

By Joe Darrah, contributing editor

Accurate field testing without the stress

Olleyes VisuALL offers both consistency and comfort.

It's the ultimate ophthalmologic conundrum: The visual field vision test is one of the most undesirable aspects of any patient's eye health visit. The difficult-to-detect dim lighting, the frustration of trying to determine when visual cues are being displayed, and, ultimately, the anxiety that builds as time and the test progress amid the uncertainty. As Jonathan S. Myers, MD, puts it, the test can become more of a mental tug of war and guessing game, leading many patients to worry that their eyesight is worsening in the moment.

"Many of our patients dread field testing," says Dr. Myers, chief of glaucoma service at Wills Eye Hospital, Philadelphia, and associate professor of the Sidney Kimmel

Medical College at Thomas Jefferson University. "These are very stressful tests for those who have damage to the eye or who fear that there is damage. It can feel like the machine is telling you that you're not doing well, and it's a test that takes a lot of concentration. There's a lot of pushback with it."

Yet, the best chance for reliable results increases only with testing frequency. When considering that the collective patient apprehension is a direct cause of unreliable test results surfacing for physicians, there can be a lack of prognosis for glaucoma and other disorders among a vulnerable population. This is particularly likely given that testing is only conducted once or twice annually.

"This is really an inadequate way to monitor a patient's disease progression," says Dr. Myers.

As mobile eye health continues to emerge and evolve, especially during the COVID-19 pandemic, a new technology may offer patients a more convenient, comfortable alternative to peripheral and other eye examinations that improves compliance while mitigating complications associated with traditional testing modalities.

A VISUALLY COMFORTABLE FIELD

The VisuALL is a digital perimeter designed for standardized and mobile assessment of the visual field. The platform, launched by Olleyes Inc., automatically analyzes the retinal sensitivity in patients diagnosed with glaucoma and other visual disorders. The patient wears a pair of goggles on a headset, which allows for use in a standing or seated position; the device records test scores through a handheld trigger that sends data to a health record for storage. Available in two models — the VisuALL S office-based model and the VisuALL H home-based model — the device features a lightweight, compact, balanced design for a comfortable fit with a face cushion that enables a soft adaptation to the face.

"This technology is more comfortable than the traditional testing methods," says Dr. Alberto Gonzalez-Garcia, president and chief executive officer of Olleyes, a company founded in 2018 with a focus on home-based evaluations for eye care.

Equipped to conduct visual field and visual acuity testing,



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the technology is intended to increase the number of patients that physicians can test and to expand on the number of times that each patient can complete testing in a more accurate fashion, Dr. Gonzalez-Garcia says. “You can increase the number of people who can be tested per day — regardless if patients are in wheelchairs or if they have a muscular-skeletal issue. The patient can sit in a preferred position when taking the test. Physicians tell us that they are conducting between 10 and 15 patient tests per day.”

At Wills Eye Hospital, Dr. Myers has been able to increase the number of tests conducted daily by 50% with the use of two in-house devices. To further foster patient comfort, if additional breaks are needed the test can also be paused at any time by holding the hand button down and then releasing the trigger when the patient is ready to reengage. As the test is conducted, the product’s built-in eye tracking allows for uninterrupted control of eye fixation, eliminating issues with loss of fixation, says Dr. Gonzalez-Garcia.

There are three methods for fixation control offered across the two different models:

1. The traditional blind-spot method (Heijl-Krakau)
2. A combination of positioning sensors within the headset that sync with the response button to evaluate the patient’s response while looking for false responses, in addition to controlling central fixation
3. Eye-tracking for an accurate control and quantification of the eye’s movements. (This third method is currently

only with the in-office model because it is tethered to the physician’s laptop.)

IMPROVED CONSISTENCY AND RELIABILITY

The ability to glean valuable data is expected to produce the greatest impact — from both the physician perspective of obtaining more reliable results that predict disease progression while influencing treatment as well as from the patient perspective of reducing anxiety subsequent to the testing confidence.

“We’ve compared visual field results of both normal and glaucoma patients using the VisuALL with previous visual field results and found more consistent results,” says Dr. Myers, who anticipates that his most high-risk patients could warrant two field tests per month. “Having that control and ability to help monitor their own disease at home can be really empowering,” he says. “Patients feel they’re going to catch a problem before it gets significantly worse.”

PANDEMIC PARAMETERS

Although he first became familiar with the technology two years ago for research purposes, Dr. Myers says that the timing of his practice’s initiation with the VisuAll has conveniently coincided with various challenges that have surfaced due to COVID-19.

“We’ve been using the device for about 4 months, and we anticipate an increasing number of patients will opt for at-home testing, if for no other reason than their concerns about disease spread and infection control

are heightened right now,” he explains. “Patients are zeroed in on COVID-related precautions. As a university setting, our patients are informed, and they’re concerned about their eye health in general. You factor in COVID, and their awareness is heightened — and they’re vocal about it.”

From a sanitation perspective, Dr. Myers says the level of comfort patients experience with the VisuAll is evident. Particular concerns are associated with open-bowl perimeters because of the potential for the bowl to be breathed into. The proximity of provider to patient is also an issue.

“People get close to one another during eye testing, and it’s tough to get away from the idea that someone’s going to be within 3 feet of you, face-to-face,” Dr. Myers says. “Our patients have been able to utilize the VisuAll well enough on their own that it allows the technicians to walk away more frequently, so that distancing can occur,” he continues. “It’s been very favorably accepted. You’re not leaning into a machine. It’s a much more comfortable interface.”

Easy cleaning of the device has been an added benefit. “This technology is easier to keep sanitized because it really only requires the wiping of small surfaces on the headset,” he says. “For open-bowl perimetry, the inside of the bowl must be sprayed down and effective protocols call for you to let the bowl air dry, which can take about 20 minutes. When you’re busy, that kind of waiting time basically cuts in half the number of fields that you can conduct with that machine.” **OM**