

# Comparison of Scapular Posterior Tilting Exercise Alone and Scapular Posterior Tilting Exercise after Pectoralis Minor Stretching On Scapular Alignment and Scapular Upward Rotators Activity in Subjects with Short Pectoralis Minor

Lee, J.H., Cynn, H.S., Yoon, T.L., Choi, S.A., Choi, W.J., Choi, B.S. and Ko, C.H., 2015. Comparison of scapular posterior tilting exercise alone and scapular posterior tilting exercise after pectoralis minor stretching on scapular alignment and scapular upward rotators activity in subjects with short pectoralis minor. *Physical Therapy in Sport*, 16(3), pp.255-261.

## Setting the scene:

The aim of this study was to compare scapular posterior tilting exercise alone and scapular posterior tilting exercise after pectoralis minor (PM) stretching on the PM index (PMI), scapular anterior tilting index, scapular upward rotation angle, and scapular upward rotators' activity in subjects with a short PM.

## What did they do?

15 subjects with a short PM participated in this study. **Main outcome measures:** The PMI, scapular anterior tilting index, and scapular upward rotation angle were measured after scapular posterior tilting exercise alone and scapular posterior tilting exercise after PM stretches. Scapular upward rotators' activities were collected during scapular posterior tilting exercise alone and scapular posterior tilting exercise after PM stretches.

The PMI and scapular upward rotation angle, as well as the activity of the upper trapezius, lower trapezius, and serratus anterior muscles, **were significantly greater for scapular posterior tilting exercise after PM stretching** and the scapular anterior tilting index was **significantly lower** for scapular posterior tilting exercise **after** PM stretching than the scapular posterior tilting exercise alone.

## Takeaway message:

Scapular posterior tilting exercise after PM stretching in subjects with a short PM could be an effective method of modifying scapular alignment and scapular upward rotator activity. Patients with short PM should be encouraged to perform PM stretch, and then perform the SPT exercise.