

The Effect of Scapular Dyskinesia on Upper Quarter Y-Balance Test Performance

SOPHIA MANOKAS, TAL AMASAY and VERED ARBEL

Sport & Exercise Sciences Department; Barry University; Miami, FL
Department of Kinesiology and Nutrition; University of Illinois at Chicago; Chicago, IL

Category: Undergraduate Student

Advisor / Mentor: Amasay, Tal (tamasay@barry.edu)

ABSTRACT

The Upper Quarter Y-Balance Test (UQYBT) is a functional assessment tool that measures the stability and mobility of the upper extremity, while also analyzing symmetry. Scapular dyskinesia is defined as an alteration of the positioning and function of the scapula that impacts the overall kinetic chain, inhibiting proper shoulder movement. This condition is most prevalent in athletes participating in overhead sports such as swimming and tennis. Scapular dyskinesia decreases the range of motion of the shoulder resulting in a weakened performance. While it is unknown whether scapular dyskinesia is a cause or effect, it is believed that it increases the risk for shoulder injuries to occur. **PURPOSE:** to investigate if scapular dyskinesia impacts the performance on the UQYBT. **METHODS:** Twenty subjects (23±5 years; 76±17 kg; 173±10 cm), eight females and 12 males, participated in this study. Scapular dyskinesia was assessed using the Kibler Scapular Dyskinesia Test (SDT), on all subjects. Once the SDT was completed, the subjects performed the Upper Quarter Y-Balance Test (UQYBT). The three reach directions of the UQYBT are medial reach (MR), superolateral reach (SLR), and inferolateral reach (ILR). Three consecutive trials in all three directions were performed on the right and left arm, randomly. A one-minute resting period was given for each subject between trials. The best reach score for each direction and side was collected and normalized to the right upper extremity length. Composite scores were then calculated using the average of the three reach directions, for each side. One-way ANOVA analyses were used to compare the normalized reach scores for each direction, between the shoulders with scapular dyskinesia and the normal, $p < .05$. **RESULTS:** Out of the 40 shoulders tested in this study, 15 shoulders were categorized as having scapular dyskinesia and the other 25 were categorized as normal. No significant differences were found when comparing all three normalized reach scores and normalized composite score between scapular dyskinesia shoulders and normal shoulders, $p > .05$. For the normal shoulders, %MR was 98.4±7.9%, %SR was 73.1±13.5%, %IR was 81.1±12.8%, and %composite was 84.2±8.95%. In terms of the scapular dyskinesia shoulders, %MR was 95.6±8.9%, %SR was 69.9±13.9%, %IR was 83.8±12.6%, and %composite was 83.1±10.5%. **CONCLUSION:** In all three reach directions and composite scores, the scapular dyskinesia shoulders were observed to have similar results when compared to the normal shoulders. These results may indicate that subjects with scapular dyskinesia shoulders are able to achieve similar scores due to compensatory patterns of the muscles surrounding the shoulder girdle complex and thorax. Further research needs to be done to investigate if there are different compensatory mechanisms in individuals with scapular dyskinesia shoulders.