

Diagnosing Dizziness with Balance Biomarkers

Principal Investigator: James Naples, MD. Beth Israel Deaconess Medical Center

1. To measure levels of inner ear-specific biomarkers (prestin and otolin-1) in patients presenting to the emergency room presenting with acute dizziness.
2. To evaluate whether these biomarkers are different between patients who presented with dizziness from a peripheral (otologic) source or central source.

Dizziness is one of the most challenging symptoms for patients to articulate. As such, there are significant challenges in arriving at appropriate diagnoses. In order to maintain our sense of balance, humans integrate input from multiple sensory systems that include our eyes (vision), feet (proprioception), ears (vestibular) and brain. Dysfunction of any of these systems can create a sense of imbalance.

In many cases, dizziness is related to either a “peripheral vestibular” dysfunction that involves the inner ear (ie: Meniere’s Disease, vestibular hypofunction, labyrinthitis, benign paroxysmal positional vertigo (BPPV), etc...) or “central vestibular” dysfunction that involves the brain (ie: stroke, vestibular migraine, etc...). This important research proposal aims to offer inner ear-specific biomarkers as a novel diagnostic tool that can help localize balance disorders to either the inner ear or central nervous system, and improve diagnostic accuracy for complex sensory symptoms of dizziness.