



Utilization Management Policy

Spinal Manual Therapy for Non-Spinal Musculoskeletal Disorders

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Policy Statement

Optum* by OptumHealth Care Solutions, LLC considers spinal manual therapy to be unproven and not medically necessary for the treatment of non-spinal musculoskeletal disorders due to insufficient scientific evidence of effectiveness as either a single intervention or when combined with other treatment.

Purpose

This policy has been developed as the clinical criterion that describes the position of Optum regarding the efficacy, effectiveness, risks, and burdens associated with the use of spinal manual therapy techniques for the treatment of non-spinal musculoskeletal disorders.

Scope

This policy is limited to the application of manual therapy (manipulation, mobilization) of spinal structures, as an intervention approach intended to achieve clinically relevant patient-important outcomes (pain, function/disability) for the treatment of non-spinal musculoskeletal disorders (head/face, upper and lower extremities). This policy does not include the use of spinal manual therapy for the treatment of referred/radicular symptoms due to spine-related disorders (eg, herniated disc, spinal stenosis). The use of extraspinal manual therapy for the treatment of musculoskeletal disorders is addressed in a separate policy.

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Key Policy Question

Is there sufficient research evidence showing a clinically relevant beneficial impact on health outcomes (efficacy and safety) of spinal manual therapy, either as a single or combined therapy, for the sustained reduction of pain and disability to conclude this intervention is an appropriate therapeutic approach for individuals diagnosed with having a non-spinal musculoskeletal disorder?

Summary

- Spinal manual therapy (manipulation, mobilization) is frequently viewed as an adjunct to local intervention (eg, extraspinal manual therapy and exercise) for the treatment of non-spinal musculoskeletal disorders.
- Evidence syntheses and clinical trials of spinal manual therapy as a treatment for non-spinal musculoskeletal disorders have generally reported favorable trends.
- The clinical relevance of spinal manual therapy as a treatment for non-spinal musculoskeletal disorders on patient important outcomes (pain, function) remains to be established.
- Further research is very likely to have an important impact on confidence in the estimate of effect.

Background

The reasoned basis for administering spinal manual therapy (SMT) techniques (manipulation and mobilization) for the treatment of non-spinal musculoskeletal disorders (MSD) is rooted in the theory of “regional interdependence”. With respect to musculoskeletal problems, regional interdependence refers to the concept that seemingly unrelated impairments in a remote anatomical region may contribute to, or be associated with, the patient’s primary complaint.¹ The clinical implication of this premise is that interventions directed at one region of the body will often have effects at remote and seeming unrelated areas.²

In addition to the biomechanical and anatomic relationships that underpin the concept of regional interdependence, neurophysiologic interactions may further account for the observed changes associated with treating regional dysfunctions.³ These postulated mechanisms of regional interdependence provide biologic plausibility for the experimental use of manual therapies (MT), which have been shown to produce biomechanical (increased range of motion) and neurophysiological effects (hypoalgesia).³

Regional interdependence, as a musculoskeletal model, was born out of earlier clinical reports and clinical observation. In other words, clinicians treating one region of the body, such as the thoracic spine, noticed that signs and symptoms in areas remote to the area of treatment, such as the shoulder, were altered. Subsequently, regional interdependence has served as the hypothetical basis for studies that explored the treatment of biomechanical dysfunctions, proximal and distal to the primary region of complaint, to observe the possible effects on patient-important outcomes (pain and function).⁴ A growing body of literature has incorporated the principles of regional interdependence for the treatment non-spinal MSD with intervention directed at spinal/pelvic structures for primary complaints involving jaw, and upper and lower extremities.⁵

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Literature Review

A systematic literature search and data extraction, using a broadly adopted methodology, was conducted to identify relevant systematic reviews, with or without meta-analysis, and randomized clinical trials (RCTs) not included in an evidence review.⁶ Biomedical databases (Medline, CINAHL, Central, Pedro, Mantis, Lilacs) were searched to identify and retrieve relevant evidence. Hand-searches of bibliographies and non-indexed documents were included in the search strategy. A total of nine systematic reviews and four RCTs were identified in the current literature search. These were grouped by general anatomic region.

