

# AFTER HOURS

New technology helps patients and physicians monitor IOP outside the office.

BY JONATHAN S. MYERS, MD



Clinicians have long known that IOP varies throughout the day, and some evidence suggests that many of the highest pressures occur outside of office hours.<sup>1</sup> Measuring IOP at off hours presents many logistical and technical challenges, but technological advances may address those barriers. The information gained (eg, activities that affect

a patient's IOP and measurements that differ significantly from the target range) could help practitioners improve the glaucoma care they deliver. (See *Unique Insights Into Glaucoma Progression*.)

## TECHNOLOGICAL OPTIONS

The Triggerfish (Sensimed) is a contact lens sensor that allows collection of 24-hour data that are correlated to IOP-related changes in the corneoscleral geometry.<sup>2</sup> The device can measure a day of detailed IOP data outside the office, but it requires an adhesive antenna to be applied to the face around the eye being tested. This may discourage frequent use by patients.

The Icare Home tonometer (Icare USA) takes a different approach. This rebound tonometer does not require an anesthetic, and ergonomic changes to the clinical device allow self-measurement of IOP. Rebound tonometry is closely correlated to Goldmann applanation tonometry; although outliers occur, most measurements fall within  $\pm 4$  mm Hg.<sup>3,4</sup> Presumably, since readings obtained with either approach are reproducible, a measurement in the office can establish a consistent offset between the two instruments for any individual patient. The Icare Home tonometer can thus be used to measure IOP outside the office with much less frequent readings but also less obtrusiveness, and a longer duration of measurement than the Triggerfish. (See *What Is the Potential of the Icare Home Tonometer?* and *How Important Is 24-Hour Monitoring?* on page 64.)

A patient with severe glaucoma in my practice uses rebound tonometry at home for frequent measurements after each therapeutic intervention and intermittently between visits. It has been surprising how much higher many of his 4:00 AM readings are than measurements in the office. He returns to the office sooner when readings are out of range, and we hope this is keeping his eye pressure better controlled and the nerve more stable than otherwise.



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### What Is the Potential of the Icare Home Tonometer?



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## THE PROMISE OF REMOTE TESTING

David S. Friedman, MD, MPH, PhD, contemplates the impact that such new testing devices could have on care in *What Is the Future of Glaucoma Management?* (see page 64).

Devices that do not require trained technicians or an anesthetic create an opportunity for testing at satellite centers, allowing physicians to make management decisions with less frequent face-to-face interaction. Perhaps in the future, interim visits including IOP measurements, optic

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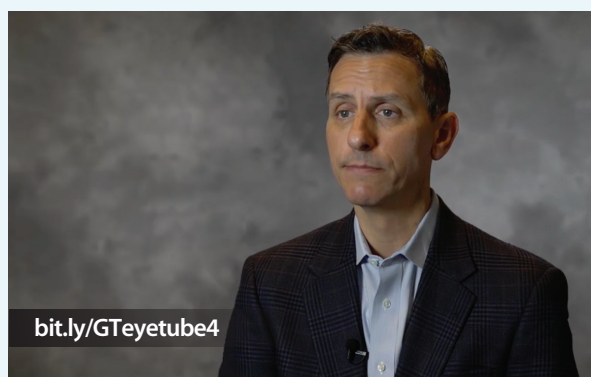


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nerve imaging, and perimetry could be done remotely, with calls to return to the ophthalmologist's office sooner than scheduled in the event of unexpected results. It is exciting to imagine that the innovative use of new technologies might reduce escalating health care costs and improve access. ■

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