



National Imaging Associates, Inc.*	
Clinical guidelines EXPERIMENTAL, UNPROVEN, OR INVESTIGATIONAL SERVICES	Original Date: November 2015
Physical Medicine – Clinical Decision Making	Last Revised Date: December 2021
Guideline Number: NIA_CG_601	Implementation Date: July 2022

Policy Statement

This policy will be used to provide a listing of procedures considered experimental, investigational by any physical medicine practitioner. Services listed in the policy are not eligible for reimbursement.

Purpose

To provide a listing of procedures considered experimental, investigational, or unproven services by any physical medicine practitioner, including chiropractors, physical therapists, occupational therapists, and speech language pathologists.

Coverage

Coverage is subject to the terms of an enrollee’s benefit plan. To the extent there is any inconsistency between this medical policy and the terms of an enrollee’s benefit plan, the terms of the enrollee’s benefit plan documents will always control. Investigational services are not covered under enrollee’s health plan.

Definition

A service is considered experimental/investigation if **any** of the following criteria is met:

- The services, procedures, or supplies requiring Federal or other Governmental body approval, such as drugs and devices, do not have unrestricted market approval from the Food and Drug Administration (FDA) or final approval from any other governmental regulatory body for use in treatment of a specified condition. Any approval that is granted as an interim step in the regulatory process is not a substitute for final or unrestricted market approval.

* National Imaging Associates, Inc. (NIA) is a subsidiary of Magellan Healthcare, Inc.

- There is insufficient or inconclusive medical and scientific evidence to evaluate the therapeutic value of the service, procedure, or supply.
- There is inconclusive medical and scientific evidence in peer-reviewed medical literature that the service, procedure, or supply has a beneficial effect on health outcomes.
- The service, procedure, or supply under consideration is not as beneficial as any established alternatives.
- There is insufficient information or inconclusive scientific evidence that, when used in a non-investigational setting, the service, procedure, or supply has a beneficial effect on health outcomes or is as beneficial as any established alternatives.

Experimental and investigational services include the use of a service, procedure, or supply that is not recognized as standard clinical care for the condition, disease, illness, or injury being treated. A service, procedure, or supply includes, but is not limited to the diagnostic service, treatment, facility, equipment, or device. This organization will determine whether a service, procedure, or supply is considered experimental and investigational.

The following is a partial listing of experimental and investigational services:

- Advanced BioStructural Correction (ABC)
- Alphabiotics
- Applied Kinesiology or any of its derivations¹
- Applied Spinal Biomechanical Engineering
- BioEnergetic Synchronization Technique (B.E.S.T)²
- Blood Flow Resistance Training³⁻⁶
- Chiropractic Biophysics (CBP,⁷ Clinical Biomechanics of Posture, CBP Mirror Image Technique⁸)
- Chiropractic services directed at controlling progression and/or reducing scoliosis, including but not limited to the SpineCor brace⁹ and CLEAR scoliosis treatment
- Coccygeal Meningeal Stress Fixation
- Cold Laser Therapy
- Computerized muscle testing or analysis
- Cupping¹⁰
- Craniosacral Therapy (CST)¹¹, including the Upledger Technique
- Directional Non-force Technique¹²
- Dry Needling¹³
- Hako-Med electrotherapy (horizontal electrotherapy)¹⁴
- Hippotherapy¹⁵⁻²¹
- Impulse adjusting instrument
- Intersegmental traction and Autotraction^{22, 23}

- Kinesio taping²⁴⁻²⁸ (Elastic Therapeutic Taping)
 - Live Cell Analysis or hair analysis^{29, 30}
 - Manipulation under Anesthesia (MUA)^{31, 32}
 - Moire Contourographic Analysis³³
 - Nambudripad's Allergy Elimination Technique (NAET)/ other Allergy Testing³⁴
 - National Upper Cervical Chiropractic Association (NUCCA technique)³⁵ / Grostic technique
 - Network Chiropractic, NeuroEmotional Technique (NET)³⁶
 - Neural Organizational Technique, Contact Reflex Analysis (CRA),³⁷ Whole System Scan
 - Neurocalometer, Nervoscope, Nerve Conduction Velocity, Surface EMG,³⁸ Paraspinal Electromyography,³⁹ Spinoscopy or other nerve conduction testing for non-specific neck and back pain^{40, 41}
 - Nimmo Receptor-Tonus method⁴²
 - Pettibon, including, but not limited to wobble chair/board treatment and posture pump⁴³⁻⁴⁸
 - Preventive Care, Maintenance Care, Corrective Care
 - Pro-Adjuster
 - Sacro Occipital Technique, Neurocranial Restructuring (NCR),⁴⁹ Cranial Manipulation
 - Sound Assisted Soft Tissue mobilization⁵⁰
 - Spinal Diagnostic Ultrasound⁵¹
 - Repeat imaging to determine the progress of conservative treatment
 - Thermography⁵²
 - Treatment for brachioradial pruritis
 - Vascular Studies, including, but not limited to, Doppler ultrasound analysis and plethysmography
 - VAX-D,⁵³ Lordex, LTX3000, DRX-9000, DRS (Decompression Reduction Stabilization System), or other back traction devices charged at a higher rate than mechanical traction (97012)
 - Whole Body Vibration (WBV),⁵⁴⁻⁵⁶ Vibration Plate, Vibration Therapy
- Any lab work for which the office is not CLIA Certified or falls outside of the scope of practice, including, but not limited to: drug testing, therapeutic drug assays, and organ or disease oriented panels

