Vertebral Axial Decompression

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This Medical Policy document describes the status of medical technology at the time the document was developed. Since that time, new technology may have emerged, or new medical literature may have been published. This Medical Policy will be reviewed regularly and be updated as scientific and medical literature becomes available; therefore, policies are subject to change without notice.

DESCRIPTION

Vertebral axial decompression (also referred to as mechanized spinal distraction therapy) is used as traction therapy to reduce intradiscal pressure and relieve chronic low back pain associated with herniated lumbar discs or degenerative lumbar disc disease.

During treatment with vertebral axial decompression the individual wears a pelvic harness and lies prone on a specially equipped table. The table is slowly extended, and a distraction force is applied via the pelvic harness until the desired tension is reached, followed by a gradual decrease of the tension. The cyclic nature of the treatment allows the individual to withstand stronger distraction forces compared to static lumbar traction techniques. An individual session typically includes 15 cycles of tension, and 10 to 15 daily treatments may be administered.

Vertebral Axial Decompression for Chronic Lumbar Pain

Clinical Context and Therapy Purpose
The purpose of vertebral axial decompression is to provide a treatment option that is an alternative to or an improvement on existing therapies, such as standard conservative therapy, in individuals with chronic lumbar pain due to disc-related causes.

Population
The relevant population of interest is individuals with chronic lumbar pain due to disc-related causes.

Interventions
The therapy being considered is vertebral axial decompression. Vertebral axial decompression applies traction to the vertebral column to reduce intradiscal pressure, and in doing so, potentially relieves low back pain associated with herniated lumbar discs or degenerative lumbar disc disease.

Comparators
The following practice is currently being used to treat chronic lumbar pain due to disc-related causes: standard conservative therapy.

Conservative management includes nonsteroidal anti-inflammatory medications, back braces, and physical therapy; other nonsurgical treatments could include muscle relaxants, narcotic pain medications, or epidural steroid injections.

Outcomes
The general outcomes of interest are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Follow-up for individuals receiving vertebral axial decompression would ideally be 6 months or longer.

Review of Evidence

Agency for Healthcare Research and Quality (AHRQ)
According to the AHRQ publication on Non-Invasive Techniques for Low Back Pain: For low back pain with or without radicular symptoms, a systematic review included 13 trials that found no clear differences with inconsistent effects of traction versus placebo, sham, or no treatment in pain, function, or other outcomes, though two trials reported favorable effects on pain in individuals with radicular back pain (SOE: insufficient for pain and function).

For low back pain with or without radicular symptoms, a systematic review included five trials that found no clear differences between traction versus physiotherapy versus physiotherapy alone.

For low back pain with or without radicular symptoms, a systematic review included 15 trials of traction versus other interventions that found no clear between traction versus other active interventions in pain or function (SOE: low for pain and function).
A systematic review included five trials that found no clear differences between different types of traction. Eleven trials of traction in a systematic review reported no adverse events or no difference in risk of adverse events versus placebo or other interventions. Three subsequent trials reported findings consistent with the systematic review.

Overall, there is insufficient evidence to support the isolated use of mechanical traction as a treatment for chronic LBP.

(2021) Vanti et al. completed a systemic review on Vertical traction for lumbar radiculopathy. They searched the Cochrane Controlled Trials Register, PubMed, CINAHL, Scopus, ISI Web of Science and PEDro from their inception to March 31, 2019 to retrieve RCTs on adults with LR using VT to reduce pain and activity limitation. We considered only trials reporting complete data on outcomes. Two reviewers selected the studies, extracted the results, and performed the quality assessment using the Risk of Bias and GRADE tools. The results noted three studies met the inclusion criteria. Meta-analysis was not possible due to the heterogeneity of the included studies. We found very low-quality evidence for a large effect of VT added to bed rest when compared to bed rest alone (g = - 1.01; 95% CI = -2.00 to - 0.02). Similarly, VT added to medication may have a large effect on pain relief when compared to medication alone (g = - 1.13; 95% CI = -1.72 to - 0.54, low quality evidence). Effects of VT added to physical therapy on pain relief were very small when compared to physical therapy without VT (g = - 0.14; 95% CI = -1.03 to 0.76, low quality evidence). All reported effects concerned short-term effect up to 3 months post-intervention. The author's concluded with respect to short-term effects, VT may have a positive effect on pain relief if added to medication or bed rest. Long-term effects of VT are currently unknown. Future higher quality research is very likely to have an important impact on our confidence in the estimate of effect and may change these conclusions.

