The Effects of Self-Joint Mobilization on Thoracic Extension Utilizing a High Density Foam Roller

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Abstract

Hypomobility of the thoracic spine has been linked to decreased shoulder flexion, increased neck and shoulder pain, as well as overuse injuries in the cervical and lumbar spine. One method commonly used by physical therapists to treat hypomobility is joint mobilization. Joint mobilizations are passive movements of a skeletal joint with the aim of increasing range of motion (ROM) by stretching joint capsules, surrounding connective tissue and soft tissue. Physical therapists often prescribe joint mobilizations as self-exercises for patients to perform between appointments.

Research has shown that mobilizations can be used as an intervention for increasing mobility in hypomobile joints. However, little research has been done to test the effectiveness of self-mobilization without additional mobilizations. The aim of this study was to determine the effect of thoracic self-joint mobilization on active thoracic extension using a high density foam roller.

Methods

The self-mobilization protocol is a viable alternative to traditional mobilizations. The aim of this study was to determine the effect of thoracic self-joint mobilization on active thoracic extension using a high density foam roller.

An independent t-test was conducted to analyze the difference between pre and post thoracic extension measurements. Results revealed significant increase in thoracic extension for the intervention group after the 14 day protocol (from 2.36 cm ± 0.98 to 3.31 cm ± 1.19 for an increase of 0.95 cm ± 0.65 (p = 0.010)).

Conclusion

The self-mobilization protocol significantly increased thoracic extension. Increased extension in the thoracic spine has several benefits which include increased shoulder flexion, and decreased neck and shoulder pain. The present results suggest that the utilized self-mobilization protocol is a viable method for increasing thoracic ROM. The protocol provides a possible method of obtaining the benefits of increased thoracic extension through a self-administered mobilization.

Subjects began each session with a warm-up. They were instructed to lie on their backs, placing the foam roller underneath their scapulae, perpendicular to the spine. Hips and buttocks rested on the floor, and knees were bent at 90 degrees. The head was supported by the hands in a neutral position with elbows in the sagittal plane and the back straight. The subjects then lifted their hips and buttocks off the floor into a neutral position, and rolled on the foam roller from T1 to T12 and back to T1. For interpretational purposes participants were instructed to roll from the base of their neck to the bottom of their rib cage. This was performed 12 times.

At each location, the participants were instructed to exhale as they extended over the foam roller. They were told to pause at the end ROM for five seconds. They would then inhale while maintaining position. As they exhaled the second time, they would attempt to fall farther into extension and pause at the new end ROM for five seconds. The repetition was completed by inhaling as they returned to the starting position. Two repetitions were done at each of the three locations to complete one session. Twenty-eight total session were performed by completing two sessions per day for 14 days.

References


The Effect of Thoracic Extension on Thoracic Extension (cm)