Professional societies have published position statements concluding that diagnostic spinal ultrasound is investigational for non-operative spinal and paraspinal conditions in adults. The 2019 policy statement of the American Institute of Ultrasound in Medicine indicates: "There is insufficient evidence in the peer-reviewed medical literature establishing the value of non-operative spinal/paraspinal ultrasound in adults for diagnostic evaluations of conditions involving the intervertebral disks, facet joints and capsules, and central nerves... [A]t this time, the use of ultrasound in diagnostic evaluations, screening, or monitoring of therapy for these

conditions has no proven clinical utility and should be considered investigational. Ultrasound may, however, be used as a guidance modality for certain spinal injections.”⁵⁷

There is insufficient peer-reviewed published scientific evidence that computerized muscle testing leads to better patient outcomes. There is insufficient evidence to support any specific therapeutic effect of craniosacral therapy. While there is emerging evidence for the effectiveness of whole body vibration in treating some medical conditions, the evidence for whole body vibration as a treatment for low back pain (LBP) remains equivocal.

A 2015 systematic review⁵⁸ found that that low level laser therapy is an effective method for relieving pain in non-specific chronic low back pain patients. However, no significant treatment effect was identified for disability scores or spinal range of motion outcomes. In a 2009 study, Yeldan and colleagues report no statistically significant differences between the placebo LLLT and LLLT groups on shoulder function in subacromial impingement syndrome.⁵⁹ Ay and colleagues found “no differences between laser and placebo laser treatments on pain severity and functional capacity in patients with acute and chronic low back pain caused by LDH [lumbar disc herniation].”⁶⁰ Furthermore, both a 2016 Cochrane review⁶¹ and 2017 meta-analysis⁶² report limited effectiveness of rehabilitation low-level laser therapy in carpal tunnel syndrome management. A 2013 study examined the effectiveness of LLLT in reducing acute and chronic neck pain. The authors concluded, “This systematic review provided inconclusive evidence because of significant between-study heterogeneity and potential risk of bias. The benefit seen in the use of LLLT, although statistically significant, does not constitute the threshold of minimally important clinical difference.”⁶³ The best available current evidence does not support the effectiveness of low level laser therapy as a therapy for patients with knee osteoarthritis.⁵⁸

Similarly, there is insufficient evidence to support the clinical value of the Pettibon System. Posture Pump is deemed experimental and investigational because the effectiveness of this device has not been proven by adequate scientific studies, published in peer-reviewed scientific journals. There is insufficient evidence to support the clinical value of the Therapeutic (Wobble) Chair/Board.

The appropriateness and effectiveness of chiropractic manipulation as a preventive or maintenance therapy has not been established by clinical research and is not covered.

Thermography has not been shown to provide sufficient, reliable characterizing information about neurologic dysfunction or deficit to accept it as a proven evaluative procedure for the clinical diagnosis or characterization of: neck or back pain; musculoskeletal pain; entrapment neuropathy; headache; or transient cerebral ischemia and stroke.

High-density surface electromyography (HD-sEMG), surface scanning EMG, paraspinal surface EMG, or macro EMG are considered experimental and investigational as a diagnostic test for evaluating low back pain or other thoracolumbar segmental abnormalities, such as soft tissue injury, intervertebral disc disease, nerve root irritation and scoliosis, and for all other

indications because the reliability and validity of these tests have not been established. Surface EMG devices are also experimental and investigational for diagnosis and/or monitoring of nocturnal bruxism and all other indications because the reliability and validity of these tests have not been demonstrated. The Neurophysiologic Pain Profile (NPP) and the spine matrix scan (lumbar matrix scan) are considered experimental and investigational because the reliability and validity of these tests has not been established.

There is insufficient evidence to conclude that nerve conduction studies are beneficial for health outcomes in patients with non-specific neck or back pain. Non-invasive automatic or portable nerve conduction monitoring systems that test only distal motor latencies and conduction velocities are unproven and not medically necessary for the purpose of electrodiagnostic testing.

