**Article Full Title**

Self and manual mobilization improves spine mobility in men with ankylosing spondylitis—a randomized study

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**Paper Abstract**

Objective Chronic low back pain (CLBP) is a disabling and costly condition for older adults that is difficult to properly classify and treat. In a cohort study, a subgroup of older adults with CLBP who had elevated hip pain and hip muscle weakness was identified; this subgroup differentiated itself by being at higher risk for future mobility decline. The primary purpose of this clinical trial is to evaluate whether a hip-focused low back pain (LBP) treatment provides better disability and physical performance outcomes for this at-risk group compared with a spine-focused LBP treatment. Methods This study is a multisite, single-blinded, randomized controlled, parallel arm, Phase II trial conducted across 3 clinical research sites. A total of 180 people aged between 60 and 85 years with CLBP and hip pain are being recruited. Participants undergo a comprehensive baseline assessment and are randomized into 1 of 2 intervention arms: hip-focused or spine-focused. They are treated twice weekly by a licensed physical therapist for 8 weeks and undergo follow-up assessments at 8 weeks and 6 months after randomization. Primary outcome measures include the Quebec Low Back Disability Scale and the 10-Meter Walk Test, which are measures of self-report and performance-based physical function, respectively. Impact This multicenter, randomized clinical trial will determine whether a hip-focused or spine-focused physical therapist intervention results in improved disability and physical performance for a subgroup of older adults with CLBP and hip pain who are at increased risk of mobility decline. This trial will help further the development of effective interventions for this subgroup of older adults with CLBP.

**NIH Risk of Bias Tool**

Quality Assessment of Controlled Intervention Studies

**Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT**

Yes

**Was the method of randomization adequate (i.e., use of randomly generated assignment)?**

Yes

**Was the treatment allocation concealed (so that assignments could not be predicted)?**

Yes

**Were study participants and providers blinded to treatment group assignment?**

Yes

**Were the people assessing the outcomes blinded to the participants' group assignments?**

Yes

**Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)?**

Yes

**Was the overall drop-out rate from the study at endpoint 20% or lower of the number allocated to treatment?**

Yes

**Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage points or lower?**

Yes

**Was there high adherence to the intervention protocols for each treatment group?**

Yes

**Were other interventions avoided or similar in the groups (e.g., similar background treatments)?**

Yes

**Were outcomes assessed using valid and reliable measures, implemented consistently across all study participants?**

Yes

**Did the authors report that the sample size was sufficiently large to be able to detect a difference in the main outcome between groups with at least 80% power?**

Cannot Determine, Not Reported, Not Applicable

**Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)?**

Yes

**Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis?**

Cannot Determine, Not Reported, Not Applicable

**Key Finding #1**

Chest expansion increased over the xiphoid process but not the 4th intercostal space, and vital capacity did not increase.

**Key Finding #2**

An increase in thoracic and lumbar flexion and range of motion was demonstrated.

**Key Finding #3**

Cervical and thoracic posture demonstrated improvements, but no improvements were noted in the lumbar spine.

**Please provide your summary of the paper**

The purpose of this paper was to determine the efficacy of manual therapy on increasing chest expansion and spinal mobilization in patients with ankylosing spondylitis. The treatment group received self- and manual mobilization for one hour twice a week for 8 weeks. The control group participated in their usual physical exercises. Statistically significant differences were seen in the chest expansion over the xiphoid process, cervical and thoracic spine posture, and thoracic and lumbar spine flexion and range of motion. Limitations to this study include lack of diversity of the patient population (only men), small sample size, and lack of comparison to specific exercise programs.

**Please provide your clinical interpretation of this paper. Include how this study may impact clinical practice and how the results can be implemented.**

This study suggests that manual therapy could be useful for increasing chest expansion and spinal range of motion in people with ankylosing spondylitis. Greater research must be conducted to determine the efficacy of manual therapy in concordance with an exercise program in treating the disease. Additionally, more research expanding over a more diverse patient population will be beneficial.