

The Effects of Vestibular Training in a Balance Program in the General Population Versus a Post-Concussive Population

Joseph Kelleher, Cara Lapp, Kali Richardson, Haley Williams

Faculty: Christina Ashbrook

Department of Physical Therapy, College of Health Professions

INTRODUCTION: Concussions are prevalent injuries sustained by individuals in various populations. Each individual may experience an array of symptoms with concussions which may include but are not limited to, confusion, headache, dizziness or vertigo, and mood or cognitive disturbances. The short-term effects of concussions are clearly identified and well-studied, but the potential long-term effects of concussions, including balance deficits, have not been studied as extensively.

PURPOSE: This case study will examine the impact of vestibular training with an additional balance training program for a concussive participant compared to a healthy population.

METHODS: Participants will range from eighteen to forty years of age, which includes healthy and concussed individuals. The Balance Error Scoring System (BESS), Y-Balance Test, and Dizziness Handicap Inventory (DHI) will be used for the pre-test and post-test examination of the participants' balance and dizziness.

RESULTS: The initial results of the twenty-nine participants from the general population and the one concussed participant were analyzed using a mixed ANOVA set at a 95% confidence interval ($p=0.05$) to determine the significance from the pretest to the posttest. The data collection of the twenty-nine participants from the general population and the one concussed participant were analyzed separately and then compared. Our case study found no clinically detectable changes between the healthy participant's data and the data of the concussed participant.

CONCLUSION: This case study aimed to examine the long-term effects of potential balance deficits following sustained concussion and determine the impact of vestibular exercises and balance exercises in a concussive population compared to the general population.