Plethysmography is used to diagnose deep vein thrombosis^{64, 65} and arterial occlusive disease.⁶⁶ Plethysmography is used as the sole diagnostic modality for these conditions or as an initial evaluation to determine the need for venography or arteriography. Body Plethysmography evaluates total lung capacity and residual volume.⁶⁷ Since treatment of cardiovascular and lung conditions falls outside of the scope of chiropractic, patients should be referred for testing if these conditions are suspected.

Procedure

- **Guidelines**

- If such services are to be provided, the practitioner will inform the member, in writing, that such services will be the member's responsibility. None of these services are to be performed in lieu of an appropriate examination or without consideration of an appropriate referral.
- There is limited scientific evidence that the use of experimental, investigational, and unproven services provides an improved or more accurate diagnosis, nor do they result in an improved clinical outcome.
- Scientific literature will continue to be reviewed and any significant changes in published literature will be taken into consideration for modification of this policy.

- **Exclusions/Limitations (not limited to)**

Refer to enrollee's Certificate of Coverage or Summary Plan Description.

- **Removal of a service from the Experimental and Investigations Policy**

At least annually, a review of the current literature will be evaluated to determine if there is additional research in support of any of the services listed under this policy.

This evaluation will include the following criteria:

- Safety – Is the potential benefit superior to the potential harm?
- Health Outcomes – Is there evidence the service will provide, at minimum, equal outcomes and at best, superior outcomes to currently available services?

- Patient Management – Will the service improve clinical decision making?
- Clinical Performance – Is the reliability as well as predictive value of the service equal or superior to the current “gold standard” for such services?
- Cost-effectiveness – Is the service equal to or lower cost than currently utilized services for similar diagnosis and treatment?

All criteria will be based on peer-reviewed scientific literature and internationally and nationally accepted and published guidelines. Peer-reviewed scientific studies must be published in or accepted for publication by medical journals meeting national requirements for scientific publication (<http://www.icmje.org/>). The medical literature must meet the National Institutes of Health Library of Medicine standards for indexing (<https://www.nlm.nih.gov/>). Medical journals that publish most of their scientific manuscripts by the editorial staff of a journal will not be considered for review. If the majority of funding for research is published by the device manufacturer or organization sponsoring a technique, the results will not be considered for review.

If the service appears to be safe and cost-effective, this organization will present these results to our health plan partners for consideration of coverage and/or payment. Final authority for such coverage determinations rests with the health plan.

POLICY HISTORY

Date	Summary
December 2021	<ul style="list-style-type: none"> • Added “General Information” statement • Reordered (in alphabetical order) the list of experimental and investigational services • Added Blood Flow Resistance Training to list of E&I services
August 2020	No content changes
January 2020	No content changes following review of the evidence base. Minor copyediting changes.
July 2019	Older references updated or omitted as appropriate.

