

Batson, G, Wilson, MA, Tanaka ML, Zhu, QA, Deckert J, Long, BE, Bundle M, “Performance Strategies in College-Age Dancers on the Modified Star Excursion Balance Test: Preliminary Findings”, The 20th Annual Meeting of the International Association of Dance Medicine and Science, October 28 – 31, Birmingham, UK (2010).

This multi-site research project is a continuation of studies designed to examine the efficacy of a dynamic test of balance, the Star Excursion Balance Test (SEBT), in detecting postural control deficits in dancers. The SEBT involves standing on one leg in the middle of a star-shaped taped grid, while targeting lightly with the free foot to the farthest distance along the 8 cardinal directions of the star. Validated solely for distance on athletes with a history of ankle sprain, the original SEBT was modified (mSEBT) in 2009, to increase sensory and cognitive challenges in screening for dancers’ balance deficits. Fifty conservatory dancers were sampled in the US and the UK. While results concurred with original findings on distance, performance strategies varied widely on the modifications, despite sample homogeneity and controlling for strategy. In this study, the mSEBT will be administered to college-age dance majors and age-matched controls at two US research institutions with two aims in mind: (1) To hone the test further as a pre-season screening tool for balance for this dance population, and (2) to analyze postural control strategies emerging during performance of the test. Subjects recruited from both institutions will include dancers with- and without history of lower extremity injury who report maintaining a pain-free, rigorous training schedule. Age-matched controls will include college athletes without history of injury. The mSEBT will be administered as per the 2009 modifications: timing (speed), timing with cognitive interference (calculating while executing) and surface alterations (standing on foam). Number of stepping strategies and falls also will be tracked. The test also will be adapted for quantitative analysis using a force platform and 3-D motion capture. Comparative analysis of both qualitative with quantitative data will assist in defining dancers’ postural control strategies for maintaining balance under multiple conditions. Outcomes will support future research in accurately identifying dancers with balance deficits, leading to design of appropriate protocols for training and rehabilitation.