

**Zlowodwski M, Chan S, et al. Anterior Transposition Compared with Simple Decompression for Treatment of Cubital Tunnel Syndrome. JBJS Am 2007;89:2591-8.**

Design: Meta-analysis of randomized clinical trials (RCTs)

Databases/selection and rating of articles:

- 4 randomized trials comparing simple nerve decompression with anterior transposition in patients with ulnar nerve compression at the elbow
- Databases were Medline, EMBASE, Cochrane Library, CINAHL, and conference proceedings through November 2006
- Criteria for article selection were (1) target population of patients with symptoms of ulnar nerve compression at the elbow, (2) no history of trauma or surgery of involved elbow, and (3) randomized or quasi-randomized trial comparing simple nerve decompression with anterior transposition, either submuscular, intramuscular, or subcutaneous
- Quality scores measured on a 21 point scale which includes allocation concealment, patient blinding, outcome assessor blinding, and loss to follow-up
- Summary statistics were reported as standard mean differences using a random-effects model
- Three of the four authors were successfully contacted and furnished raw data from their studies

Main outcome measures:

- 458 citations found in electronic search; 43 retrieved for detailed analysis after reading abstracts, and 4 RCTs selected for meta-analysis
- The 4 RCTs included 335 randomized patients, 327 of whom were followed; ulnar nerve transposition was submuscular in 2 studies and was subcutaneous in 2 studies; average patient was 51 years old; 65% were male
- Accurate pooling of preoperative symptom severity was not possible because the selected authors used different severity grading systems
- Study outcomes were measured either with electrodiagnostic or with clinical scales or both
- A funnel plot was used to detect publication bias but was not informative
- Decompression and anterior transposition did not yield different pooled outcomes on either the electrodiagnostic or the clinical outcome scales
- The point estimate of the standard mean difference of the clinical scores was 0.04 in favor of transposition, with 95% confidence limits between 0.36 in favor of transposition and 0.26 in favor of decompression
- One study compared operative outcomes in a subgroup of patients with ulnar nerve subluxation; the operative results in this subgroup were not different for the decompression and anterior transposition patients

Authors' conclusions:

- No significant differences were found between transposition and decompression for cubital tunnel syndrome
- Using conventional criteria for effect size of standard mean difference, an SMD of 0.2 is small, 0.5 is moderate, and 0.8 is large; the 95% confidence limits of the clinical scores are small to medium and a large treatment difference is unlikely
- Future studies need to be better at avoiding sources of bias, such as lack of allocation concealment and blinding

Comments:

- The individual studies effect size estimates all include the null value showing no difference; the pooled estimate narrows the confidence interval to levels that make a large effect size difference unlikely
- The definition of the clinical question, the database searches, and the methods of estimating effect size are consistent with Cochrane methods

Assessment: High quality for an evidence statement that both operations are effective for cubital tunnel syndrome, and that neither has been shown to be superior to the other