The AS does not monitor fixation, but uses a 3D capable video monitor with a top-mounted chinrest placing the patient at reading distance. The entire assembly is mounted on a swiveling arm so the patient can sit comfortably in an exam chair.

A laptop computer displays separate images to the left and right eyes for use as a fixation target. The target appears three-dimensional when fused. The AS does not monitor fixation, but uses binocular stereoscopic fixation and animation of the target to improve fixation, although only one eye is presented stimulus during a test. To compare the locations and extents of loss, the AS performs a superimposed on the FPG results. The AS presents stimuli at one light intensity throughout the test (suprathreshold).

**RESULTS**

The AS method of finding and depicting a scotoma is fundamentally different than perimetry and is more akin to a manual test. Though like a perimeter the AS first uses a preset grid of stimuli, the software algorithm then presents stimuli on the boundary of the area of vision and non-vision. The density of points increases automatically as points are missed. Below is AS data superimposed over FGP data, both of which are overlaid on the SLO image. The AS also captures the physiological blind spot whereas the FGP does not.

Of the 8 subjects tested on the AS, 6 were consistent with finding of the FGP. In one case (JL) we found small scotomas that were missed by the FGP and in areas with seemingly normal retinal structure. Whether these were errors or subclinical changes needs further investigation.

**CONCLUSIONS**

Most patients have been able to complete an AS test successfully, and the correspondence to the FGP data suggests that the AS may be useful in following patients with centrally located pathology. Poor results were usually easy to identify, which reduces the chance of false positive tests.

Of particular importance was the time required to take the test which can affect the results of subjective testing. Most AS tests had half the duration of the FGP test even with the AS providing much higher resolution, although the average test time was 3:01 for the AS and 4:17 for FGP. In short, the AS obtained higher resolution scotometry on average 25% quicker.

**METHODS**

We obtained Automated Stereocampimetry (AS) data on 6 subjects which were also tested on a Fundus Guided Perimeter (FGP) which is often referred to as Microperimetry. All subjects reported had either wet or dry age related macular degeneration (AMD). Both devices require a subjective response from the subject.

The FGP is part of a spectral OCT/SLO (Opto-OTI) which also gives retinal thickness and an image of the retina. It is a monocular test and tracks fixation by monitoring any movement of landmarks in the retinal image. The FGP presents stimuli in a regular pattern over 30 degrees of visual field and the stimulus points are repeated at various light intensities (full threshold).

The Automated Stereocampimeter is a prototype device and consists of an LCD monitor capable of displaying 3D imagery in conjunction with electronic shutter glasses. A laptop computer displays separate images to the left and right eyes for use as a fixation target. The target appears three-dimensional when fused. The AS does not monitor fixation, but uses binocular stereoscopic fixation and animation of the target to improve fixation, although only one eye is presented stimulus during a test. To compare the locations and extents of loss, the AS results were superimposed on the FPG results. The AS presents stimuli at one light intensity throughout the test (suprathreshold).

**PURPOSE**

Despite high prevalence of central and para-central scotomas and the success of available treatments, no precise automated means to measure the size or shape of the scotoma exists. Such information would be useful for early detection and following treatment. Standard automated perimetry and Fundus Guided Perimetry (also known as Microperimetry) present stimuli at various intensities to obtain thresholds. The stimuli are typically in a preset grid pattern which fails to give a detailed outline of scotomas. We describe a new technique, Automated Stereocampimetry, that precisely defines the size and shape of a scotoma, and compare the results to an OCT SLO outfitted with a Fundus Guided Perimeter.