

EVALUATION OF VESTIBULAR FUNCTION TESTS

Essay

**Submitted for Partial Fulfillment
of Requirements for Master
Degree of Oto-Rhino-Laryngology**

Presented By
Morcos Moheb Morcos
M.B., B.Ch.

SUPERVISED By :

Prof. Dr.
Youssef Ezz-El Din Essamma
Prof. of E.N.T.
Faculty of Medicine
AIN SHAMS UNIVERSITY

Prof. Dr.
Mamdouh El Gohary
Prof. of E.N.T.
Faculty of Medicine
AIN SHAMS UNIVERSITY

Faculty of Medicine
AIN SHAMS UNIVERSITY
Cairo

1983



Contents

- Acknowledgement	
- Introduction and aim of the essay	1
- Anatomy and physiology of the vestibular system	3
- History and character of vertigo	18
- Examination and vestibular function tests	32
. Tests of stance and gait	34
. Examination for pathologic nystagmus	45
. Caloric test	8
. Rotation test	111
. Galvanic test	131
. Tests of visual-ocular control	134
. Miscellaneous tests	148
- Discussion	154
- Summary	174
- References	179
- Arabic summary	

Acknowledgement

I am very much privileged and honoured to have Prof. Dr. Youssef Ezz-Elidin Essamma professor of E.N.T., Faculty of Medicine, Ain Shams University supervisor of this work. His nobility is always expressed. I am grateful to him for his guidance, insight and wise counsel.

I wish to express my deepest gratitude and appreciation to Prof. Dr. Mamdouh El-Gohary professor of E.N.T., Faculty of Medicine, Ain Shams University for his kind supervision and valuable guidance, comments, continual encouragement, sacrifice of his valuable time and effort, and interest in this work.

I am also grateful to the cooperation and help of all staff of E.N.T. Department, Faculty of Medicine, Ain Shams University.

Introduction

Extensive research on human vestibular reflexes initiated by Robert Bárány in 1907 provided the foundation for clinical analysis of pathologic processes in the labyrinth or in the pathways and centers of the vestibular system.

In the past 75 years owing to significant technologic advances and an increase in the number of investigators entering the field, there has been a spectacular change. Abundant qualitative and quantitative information is now available on the structure and function of the vestibular system with numerous reports on the symptoms and diagnosis of vestibular dysfunction.

Several centers around the world are attempting to develop reliable, clinically feasible vestibular test methods based upon known physiological mechanisms of the vestibulo-ocular and vestibulo-spinal reflex systems.

There are no standard tests of human vestibular function. Consequently all the tests proposed at present should be used with some subjective assessment criteria. However, techniques recently developed, using computerized measurements, show a great deal of promise for meaningful quantitative vestibular testings.

AIM OF THE ESSAY

The objectives of this work is :

- To correlate the numerous advances in the field of vestibular research with clinical diagnosis, and to treat the areas of controversy.

- To discuss the advantages and limitations of each test, with the purpose of defining the diagnostic significance of each vestibular test.

Anatomy and Physiology of the Vestibular System

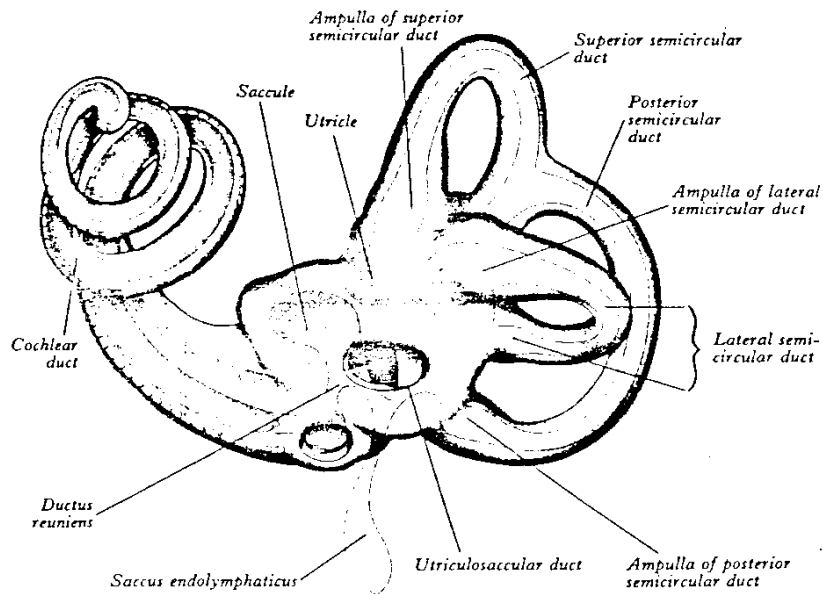


Fig. 1 Scheme of the membranous labyrinth projected on the osseous labyrinth.
(Quoted from: Warick and Williams, 1973)

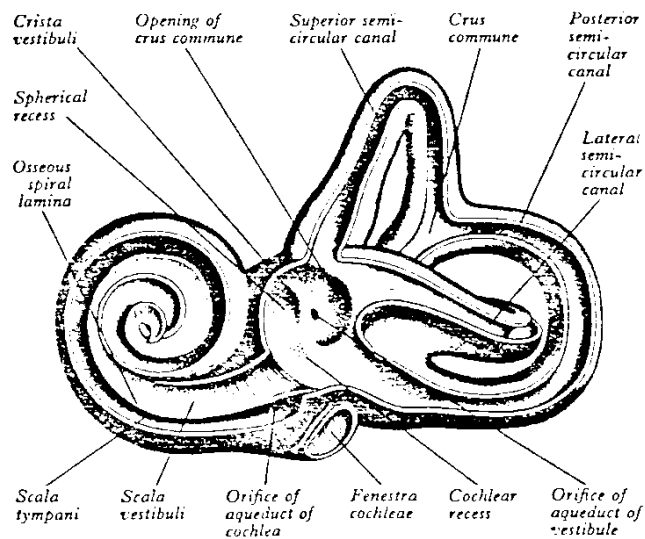


Fig. 2 The interior of the left bony labyrinth.
(Quoted from Warick and Williams, 1973)