equipment

June 2019

Optometry AUSTRALIA

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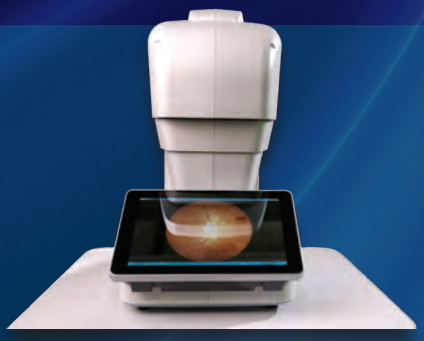
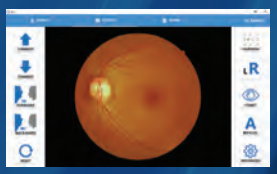


NFC-700



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idra

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Optometry AUSTRALIA

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Cover DESIGNS FOR VISION'S ORCHESTRATED DRY EYE CARE

Partnership ticks all the boxes

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by G&M Eyecare
Mosman, NSW

Equipment
NIDEK RetinaScan RS-330 Duo
NIDEK RS-3000 Advance

Supplier
Designs For Vision

Each year, our optometry environment becomes more and more competitive. The scope of care that an optometrist provides seems to keep expanding; it's fantastic to be part of a profession that is moving forwards so quickly in providing patient care. But to keep up with this ever-changing environment, an optometry practice needs support from its key suppliers.

Any investment in equipment has to add value to the patient-care journey as well as be a sound financial decision for the practice. As any owner of their own practice knows, every dollar spent on the business really needs to be worthwhile and needs to generate a return on their investment.

When the time came for us to purchase OCTs for several of our practices, we invested in the NIDEK RetinaScan RS-330 Duo and the NIDEK RS-3000 Advance. Although every OCT has different strengths, NIDEK's range ticks a lot of boxes, including ease and simplicity of use, overall performance, accuracy, value and reliability.

The Retinascan DUO has a camera that provides a high-resolution, 12-megapixel image. The camera is incorporated in the same unit as an OCT, which saved us valuable floor space. The bigger advantage of the Retinascan DUO is having an OCT that takes both retinal images and OCTs in rapid succession with such speed.

I often think of the Retinascan Duo as the 'Tesla of OCTs' because it is so intuitive that it almost drives itself. We also wanted an OCT that provided close correlation between ganglion cell layer/complex changes with early

CASE REPORT

The advantages of the macular ganglion cell complex

JH is a healthy 72 year-old Caucasian female with a family history of glaucoma (mother). She had bilateral prophylactic iridotomies performed by a glaucoma specialist in 2011 for narrow angles at risk of angle closure. At that time, JH did have optic disc asymmetry, with a left greater-than-right vertical cup-to-disc (C/D) ratio, but this was determined to be physiological.

JH was reviewed by the same glaucoma specialist 18 months post-procedure. Repeat gonioscopy confirmed that her angles remained open and iridotomies were patent. Visual fields were full, intra-ocular pressures (IOPs) normal and optical coherence tomography (OCT) imaging unchanged. JH was returned to our optometric care for ongoing annual review.

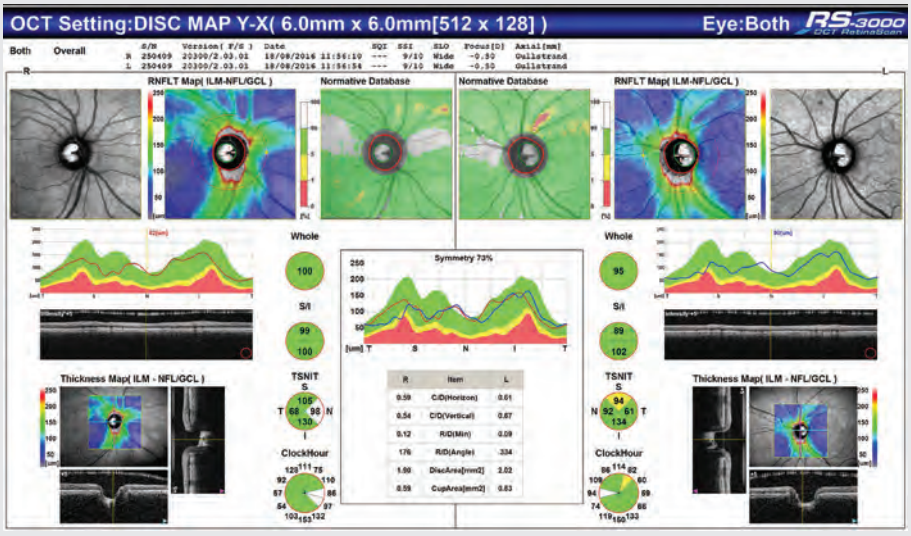

Figure 1. 2016 Disc Map scan

Over the next two years, JH's optic discs and IOPs remained unchanged. She was referred back to the same glaucoma specialist in 2015 for bilateral cataract surgery as her angles were narrowing and vision decreasing. Surgery was successful and JH was again returned to our care for ongoing annual review.

