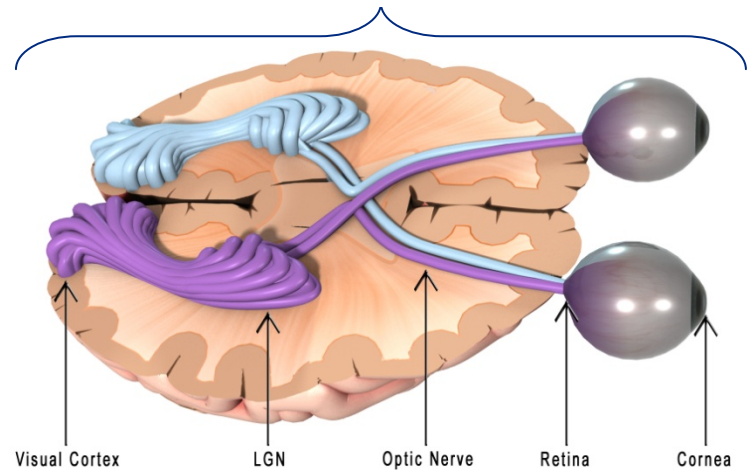


VEP Measures the Entire Vision System

Visual Evoked Potentials (VEPs) are electrical signals that are measured from the electrophysiological activity (“brain waves”) at the visual cortex. A technician will generally place three sensors on the patient’s head to measure the VEP signal that travels from the retina to the visual cortex. VEPs occur when a patient observes a visual stimulus, such as a flash of light or a pattern on a monitor. VEP results are a representation of the functional integrity of all levels of the visual pathway including the retina, optic nerve, optic radiations, and visual cortex.



VEP waveforms are represented on graphs using amplitude and time (latency) measurements. In general terms, the amplitude, measured in microvolts (μV), indicates the integrity of the neural structures including axons conducting information along the visual pathway. Latency, measured in milliseconds (ms), indicates the time the electrical signal takes to travel from the retina to the visual cortex. The combination of amplitude and latency is helpful in determining the health of the visual pathway.

VEP recordings have been used for a variety of applications that involve neuro-visual disorders such as glaucoma, amblyopia, multiple sclerosis, and diabetic retinopathy.^{1,2,3,4} Visual Evoked Potential tests provide the clinician with objective data on vision abnormalities that are often subtle and difficult to detect, as no response is required from the patient. This also allows clinicians to test preverbal children, infants, and patients with communication difficulties.

Diopsys® VEP Vision Testing Systems bring the science of visual evoked potential right into the practitioner’s office. The automated data collection, enhancement and display makes it easy and fast for the clinician to record, view and assess quality VEP signals in their office.

The **Enfant® Pediatric VEP Vision Testing System** produces a visual stimulus consisting of an equal number of horizontal black-and-white bars. By changing the width of the bars, the visual pathway’s response to stimuli requiring different visual acuities can be objectively assessed. The test is performed rapidly for each eye separately, and if a significant difference between the left and right eye is detected, the patient fails the test. The patient is then referred to an eye care specialist.

The **Diopsys® NOVA-VEP Vision Testing Systems** also use black and white patterns to elicit a VEP response. The **fixed protocol configuration with multi-contrast stimulus** uses a checkerboard pattern at both low contrast and high contrast to test the integrity of both the magnocellular (peripheral vision) and parvocellular (central vision) pathways. The **user-defined protocol** enables the clinician to designate the pattern size and contrast level of checkerboard, horizontal, vertical, or sinusoidal patterns. Eye care specialists may use the Diopsys® NOVA-VEP to improve their sensitivity in diagnosing vision disorders when used in conjunction with other tests. They may also use the device to track patients’ response to treatment and monitor disease progression.

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