The purpose of this systematic review was to determine the effectiveness of soft-tissue mobilization compared to eccentric exercise in the treatment of tendinosis in terms of pain reduction and functional outcomes. The methods included a literature search (2006-2016) of CINAHL, Medline, Web of Science, Science Direct, and PubMed using the search terms: (tendinosis OR tendinopathy) AND (ASTYM OR eccentric exercise). The selection criteria were: RCTs, human subjects, and English language. Two reviewers independently assessed each article for methodological quality and came to consensus based on PEDro scoring guidelines.

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RESULTS
A total of 508 articles were screened for eligibility. Following detailed appraisals, 7 RCTs fulfilled criteria. PEDro scores ranged from 6-9/10 (avg=7.3). Samples ranged from 16 to 120 subjects (430 total) with chronic tendinopathy pathology in the shoulder, elbow, knee, and heel cord across all studies. Ecc was performed for 3 sets of 15 reps for 1.67 times per day, 2-7 days per week, averaging 9.67 weeks duration (4-12 wks). ST was performed for 2.53 times per week averaging 9.33 weeks duration (4-12 wks).

Primary outcomes included the DASH, VISA-A, and VAS. No adverse events were reported. There were statistically significant between-group improvements noted in functional outcome measures (VISA-A and DASH) following Ecc & ST vs Ecc alone in 2 studies. There were not statistically significant between-group improvements noted in pain (VAS) following Ecc vs concentric exercise in 1 study. There were statistically significant improvements noted in functional outcome measures (VISA-A) following Ecc in 1 study. There were not statistically significant between-group improvements noted in functional outcome measures (VISA) following Ecc vs surgery in 1 study. There were no statistically significant between-group improvements noted in functional outcome measures (VISA-A) following Ecc vs heavy slow resistance in 1 study. There were no statistically significant between-group improvements noted in pain (VAS) following ST vs Therapeutic Exercise in 1 study.

CONCLUSIONS
There is moderate to strong evidence in support of an intervention that includes Ecc vs ST alone for improving pain and functional outcome scores in persons with chronic tendinopathy. Ecc & ST together have an advantage over Ecc or ST alone. Limitations included small samples and a lack of blinding participants. Future RCTs should focus on an optimal dose of Ecc as well as well-defined ST technique for treating chronic tendinopathy.

The outcomes for Ecc and ST together appear superior compared to other forms of treatment for improving functional outcomes in adults with chronic tendinopathy. Effective treatment protocols use Ecc, for 3 sets of 15 reps, and ST 4-5 days per week for 9 weeks. Implementing interventions consisting of Ecc and ST are safe and feasible methods for treating chronic tendinopathy.

REFERENCES