

Conroy DE, Hayes KW. The Effect of Joint Mobilization as a Component of Comprehensive Treatment for Primary Shoulder Impingement Syndrome. JOSPT 1998;28:3-14.

Design: Randomized clinical trial

Study question: In patients with primary shoulder impingement syndrome, what is the efficacy of joint mobilization when added to a regimen of heat, soft tissue mobilization, strength and range of motion exercises, and patient education?

Reasons not to cite as evidence:

- There are too few patients (n=14) in the entire study to provide meaningful effect measures for the outcomes of treatment
- There are too many independent outcomes (10 dependent variables) with no clear designation of a primary outcome, creating a high likelihood that a “statistically significant” p value less than 0.05 will be generated by chance
- Most outcomes do not show a group difference, but 24 hour pain and subacromial compression test pain are reported as better in the group which had joint manipulation
 - o Unfortunately, the p values (in Table 3) are one-tailed, meaning that they do not assume that either treatment group could have a better outcome than the other group; this further inflates the likelihood of declaring statistical significance where there is none
 - o It is unclear why this was done, since the methods section said that the comparisons would be done with two-tailed tests
- All treatments were done by only one clinician, who was the principal investigator, making it likely that performance bias could influence the results
- Randomization method is not stated and allocation concealment appears not to have been done