From 2016 to 2018, JH's IOPs remained normal (ranging from 10-15 mmHg), visual fields full, and her C/D asymmetry and OCT

detection of nerve fibre loss to allow for early glaucoma detection. We found that the NIDEK RetinaScan RS-330 Duo and NIDEK RS-3000 Advance provided all that we asked for—with some nifty anterior eye capabilities for scleral lens assessment as well.

The uniqueness of George and Matilda Eyecare is that we also value the independence that optometrists bring to their practice even as we seek to strengthen the way they operate and add value to their practice. We work to guide our optometrists where we can improve the way the practices work, and that means we need supplier partners that are deeply invested in training and education of our optometrists to ensure that any new equipment is transitioned into the practice successfully. What we require of our suppliers is a partner to deliver 'above and beyond' in education, training and back-up support.

So our 'equipment decision' was also an 'equipment-supplier decision.' Our experience with Designs For Vision and the NIDEK devices have both been very positive. From the investment in training and education for our optometrists in their new optometry equipment, to transitioning existing databases from older to newer equipment, Designs For Vision delivered above and beyond.

As with all technology, once in a while, IT/tech issues are bound to occur, and when they do, Designs For Vision has been quick to act and to minimise impact on our businesses.

(GCC) thickness map

retinal nerve fibre layer (RNFL) thickness remained unchanged.

In February 2019, JH returned for her most recent review. She was asymptomatic. Best-corrected vision remained 6/6 R and L, angles were open, and intra-ocular pressures were normal (R 14 mmHg L 12 mmHg). Repeat OCT imaging was performed with the recently-upgraded NIDEK RS-3000 OCT-RetinaScan Advance. (All previous OCT scans had been performed with the NIDEK RS-3000).

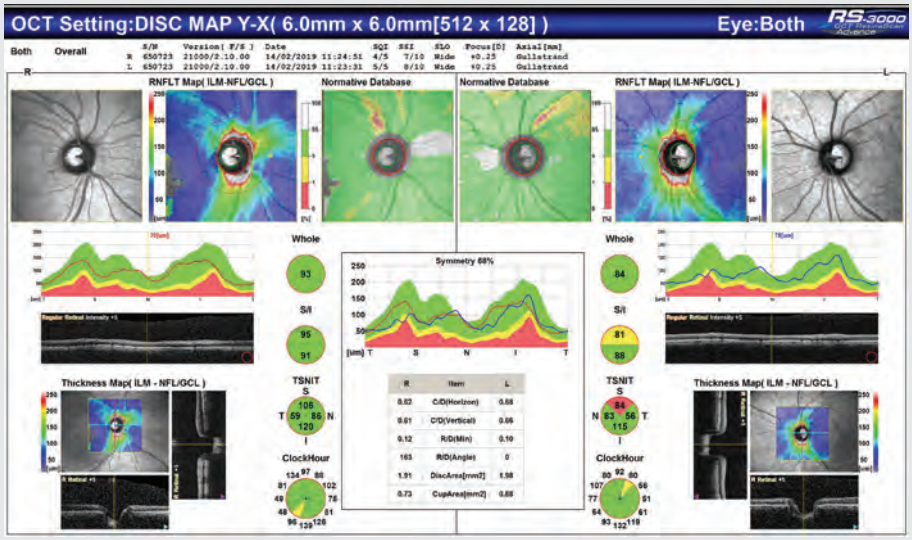

Figure 2. 2019 Disc Map scan

A 9mm X 9mm macular GCC thickness map was performed for the first time. This revealed a significantly thin superotemporal quadrant in the left eye. A corresponding, repeatable inferonasal visual field defect was also observed. Accordingly, the patient has been referred to their glaucoma specialist for a full glaucoma work-up, including investigation for other causes of optic neuropathy.

DISCUSSION

From 2011 to 2018, JH was

Continued page 6

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Dry Eye: Analysis

Oculus Keratograph 5M

Complete Dry Eye Assessment

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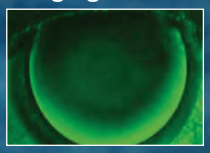
TF-Scan

R-scan

Imaging



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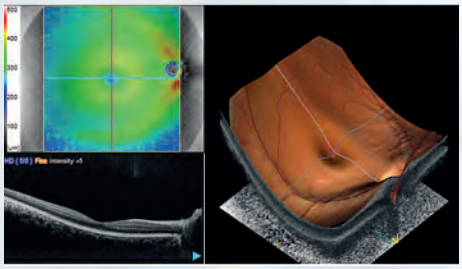

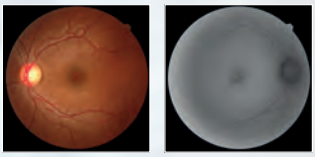

RS-3000 Advance2

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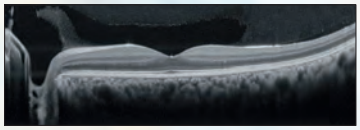
- **HIGHER DEFINITION** Selectable sensitivity



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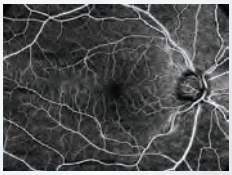

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DESIGNS FOR VISION

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Case report

From page 3

considered a glaucoma suspect. While her 2011 bilateral iridotomies and 2015 bilateral cataract surgery reduced her risk of angle closure glaucoma, she continued to have known risk factors for open angle glaucoma including a family history, advancing age, large vertical C/D ratios, and asymmetric C/D ratios.[1]

JH was adherent to her review schedule. This allowed her left optic neuropathy to be diagnosed in February 2019 prior to the development of symptoms.

