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Vestibular & Balance Rehabilitation Research

At NYU Langone's Rusk Rehabilitation, our research on the vestibular system and balance

continues to lead to improvements in the diagnosis and treatment of patients experiencing dizziness and imbalance.

Tara Denham, PT, MS, who founded the renowned Vestibular Rehabilitation Center [↗](#) at Rusk Rehabilitation, is leading a study to examine the effects of aerobic training with vestibular rehabilitation on gait and balance in people with concussion. The randomized single-blind controlled trial includes patients who have had concussion for at least 14 days. The research team, which includes Jennifer L. Fay, PT, DPT, NCS [↗](#), has the control group perform traditional vestibular rehabilitation exercises commonly given to people with concussion and the experimental group do vestibular rehabilitation and aerobic exercise.

Participants in the experimental group are tested on a stationary bicycle through progressive resistance maintaining the same speed and are instructed to train independently in a customized exercise regimen of moderate to high intensity. The team assesses subjects using standardized outcome measures at initial evaluation and again at the end of a six-week vestibular rehabilitation program with an aerobic exercise component. The goals of this proposed research are to examine the effects

of aerobic exercise testing and training on individuals with concussion who are currently experiencing symptoms.

The team is also investigating the reliability and validity of the observational vestibulo-ocular reflex test, specifically to determine whether an observational vestibulo-ocular reflex test can perform accurately in a cohort of healthy young adults with no history of vestibular or balance disorders. Researchers also want to determine the interrater reliability of observational vestibulo-ocular reflex test measurements. The vestibulo-ocular reflex test is standard treatment in vestibular clinics and is used to count head turns as an assessment of progress over time. The team wants to see whether the vestibulo-ocular reflex test can be standardized as an observation-based clinical test and whether it is valid and reliable compared with the computerized gaze stabilization test.

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