ABSTRACT

Background: The scapula is a critical link utilized in the kinetic chain to achieve efficient overhead movement and transfer energy from the lower extremity to the upper extremity. Additionally, daily activities such as sitting at a computer or driving in a car may negatively influence an individual’s ability to maintain proper body posture and therefore compromise those movements. To reduce these negative influences, posture garments have been designed to cue the individual in maintaining and improving posture and alignment, specifically targeting scapular positioning.

Purpose: The purpose of this study was to compare scapular positioning between an IntelliSkin™ posture-cueing compression garment and a generic performance garment on scapular kinematics during static standing.

Study Design: Case control.

Methods: Forty active females (1.68 ± 0.07 m; 67.29 ± 11.25 kg) stood in a natural standing position while wearing two different garments: IntelliSkin™ posture-cueing compression garment and a generic performance garment. Kinematic data were collected at 100 Hz using an electromagnetic tracking system (trakSTAR™, Ascension Technologies, Inc., Burlington, VT, USA) synced with The MotionMonitor® (Innovative Sports Training, Chicago, IL, USA).

Results: Repeated measures ANOVAs revealed a statistically significant Shirt by Side interaction for scapular protraction/retraction (F(1,39) = 52.91, p ≤ 0.05) and main-effect of Shirt for scapula anterior/posterior tilt (F(1,39) = 96.45, p ≤ 0.05). Individuals showed increased retraction and posterior tilt while wearing the IntelliSkin™ posture-cueing compression garment.

Conclusion: The results of the current study indicate that the IntelliSkin™ posture-cueing compression garment improved scapular positioning during static standing posture. The IntelliSkin™ posture-cueing compression garment may provide clinicians an adjunct strategy to include with rehabilitative protocols.

Level of Evidence: Diagnosis, Level 3

Key Words: Kinetic chain, proprioceptive feedback, rehabilitation, scapular kinematics, upper extremity kinematics