**Peters S, Page MJ, Coppieters MW, Ross M, Johnston V. Rehabilitation following carpal tunnel release. *Cochrane Database of Systematic Reviews* 2013; Issue 6.**

**PMID:** 23740605

**Reviewer:** Linda Metzger 10-7-15

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

**Objective:** To assess the effectiveness of rehabilitation following carpal tunnel syndrome (CTS) surgery compared with no treatment, placebo, or another postoperative rehabilitation intervention in people who had undergone CTS surgery.

**Summary of Results:**

* Includes 20 studies with a total of 1445 participants who underwent CTS surgery followed by postoperative rehabilitation. The trials included different rehabilitation treatments including: immobilization using a wrist orthosis, dressings, exercise, controlled cold therapy, ice therapy, multimodal hand rehabilitation, laser therapy, electrical modalities, scar desensitization, and arnica. Three trials compared a rehabilitation treatment to a placebo comparison, 3 trials compared rehabilitation to a no treatment control, 3 trials compared rehabilitation to standard care, and 14 trials compared various rehabilitation treatments to one another.
* One small high quality unpublished trial with 29 participants studied a desensitization program compared to standard treatment and revealed no statistically significant functional benefit based on the Boston Carpal Tunnel Questionnaire (BCTQ) (MD -0.03; 95% CI -0.39 to 0.33) (Powell 2003).
* One moderate quality trial assessed 150 employed participants six months post-surgery using the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire and found no significant difference between a no therapy group and a two-week course of multimodal therapy commenced at five to seven days post-surgery (MD 1.00; 95% CI

-4.44 to 6.44). Participants were not blinded and the study was at high risk of reporting bias (Pomerance 2007).

* One very low quality quasi-randomized trial with 40 participants found no statistically significant difference in function on the BCTQ at three months post-surgery with early immobilization (plaster wrist orthosis worn until suture removal) compared with a splint and late mobilization (MD 0.39; 95% CI -0.45 to 1.23). Failure to blind participants and outcome assessors, as well as high risk of selection bias due to inadequate random sequence generation and allocation concealment, suggest that this data should be interpreted with caution. (Cebesoy 2007).
* The authors concluded that there is limited and low quality evidence for the effectiveness of postoperative rehabilitation interventions in people who have had CTS surgery. The postoperative rehabilitation interventions reviewed included immobilization with a wrist orthosis (splint), dressings used post-surgery, exercise, cold and ice therapy, different types of hand rehabilitation in combination, laser therapy, electrical treatments, scar desensitization, and arnica. Until the results of more high quality trials that assess the effectiveness and safety of various rehabilitation treatments have been reported, the decision to provide rehabilitation following CTS surgery should be based on the clinician’s expertise, the patient’s preferences and the context of the rehabilitation environment.
* Overall, there is insufficient evidence that one postoperative rehabilitation intervention is more effective than another or to support postoperative rehabilitation in people after CTS surgery compared to no treatment.

**Reasons not to Cite as Evidence:**

* Only 4 studies measured the primary outcome of interest, change in self-reported functional ability at three months or more, and only 3 of these provided sufficient data to be included in this review.
* Few studies reported adverse events.
* The present search went through January 2013. One study was published in 2011and one in 2012, and all the others were older.
* The included studies were very low in quality. Eleven trials explicitly reported random sequence generation and, of these, three adequately concealed the allocation sequence. Four trials achieved blinding of both participants and outcome assessors. Five studies were at high risk of bias from incompleteness of outcome data at one or more time intervals. Eight trials had a high risk of selective reporting bias.
* The trials were heterogenous in terms of the interventions provided, the duration of interventions, the nature and timing of outcomes measured and setting. Therefore, the pooling of results across trials was not possible.
* This very low quality evidence does not meet our literature critique criteria and would not qualify for an evidence statement.
* 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.

**Comments:**

* This Cochrane Review has since been updated with a new literature search through September 2015 and a new published date of 2016. Two new trials were identified in this update. There was no change to the authors’ conclusions.

**Assessment:**

* High quality Cochrane review that shows there is inadequate evidence for the effectiveness of postoperative rehabilitation following carpal tunnel syndrome (CTS) surgery compared with no treatment, placebo or another postoperative rehabilitation intervention in people who have undergone CTS surgery.

**References:**

* Cebesoy O, Kose KC, Kuru I, Altinel L, Gul R, Demirtas M. Use of a splint following open carpal tunnel release: a comparative study. Advances in Therapy 2007; 24(3): 478–84.
* Powell F. Desensitisation techniques: Do they reduce scar sensitivity following carpal tunnel release? (A pilot study). Unpublished Masters Thesis 2003.
* Pomerance J, Fine I. Outcomes of carpal tunnel surgery with and without supervised postoperative therapy. Journal of Hand Surgery. American Volume 2007; 32(8):1159–63.