.

20. Lansinger B, Larsson E, Persson LC, Carlsson JY. Qigong and exercise therapy in patients with long-term neck pain: a prospective randomized trial. Spine. 2007;32:2415-2422.

21. Ylinen J, Nikander R, Nykanen M, Kautiainen H, Hakkinen A. Effect of neck exercises on cervicogenic headache: a randomized controlled trial. Journal of rehabilitation medicine : official journal of the UEMS European Board of Physical and Rehabilitation Medicine. 2010;42:344-349.

22. Chiu TT, Lam TH, Hedley AJ. A randomized controlled trial on the efficacy of exercise for patients with chronic neck pain. Spine. 2005;30:E1-7.

23. Chiu TT, Hui-Chan CW, Chein G. A randomized clinical trial of TENS and exercise for patients with chronic neck pain. Clinical rehabilitation. 2005;19:850-860.

24. Dusunceli Y, Ozturk C, Atamaz F, Hepguler S, Durmaz B. Efficacy of neck stabilization exercises for neck pain: a randomized controlled study. Journal of rehabilitation medicine : official journal of the UEMS European Board of Physical and Rehabilitation Medicine. 2009;41:626-631.

25. Ylinen JJ, Hakkinen AH, Takala EP, Nykanen MJ, Kautiainen HJ, Malkia EA, et al. Effects of neck muscle training in women with chronic neck pain: one-year follow-up study. Journal of strength and conditioning research / National Strength & Conditioning Association. 2006;20:6-13.

26. Zaproudina N, Hanninen OO, Airaksinen O. Effectiveness of traditional bone setting in chronic neck pain: randomized clinical trial. Journal of manipulative and physiological therapeutics. 2007;30:432-437.

27. Sherman KJ, Cherkin DC, Hawkes RJ, Miglioretti DL, Deyo RA. Randomized trial of therapeutic massage for chronic neck pain. The Clinical journal of pain. 2009;25:233-238.

28. Shaw L, Descarreaux M, Bryans R, Duranleau M, Marcoux H, Potter B, et al. A systematic review of chiropractic management of adults with Whiplash-Associated Disorders: recommendations for advancing evidence-based practice and research. Work. 2010;35:369-394.