**A Downloadable 3D BPPV Model for the Study of Otolith Disease**

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BPPV is the most common cause of peripheral vertigo. Its diagnosis and treatment depend on an understanding of the anatomy of the vestibular labyrinth and its position relative to the head. To date, many illustrations have been made to explain principles of diagnosis and treatment of BPPV, but few have been based on anatomical studies of the membranous labyrinth. A three-dimensional study tool of the membranous labyrinth has been developed in order to study the pathophysiology, diagnostic workup, and treatment of benign paroxysmal positional vertigo (BPPV). A cadaveric human membranous labyrinth was axially sectioned at 20-mm resolution, stained, and segmented to create a high-resolution digital model. The model was cloned to create an enantiomeric pair of labyrinths. These were associated with a 3D modelof a human skull, segmented from MRI data, and were oriented according to established anatomic norms. Canal markers representing otoliths were created to mark canalith position during movement of the model within the 3D environment. The model development was then transferred to Unity software, and simple manipulation controls were developed as well as draw styles that facilitate medical illustration and communication. The model allows visualization of true membranous labyrinth anatomy in both ears simultaneously. Moveable markers can mark the expected progress of otolith debris with changes in head position, and images can be captured to document simulations. The simplified 3D system can be exported to iOS and to Windows and is available for download. The model has been used to study conventional diagnostic and therapeutic maneuvers in BPPV and has resulted in modifications of these maneuvers that increase diagnostic accuracy. The presence of a widely available model promises progress in the study of BPPV as discrepancies between model predictions and clinical observations can lead to new questions and insights.