REFERENCES

1. Kelso JM. Unproven Diagnostic Tests for Adverse Reactions to Foods. *J Allergy Clin Immunol Pract.* Mar-Apr 2018;6(2):362-365. doi:10.1016/j.jaip.2017.08.021
2. Hawk C, Rupert RL, Colonvega M, Boyd J, Hall S. Comparison of bioenergetic synchronization technique and customary chiropractic care for older adults with chronic musculoskeletal pain. *J Manipulative Physiol Ther.* Sep 2006;29(7):540-9. doi:10.1016/j.jmpt.2006.06.026
3. Centner C, Wiegel P, Gollhofer A, König D. Effects of Blood Flow Restriction Training on Muscular Strength and Hypertrophy in Older Individuals: A Systematic Review and Meta-Analysis. *Sports Med.* Jan 2019;49(1):95-108. doi:10.1007/s40279-018-0994-1
4. Cuyul-Vásquez I, Leiva-Sepúlveda A, Catalán-Medalla O, Araya-Quintanilla F, Gutiérrez-Espinoza H. The addition of blood flow restriction to resistance exercise in individuals with knee pain: a systematic review and meta-analysis. *Braz J Phys Ther.* Nov-Dec 2020;24(6):465-478. doi:10.1016/j.bjpt.2020.03.001
5. Grantham B, Korakakis V, O'Sullivan K. Does blood flow restriction training enhance clinical outcomes in knee osteoarthritis: A systematic review and meta-analysis. *Phys Ther Sport.* May 2021;49:37-49. doi:10.1016/j.ptsp.2021.01.014
6. Wortman RJ, Brown SM, Savage-Elliott I, Finley ZJ, Mulcahey MK. Blood Flow Restriction Training for Athletes: A Systematic Review. *Am J Sports Med.* Jun 2021;49(7):1938-1944. doi:10.1177/0363546520964454
7. Oakley PA, Harrison DD, Harrison DE, Haas JW. Evidence-based protocol for structural rehabilitation of the spine and posture: review of clinical biomechanics of posture (CBP) publications. *J Can Chiropr Assoc.* 2005;49(4):270-296.
8. Harrison DE, Cailliet R, Betz JW, et al. A non-randomized clinical control trial of Harrison mirror image methods for correcting trunk list (lateral translations of the thoracic cage) in patients with chronic low back pain. *Eur Spine J.* 2005;14(2):155-162. doi:10.1007/s00586-004-0796-z
9. Rożek K, Potaczek T, Zarzycka M, Lipik E, Jasiewicz B. Effectiveness of Treatment of Idiopathic Scoliosis by SpineCor Dynamic Bracing with Special Physiotherapy Programme in SpineCor System. *Ortop Traumatol Rehabil.* Oct 28 2016;18(5):425-434. doi:10.5604/15093492.1224616
10. Niu JF, Zhao XF, Hu HT, Wang JJ, Liu YL, Lu DH. Should acupuncture, biofeedback, massage, Qi gong, relaxation therapy, device-guided breathing, yoga and tai chi be used to reduce blood pressure?: Recommendations based on high-quality systematic reviews. *Complement Ther Med.* Feb 2019;42:322-331. doi:10.1016/j.ctim.2018.10.017
11. Brough N, Lindenmeyer A, Thistlethwaite J, Lewith G, Stewart-Brown S. Perspectives on the effects and mechanisms of craniosacral therapy: A qualitative study of users' views. *European Journal of Integrative Medicine.* 2015;7(2):172-183.
12. Khauv KB, John C. Health-related quality of life improvements in adult patients with chronic low back pain under low-force chiropractic care: A practice-based study. *Chiropractic Journal of Australia.* 2011;41(4):118-122.
13. Liu L, Huang QM, Liu QG, et al. Evidence for Dry Needling in the Management of Myofascial Trigger Points Associated With Low Back Pain: A Systematic Review and Meta-Analysis. *Arch Phys Med Rehabil.* Jan 2018;99(1):144-152.e2. doi:10.1016/j.apmr.2017.06.008

14. Di Sante L, Paoloni M, Dimaggio M, et al. Ultrasound-guided aspiration and corticosteroid injection compared to horizontal therapy for treatment of knee osteoarthritis complicated with Baker's cyst: a randomized, controlled trial. *Eur J Phys Rehabil Med*. Dec 2012;48(4):561-7.
15. Hilgers M, Nielsen H. The Efficacy of Hippotherapy for Physical Rehabilitation: A Systematic Review. *Occupational Therapy Capstones*. 2018;387
16. Santos de Assis G, Schlichting T, Rodrigues Mateus B, Gomes Lemos A, Dos Santos AN. Physical therapy with hippotherapy compared to physical therapy alone in children with cerebral palsy: systematic review and meta-analysis. *Dev Med Child Neurol*. Aug 28 2021;doi:10.1111/dmcn.15042
17. Lightsey P, Lee Y, Krenek N, Hur P. Physical therapy treatments incorporating equine movement: a pilot study exploring interactions between children with cerebral palsy and the horse. *J Neuroeng Rehabil*. 2021;18(1):132-132. doi:10.1186/s12984-021-00929-w
18. Peters BC, Wood W, Hepburn S, Moody EJ. Preliminary Efficacy of Occupational Therapy in an Equine Environment for Youth with Autism Spectrum Disorder. *J Autism Dev Disord*. Sep 23 2021;doi:10.1007/s10803-021-05278-0
19. Prieto AV, Ayupe KMA, Abreu ACA, Filho P. Development and Validation of an Instrument to Assess Horseback Mobility in Hippotherapy. *Percept Mot Skills*. Oct 2021;128(5):2117-2131. doi:10.1177/00315125211036578
20. Suárez-Iglesias D, Bidaurrezaga-Letona I, Sanchez-Lastra MA, Gil SM, Ayán C. Effectiveness of equine-assisted therapies for improving health outcomes in people with multiple sclerosis: A systematic review and meta-analysis. *Mult Scler Relat Disord*. Jul 23 2021;55:103161. doi:10.1016/j.msard.2021.103161
21. Menor-Rodríguez MJ, Sevilla Martín M, Sánchez-García JC, Montiel-Troya M, Cortés-Martín J, Rodríguez-Blaque R. Role and Effects of Hippotherapy in the Treatment of Children with Cerebral Palsy: A Systematic Review of the Literature. *J Clin Med*. 2021;10(12):2589. doi:10.3390/jcm10122589
22. Tesio L, Franchignoni FP. Autotraction treatment for low-back pain syndromes. *Crit Rev Phys Rehab Med*. 1995;7(1):1-9.
23. Tesio L, Merlo A. Autotraction versus passive traction: an open controlled study in lumbar disc herniation. *Arch Phys Med Rehabil*. Aug 1993;74(8):871-6. doi:10.1016/0003-9993(93)90015-3
24. Mao H-Y, Hu M-T, Yen Y-Y, Lan S-J, Lee S-D. Kinesio Taping Relieves Pain and Improves Isokinetic Not Isometric Muscle Strength in Patients with Knee Osteoarthritis—A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2021;18(19):10440. doi:10.3390/ijerph181910440
25. Topdemir E, Birinci T, Taşkıran H, Mutlu EK. The effectiveness of Kinesio taping on playing-related pain, function and muscle strength in violin players: A randomized controlled clinical trial. *Phys Ther Sport*. Aug 29 2021;52:121-131. doi:10.1016/j.ptsp.2021.08.010
26. Jung K-S, Jung J-H, In T-S, Cho H-Y. Influences of Kinesio Taping with Therapeutic Exercise in Patients with Low Back Pain. *Healthcare (Basel)*. 2021;9(8):927. doi:10.3390/healthcare9080927