Head and Face Complaints

Two evidence reviews assessed the efficacy of spinal manual therapy (SMT) for the treatment of temporomandibular dysfunction (TMD).^{7,8} LaTouche, et al. (2020) conducted a systematic review and meta-analysis of 3 RCTs (n=153) that investigated the effectiveness of cervical MT in patients with chronic TMD.⁷ Cervical MT was compared to placebo or minimal intervention for the outcomes of pain, maximal mouth opening (MMO) and pressure pain threshold (PPT) over a short-term (<3 months follow-up). The reviewers concluded that cervical MT treatment is more effective in decreasing pain intensity than placebo MT or minimal intervention, with moderate evidence. Critical appraisal of the results confirms the reduction in pain was both statistically and clinically significant. In addition, the meta-analysis showed statistically significant differences in the short-term for PPT with a large clinical effect. The findings from this systematic review and meta-analysis provide promising evidence favoring SMT for TMD; however, confidence in the results is limited due to sparse data (imprecision), significant heterogeneity (i.e., the results include effects ranging from trivial to large) and uncertainty about the durability of effects.

An earlier systematic review of RCTs synthesized the evidence regarding the isolated effect of SMT in improving maximum mouth opening (MMO) and pain in subjects with signs and symptoms of TMD.⁸ While the results of this systematic review showed that upper cervical manipulation or mobilization presented the strongest evidence for symptom control and improvement of MMO, the findings are based on a small number of studies (3 RCTs; n=116). One included study (Mansilla-Ferragut; n=37) investigated CMT for women with mechanical neck pain.⁹ The GRADE methodology was applied incorrectly, with summary tables reporting for each study. Studies should have been combined by outcome and time to F/U. The results were not pooled, making judgments about overall effects uncertain. The overall quality of the evidence was overstated in the review. There were conflicting results from 2 studies (n=64) regarding the clinical significance of CMT on immediate pain outcomes. Two of 3 studies found no effect for PPT and a single trial¹⁰ found a very large effect favoring CMT. Overall, the results of this review are unclear due to poor methodology and imprecise data from few studies.

Upper Extremity (UE) Conditions

Six evidence syntheses and an additional four RCTs, which were not included in a review article, were identified in this evidence review of SMT for upper extremity MSD. Five systematic reviews investigated the use of cervical, cervicothoracic or thoracic MT for shoulder disorders (nonspecific shoulder pain/dysfunctions or subacromial impingement syndrome).¹¹⁻¹⁵ None of the studies reported short-term beneficial effects on pain, function or PPT, when SMT was compared to sham or usual care. The results from 1 review suggested that SMT is not as effective as local treatment (treatment specific to the shoulder region) in reducing pain.¹¹ A single review reported that cervicothoracic spinal manipulation and mobilization in addition to usual care may improve self-perceived recovery compared to usual care alone for adults with nonspecific shoulder pain of variable duration.¹³ This conclusion was based on a single RCT (N=74).

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Four RCTs evaluated the effects of SMT on adults with shoulder conditions (subacromial impingement syndrome, chronic rotator cuff tendinopathy, nonspecific shoulder pain).¹⁶⁻¹⁹ Three studies found no clinically relevant differences in pain and function when SMT was compared to either sham manipulation or exercise-alone.^{16,18,19} Two trials reported that SMT did not have an immediate effect on physical performance measures (scapular impairments¹⁸ or isometric muscle strength¹⁷). A single study provided results achieving minimal thresholds for clinically relevant immediate decreases in pain and disability.¹⁷ There were, however, some concerns about the analysis of the study data. Approximately 15% of the participants were not included in the analysis, after dropping out during the trial to seek other treatment. Additionally, this small study (N=35) was conducted by a single clinician. The findings were not generalizable.