This case highlights the need to encourage glaucoma suspects to adhere to scheduled reviews, even after many years of stability. JH's case also highlights the benefit of utilising the 9mm x 9mm NIDEK RS-3000 OCT-RetinaScan Advance's macular GCC thickness map.

When the 2019 retinal nerve fibre layer scan was compared to previous scans, only a slight thickness change was observed in what was already a physiologically thin

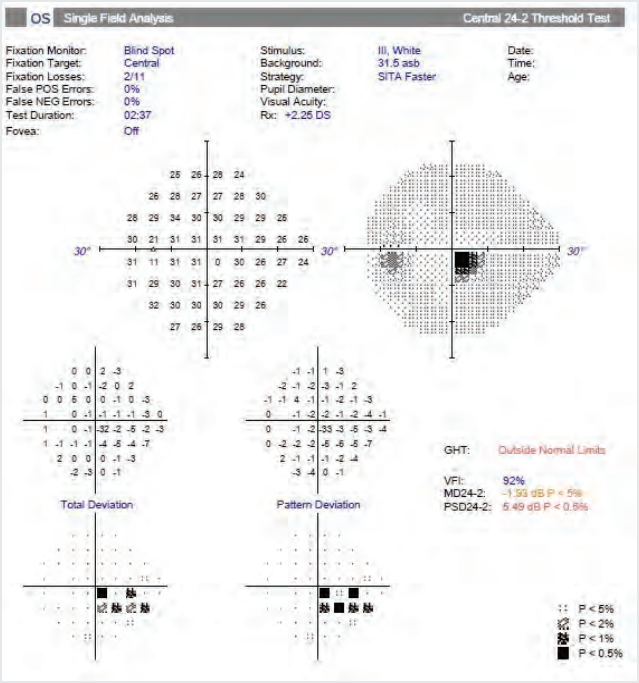


Figure 4. Visual fields

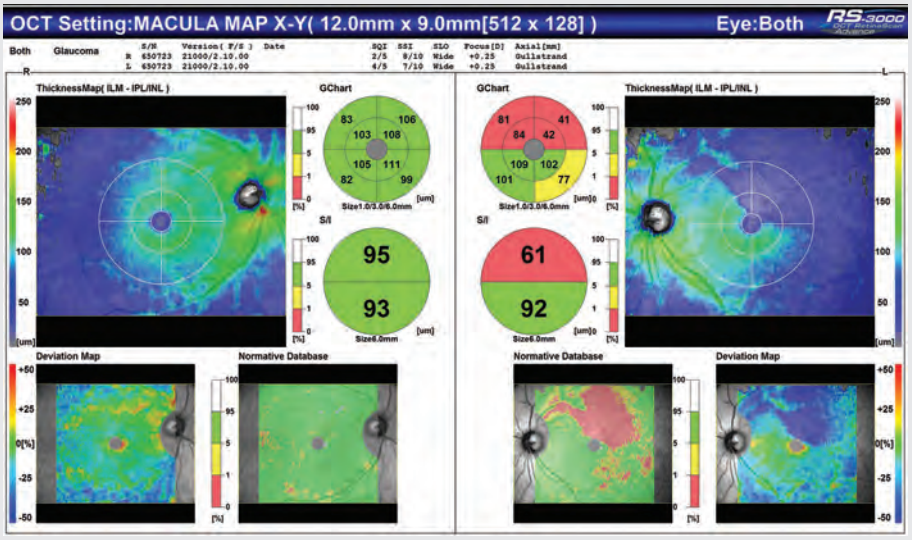


Figure 3. 2019 Macula Map scan showing Ganglion Cell Complex thickness.

nerve fibre layer bundle. Furthermore, no change in vertical C/D ratio was observed. However, the macular GCC thickness map revealed marked anomalous thinning in the superotemporal quadrant of the left eye that did not extend to the optic disc. This accounted for the patient's corresponding defect and readily justified a referral for further investigation.

A key reason to use OCT imaging is to detect glaucoma in its pre-perimetric state.[2] Macular GCC thickness maps have been found to be comparable to RNFL thickness maps in their glaucoma-discriminating ability.[3] This ability is improved though when a wide area thickness map, like the 9mm x 9mm NIDEK RS-3000 OCT-RetinaScan Advance's macular GCC thickness map, is used over the standard map of 6mm x 6mm.[4] While JH had already developed a left visual defect, the use of a wide area macular GCC thickness map allowed the diagnosis of an optic neuropathy to be made. Had this same scan been performed at her previous reviews, it may have allowed the optic neuropathy to be detected earlier.

