

## Proposal

**Title:** Clinically Assessing Balance Using Idestrom Maneuver

**Program of Study:** Medicine

**Presentation Type:** Print Poster

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**Category:** Experimental (Applied)

### **Abstract:**

Balance is a synchronized effort between the body's sensory systems; these sensory systems provide input to the cerebellum. The vestibular, somatosensory, and visual systems play a crucial role in keeping one balanced and coordinated during the simple task of standing on two feet, and during the more complex task of walking. In the event that a lesion occurs in one of these systems, balance can be altered, making simple, daily tasks extremely difficult. One particular test that can be used to assess if a patient is experiencing imbalance is the Idestrom maneuver. In performing the Idestrom maneuver, the patient is asked to place one foot in front of the other in tandem, and then close his or her eyes. The Idestrom maneuver is a sensitive test for balance but lacks a normative data profile. The goal of the finished study is to establish this normative data profile with the aim of using the Idestrom maneuver as a simple test to quickly assess stationary balance in a clinical setting. For this study, we are evaluating multiple volunteer subjects of various age groups seeking a narrow confidence range for three broad adult age groups: young adult 18-30, middle age 31-55, and senior 56-75. Each participant completes only one visit in which they are asked to conduct the Idestrom maneuver after completing a brief verbal questionnaire to collect demographic data and determine if any confounders may exist. While standing without shoes, he or she is next instructed to place one foot in front of the other in tandem, then close his or her eyes once adequate balance is achieved, The participant is then timed until he or she breaks stance. This is done twice with the dominant foot forward and twice with the non-dominant foot forward, recording the longest trial for each. As of yet, seventy-five data points have been collected, although normative data continues to be compiled.

Liberty University College of Osteopathic Medicine was founded upon a strong Christian worldview with a goal of recognizing the needs of underserved populations from the individual to the global level. A vital component of LUCOM's mission statement is "service toward their fellow man." With that belief in mind, LUCOM is dedicated to sending medical missionaries to areas of need around the globe. One of the most common themes in overseas or domestic medical missions is the scarcity of resources. Whether it be medications, diagnostic equipment or even time, resources are often in high demand and insufficient for the amount of need in areas that require them the most. The Idestrom maneuver can be used globally to address the issue involving limited resources. Using the Idestrom maneuver on mission trips allows students and physicians to quickly assess the balance capacity and cerebellar function of their patients in areas where other scans and diagnostic tests are not available. In July 2015, LUCOM sent over 80 student doctors to three villages in the underserved regions of Zacapa, Guatemala. In Zacapa along with others areas around the world of similar need, simple screening tools could go a long way in ruling in or out the necessity for more sophisticated and expensive diagnostic tests. Once the Idestrom maneuver has been established as a strong, reliable clinical tool through the collection of a normative data pool in this study, it can be used as a simple, inexpensive screening tool in areas where further diagnostic tools can be extremely expensive and often challenging to access.