Two systematic reviews provided an evidence synthesis of the effects of SMT on lateral epicondylalgia.^{11,20} Aoyagi, et al. (2015) included three small RCTs (N=38) in their review.¹¹ The authors concluded there was very low-quality evidence of no difference in the effect of SMT on lateral elbow pain compared to other interventions including sham manipulation. Nor did the addition of SMT to local (elbow) treatment improve outcomes compared local treatment-alone. A systematic review by Giacalone, et al. (2020) provided results based on a single pilot study with only 10 participants.²⁰ Outcomes were measured immediately following SMT and a sham comparator. PPT was found to be increased at the affected elbow, while there were no significant differences in heat/cold sensitivity and grip strength. In sum, the evidence for the effectiveness of SMT as a treatment for lateral epicondylalgia is limited to a few small (pilot) trials with generally negative outcomes.

Lower Extremity Conditions

A single systematic review and meta-analysis sought to determine the effectiveness of SMT, used alone or as an adjunct intervention, compared to standard treatment or sham for reducing pain and improving self-reported function in individuals with patellofemoral pain syndrome (PFPS).²¹ The reviewers found the evidence regarding lumbopelvic manipulation was inconclusive for pain improvement in individuals with PFPS, based on 3 studies (N=118).

Summary

The current literature review does not support the clinical efficacy of SMT-alone or in combination with other interventions for the treatment of non-spinal MSD.

Evidence Rating

Potential but unproven benefit (C): Spinal manual therapy for non-spinal musculoskeletal disorders is supported by some positive published data regarding the efficacy for the cited applications in the literature review, but a beneficial impact on health outcomes has not been proven for one of two reasons: (1) Data are sparse and the level of evidence is low, or (2) Data are inconsistent or conflicting.

No proven benefit (D): For those applications not cited, research regarding use of spinal manual therapy for non-spinal musculoskeletal disorders is so limited that an appraisal of safety and efficacy cannot be made.

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Pragmatic Judgments

1. Does SMT for non-MSD address a significant patient or plan need?
 - There are typically other established or more broadly employed options for most disorders where SMT has been studied and/or recommended
 - Local interventions appear to be more efficacious than SMT for non-spinal MSD
 - Specific patient sub-groups favoring SMT have not been identified
2. Is insufficient evidence likely to continue?
 - Uncertain. The National Institutes of Health website notes there are at least 8 clinical trials involving SMT for non-spinal MSD that are in various stages of development.²²
3. Is SMT for non-spinal MSD already used or will it soon be in widespread use?
 - The prevalence of use has not been established
 - There are good reasons to believe that use by clinicians is common
4. Do the potential benefits for the patient outweigh the risks?
 - The current evidence suggests benefits are usually not clinically important and any effects are generally limited to a short-term
 - Adverse event reporting is sparse.

References

1. Wainner RS, Whitman JM, Cleland JA, Flynn TW. Regional interdependence: a musculoskeletal examination model whose time has come. *Journal of Orthopaedic and Sports Physical Therapy*. 2008 Feb 28;38(3):159-60.
2. Sueki DG, Cleland JA, Wainner RS. A regional interdependence model of musculoskeletal dysfunction: research, mechanisms, and clinical implications. *Journal of Manual & Manipulative Therapy*. 2013 May 1;21(2):90-102.
3. Bialosky JE, Bishop MD, Price DD, Robinson ME, George SZ. The mechanisms of manual therapy in the treatment of musculoskeletal pain: a comprehensive model. *Manual Therapy*. 2009 Oct 1;14(5):531-8.
4. Strunce JB, Walker MJ, Boyles RE, Young BA. The immediate effects of thoracic spine and rib manipulation on subjects with primary complaints of shoulder pain. *Journal of Manual & Manipulative Therapy*. 2009 Dec 1;17(4):230-6.
5. Cheatham S, Kreiswirth E. The regional interdependence model: a clinical examination concept. *International Journal of Athletic Therapy and Training*. 2014 May 1;19(3):8-14.
6. Guyatt G, Rennie D, editors. *Users' guides to the medical literature: a manual for evidence-based clinical practice*. 3rd ed. Chicago, IL: AMA press; 2015.
7. La Touche R, Martínez García S, et al. Effect of manual therapy and therapeutic exercise applied to the cervical region on pain and pressure pain sensitivity in patients with temporomandibular disorders: A systematic review and meta-analysis. *Pain Medicine*. 2020 Oct;21(10):2373-84.
8. Calixtre LB, Moreira RF, Franchini GH, et al. Manual therapy for the management of pain and limited range of motion in subjects with signs and symptoms of temporomandibular disorder: a systematic review of randomised controlled trials. *Journal of Oral Rehabilitation*. 2015 Nov;42(11):847-61.