1. Hollands H, Johnson D, Hollands S, Simel DL, Jinapriya D, Sharma S. Do findings on routine examination identify patients at risk for primary open-angle glaucoma? *JAMA* 2013; 309 (19): 2035-2042.
2. Bhagat PR, Deshpande KV, Natu B. Utility of Ganglion Cell Complex Analysis in Early Diagnosis and Monitoring of Glaucoma using a Different Spectral Domain Optical Coherence Tomography. *J Curr Glaucoma Pract* 2014; 8 (3): 101–106.
3. Rao HL, Zangwill LM, Weinreb RN, Sample PA, Alencar LM, Medeiros FA. Comparison of different spectral domain optical coherence tomography scanning areas for glaucoma diagnosis. *Ophthalmology* 2010; 117: 1692–1699e1
4. Morooka S, Hangai M, Nukada M, Nakano N, Takayama K, Kimura Y, Akagi T, Ikeda HO, Nonaka A, Yoshimura N. Wide 3-dimensional macular ganglion cell complex imaging with spectral-domain optical coherence tomography in glaucoma. *Invest Ophthalmol Vis Sci* 2012; 53 (8): 4805-12.

CLARUS 500 UWF retinal camera

Dr Graham Lakkis
BScOptom GradCertOcTher FACO
Lakkis Optometry, Keilor East Vic

Product
CLARUS 500 ultra-widefield retinal camera

Supplier
ZEISS

In my days as a student optometrist in the 1980s, the retinal cameras of the time could only capture an area of 45 degrees onto photographic film—and we had to wait patiently until the complete film roll was used before processing and receiving the eagerly-awaited hard-copy images. There was no way to know if the retinal photograph had been captured correctly so we often took multiple images in the hope one of them was useful. There was also no opportunity to discuss the findings and educate the patient at the time of the consultation.

In 2018, Zeiss introduced the Clarus 500 Ultra Widefield retinal imaging system to Australia. As with many technologies, retinal imaging has improved dramatically in recent years. Not only has capture area increased, but image resolution has also increased exponentially.

The Clarus 500 is able to image the retina up to 200 degrees in both the horizontal and vertical meridian in true colour, infrared and two wavelengths of fundus auto-fluorescence. The digital imaging software allows separation of individual colour channels to highlight different depths of the retina as well as contrast and brightness enhancement to aid in clinical interpretation. Resolution is excellent at seven microns, and the images can be repeatedly enlarged until some of the finest retinal vessels come into view.

CASE REPORT

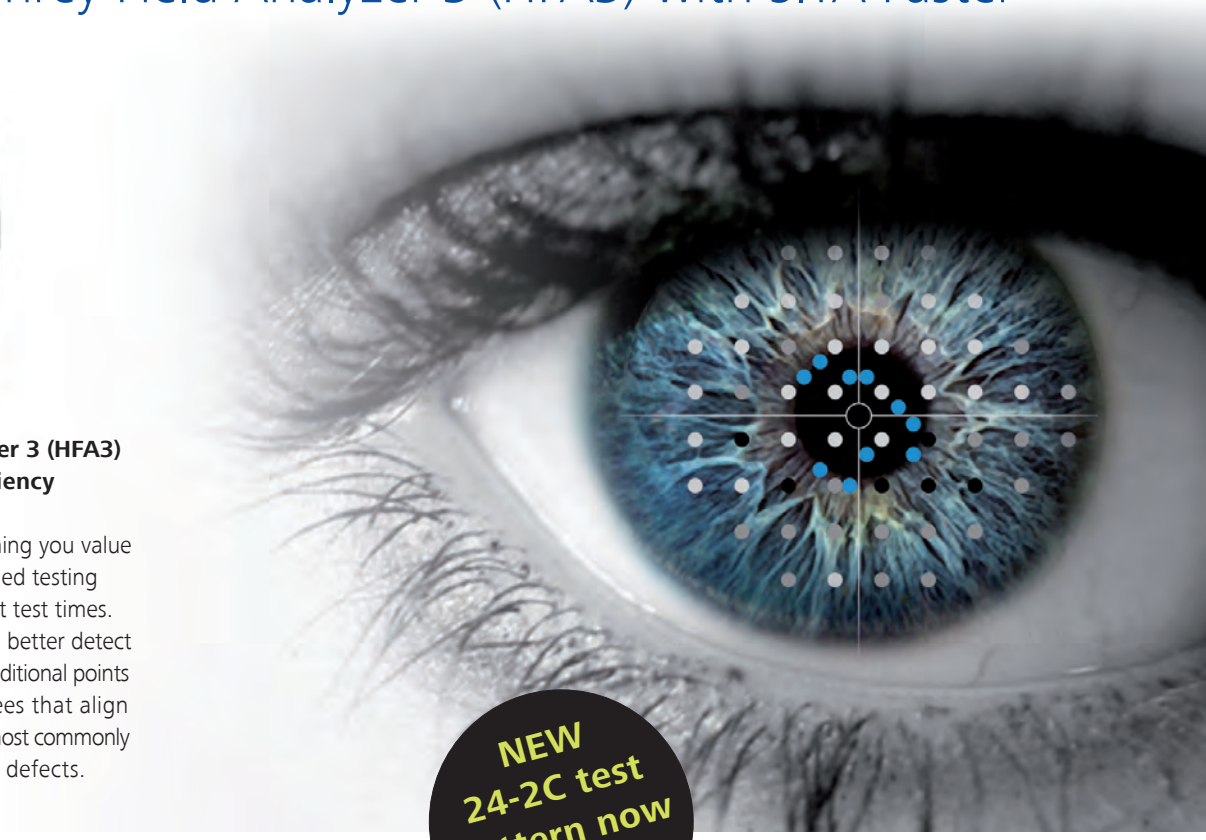
A 57 year-old Caucasian female presented for a routine eye examination without symptoms other than deteriorating near vision. Her distance vision was excellent at R and L 6/6 and she had no issues with night driving.

