Three Things to Know about ERG/VEP: A Corporate Affiliate's Perspective

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Introduction:

I have been a part of the Walmart and Sam's Club optical community since 1992. I now have three Walmart Visions Centers in Illinois and Iowa, and I owe part of my success to adopting a medical model early on in my optometric career. This means I evaluate diagnostic vision testing equipment frequently, and part of that evaluation includes talking to my peers.

Here is what I would want my corporate-affiliated optometric colleagues to know about adding visual electrophysiology to their practice:

1: Location, Location, Location

I use the Diopsys® NOVA™ ERG and VEP Vision Testing System which has a small footprint. We're all corporate doctors and space is at a premium. The device itself only takes up 28″ x 20″, but you do need to be able to place a chair 39″ back from the stimulus monitor for the patient. Diopsys also offers a table-top device which can be placed on a counter or medical table.

Additionally, you need a dark room. I use my contact lens room as it has no windows or ambient light. Since my system is on wheels, I can move it aside whenever necessary.

2: Assessing Function

Visual Electrophysiology, ERG and VEP vision testing, is unique in its ability to evaluate visual function. There are other tools that assess the eye's structural integrity, like the SD-OCT, but often structure does not play itself out in function. ERG and VEP help me determine how the eye is performing, and this is the key when examining glaucoma or Plaquenil patients.

I like the analogy of an x-ray. Imagine getting an x-ray because you have a problem with your leg. The image that results provides you with feedback on the structural integrity of the bone, but it doesn't

tell you how well your leg is working. That is a higher order evaluation.

In the same manner, an OCT will show you if there is any deterioration of the eye's structure. This is very important information, but it's even more beneficial when coupled with information on how well the eye is working. Now you have a complete story and your treatment plan is going to be significantly better as a result.

3: Patient Population

I have found that electroretinography (ERG) is excellent for the early diagnosis of glaucoma, AMD, and diabetic retinopathy. Visual Evoked Potential (VEP) results, on the other hand, help me evaluate optic neuritis, amblyopia, and give me a better understanding if the vision problem is with the retina or further back in the visual pathway.

In addition to early diagnosis, the device also helps me monitor the effects of treatment, and disease progression. Again, monitoring for structural change is important, but in some ways monitoring functional changes is more important, as this is what often precedes structural damage.

Conclusion:

Frankly, using the Diopsys® NOVA™ system makes me a better clinician, both in diagnosing disease and monitoring treatment. I want to provide the best care I can for my patients, which means keeping up-to-date on the latest eye care research and technologies. Interestingly enough, visual electrophysiology has been around for decades, but it took some time for me to understand that I could use this in my everyday practice to benefit my clinical outcomes. I hope my quick write-up helps answer some top level questions other corporate-affiliated optometrists may have about ERG and VEP vision testing.