9. Mansilla-Ferragut P, Fernández-de-Las Peñas C, Albuquerque-Sendín F, et al. Immediate effects of atlanto-occipital joint manipulation on active mouth opening and pressure pain sensitivity in women with mechanical neck pain. *Journal of Manipulative and Physiological Therapeutics*. 2009 Feb 1;32(2):101-6.
10. La Touche R, París-Alemany A, Mannheimer JS, Angulo-Díaz-Parreño S, Bishop MD, López-Valverde-Centeno A, von Piekartz H, Fernández-Carnero J. Does mobilization of the upper cervical spine affect pain sensitivity and autonomic nervous system function in patients with cervico-craniofacial pain?: a randomized-controlled trial. *The Clinical journal of pain*. 2013 Mar 1;29(3):205-15.
11. Aoyagi M, Mani R, Jayamoorthy J, Tumilty S. Determining the level of evidence for the effectiveness of spinal manipulation in upper limb pain: a systematic review and meta-analysis. *Manual Therapy*. 2015 Aug 1;20(4):515-23.
12. Bizzarri P, Buzzatti L, Cattrysse E, Scafoglieri A. Thoracic manual therapy is not more effective than placebo thoracic manual therapy in patients with shoulder dysfunctions: A systematic review with meta-analysis. *Musculoskeletal Science and Practice*. 2018 Feb 1;33:1-0.
13. Southerst D, Yu H, Randhawa K, et al. The effectiveness of manual therapy for the management of musculoskeletal disorders of the upper and lower extremities: a systematic review by the Ontario Protocol for Traffic Injury Management (OPTIMA) Collaboration. *Chiropractic & Manual Therapies*. 2015 Dec;23(1):1-7.
14. Minkalis AL, Vining RD, Long CR, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. *Chiropractic & Manual Therapies*. 2017 Dec;25(1):1-0.
15. Peek AL, Miller C, Heneghan NR. Thoracic manual therapy in the management of non-specific shoulder pain: a systematic review. *Journal of Manual & Manipulative Therapy*. 2015 Sep 1;23(4):176-87.
16. da Silva AC, Santos GM, de Godoy Marques CM, Marques JL. Immediate effects of spinal manipulation on shoulder motion range and pain in individuals with shoulder pain: a randomized trial. *Journal of Chiropractic Medicine*. 2019 Mar 1;18(1):19-26.
17. Elmelhat AM, Abdelmagid SF, Gomaa EF, Gad AM. Changes in rotator cuff strength ratio, shoulder pain and disability after cervicothoracic mobilization in subjects with shoulder impingement syndrome. *Polish Journal of Physiotherapy*. 2020; (4)
https://www.researchgate.net/publication/341049636_Changes_in_Rotator_Cuff_Strength_Ratio_Shoulder_Pain_and_Disability_after_Cervicothoracic_Mobilization_in_Subjects_with_shoulders_impingement_syndrome
18. Grimes JK, Puentedura EJ, Cheng MS, Seitz AL. The comparative effects of upper thoracic spine thrust manipulation techniques in individuals with subacromial pain syndrome: a randomized clinical trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2019 Oct;49(10):716-24.
19. Mintken PE, McDevitt AW, Cleland JA, et al. Cervicothoracic manual therapy plus exercise therapy versus exercise therapy alone in the management of individuals with shoulder pain: a multicenter randomized controlled trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2016 Aug;46(8):617-28.
20. Giacalone A, Febbi M, Magnifica F, Ruberti E. The Effect of High Velocity Low Amplitude Cervical Manipulations on the Musculoskeletal System: Literature Review. *Cureus*. 2020 Apr;12(4).
21. Eckenrode BJ, Kietrys DM, Parrott JS. Effectiveness of manual therapy for pain and self-reported function in individuals with patellofemoral pain: systematic review and meta-analysis. *Journal of Orthopaedic and Sports Physical Therapy*. 2018 May;48(5):358-71.
22. Clinical trials registry. U.S. National Institutes of Health; <https://clinicaltrials.gov/ct2/search>



