

Yang JI, Jan MH, Chang CW and et al. Effectiveness of the end-range mobilization and scapular mobilization approach in a subgroup of subjects with frozen shoulder. Manual Therapy 2012; 17:47-52.

Reviewer: Linda Metzger 3-04-14

Design: Randomized controlled trial

Objective: To evaluate the effectiveness of an end-range mobilization/scapular mobilization treatment approach in a specific subgroup of patients with frozen shoulder syndrome.

Reasons not to cite as evidence:

- Several outcomes are reported: Flexilevel Scale of Shoulder Function (FLEX-SF), three measuring range of motion (humeral external rotation, humeral internal rotation, hand-behind-back reach), and three measuring shoulder kinematics (scapular humeral rhythm, scapular posterior tipping, and scapular upward rotation ROM), and two followup measurements: 4 and 8 weeks.
- The designation of a primary outcome was not clear.
- Any common outcome measurement for pain was not included.
- Multiple independent comparisons were made in search of statistical significance.
- Two separate control groups were formed for no apparent good reason and one control group was not randomly allocated.
- Several irrelevant comparisons were made and other more important outcomes were not reported.
- The presentation of the outcome data was insufficient. Outcome data was presented as mostly figures with some numbers presented in the results as text, but no actual numbers were reported in tables.
- Sample size was extremely small. The 2 relevant groups included only 22 total participants.
- The criteria used for inclusion into the study were so specific that you would not be able to generalize the results of this study to the majority of the frozen shoulder population and you could not readily compare the results to other studies either. Inclusion criteria did not compare a patient's frozen shoulder to their good shoulder.
- Several confusing inconsistencies were noted such as the length of the intervention as either 8 weeks or 3 months.
- There were too many issues to make sensible recommendations and the author's conclusions were too weak for evidence.

Interesting Observations:

- The authors did report improvement on the Flexilevel Scale of Shoulder Function for the intervention group that received specific end-range mobilization and scapular mobilization treatment. This type of scapular stability strategy appears to be effective and is a biologically plausible intervention.