

Quick Guide

Vestibular Diagnosis and Treatment Utilizing Videonystagmography (VNG)

SACCADE TEST

Purpose of Test:

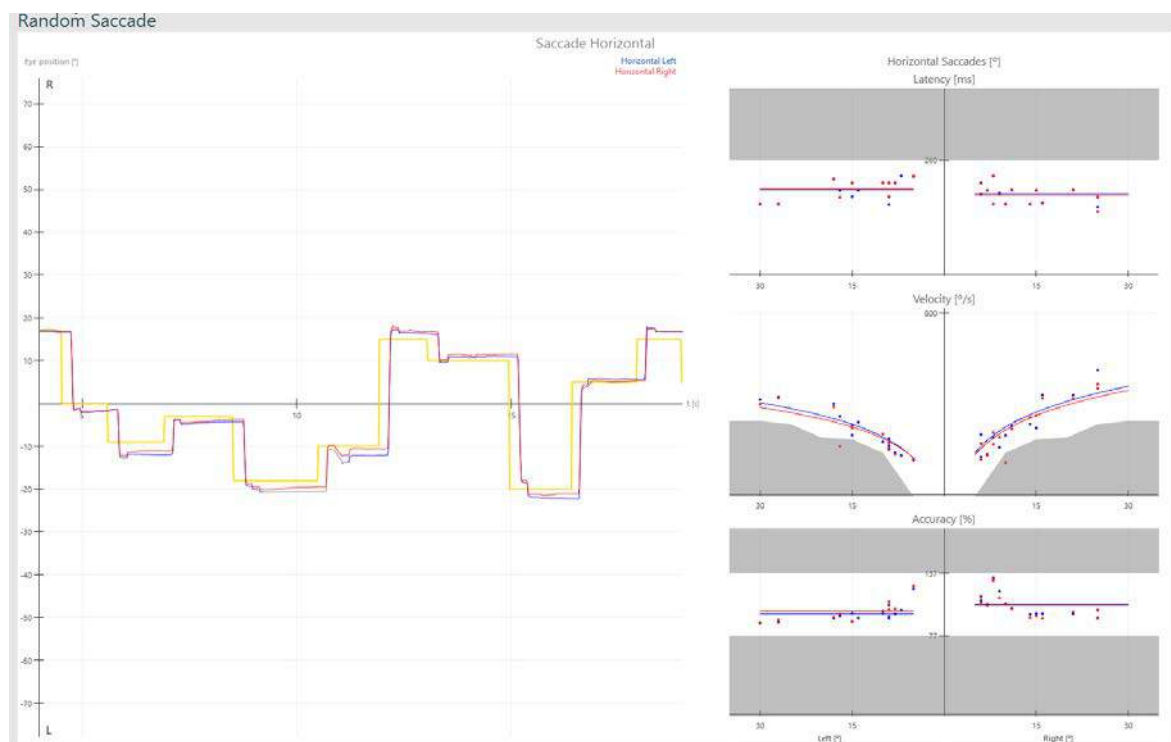
To assess the patient's ability to accurately move the eyes from one designated focal point to another in a single, quick movement. The ability to accurately perform saccade testing assesses the patient's central vestibular system. The random saccade paradigm has been established as the most useful for saccade testing; therefore, it is the random saccade test that is discussed in this paper.

Patient Instructions:

"You will see a green dot on the screen. Simply look at the dot. If the dot moves, follow it with your eyes *only* as quickly as you can. Try not to move your head."

What to Expect:

A patient with the ability to perform a saccade test normally will produce a tracing in which the stimulus target and the eye tracings are virtually identical. The stimulus is represented by the yellow target line and the right and left eyes are represented by red and blue tracings, respectively. The responses for each saccade are represented on the accuracy, velocity and latency graphs by red dots for the right eye and blue dots for the left eye. Responses that are within threshold limits will fall in the white region and responses outside of threshold limits will fall in the grey shaded region.

