The efficacy of traction for back and neck pain: a systematic, blinded review of randomized clinical trial methods


Authors' objectives
To assess the efficacy of traction for patients with neck or back pain.

Searching
MEDLINE was searched from 1966 to 1992 using MeSH and free textwords; EMBASE was searched from 1974 to 1992, Index to Chiropractic Literature (ICL) from 1980 to 1992 and AMED from 1986 to 1992. Several (unspecified) journals were also examined.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) involving patients with back or neck pain, in which one of the treatment regimens included a traction technique. Studies not published by June 1992 were excluded.

Specific interventions included in the review
Traction (lumbar traction or cervical traction exerted manually, by a motorised pulley, using pulley and weights, or using gravitational forces).

Participants included in the review
People with back or neck pain, including those with acute and chronic low back pain, subacute and chronic cervical pain, and prolapsed lumbar discs.

Outcomes assessed in the review
Clinician's global estimate of improvement and patient's global estimate of improvement; patient estimates were often based on reported pain scores.

How were decisions on the relevance of primary studies made?
The inclusion criteria were applied by the first author during non-blinded screening of full papers, then repeated.

Assessment of study quality
A methodological assessment of all studies was undertaken, which considered various aspects of the study quality relating to the study population (e.g. sample size, adequacy of randomisation procedures and baseline comparability of groups), interventions (e.g. standardisation of treatments and quality of intervention description), measurement of effect (e.g. blinding and duration of follow-up) and data presentation. Two reviewers, blinded to the author(s), journal and results, applied the methodological checklist independently. Disagreements were resolved by consensus.

Data extraction
The data were extracted from non-blinded primary studies by the first author, then repeated.

Methods of synthesis
How were the studies combined?
The studies were combined by a narrative summary and tabulation. The authors did not pool the study results statistically because of the diversity of the protocols used and the variations in methodological quality.

How were differences between studies investigated?
The differences in patient groups, types of intervention and various aspects of methodological quality were detailed.

Results of the review
There were 17 randomised controlled trials (RCTs): 3 on cervical traction and 14 on lumbar traction.

The 3 RCTs with methodological scores greater than fifty (out of a maximum of 100) had negative results, i.e. they showed no favourable effects of traction on pain, mobility, functional status or other symptoms and complaints. These trials compared continuous motorised traction with a sham for chronic lower-back pain, continuous motorised traction with infra-red heat for acute lower-back pain, and intermittent motorised traction with either isometric exercise or no intervention for chronic cervical pain. Four of the 17 RCTs reported some favourable effects of traction. These trials, which all had methodological scores lower than 40, compared the following: autotraction plus corset with corset alone for acute lower-back pain; hot packs, neck school, mobilising and isometric exercises alone, and with manual traction, intermittent motorised traction or continuous motorised traction, for subacute cervical pain; intermittent motorised traction and isometric abdominal exercises with hot packs, and either rest or massage and mobilising, for chronic lower-back pain; and autotraktion with isometric abdominal exercises for chronic lower-back pain.

Authors' conclusions
Due to the poor methodological quality of the studies reviewed, it is impossible to formulate a strong and valid judgement about either lumbar or cervical traction. To date there has been no clear-cut information about the mechanism, nor evidence for any specific effect, of cervical and lumbar traction. There is no conclusive evidence that traction is an ineffective therapy for back and neck pain, and further trials are needed.

CRD commentary
This review is based on a reasonably comprehensive search strategy, although it does not include studies published later than June 1992. Details of individual studies are provided in a clear and comprehensive set of tables. The decision not to undertake statistical pooling of the available data was justified. Careful attention has been paid to methodological issues arising from the included studies, and the authors provide a balanced commentary. Sensible recommendations are made about a future research agenda.

Implications of the review for practice and research
The available RCTs do not allow clear conclusions to be drawn about the effectiveness of cervical or lumbar traction. Rigorous RCTs are needed before research-based recommendations or guidelines can be drawn.

Bibliographic details

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Indexing Status
Subject indexing assigned by NLM

MeSH
Back Pain /therapy; Bias (Epidemiology); Confidence Intervals; Humans; Neck; Pain Management; Randomized Controlled Trials as Topic; Reproducibility of Results; Research Design; Single-Blind Method; Traction; Treatment Outcome

AccessionNumber
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.