

# About the Usefulness of Nystagmography

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## ABOUT THE USEFULNESS OF NYSTAGMOGRAPHY

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Balance is achieved and maintained by complex set of sensorimotor control systems that include sensory input from several senses (vision, proprioception, vestibular system, tactile sense and hearing), integration of that sensory input, and motor output to the eyes and body muscles. The diagnostics of vertigo and balance disorders is often complex and requires a multidisciplinary approach. Nystagmography is a series of tests used to examine and evaluate part of the human balance system by recording, analyzing and reporting reflexive repetitive eye movements called nystagmus. Electronystagmography (ENG) is the oldest, electrical method of recording nystagmus, it detects changes of periorbital electrical field caused by eye movements since the eye is a dipole in which the cornea is electropositive and the retina electronegative. Videonystagmography (VNG) uses video goggles with infrared cameras that provides video monitoring of the eyes supplemented by computerized recording of nystagmus. There are three main groups of tests: tests that

looks for presence of abnormal eye movements ( the gaze tests, Dix- Hallpike and positional tests) , tests that investigate vestibular-oculomotor function (the bithermal caloric test), and tests used to evaluate visual-oculomotor function ( the saccade test, the tracking test and the optokinetic test). ENG/VNG is often used complementary with rotation tests, VEMP ( vestibular evoked myogenic potential) and posturography. Vestibular function tests should aid in: objectivisation of patient symptoms, determining whether a disorder is peripheral or central, localising the side of lesion, supporting the clinical diagnosis, establishing treatment , evaluating the patient progress, differentiating the symptoms of balance system impairment from psychogenic dizziness and unsteadiness. The principles of nystagmography procedures, some common forms of nystagmus and examples of findings in some peripheral and central vestibular impairments will be presented and discussed.