27. Yam ML, Yang Z, Zee BC, Chong KC. Effects of Kinesio tape on lower limb muscle strength, hop test, and vertical jump performances: a meta-analysis. *BMC Musculoskelet Disord*. May 14 2019;20(1):212. doi:10.1186/s12891-019-2564-6
28. Tsikopoulos K, Sidiropoulos K, Kitridis D, Cain Atc SM, Metaxiotis D, Ali A. Do External Supports Improve Dynamic Balance in Patients with Chronic Ankle Instability? A Network Meta-analysis. *Clin Orthop Relat Res*. Feb 2020;478(2):359-377. doi:10.1097/corr.0000000000000946
29. Kintz P, Russell E, Baber M, Pichini S. Clinical applications of hair analysis. *Hair Analysis in Clinical and Forensic Toxicology*. Elsevier; 2015:141-159.
30. Nketia TA, Sailem H, Rohde G, Machiraju R, Rittscher J. Analysis of live cell images: Methods, tools and opportunities. *Methods*. Feb 15 2017;115:65-79. doi:10.1016/j.ymeth.2017.02.007
31. DiGiorgi D, Cerf JL, Bowerman DS. Outcomes indicators and a risk classification system for spinal manipulation under anesthesia: a narrative review and proposal. *Chiropr Man Therap*. 2018;26:9-9. doi:10.1186/s12998-018-0177-z
32. Kraal T, The B, Boer R, et al. Manipulation under anesthesia versus physiotherapy treatment in stage two of a frozen shoulder: a study protocol for a randomized controlled trial. *BMC Musculoskelet Disord*. 2017;18(1):412-412. doi:10.1186/s12891-017-1763-2
33. Spector B. *Manual of Procedures for Moire Contourography*. New York Chiropractic College; 1979.
34. Nambudripad DS. *Say Good-Bye to Illness*. 3rd ed. Delta Publishing Co.; 2002.
35. Woodfield HC, 3rd, York C, Rochester RP, et al. Craniocervical chiropractic procedures - a précis of upper cervical chiropractic. *J Can Chiropr Assoc*. 2015;59(2):173-192.
36. Peterson CD, Haas M, Gregory WT. A pilot randomized controlled trial comparing the efficacy of exercise, spinal manipulation, and neuro emotional technique for the treatment of pregnancy-related low back pain. *Chiropr Man Therap*. 2012;20(1):18-18. doi:10.1186/2045-709X-20-18
37. Jensen AM. Estimating the prevalence of use of kinesiology-style manual muscle testing: A survey of educators. *Advances in Integrative Medicine*. 2015;2(2):96-102.
38. Audag N, Goubau C, Toussaint M, Reychler G. Screening and evaluation tools of dysphagia in children with neuromuscular diseases: a systematic review. *Dev Med Child Neurol*. Jun 2017;59(6):591-596. doi:10.1111/dmcn.13354
39. Meyer JJ. The validity of thoracolumbar paraspinal scanning EMG as a diagnostic test: an examination of the current literature. *J Manipulative Physiol Ther*. Oct 1994;17(8):539-51.
40. Albeck MJ, Taher G, Lauritzen M, Trojaborg W. Diagnostic value of electrophysiological tests in patients with sciatica. *Acta Neurol Scand*. Apr 2000;101(4):249-54. doi:10.1034/j.1600-0404.2000.101004249.x
41. Levinson DR. Questionable billing for Medicare electrodiagnostic tests. Department of Health and Human Services. Updated April 2014. Accessed September 17, 2021. <https://oig.hhs.gov/oei/reports/oei-04-12-00420.pdf>
42. Koo TK, Cohen JH, Zheng Y. Immediate effect of nimmo receptor tonus technique on muscle elasticity, pain perception, and disability in subjects with chronic low back pain. *J Manipulative Physiol Ther*. Jan 2012;35(1):45-53. doi:10.1016/j.jmpt.2011.09.013