Undilated stereoscopic slit lamp ophthalmoscopy did not reveal any ocular pathology at the posterior pole. As there were no clinical indications for pupillary dilation such as high

Continued page 10

Reduce testing time and increase insight into glaucoma.

ZEISS Humphrey Field Analyzer 3 (HFA3) with SITA Faster



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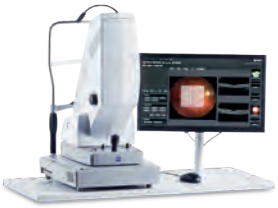

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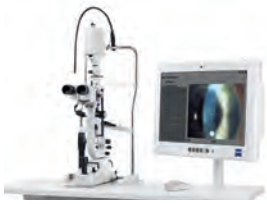

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CLARUS 500

From page 7

myopia, ocular trauma or sudden onset flashes and floaters, retinal imaging with the Zeiss Clarus 500 ultra widefield was performed.

Diagnosis

The likely aetiology for the clinical findings was peripheral reticular pigmentary degeneration (PRPD), an asymptomatic ageing condition of the peripheral retina predominantly affecting the nasal areas of the eye. It is believed to be due to vascular insufficiency in the underlying choroidal vessels, and since the RPE and outer retina derive their nutrition principally from the choroid, this can lead to degeneration of the RPE and scattered pigment throughout the overlying retina. The condition is considered benign although recent studies have shown an increased association of PRPD with stroke, ischaemic optic neuropathy and age-related macular degeneration.

Discussion

In this instance, the technical abilities of the Zeiss Clarus 500 were indispensable in making the clinical diagnosis.

- The ultra widefield capture allowed the full extent of the retinal degeneration to be determined, and in the future will provide an objective baseline to detect progressive disease.
- The Clarus 500 uses two montaged images to generate its 200 degree ultra widefield scan. This does not introduce peripheral image size distortion that may exaggerate the extent of the retinal pathology seen in competing systems that only utilise a single capture to produce their ultra widefield image.
- True colour imaging displayed the retina exactly as seen clinically via ophthalmoscopy therefore no interpretation errors were potentially introduced due to non-natural colours generated by other ultra widefield instruments.
- Seven micron resolution enabled the retinal pathology to be assessed in great detail to help differentiate this condition from other retinal pigmentary disorders such as retinitis pigmentosa.
- Colour channel separation helped localise the disease process to the outer layers of the sensory retina and retinal pigment epithelium.

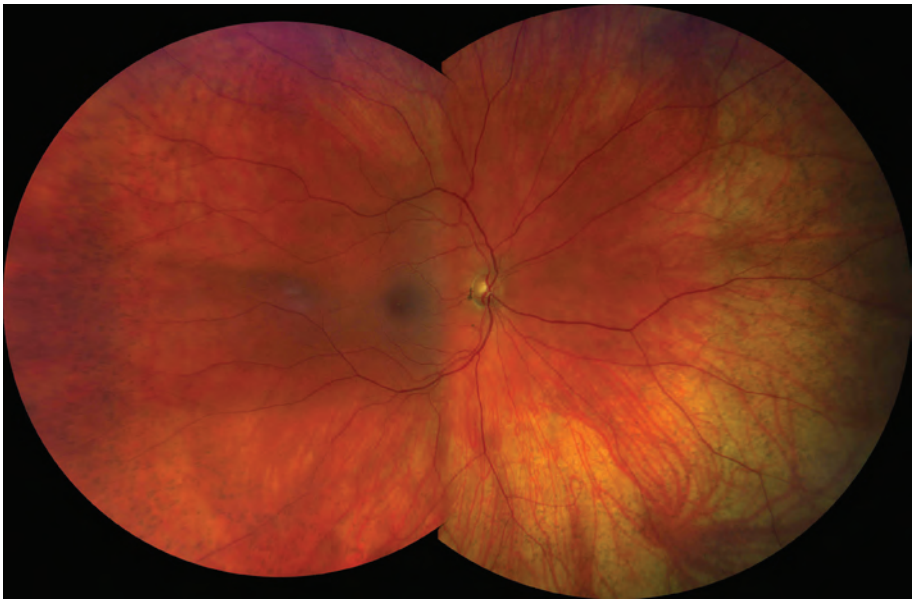

Figure. 1. High resolution 200-degree image revealed numerous areas of pigment clumping in all four quadrants in the equatorial region of both eyes (Right eye shown). The nasal and inferior retina exhibited significant retinal atrophy with increased visibility of the choroidal vasculature.