Utilization Management Policy

Policy History/Revision Information

Date	Action/Description
4/22/2021	Original effective date
5/03/2022	Annual review and approval completed; No new evidence supporting a change in the policy statement was identified
6/29/2022	Updated legal entity name “OptumHealth Care Solutions, LLC.” to *Optum™ Physical Health (“Optum”) includes OptumHealth Care Solutions, LLC; ACN Group IPA of New York, Inc.; ACN Group IPA of California, Inc. d/b/a OptumHealth Physical Health of California; Managed Physical Network, Inc.; and OrthoNet Holdings, Inc. which includes OrthoNet New York IPA, Inc., OrthoNet West, Inc., OrthoNet, LLC, OrthoNet of the South, Inc.
4/27/23	Annual review and approval completed; no significant changes made to the document. Updated contact email from policy.inquiry@optumhealth.com to phpolicy_inquiry@optum.com .

Contact Information

Please forward any commentary or feedback on Optum utilization management policies to: phpolicy_inquiry@optum.com with the word “Policy” in the subject line.

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PLAIN LANGUAGE SUMMARY

Spinal Manual Therapy for Non-Spinal Musculoskeletal Disorders

Utilization Management Policy # 490

Plain Language Summaries are a service provided by *Optum*^{*} by *OptumHealth Care Solutions, LLC* to help patients better understand the complicated and often mystifying language of modern healthcare.

Plain Language Summaries are presented to supplement the associated clinical policy or guideline. These summaries are not a substitute for advice from your own healthcare provider.

What is spinal manual therapy and what is known about it so far?

Spinal manual therapy is a hands-on method of manipulating or mobilizing the joints and tissues of the neck, mid and lower back. Manual therapy is often used by chiropractors and physical therapists.

The use of spinal manual therapy has been viewed as a possible treatment of non-spinal musculoskeletal disorders involving the head/face, arms and legs.

How was spinal manual therapy for non-spinal musculoskeletal disorders evaluated?

A work group of clinicians was assigned to review the available research. The internet was searched for relevant articles. The work group independently examined the selected research studies. A broadly accepted rating scale was used. Possible ratings were proven benefit, potential but unproven benefit, and no proven benefit.

Before it was approved, the policy was presented to a series of committees that included independent health care practitioners.

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What did the work group find?

There is only limited research about the effectiveness of spinal manual therapy for non-spinal musculoskeletal disorders. The findings showed some promising results. The overall research quality was rated as *low*. Better quality studies are needed.

It was not possible to decide that spinal manual therapy for non-spinal musculoskeletal disorders provided more benefit or less risk, when compared to generally accepted and safe treatments including traditional rehabilitation procedures.

What were the limitations of the information?

Most studies did not evaluate if the results of spinal manual therapy lasted for more than immediately after treatment. Most studies looked at only a small number of individuals, making difficult to apply the findings to most people. Few studies described the clinical benefit of treatment.

The use of spinal manual therapy has not been studied for many non-spinal musculoskeletal disorders.

What are the conclusions?

Spinal manual therapy for the treatment of non-spinal musculoskeletal disorders is viewed as *unproven and not medically necessary*. Further research is needed before its use can be considered an established treatment option.