

## Neck Pain – Cervical Osteoarthritis – Myofascial Pain

[Spine](#). 2008 Feb 15;33(4 Suppl):S123-52.

### ***Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders.***

[Hurwitz EL](#), [Carragee EJ](#), [van der Velde G](#), [Carroll LJ](#), [Nordin M](#), [Guzman J](#), [Peloso PM](#), [Holm LW](#), [Côté P](#), [Hogg-Johnson S](#), [Cassidy JD](#), [Haldeman S](#); [Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders](#).

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**STUDY DESIGN:** Best evidence synthesis. **OBJECTIVE:** To identify, critically appraise, and synthesize literature from 1980 through 2006 on noninvasive interventions for neck pain and its associated disorders. **SUMMARY OF BACKGROUND DATA:** No comprehensive systematic literature reviews have been published on interventions for neck pain and its associated disorders in the past decade. **METHODS:** We systematically searched Medline and screened for relevance literature published from 1980 through 2006 on the use, effectiveness, and safety of noninvasive interventions for neck pain and associated disorders. Consensus decisions were made about the scientific merit of each article; those judged to have adequate internal validity were included in our best evidence synthesis. **RESULTS:** Of the 359 invasive and noninvasive intervention articles deemed relevant, 170 (47%) were accepted as scientifically admissible, and 139 of these related to noninvasive interventions (including health care utilization, costs, and safety). For whiplash-associated disorders, there is evidence that educational videos, mobilization, and exercises appear more beneficial than usual care or physical modalities. For other neck pain, the evidence suggests that manual and supervised exercise interventions, low-level laser therapy, and perhaps acupuncture are more effective than no treatment, sham, or alternative interventions; however, none of the active treatments was clearly superior to any other in either the short- or long-term. For both whiplash-associated disorders and other neck pain without radicular symptoms, interventions that focused on regaining function as soon as possible are relatively more effective than interventions that do not have such a focus. **CONCLUSION:** Our best evidence synthesis suggests that therapies involving manual therapy and exercise are more effective than alternative strategies for patients with neck pain; this was also true of therapies which include educational interventions addressing self-efficacy. Future efforts should focus on the study of noninvasive interventions for patients with radicular symptoms and on the design and evaluation of neck pain prevention strategies.

[Spine](#). 2008 Feb 15;33(4 Suppl):S199-213.

***Clinical practice implications of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders: from concepts and findings to recommendations.***

[Guzman J](#), [Haldeman S](#), [Carroll LJ](#), [Carragee EJ](#), [Hurwitz EL](#), [Peloso P](#), [Nordin M](#), [Cassidy JD](#), [Holm LW](#), [Côté P](#), [van der Velde G](#), [Hogg-Johnson S](#); [Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders](#).

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**STUDY DESIGN:** Best evidence synthesis. **OBJECTIVE:** To provide evidence-based guidance to primary care clinicians about how to best assess and treat patients with neck pain. **SUMMARY OF BACKGROUND DATA:** There is a need to translate the results of clinical and epidemiologic studies into meaningful and practical information for clinicians. **METHODS:** Based on best evidence syntheses of published studies on the risk, prognosis, assessment, and management of people with neck pain and its associated disorders, plus additional research projects and focused literature reviews reported in this supplement, the 12-member multidisciplinary Scientific Secretariat of the Neck Pain Task Force followed a 4-step approach to develop practical guidance for clinicians. **RESULTS:** The Neck Pain Task Force recommends that people seeking care for neck pain should be triaged into 4 groups: Grade I neck pain with no signs of major pathology and no or little interference with daily activities; Grade II neck pain with no signs of major pathology, but interference with daily activities; Grade III neck pain with neurologic signs of nerve compression; Grade IV neck pain with signs of major pathology. In the emergency room after blunt trauma to the neck, triage should be based on the NEXUS criteria or the Canadian C-spine rule. Those with a high risk of fracture should be further investigated with plain radiographs and/or CT-scan. In ambulatory primary care, triage should be based on history and physical examination alone, including screening for red flags and neurologic examination for signs of radiculopathy. Exercises and mobilization have been shown to provide some degree of short-term relief of Grade I or Grade II neck pain after a motor vehicle collision. Exercises, mobilization, manipulation, analgesics, acupuncture, and low-level laser have been shown to provide some degree of short-term relief of Grade I or Grade II neck pain without trauma. Those with confirmed Grade III and severe persistent radicular symptoms might benefit from corticosteroid injections or surgery. Those with confirmed Grade IV neck pain require management specific to the diagnosed pathology. **CONCLUSION:** The best available evidence suggests initial assessment for neck pain should focus on triage into 4 grades, and those with common neck pain (Grade I and Grade II) might be offered the listed noninvasive treatments if short-term relief is desired.

