

Establishing the reliability of measures of centre of pressure in postural sway and gait initiation in a cohort of university aged active individuals. Robyn Connors

Recent reports linking concussion injuries with the onset of neurological conditions in later years have led to an increase in the likelihood to report head trauma in physical activity and recreation across all age levels. However, since there is no standardized measure of concussion, assessments of head injuries may vary across laboratories/clinics and emergency departments and therefore decisions about return to work/play may be subjective and inconsistent. Centre of pressure is a measure that can identify sway and proprioception that may reflect the magnitude of a concussion injury.

The purpose of the present study is to measure the reliability of centre of pressure estimates during static postural sway and measures of anticipatory postural adjustment during gait initiation under normal and perturbed conditions.

A sample of 28 asymptomatic, university aged participants, with no previous history of concussion over the past 6 months, and no conditions that could affect balance, were recruited. A test-retest design with a two week break between tests, to reduce a learning effect, was used for data collection.

A laboratory force plate (AMTI AccuSway Optimized) enabled the researchers to record measures of balance and gait-initiation under single and dual task conditions.

Establishing measures of static and dynamic balance as a stable measure of the concussion injury will contribute to information used in evaluating an individual's recovery from head injury, which may support decisions related to return to play/work.