(2016) Isner-Horobeti et al. completed a preliminary double blinded randomized trial. This study compared the effects of high-force versus low-force lumbar traction in the treatment of acute lumbar sciatica secondary to disc herniation. 17 subjects with acute lumbar sciatica secondary to disc herniation were assigned to high-force traction at 50% body weight (BW; LT50, n = 8) or low force traction at 10% BW (LT10, n = 9) for 10 sessions in 2 weeks. Radicular pain (visual analogue scale [VAS]), lumbo-pelvic-hip complex motion (finger-to-toe test), lumbar-spine mobility (Schöber-Macrae test), nerve root compression (straight-leg-raising test), disability (EIFEL score), drug consumption, and overall evaluation of each patient were measured at days 0, 7, 1, 4, and 28. The results noted significant (P < .05) improvements were observed in the LT50 and LT10 groups, respectively, between day 0 and day 14 (end of treatment) for VAS (-44% and -36%), EIFEL score (-43% and -28%) and overall patient evaluation (+3.1 and +2.0 points). At that time, LT50 specifically improved in the finger-to-toe test (-42%), the straight-leg-raising test (+58), and drug consumption (-50%). No significant interaction

effect (group-by-time) was revealed, and the effect of traction treatment was independent of the level of medication. During the 2-week follow-up at day 28, only the LT10 group improved ($P < .05$) in VAS (-52%) and EIFEL scores (-46%). During this period, no interaction effect (group-by-time) was identified, and the observed responses were independent of the level of medication. The authors concluded, for this preliminary study, patients with acute lumbar sciatica secondary to disc herniation who received 2 weeks of lumbar traction reported reduced radicular pain and functional impairment and improved well-being regardless of the traction force group to which they were assigned. The effects of the traction treatment were independent of the initial level of medication and appeared to be maintained at the 2-week follow-up.

Summary of Evidence
For individuals with chronic lumbar pain who receive vertebral axial decompression, the evidence includes randomized controlled trials (RCTs). Relevant outcomes are symptoms, functional outcomes, quality of life (QOL), and treatment-related morbidity. Evidence for the efficacy of vertebral axial decompression on health outcomes is limited. Because a placebo effect may be expected with any treatment that has pain relief as the principal outcome, RCT s with sham controls and validated outcome measures are required. The only sham-controlled randomized trial published to date (2009) did not show a benefit of vertebral axial decompression compared with the control group. The evidence is insufficient to determine that the technology results in an improvement in the net health outcomes.

Practice Guidelines and Position Statements

American College of Physicians and American Pain Society
(2017) According to the American College of Physician's clinical practice guideline on noninvasive treatments for acute, subacute, and chronic low back pain, evidence was insufficient to determine the effectiveness of traction tables/devices. (*Accessed June 2022*)

Regulatory Status
According to labeled indications from the U.S. Food and Drug Administration (FDA), vertebral axial decompression may be used as a treatment modality for individuals with incapacitating low back pain and for decompression of the intervertebral discs and facet joints.

Numerous proprietary spinal decompression devices have been granted 510(K) clearance under the FDA's pre-market approval process and are marketed under various trade names.

Examples of vertebral decompression therapy devices include, but may not be limited to:
- Acua-Spina System™ utilizing Intervertebral Differential Dynamics (IDD) Therapy
- Alpha-SPINA System

- Antalgic-Trak
- Axiom DRX-2000™
- Axiom DRX-3000™
- Axiom DRX-5000™
- Axiom DRX 9000™
- Decompression Reduction Stabilization (DRS)® System
- Dynapro™ DX2
- Dynatron DX2
- Integrity Spinal Care System
- Lordex® Power Traction Unit
- Mettler Traction Device [MTD 4000]
- NuChoice Medical Healthstar Elite Decompression Therapy
- Saunders 3D ActiveTrac
- SpineMED® Decompression Table
- Spinerx LDM
- Tru Trac 401
- V DRX 9000
- VAX-D® Table

PRIOR APPROVAL

Not applicable.

POLICY

Vertebral axial decompression (also referred to as mechanized spinal distraction therapy) for the treatment of chronic low back pain and all other indications is considered **investigational,** because the evidence is insufficient to determine that the technology results in an improvement in the net health outcomes.

PROCEDURE CODES AND BILLING GUIDELINES

To report provider services, use appropriate CPT* codes, Alpha Numeric (HCPCS level 2) codes, Revenue codes, and/or ICD diagnosis codes.

- S9090 vertebral axial decompression, per session

SELECTED REFERENCES

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POLICY HISTORY

Date	Reason	Action
June 2022	Annual Review	Policy Renewed
June 2021	Annual Review	Policy Revised
June 2020	Annual Review	Policy Revised
June 2019	Annual Review	Policy Renewed
June 2018	Annual Review	Policy Renewed
June 2017	Annual Review	Policy Renewed
July 2016	Annual Review	Policy Renewed
August 2015	Annual Review	Policy Revised
September 2014	Annual Review	Policy Renewed
December 2012	Annual Review	Policy Renewed
December 2011	Annual Review	Policy Renewed
December 2010	Annual Review	Policy Renewed

New information or technology that would be relevant for Wellmark to consider when this policy is next reviewed may be submitted to:

Wellmark Blue Cross and Blue Shield
Medical Policy Analyst
PO Box 9232
Des Moines, IA 50306-9232

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