

CLINICAL METHODOLOGIES COMPARISON

VIDEONYSTAGMOGRAPHY (VNG) VS. FULL VESTIBULAR DIAGNOSTIC BATTERY

LIMITED TESTING = LIMITED DIAGNOSIS

The current industry standard for diagnosis of vestibular disorders is videonystagmography (VNG). Studies reveal 68% of patients with vestibular disorders are missed when only a VNG is performed. Patients with normal caloric testing were found to be abnormal: 38% with rotary chair testing, 20% with posturography and 42% with both tests¹.

Clearly, a range of tests is needed to accurately assess vestibular system dysfunction. As technology progresses, so does testing sensitivity and specificity. Using a full vestibular diagnostic battery, Newport-Mesa Audiology has evaluated over 3,236 dizzy patients and identified vestibular dysfunction in over 2,912 patients since 2015.

COMPREHENSIVE TESTING = COMPREHENSIVE DIAGNOSIS

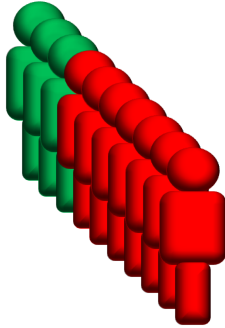
Going beyond peripheral vs. central: With current technology, we are capable of assessing the functional ability of the 10 peripheral vestibular end organs in a static and dynamic state^{2,3}:

- Ability to evaluate integrity to movements beyond .004 Hz³
- Vestibular ocular reflex (VOR) function⁴
- Vestibular spinal reflex (VSR) function⁵
- Otolith function and otolith ocular reflex (OOR) function⁶
- Function of the superior and inferior portions of vestibular nerve⁷

COMPREHENSIVE DIAGNOSIS = COMPREHENSIVE TREATMENT

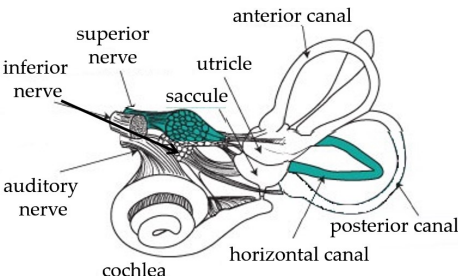
Our comprehensive diagnostic vestibular testing, to include assessment of the 10 vestibular end organs in a dynamic and static test, allows us to customize a treatment program specific to the patient's vestibular thresholds and current functional state.

VNG (Alone)

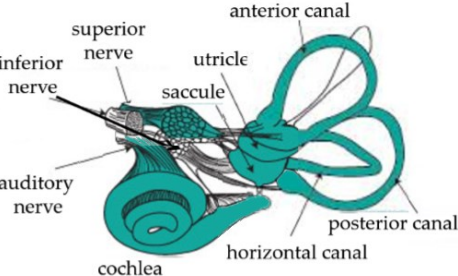


• 68% of patients with vestibular disorders are potentially missed or unidentified

VNG (Alone)



FULL DIAGNOSTIC VESTIBULAR BATTERY



VNG (Alone)

- VNG
 - Calorics
 - Positional Testing
 - Oculomotor Testing

FULL DIAGNOSTIC VESTIBULAR BATTERY

<ul style="list-style-type: none"> • VNG <ul style="list-style-type: none"> ◦ Calorics ◦ Head shake • Epley Omniax <ul style="list-style-type: none"> ◦ Dix-Hallpike ◦ Positionals 	<ul style="list-style-type: none"> • Video Head Impulse (vHIT) • Rotational Chair <ul style="list-style-type: none"> ◦ Oculomotor ◦ SHA ◦ SVV/SVH ◦ UC 	<ul style="list-style-type: none"> • VEMP • Audiogram • Bertec CDP <ul style="list-style-type: none"> ◦ SOT ◦ ADP
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REFERENCES

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- 2 P Eza-Nunez, C Farinas-Alvarez, N Perez Fernandez. Comparison of three diagnostic tests in detecting vestibular deficit in patients with peripheral vestibulopathy. *The Journal of Laryngology & Otology* (2016), 130, 145–150.
- 3 Floris L. Wuytsa, Joseph Furmanb, Robby Vanspauwena and Paul Van de Heyning (2007). Vestibular function testing. *Curr Opin Neurol* 20:19–24.
- 4 Arriaga, M.A., & Chen, D.A. (2004). Rotational chair instead of ENG as the primary vestibular test. *Otolaryngology-head and Neck Surgery*, 131 (2), P217-P217.
- 5 Halmagyi GM, Weber KP, Aw ST et al (2008) Impulsive testing of semicircular canal function. *Prog Brain Res* 171:187–194
- 6 Black F, Owen MD (2001) Clinical status of computerized dynamic posturography in neurotology. *Curr Opin Otolaryngol Head Neck Surg* 9(5):314–318
- 7 Welgampola MS (2008) Evoked potential testing in neuro-otology. *Curr Opin Neurol* 21(1):29–35