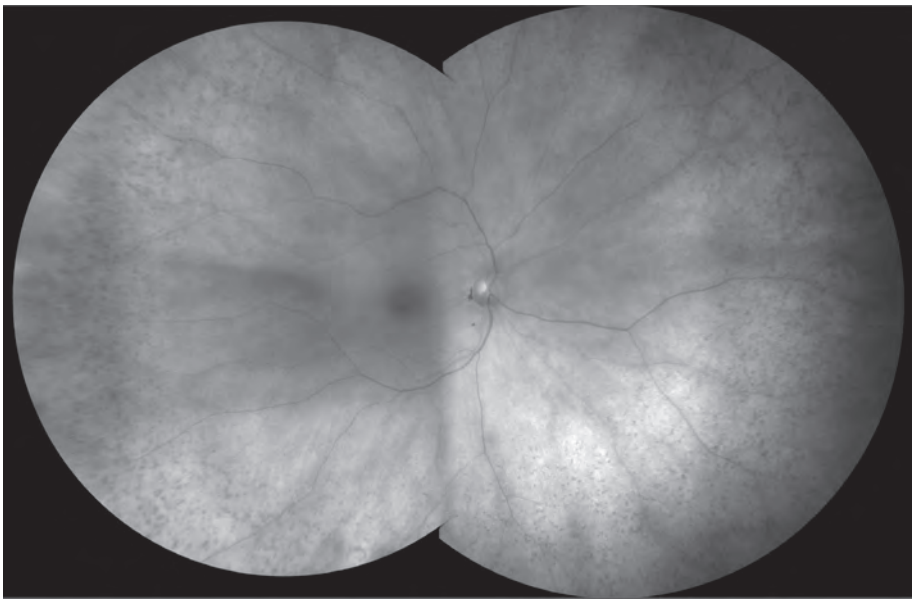

Figure 2. Red wavelength image separation emphasised the outer retinal structures and more clearly delineated the extent of the pigment clumping circumferentially around the equator.

Practical Considerations

Imaging with the Clarus 500 is straightforward and requires two shots per eye which are automatically montaged together into a single ultra widefield image, and both eyes can usually be imaged and interpreted within five minutes. The Clarus 500 flash is bright, but few patients are bothered by it and rarely mention it. Many patients comment that the instrument is impressive in size and appearance and looks very 'hi-tech.' There has been almost no resistance to the fees involved for the imaging.

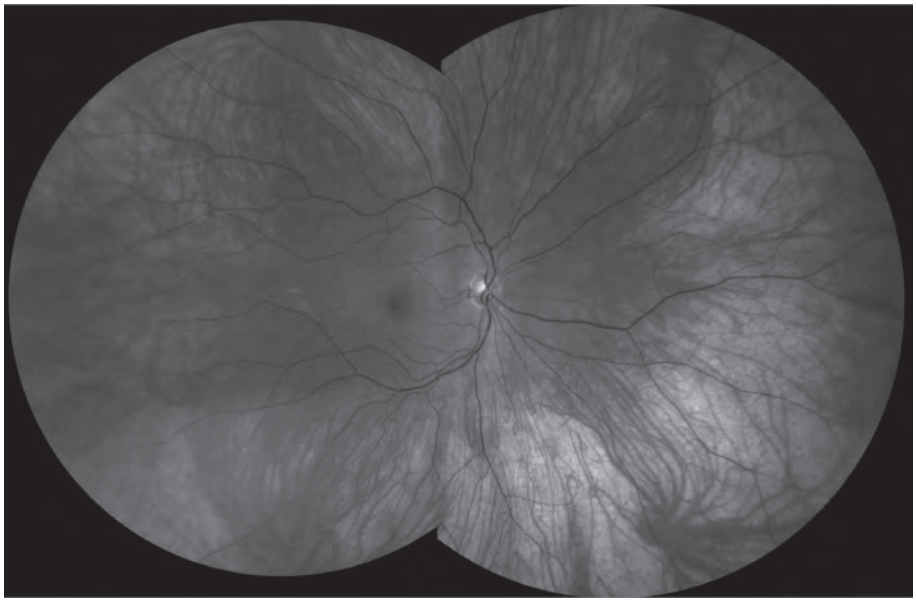

Figure 3. Green wavelength image separation highlighted the sensory retinal layers to better demarcate the peripheral areas of retinal thinning compared to the near-normal central retina and posterior pole.