43. Morningstar M. Integrative treatment using chiropractic and conventional techniques for adolescent idiopathic scoliosis: outcomes in four patients. *J Vert Sublux Rep.* 2007;9:1-7.
44. Morningstar M. Cervical curve restoration and forward head posture reduction for the treatment of mechanical thoracic pain using the pettibon corrective and rehabilitative procedures. *J Chiropr Med.* Summer 2002;1(3):113-115. doi:10.1016/S0899-3467(07)60013-5
45. Morningstar MW. Improvement of lower extremity electrodiagnostic findings following a trial of spinal manipulation and motion-based therapy. *Chiropr Osteopat.* 2006;14:20-20. doi:10.1186/1746-1340-14-20
46. Morningstar MW, Joy T. Scoliosis treatment using spinal manipulation and the Pettibon Weighting System: a summary of 3 atypical presentations. *Chiropr Osteopat.* 2006;14:1-1. doi:10.1186/1746-1340-14-1
47. Morningstar MW, Strauchman MN. Adolescent idiopathic scoliosis treatment using the Pettibon corrective procedures: a case report. *J Chiropr Med.* 2007;6(2):83-84. doi:10.1016/j.jcme.2007.04.006
48. Morningstar MW, Strauchman MN, Gilmour G. Adolescent idiopathic scoliosis treatment using pettibon corrective procedures: a case report. *J Chiropr Med.* Summer 2004;3(3):96-103. doi:10.1016/S0899-3467(07)60093-7
49. Davis GE, Murphy MP, Yueh B, Weymuller EA, Jr. A complication from neurocranial restructuring: nasal septum fracture. *Arch Otolaryngol Head Neck Surg.* Apr 2003;129(4):472-4. doi:10.1001/archotol.129.4.472
50. Nazari G, Bobos P, MacDermid JC, Birmingham T. The Effectiveness of Instrument-Assisted Soft Tissue Mobilization in Athletes, Participants Without Extremity or Spinal Conditions, and Individuals with Upper Extremity, Lower Extremity, and Spinal Conditions: A Systematic Review. *Arch Phys Med Rehabil.* Sep 2019;100(9):1726-1751. doi:10.1016/j.apmr.2019.01.017
51. Heidari P, Farahbakhsh F, Rostami M, Noormohammadpour P, Kordi R. The role of ultrasound in diagnosis of the causes of low back pain: a review of the literature. *Asian J Sports Med.* 2015;6(1):e23803-e23803. doi:10.5812/asjms.23803
52. Neves EB, Vilaça-Alves J, Rosa C, Reis VM. Thermography in Neurologic Practice. *Open Neurol J.* 2015;9:24-27. doi:10.2174/1874205X01509010024
53. Oh H-J, Jeon C-B, Jeong M-G, Choi S-J. The effects of spinal decompression therapy on pain and disability in patients with chronic low back pain. *J Kor Phys Ther.* 2017;29(6):299-302.
54. Watanabe H, Takahara M, Katakami N, Kanamoto T, Nakata K, Shimomura I. Acute effects of whole body vibration exercise on post-load glucose metabolism in healthy men: a pilot randomized crossover trial. *Endocrine.* 2021:1-8. doi:10.1007/s12020-021-02893-w
55. Domagalska-Szopa M, Szopa A, Siwiec A, Kwiecień-Czerwieniec I, Schreiber L, Dąbek J. Effects of Whole-Body Vibration Training on Lower Limb Blood Flow in Children with Myelomeningocele-A Randomized Trial. *J Clin Med.* 2021;10(18):4273. doi:10.3390/jcm10184273
56. Min S-K, Lee K, Lim S-T. The effect of whole body vibration on the sprint ability of Korean national bobsled and skeleton athletes. *PLoS One.* 2021;16(10):e0258353-e0258353. doi:10.1371/journal.pone.0258353

