

New Features for M&S Smart System® Headset - Esterman and Ptosis Testing

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M&S Technologies has brought the Smart System® VR Headset to market, primarily to transform clinical visual field testing in the modern age. As the testing algorithms for 10-2, 24-2, and 30-2 have matured and have begun taking advantage of the new freedoms afforded by the virtual reality setup, other uses of the system have been added making the system even more useful. Two of these will be discussed here, the Esterman test, used in some states for driving qualifications, and testing for qualifications for coverage of ptosis surgery.

The Esterman protocol tests the widest field possible, looking at 120 points binocularly, to verify the widest extent of the visual field. All the stimuli are at full brightness, with no thresholding being performed. By shifting fixation during the testing to the right and left edges of the displays in the headset, the system can get to the furthest extent necessary to test the full visual field for those needing the Esterman. See figure 1 for the display of the results of an Esterman field.

Figure 1 shows a completed binocular Esterman field done on the author. It took just under 4 minutes to complete.

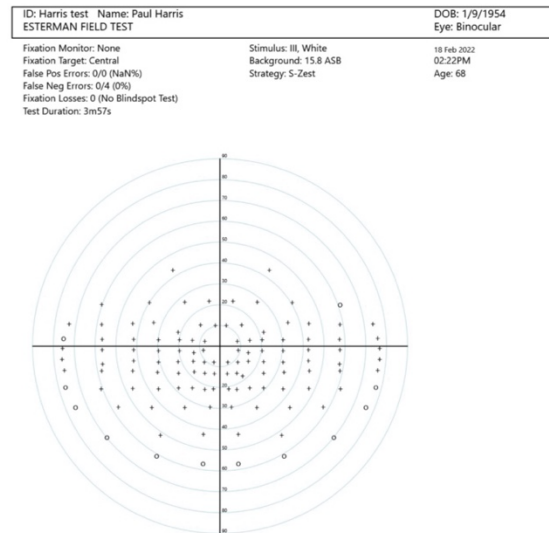


Figure 1

When looking to qualify for either Medicare or insurance coverage for ptosis surgery, carriers look for medical necessity, which is determined by visual field restrictions being present secondary to the ptosis. Two probes are done, one with the upper lid in its lowered condition and then with the upper lid taped up to see how much more visual field is gained by the lid procedure. In figure 2, we simulated artificial ptosis by taping the lid down and then removing the tape during the second pass to show how the software works.

Figure 2 shows both passes of the Ptosis testing. In this case, had this been a real Ptosis, this is precisely the data needed by most carriers to consider the treatment as medically necessary.

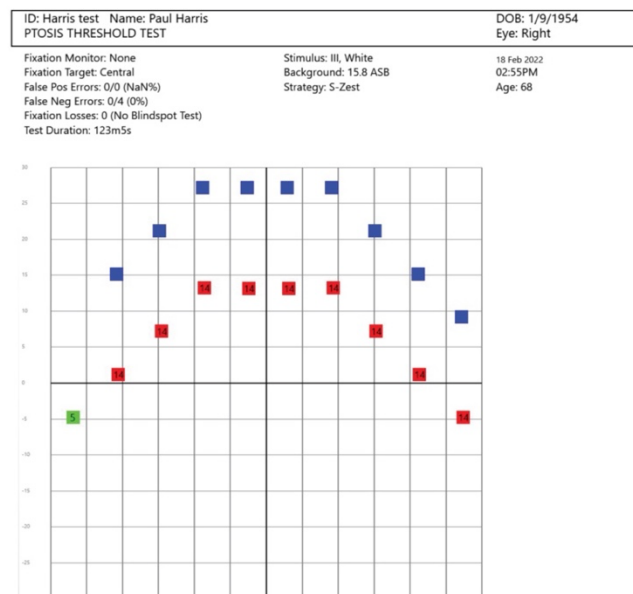


Figure 2

The addition of the Esterman and ptosis tests are certainly beneficial additions to the VR headset. The convenience factor of the headset for the practitioner and comfort for the patient make it worthwhile to continue to evolve this technology. I see the addition of these tests as just the beginning, with a whole array of vision tests that could be added to the headset in the future.