[Best Pract Res Clin Rheumatol](#). 2007 Feb;21(1):93-108.

***Strategies for prevention and management of musculoskeletal conditions. Neck pain.***

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The aim of this article was to summarise the existing evidence concerning interventions for non-specific neck pain. Neck-and-shoulder pain is commonly experienced by both adolescents and adults. Although the prevalence appears to vary among different nations, the situation is essentially the same, at least in the industrialised nations. Explanations for the wide variation in incidence and prevalence include various methodological issues. Back and neck disorders represent one of the most common causes for both short- and long-term sick leave and disability pension. Evidenced risk factors for the onset and maintenance of non-specific neck and back pain include both individual and work-related psychosocial factors. Based on the existing evidence different forms of exercise can be strongly recommended for at-risk populations, as well as for the acute and chronic non-specific neck pain patient. Furthermore, for symptom relief this condition can be treated with transcutaneous electric nerve stimulation, low level laser therapy, pulse electromagnetic treatment or radiofrequency denervation.

[Pain](#). 2006 Jun 23; [Epub ahead of print]

**The effect of 300mW, 830nm laser on chronic neck pain: A double-blind, randomized, placebo-controlled study.**

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A randomized, double-blind, placebo-controlled study of low-level laser therapy (LLLT) in 90 subjects with chronic neck pain was conducted with the aim of determining the efficacy of 300mW, 830nm laser in the management of chronic neck pain. Subjects were randomized to receive a course of 14 treatments over 7 weeks with either active or sham laser to tender areas in the neck. The primary outcome measure was change in a 10cm Visual Analogue Scale (VAS) for pain. Secondary outcome measures included Short-Form 36 Quality-of-Life questionnaire (SF-36), Northwick Park Neck Pain Questionnaire (NPNQ), Neck Pain and Disability Scale (NPAD), the McGill Pain Questionnaire (MPQ) and Self-Assessed Improvement (SAI) in pain measured by VAS. Measurements were taken at baseline, at the end of 7 weeks' treatment and 12 weeks from baseline. The mean

VAS pain scores improved by 2.7 in the treated group and worsened by 0.3 in the control group (difference 3.0, 95% CI 3.8-2.1). Significant improvements were seen in the active group compared to placebo for SF-36-Physical Score (SF36 PCS), NPNQ, NPAD, MPQVAS and SAI. The results of the SF-36 - Mental Score (SF36 MCS) and other MPQ component scores (afferent and sensory) did not differ significantly between the two groups. Low-level laser therapy (LLLT), at the parameters used in this study, was efficacious in providing pain relief for patients with chronic neck pain over a period of 3 months.

[J Rheumatol](#). 2007 Jan 15; [Epub ahead of print]