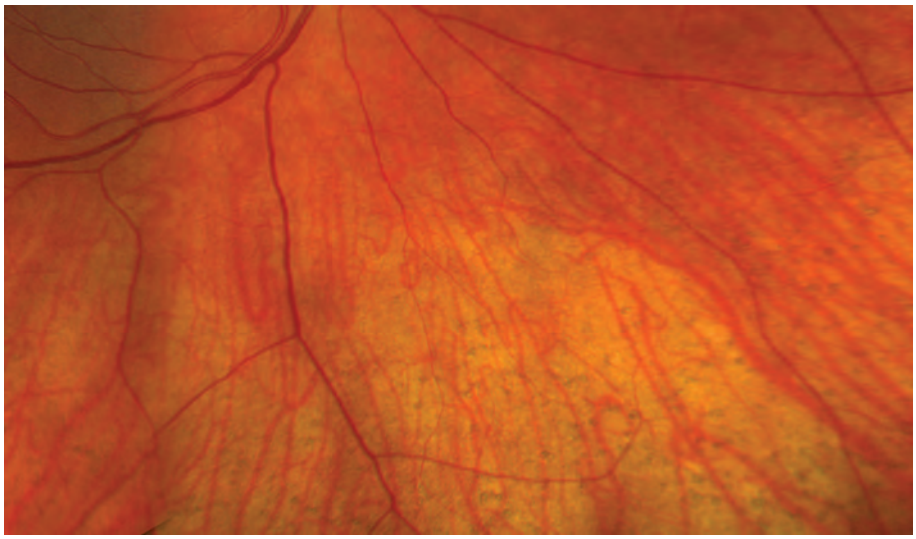

Figure 4. Seven micron high resolution imaging allowed a very magnified view at the junction of the normal and degenerated retina without loss of resolution. The RPE clumping was shown to be granular in nature with a clear area in the centre of the granule, and the small linear choroidal vessels of Sattlers Layer were more visible in the region where the RPE was absent or disturbed.

Upper eyelashes sometimes encroach on the image but only cause a mild shadow and rarely obscure the underlying retinal detail. Clarus imaging detail through quite dense cataract is impressive. No new instrument is perfect, but Zeiss has promptly implemented software and hardware upgrades at no charge to resolve some minor issues with the Clarus 500.

Conclusion

As an optometrist who takes pride in being an early adopter of new clinical technology, I delayed purchasing ultra widefield imaging for many years as I was unhappy with the quality and utility of the existing instruments on the market. I am glad I waited for the release of the Clarus 500, and have been more than happy with the instrument and its clinical abilities. Unlike other instruments that are only useful for certain eye diseases, the Clarus 500 can be ultilised with every patient at any age to provide a more detailed evaluation of the central and peripheral retina.

Further reading

Bae K, Cho K, Kang S, et al. Peripheral Reticular Pigmentary Degeneration and Choroidal Vascular Insufficiency, Studied by Ultra Wide-Field Fluorescein Angiography. *PLoS ONE*. 2017; 12: e0170526. doi:10.1371/journal.pone.0170526

Improved meibomian gland function

Figure 1. OCULUS Keratograph 5M

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Equipment
OCULUS Keratograph 5M
Eye Light IPL/OPE and Light Modulation unit
My Mask

Supplier
Designs For Vision

Ms P, a 31 year-old woman of Indian heritage presented at the Alleve Eye Clinic with burning, gritty, dry and red eyes following corneal cross linking and topography-guided PTK treatment for keratoconus in 2015. She experienced recurrent corneal erosion syndrome and had PTK to correct it but suffered corneal scarring of the left eye post treatment. A disposable soft contact lens was worn in the left eye for comfort and correction of vision. Ms P used artificial tear supplementation up to a dozen times a day and would experience so much dryness that she would not be able to insert the contact lens with comfort or ease. Daily lens replacement increased the irritation of the left eye so she changed to a monthly disposable lens as extended wear.

She was diagnosed with polycycstic ovaries nine years prior to the consultation which resulted in hair thinning; she was on oral spironolactone for this, but ceased it after suffering dry mouth and fatigue as side effects. Her last hormone tests, three years prior, showed elevated testosterone levels and low oestrogen levels. She was under the care of a dermatologist for her hair thinning and dermatitis.

On initial examination, her visual acuity was R -0.25/-0.50x130 (6/6), L -4.25/-1.75x120 (6/6). There was no anterior blepharitis, lid margin telangiectasia or corneal staining but mild bilateral conjunctival staining, often indicative of dry eye. Meibography using infra-red imaging showed very early meibomian gland (MG) drop out (Figures 2A-D).

EDE from MGD

Schirmer testing was good at R 13, L 28 mm over five minutes (using topical anaesthesia) but the meibomian glands yielded little meibum despite in-room Blephasteam and firm lid expression. She had a full and complete but frequent blink rate. A diagnosis of evaporative dry eye (EDE) from meibomian gland dysfunction (MGD) was made.

CASE REPORT

As per my typical regime, she commenced warm lid compresses using the DERM mask daily for 10 minutes, Optimel manuka honey gel 98% to the lower lids and oral omega 3 supplementation. While she persisted in doing warm compresses at home, she would have to take out the lens to apply the heat at night and then would need to rinse the lens in the morning as it became irritated overnight.

