



Cervical traction devices for neck pain for home use

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Policy contains: Cervical traction; neck pain; radiculopathy.

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Coverage policy

Cervical traction devices for neck pain for home use are investigational/not clinically proven and, therefore, not medically necessary.

Limitations

No limitations were identified during the writing of this policy.

Alternative covered services

Cervical traction devices in clinical settings.

Background

Neck pain affects about 1 in 3 people in a given year, and is more common in women. It affects people of all ages, and often is acute, but more likely to become chronic (defined as three or more consecutive months in the elderly). In most cases, symptoms resolve with little or no treatment. Diagnosis of neck pain is usually a documentation of symptoms; occasionally, imaging such as a computerized tomography scan or magnetic resonance imaging scan is needed.

The two types of neck pain are axial pain, felt in the cervical spine that belongs to the neck, and radicular pain, which radiates along the nerves from the back of the head or an arm. Identifying a clear cause of neck pain is often difficult (InformedHealth.org, 2019). In about 75% of cases of acute cervical radiculopathy, the condition resolves without treatment (Rhee, 2007).

Cervical traction is one means of treating neck pain. Traction is a light stretching of the neck by a device, used to eliminate neck pain, and to keep neck pain from spreading to adjoining body parts. Although traction was developed for use in clinical settings, some devices can now be used at home; the most common of these are air neck traction devices, over the door neck traction, posture pumps, and neck traction slings (e.g., the Neck Hammock). In theory, traction distracts the neural foramen and decompresses the affected nerve root (Eubanks, 2010).

Traction is used in a variety of cervical conditions, including cervical disc disease, cervical spine fracture, facet joint dislocation, atlantoaxial subluxation, occipitocervical synopsis, spondylosis, radiculopathy, foraminal stenosis, and myofascial tightness (Abu-Aad, 2019).

A survey of 1,001 physical therapists revealed that 76.6% use traction for neck pain, and 93.1% would use traction for signs of nerve root compression. Common delivery modes included manual methods (92.3%) and mechanical traction tables (88.3%). Using traction is often supplemented with other interventions (exercise, postural education, joint mobilization) (Madson, 2017).

Findings

No professional society has issued guidelines supporting use of cervical traction for neck pain. A guideline of a group of Canadian experts used 41 randomized controlled trials as its basis to not recommend use of traction for treatment of chronic neck pain (Bryans, 2014). The American Academy of Family Physicians guideline on non-operative treatment of acute neck pain and radicular symptoms assigned a “C” (lowest) rating to home cervical traction units, stating they “may provide temporary relief of radicular pain” (Eubanks, 2010).

While cervical traction has been used in various cervical pathologies, including radiculopathy, no accurate description of the technique’s relief mechanism exists. One review states that evidence of the benefits of cervical traction for spondylosis and myelopathy is of low quality, has a small number of subjects, and lacks evidence on long-term benefits. The same limits were observed for radiculopathy, especially its neck pain, and reports with such conclusions are cited in this section (Abi-Aad, 2019).

Systematic reviews of cervical traction, home use not specified

A meta-analysis of five randomized controlled trials (n = 449) compared efficacy of physical therapy for cervical radiculopathy therapy with cervical traction versus without cervical traction. Neck pain in the traction group declined significantly in the long term and the short term. Non-significant improvements to function and disability were observed. While no specific mention was made of whether care occurred in the home, the authors did state that the care was considered outpatient rehabilitation, suggesting home cervical traction might help therapy (Romeo, 2018).

A meta-analysis of seven randomized controlled trials concluded that patients treated with intermittent cervical traction for neck pain had significantly lower pain scores (in the short term) after therapy than patients receiving placebo (Yang, 2017).

An earlier Cochrane review of 10 trials of cervical traction for neck pain identified only one of the trials (published in 1990) to be of high quality, thus severely limiting conclusive evidence. The low-quality trials showed better pain reduction results for intermittent traction, while there were no significant differences between continuous traction and standard treatment (Graham, 2006). The same group followed up with a meta-analysis of seven trials (n = 958) of continuous and intermittent treatment, concluding evidence did not support or refute efficacy of cervical traction therapy (Graham, 2008).

Non-systematic reviews of cervical traction, home use not specified

In one trial, 42 patients with cervical radiculopathy were given a common intervention of segmental mobilization and exercise therapy for six weeks (three days per week). One group was also given mechanical traction and the other given manual traction. The group given mechanical traction saw significantly more improvement in pain and disability (Bukhari, 2016).

A randomized controlled trial (n = 79) of people with chronic neck pain assigned patients to receive intermittent cervical traction or infrared irradiation twice weekly for six weeks. No significant differences were observed between groups ($P > .05$) using neck pain intensity, disability, and range of motion measures (Chiu, 2011).

In a trial of cervical radiculopathy treatment (n = 81), all patients received manual therapy and exercise, and were assigned to also receive either intermittent cervical traction or sham intermittent cervical traction, twice weekly for an average of 4.2 weeks, in clinics. No significant differences between the groups were observed for any measures at two or four weeks, meaning cervical traction was not effective (Young, 2009).

In another trial, 42 people with at least six weeks of non-specific neck pain were given standard physical therapy (hot pack, ultrasound, and exercise program), with or without intermittent traction therapy. Pain intensity, neck disability index, and health profiles improved significantly in both groups ($P < .05$), meaning that no effect of traction was observed (Borman, 2008).

Non-systematic reviews of cervical traction, home use

In a longitudinal review of 68 patients with neck pain, subjects underwent six home sessions of intermittent cervical traction and cervical strengthening exercises twice weekly for three weeks. Forty-four percent (30 of 68) had a successful outcome — i.e. three or more of the following were present: 1) peripheralization with lower cervical spine; 2) positive shoulder abduction test; 3) age > 55; 4) positive upper limb tension test; 5) positive neck distraction test (Raney, 2009).

Over-the-door home cervical traction, using a pulley hung from a door frame to help relieve neck pain, has been suggested by some as effective in the home. An early study of outpatients revealed symptomatic improvement in 81% of persons with mild or moderately severe cervical spondylosis syndromes, after three to five minutes of over-the-door cervical traction. Another study of 58 outpatients with cervical pain and radiculopathic syndromes showed similar improvements (Swezey, 1999).

In one study, 81 patients with cervical radiculopathy wore a cervical collar and home-based halter cervical traction for 15 minutes, three times daily for three to six weeks. Seventy-eight percent (63 of 81) experienced significant or total pain relief; of that group, three patients required surgery after their symptoms recurred. (Olivero, 2002).

A study found 45.6% (47 of 103) patients with neck pain responded to home-based mechanical cervical traction. Responsiveness exceeded 80% for those with a low fear-avoidance beliefs work subscale score, high pre-intervention pain, a positive cervical distraction test, and pain below the shoulder (Cai, 2011).

In a double-blinded study of 20 women with mild to moderate osteoarthritis, patients received routine physical therapy; one group was also assigned over-the-door home cervical traction. Both groups had a significant decrease in pain intensity and disability ($P < .05$), with the cervical traction group's decline being insignificantly greater. Drug consumption within and between the groups was not significant (Bagheripour, 2016).

A comparison ($n = 86$) of subjects with radiculopathy/neck pain who received standard exercise with or without mechanical traction or over-the-door traction showed that the over-the-door traction group had significantly lower (worse) disability score differences after six months (8.1 versus 13.3). Thus, mechanical traction was the preferred method (Fritz, 2014).

References

On October 24, 2019, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were "cervical traction device," "home cervical neck traction," and "neck traction device." We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

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