57. American Institute of Ultrasound in Medicine. Nonoperative Spinal/Paraspinal Ultrasound in Adults. American Institute of Ultrasound in Medicine (AIUM). Updated November 2, 2019. Accessed September 20, 2021. <https://www.aium.org/officialStatements/18>
58. Huang Z, Ma J, Chen J, Shen B, Pei F, Kraus VB. The effectiveness of low-level laser therapy for nonspecific chronic low back pain: a systematic review and meta-analysis. *Arthritis Res Ther.* 2015;17:360-360. doi:10.1186/s13075-015-0882-0
59. Yeldan I, Cetin E, Ozdincler AR. The effectiveness of low-level laser therapy on shoulder function in subacromial impingement syndrome. *Disabil Rehabil.* 2009;31(11):935-40. doi:10.1080/09638280802377985
60. Ay S, Doğan SK, Evcik D. Is low-level laser therapy effective in acute or chronic low back pain? *Clin Rheumatol.* Aug 2010;29(8):905-10. doi:10.1007/s10067-010-1460-0
61. Peters S, Page MJ, Coppieters MW, Ross M, Johnston V. Rehabilitation following carpal tunnel release. *Cochrane Database Syst Rev.* Feb 17 2016;2:CD004158. doi:10.1002/14651858.CD004158.pub3
62. Bekhet AH, Ragab B, Abushouk AI, Elgebaly A, Ali OI. Efficacy of low-level laser therapy in carpal tunnel syndrome management: a systematic review and meta-analysis. *Lasers Med Sci.* Aug 2017;32(6):1439-1448. doi:10.1007/s10103-017-2234-6
63. Kadhim-Saleh A, Maganti H, Ghert M, Singh S, Farrokhyar F. Is low-level laser therapy in relieving neck pain effective? Systematic review and meta-analysis. *Rheumatol Int.* Oct 2013;33(10):2493-501. doi:10.1007/s00296-013-2742-z
64. Jones WS, Vemulapalli S, Parikh KS, et al. AHRQ Technology Assessments. *Treatment Strategies for Patients with Lower Extremity Chronic Venous Disease (LECVD)*. Agency for Healthcare Research and Quality (US); 2017.
65. Dezotti NRA, Dalio MB, Ribeiro MS, Piccinato CE, Joviliano EE. The clinical importance of air plethysmography in the assessment of chronic venous disease. *J Vasc Bras.* Oct-Dec 2016;15(4):287-292. doi:10.1590/1677-5449.002116
66. Nirala N, Periyasamy R, Kumar A. Noninvasive Diagnostic Methods for Better Screening of Peripheral Arterial Disease. *Ann Vasc Surg.* Oct 2018;52:263-272. doi:10.1016/j.avsg.2018.03.018
67. Delgado BJ, Bajaj T. Physiology, Lung Capacity. *StatPearls*. StatPearls Publishing Copyright © 2021, StatPearls Publishing LLC.; 2021.

ADDITIONAL RESOURCES

1. Cotchett MP, Munteanu SE, Landorf KB. Effectiveness of trigger point dry needling for plantar heel pain: a randomized controlled trial. *Phys Ther.* Aug 2014;94(8):1083-94. doi:10.2522/ptj.20130255
2. Ernst E. Craniosacral therapy: a systematic review of the clinical evidence. *Focus on Alternative and Complementary Therapies.* 2012;17(4):197-201. doi:https://doi.org/10.1111/j.2042-7166.2012.01174.x
3. Gammon SR, Mehlman CT, Chan W, Heifetz J, Durrett G, Wall EJ. A comparison of thoracolumbosacral orthoses and SpineCor treatment of adolescent idiopathic scoliosis patients