## ***Conservative Management of Mechanical Neck Disorders: A Systematic Review.***

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**OBJECTIVE:** To determine if conservative treatments (manual therapies, physical medicine methods, medication, and patient education) relieved pain or improved function/disability, patient satisfaction, and global perceived effect in adults with acute, subacute, and chronic mechanical neck disorders (MND) by updating 11 systematic reviews of randomized controlled trials (RCT). **METHODS:** Two independent authors selected studies, abstracted data, and assessed methodological quality from computerized databases. We calculated relative risks and standardized mean differences (SMD) when possible. In the absence of heterogeneity, we calculated pooled effect sizes. **RESULTS:** We studied 88 unique RCT. The mean methodological quality scores were acceptable in 59% of the trials. We noted strong evidence of benefit for maintained pain reduction [pooled SMD -0.85 (95% CI -1.20, -0.50)], improvement in function, and positive global perceived effect favoring exercise plus mobilization/manipulation versus control for subacute/chronic MND. We found moderate evidence of longterm benefit for improved function favoring direct neck strengthening and stretching for chronic MND, and for high global perceived effect favoring vertigo exercises. We noted moderate evidence of no benefit for botulinium-A injection [pooled SMD -0.39 (95% CI -0.125, 0.47)]. We found many treatments demonstrating short-term effects. **CONCLUSION:** Exercise combined with mobilization/manipulation, exercise alone, and intramuscular lidocaine for chronic MND; intravenous glucocorticoid for acute whiplash associated disorders; and low-level laser therapy demonstrated either intermediate or longterm benefits. Optimal dosage of effective techniques and prognostic indicators for responders to care should be explored in future research.

## **The clinical efficacy of low-power laser therapy on pain and function in cervical osteoarthritis.**

**Clinical Rheumatology. 2001; 20(3): 181-184.**

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Pain is a major symptom in cervical osteoarthritis (COA). Low-power laser (LPL) therapy has been claimed to reduce pain in musculoskeletal pathologies, but there have been concerns about this point. The aim of this study was to evaluate the analgesic efficacy of LPL therapy and related functional changes in COA. Sixty patients between 20 and 65 years of age with clinically and radiologically diagnosed COA were included in the study. They were randomised into two equal groups according to the therapies applied, either with LPL or placebo laser. Patients in each group were investigated blindly in terms of pain and pain-related physical findings, such as increased paravertebral muscle spasm, loss of lordosis and range of neck motion restriction before and after therapy. Functional improvements were also evaluated. Pain, paravertebral muscle spasm, lordosis angle, the range of neck motion and function were observed to improve significantly in the LPL group, but no improvement was found in the placebo group. LPL seems to be successful in relieving pain and improving function in osteoarthritic diseases.

Int J Tissue React. 2003;25(4):131-6.

## **Low-power laser in osteoarthritis of the cervical spine.**

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Patients with symptomatic osteoarthritis of the cervical spine were treated with very low-power modulated laser (LPL). Two applications were performed at an interval of 20 days. Changes in pain and ultrasound thickness of the soft connective tissue layer above the right and the left superior trapezium were studied. No worsening of pain was observed. Pain improved after the first application of LPL in 9 out of 14 patients, but the difference was not significant. Pain improvement remained stable between the first assessment and the second assessment, which was performed after 20 days. In comparison with the first application, at the second application the number of patients with improved pain after LPL increased to 12 out of 14 ( $p < 0.01$ ). An appreciable difference in the thickness of the subcutaneous soft tissue layer overlying the two superior trapezia was demonstrated in all patients at the first examination. Comparison of the measurements before and after the application of LPL showed significant differences.

## **Diode Laser in Cervical Myofascial Pain: A Double-Blind Study versus Placebo**

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Summary: We present a double-blind trial in which a pulsed infrared beam was compared with a placebo in the treatment of myofascial pain in the cervical region. The patients were submitted to 12 sessions on alternate days to a total energy dose of 5 J each. At each session, the four most painful muscular trigger points and five bilateral homometameric acupuncture points were irradiated. Those in the placebo group submitted to the same number of sessions following an identical procedure, the only difference being that the laser apparatus was nonoperational. Pain was monitored using the Italian version of the McGill pain questionnaire and the ScottHuskisson visual analogue scale. The results show a pain attenuation in the treated group and a statistically significant difference between the two groups of patients, both at the end of therapy and at the 3-month follow-up examination.

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The Clinical journal of Pain 5:301-304 copyright 1989 Raven Press, Ltd., New York

Wavelength	Power	Energy Density	Power Density	Energy per point	Pulses
904nm	5mW av (25Wpeak)	(not given)	(not given)	1 J	1KHz x 200nS