**Bisset LM, Collins NJ, and Offord SS. Immediate Effects of 2 Types of Braces on Pain and Grip Strength in People with Lateral Epicondylalgia: A Randomized Controlled Trial. *J Orthop Sports Phys Ther 2014; 44(2):120-128.***

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**Reviewer:** Linda Metzger 3-8-16

**Design:** Cross-over, double-blinded, randomized controlled trial

**Objective:** To compare the im­mediate effectiveness of 2 types of coun­terforce brace, one with and one without an elbow strap, in relieving pain and im­proving function in people with lateral epicondylalgia.

**Summary of Results:**

* A total of 34 participants were crossed over in random order into 3 intervention groups during 3 separate testing sessions: 1) forearm brace, 2) forearm-elbow brace, and 3) no brace.
* The results of this study demonstrated immediate short-term improvement of pain and function in both brace groups, but no difference in improvements between brace groups, and similar to improvements in the no-brace group.
* There was no significant difference between the braces or the no-brace group for any outcome. It appears that the ad­ditional strap on the forearm-elbow brace does not improve the efficacy of the exist­ing forearm brace to immediately relieve pain or improve function.
* While the use of a brace may be helpful in managing imme­diate symptoms related to lateral epicondylalgia, the choice of which brace to use should not be based on type, but rather on other factors such as patient preference, comfort, and cost.

**Reasons not to cite as evidence:**

* For both bracing in­tervention groups, minimum improvements of in pain-free grip strength and in pressure pain threshold were achieved, but the re­ported improvements in these 2 outcome measures were smaller than potential measurement error, and may therefore be due to mea­surement error rather than a true clini­cal change.
* The randomization procedure for this 3-way cross-over design was not detailed in the article. A description of the randomized sequence of each intervention assigned to a participant and how it was developed should have been included. Omitting this information is a major error that fails the test of evidence.
* It is unclear how long each participant wore each brace before being tested post-treatment. Since wearing instructions were not included, and the physiotherapist applied each brace during each of the 3 testing sessions, and immediate effects were evaluated, it appears that the braces were only worn during outcome measure testing. If the intervention involved only wearing the brace for a few minutes before testing, this does not really reflect a therapeutic effect of wearing the brace longer-term. It may be that a larger change in outcomes occurs with increased time spent in the brace. It is uninformative for our purposes.
* This study only evaluated the immedi­ate effects of the forearm braces, with no longer-term follow-up. Since lateral epicondylitis is usually a long term condition, it would seem clinically relevant to evaluate effectiveness of the braces in the long term.
* Participant and assessor blinding was not completely successful as the asses­sor correctly guessed the intervention on more occasions than would be expected by chance alone. Blinding was facilitated by visually obstructing the participant’s and the assessor’s view by covering the brace and forearm with opaque fabric and blindfolding the participant while each intervention was applied, and by not disclosing the purpose of each brace. This method of blinding could certainly introduce both performance and detection bias.
* Table 2 included mean differences between the 3 groups for all outcome measures, but failed to include *p* values or confidence intervals for any of these differences. It would be helpful in the interpretation of the results to know which results are statistically significant.
* Sample size was a bit smaller than the calculated sample size estimate needed to detect a significant difference. The study may have been slightly underpowered to find an effect.
* The forearm-elbow brace may not be available or readily used in this area. This study was conducted in Australia.

**Assessment:**

* There is an absence of evidence that any particular orthotic design or forearm brace differ in their effectiveness in treating people with lateral epicondylitis.