- using the Scoliosis Research Society standardized criteria. *J Pediatr Orthop*. Sep 2010;30(6):531-8. doi:10.1097/BPO.0b013e3181e4f761
4. Gutman G, Benoit M, Joncas J, et al. The effectiveness of the SpineCor brace for the conservative treatment of adolescent idiopathic scoliosis. Comparison with the Boston brace. *Spine J*. May 2016;16(5):626-31. doi:10.1016/j.spinee.2016.01.020
 5. Haldeman S, Chapman-Smith D, Petersen DM. *Guidelines for chiropractic quality assurance and practice parameters: proceedings of the Mercy Center Consensus Conference*. Jones & Bartlett Learning; 2004.
 6. Hazell TJ, Olver TD, Hamilton CD, Lemon PW. Addition of synchronous whole-body vibration to body mass resistive exercise causes little or no effects on muscle damage and inflammation. *J Strength Cond Res*. Jan 2014;28(1):53-60. doi:10.1519/JSC.0b013e318296484f
 7. Morningstar MW, Pettibon BR, Schlappi H, Schlappi M, Ireland TV. Reflex control of the spine and posture: a review of the literature from a chiropractic perspective. *Chiropr Osteopat*. 2005;13:16-16. doi:10.1186/1746-1340-13-16
 8. Jäkel A, von Hauenschild P. A systematic review to evaluate the clinical benefits of craniosacral therapy. *Complement Ther Med*. Dec 2012;20(6):456-65. doi:10.1016/j.ctim.2012.07.009
 9. Kietrys DM, Palombaro KM, Azzaretto E, et al. Effectiveness of dry needling for upper-quarter myofascial pain: a systematic review and meta-analysis. *J Orthop Sports Phys Ther*. Sep 2013;43(9):620-34. doi:10.2519/jospt.2013.4668
 10. Lam FM, Lau RW, Chung RC, Pang MY. The effect of whole body vibration on balance, mobility and falls in older adults: a systematic review and meta-analysis. *Maturitas*. Jul 2012;72(3):206-13. doi:10.1016/j.maturitas.2012.04.009
 11. Lindberg J, Carlsson J. The effects of whole-body vibration training on gait and walking ability - a systematic review comparing two quality indexes. *Physiother Theory Pract*. Oct 2012;28(7):485-98. doi:10.3109/09593985.2011.641670
 12. Mohseni Bandpei MA, Rahmani N, Majdoleslam B, Abdollahi I, Ali SS, Ahmad A. Reliability of surface electromyography in the assessment of paraspinal muscle fatigue: an updated systematic review. *J Manipulative Physiol Ther*. Sep 2014;37(7):510-21. doi:10.1016/j.jmpt.2014.05.006
 13. Negrini S, Minozzi S, Bettany-Saltikov J, et al. Braces for idiopathic scoliosis in adolescents. *Spine (Phila Pa 1976)*. Jun 1 2010;35(13):1285-93. doi:10.1097/BRS.0b013e3181dc48f4
 14. Nofsinger C, Konin JG. Diagnostic ultrasound in sports medicine: current concepts and advances. *Sports Med Arthrosc Rev*. Mar 2009;17(1):25-30. doi:10.1097/JSA.0b013e3181982add
 15. Parreira Pdo C, Costa Lda C, Hespanhol LC, Jr., Lopes AD, Costa LO. Current evidence does not support the use of Kinesio Taping in clinical practice: a systematic review. *J Physiother*. Mar 2014;60(1):31-9. doi:10.1016/j.jphys.2013.12.008
 16. Perraton L, Machotka Z, Kumar S. Whole-body vibration to treat low back pain: fact or fad? *Physiother Can*. Winter 2011;63(1):88-93. doi:10.3138/ptc.2009.44
 17. Pettibon BR. Educating the insurance companies. *Today's Chiropr*. 1989;18:74-75.
 18. Pettibon BR. An introduction to spinal biomechanics. *Today's Chiropr*. 1993;22:22-26.

19. Silkwood-Sherer DJ, Killian CB, Long TM, Martin KS. Hippotherapy--an intervention to habilitate balance deficits in children with movement disorders: a clinical trial. *Phys Ther*. May 2012;92(5):707-17. doi:10.2522/ptj.20110081
20. Sitjà Rabert M, Rigau Comas D, Fort Vanmeerhaeghe A, et al. Whole-body vibration training for patients with neurodegenerative disease. *Cochrane Database Syst Rev*. Feb 15 2012;(2):Cd009097. doi:10.1002/14651858.CD009097.pub2
21. Tough EA, White AR. Effectiveness of acupuncture/dry needling for myofascial trigger point pain. *Phys Ther Rev*. 2011/04/01 2011;16(2):147-154. doi:10.1179/1743288X11Y.0000000007
22. Wegner I, Widyahening IS, van Tulder MW, et al. Traction for low-back pain with or without sciatica. *Cochrane Database Syst Rev*. 2013;2013(8):CD003010-CD003010. doi:10.1002/14651858.CD003010.pub5
23. Williams S, Whatman C, Hume PA, Sheerin K. Kinesio taping in treatment and prevention of sports injuries: a meta-analysis of the evidence for its effectiveness. *Sports Med*. Feb 1 2012;42(2):153-64. doi:10.2165/11594960-000000000-00000
24. Gattie E, Cleland JA, Snodgrass S. The Effectiveness of Trigger Point Dry Needling for Musculoskeletal Conditions by Physical Therapists: A Systematic Review and Meta-analysis. *J Orthop Sports Phys Ther*. Mar 2017;47(3):133-149. doi:10.2519/jospt.2017.7096

Reviewed/Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

Disclaimer: Magellan Healthcare service authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. These policies are not meant to supplant your normal procedures, evaluation, diagnosis, treatment and/or care plans for your patients. Your professional judgement must be exercised and followed in all respects with regard to the treatment and care of your patients. These policies apply to all Magellan Healthcare subsidiaries including, but not limited to, National Imaging Associates (“Magellan”). The policies constitute only the reimbursement and coverage guidelines of Magellan. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies. Magellan reserves the right to review and update the guidelines at its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.