**Hoogvliet P, Randsdorp MS, Dingemanse R, et al. Does effectiveness of exercise therapy and mobilization techniques offer guidance for the treatment of lateral and medial epicondylitis? A systematic review. Br J Sports Med 2013; 47:1112–1119.**

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**Reviewer:** Linda Metzger 3-30-16

**Design:** Systematic Review (No meta-analysis)

**Objective:** To assess the evidence for the effectiveness of exercise therapy and mobilization techniques for the treatment of both medial (ME) and lateral epicondylitis (LE).

**Summary of Results:**

* Includes one systematic review and 12 RCTs, all studying lateral epicondylitis. Different therapeutic regimes were evaluated including stretching, strengthening, concentric/eccentric exercises and manipulation of the cervical or thoracic spine, elbow or wrist. No statistical pooling of the results was performed due to the high heterogeneity of the study populations in the included studies. Therefore, a best-evidence synthesis was used to summarize the results.
* Included studies were quite small. Only 2 studies had more than 31 subjects.
* Only 4 RCTs were high quality studies. One was a pilot study with 31 subjects, and the other 3 were extremely small studies with 10, 15, and 19 subjects. The low quality studies and small studies are at an increased risk of bias.
* Moderate evidence for the short-term effectiveness of pain reduction was found in favor of stretching plus strengthening exercises compared to ultrasound plus friction massage (SMD= 0.95, 95% CI 0.26 -1.64). This evidence was based on one small high quality trial (n=19).
* Moderate evidence for short-term and midterm effectiveness was found for the manipulation of the cervical and thoracic spine as add-on therapy to concentric and eccentric stretching plus mobilization of the wrist and forearm. This conclusion was based on one small high quality trial (n=10). This data should be interpreted with caution.
* For all other interventions, only limited, conflicting or no evidence was found.
* This review provides insufficient evidence that one exercise or mobilization intervention is more effective than another or to support the use of exercise or mobilization as a treatment with greater efficacy compared to other non-surgical interventions for lateral epicondylitis.

**Reasons not to Cite as Evidence:**

* The risk of bias and overall quality of the evidence was low or unclear in all studies except for 4 studies that were of high quality. Only 4 studies reported that the allocation sequence was concealed, 4 reported blinding of participants, and 6 provided adequate randomization. Less than half of the studies blinded outcome assessors. Acceptable compliance with interventions was present in half the studies, and only 4 studies reported similar baseline characteristics. The studies were heterogeneous in terms of the interventions delivered, outcomes measured, and study populations, and so pooling results across studies was not possible.
* Methodological quality scores of the included studies in Table 2 were inconsistent with what was written in the text. This was a gross oversight on the part of the authors.
* This very low quality evidence does not meet our literature critique criteria and would not qualify for an evidence statement.
* In several studies, the follow-up period was relatively short (sometimes immediately after treatment). The question remains as to what the clinically more relevant, long-term effects of these treatments might be.
* The statistical power of several studies was relatively low owing to the small number of subjects, which could cause the underestimation of the effects under investigation.
* Because the limited evidence is of very low quality, further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate, and so we are uncertain about the magnitude of the effect, and thus no useful conclusions can be drawn.
* This review provides limited data and very low quality evidence of effectiveness for all of a diverse collection of exercise and mobilization interventions for improving symptoms and functional ability for people with lateral epicondylitis, compared with other non-surgical interventions for LE. Until more high quality randomized controlled trials assessing the effectiveness of various exercise and mobilization are undertaken, the decision to provide this type of non-surgical intervention to people with LE should be based on the clinician’s expertise in being able to deliver these treatments and patient’s preferences.

**Assessment:**

* Low quality, inadequate systematic review that is inadequate to support any evidence for the effectiveness of exercise and mobilization interventions compared with placebo or another non-surgical intervention for the treatment of people with lateral epicondylitis (LE).