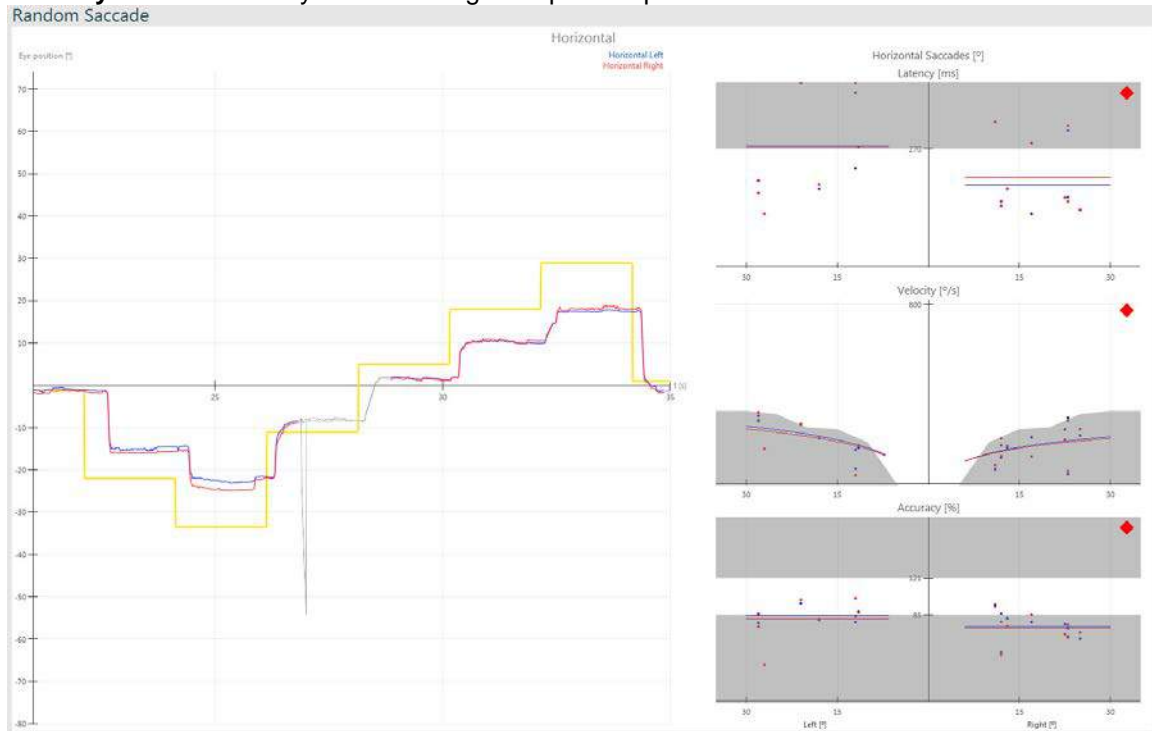


Saccade test showing a normal response horizontal targets

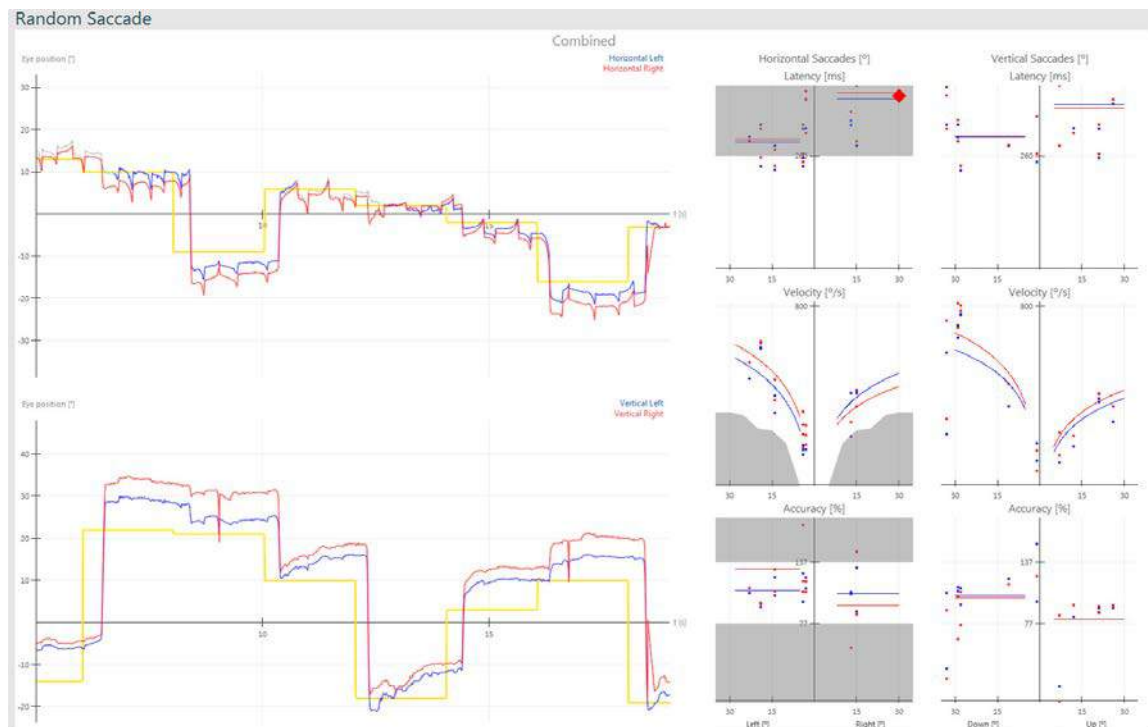
Abnormal Test Results:

Three parameters are taken into consideration for the analysis of the saccade test. They are:

- **Latency** – how long it takes the patient’s eyes to find the target
- **Accuracy** – whether the patient can move his eyes directly to the target without “overshooting” or “undershooting” the target (this is also referred to as precision)
- **Velocity** - how fast the eyes are moving from point to point



Saccade test showing abnormalities in latency, velocity and accuracy



Saccade test showing abnormal and asymmetric latencies for horizontal targets

Conclusion:

Saccade testing is an ocular test used to determine whether there is central pathology that is precluding accurate fixation of the eyes onto moving targets. Each of the saccade subtests can give anatomy-specific information about the patient's central vestibular system. For a complete discussion of differential diagnosis using saccade testing, refer to:

Jacobson, GP, and Shepard, NT. Balance Functional Assessment and Management, 2nd Ed. San Diego; Plural Publishing, 2015

*NOTE: This is intended only as a guide, official diagnosis should be deferred to the patient's physician.