I reviewed her several times over five months with very little progress to improve the quality of her meibum. Her MGs remained difficult to express; she was still symptomatic and using eyedrops frequently. We discussed the use of oral doxycycline but she had irritable bowel syndrome, and with lack of obvious ocular surface inflammation, she was reluctant to proceed down this

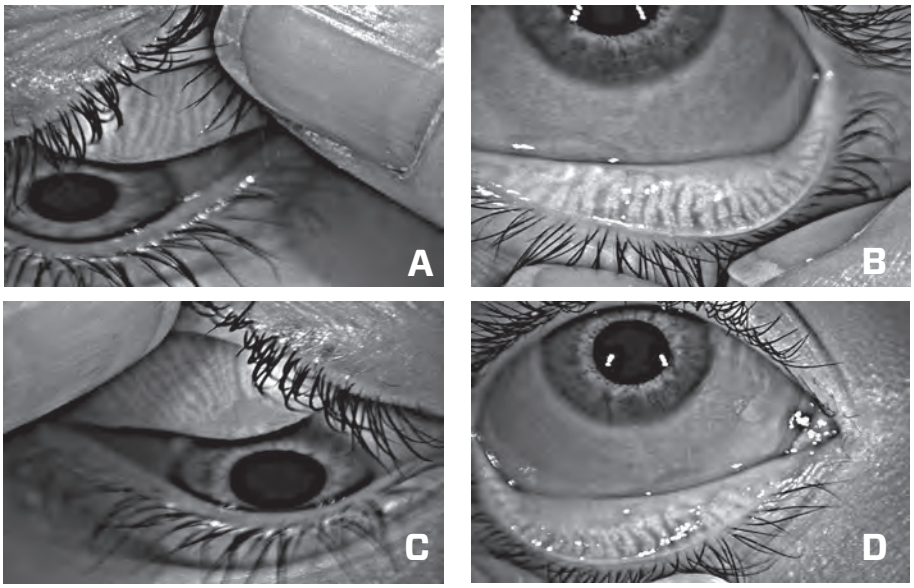
using IPL and light modulation

pathway. At this stage our clinic had the use of the EyeLight IPL and red photo-modulation mask and I suggested to her that we trial this. She returned the following week for her first IPL and photomodulation session (Table 1).

DISCUSSION

The Tear Film and Ocular Surface Society Dry Eye Workshop II (TFOS DEWS II) Definition and Classification committee updated the definition of dry eye disease (DED) to recognise the multifactorial nature of dry eye as a disease of the ocular surface where loss of homeostasis of the tear film is the central pathophysiological concept. Aqueous deficient dry eye (ADDE) and evaporative dry eye (EDE) exist as a continuum and elements of each are considered in diagnosis and management. Tear film instability, hyperosmolarity, inflammation and damage along with neurosensory abnormalities are recognised as aetiological triggers of the vicious circle. Evidence suggests that the majority of DED is evaporative in nature.[1]

Obstructed, poor functioning or atrophied meibomian glands can lead to lipid layer disruption of the tear film and subsequent evaporation – and 86 per cent of dry eye sufferers demonstrate meibomian gland dysfunction.[2] Prevalence rates can range from seven to 33 per cent and risk factors include: use of computers and devices, medications, refractive surgery, auto-immune disease, sex hormones and contact lens wear.[3] Despite numerous interventions, Ms P's meibum remained inspissated and she was subsequently symptomatic.



Figures 2A-D. A: Upper left eyelid; B: lower left eyelid; C: upper right eyelid; D: lower left eyelid.

Diagnosis of dry eye disease includes both signs and symptoms and can be differentiated from other ocular surface diseases by using the clinical decision algorithm recommended by the TFOS subcommittee.[1] Therefore it is important to perform a myriad of tests to determine where the DED falls on the spectrum between ADDE and EDE and the severity in order to devise an appropriate treatment plan.

Clinic protocols vary. I follow the DEWS II recommendation of triaging questions, risk factor analysis (medications, contact-lens wear and so

Continued page 14

Consultation date	NIBUT R	NIBUT L	SPEED^	Meibum expression R	Meibum expression L	Symptomatic	Drop usage	Ocular redness
11/01/18	6.12	4.84	-	hard hard		Gritty and burning Takes CL out daily to rinse	10+ per day	R T* 0.8 N 1.3 L N 1.4 T 0.8
29/6/18 (IPL 1)	5.35	Too short	19	hard hard		Gritty and burning	10+ per day	-
13/7/18 (IPL 2)	-	-	-	hard hard		As above	As above	-
27/7/18 (IPL 3)	-	-	-	1/3 oil	soft oil	Takes L CL out daily to rinse still	1-2x day	-
10/8/18 (IPL 4)	6.5	4.3	-	soft oil	soft oil	Improving	1-2x day	-
7/9/18	3.44	Too short	-	soft oil	soft oil	Happy Leaves CL in now EW	rarely	-
2/11/18	-	-	-	oil	oil	Happy	2-3 day	-
12/2/19	2.74**	7.84	11	oil	oil	Happy	< QID	R T 0.6 N 0.6 L N 0.9 T 0.7

Table 1. Clinical results for Ms P. *T= temporal bulbar, N=nasal bulbar. **TBUT (Nafl) showed approximate six second break up time despite the NIBUT result. ^Standard patient evaluation of eye dryness (SPEED survey).

IPL

From page 13

on) and the performance of diagnostic tests such as tear break up time, osmolarity and ocular surface staining scores. Further sub-testing can be then undertaken for ADDE (Schirmer or phenol red thread testing) or EDE–ease of MG expression, meibography and lipid layer analysis.[1] I find the OCULUS Keratograph 5M (Figure 1) to be an excellent diagnostic tool that provides many of these tests to help diagnose DED and its severity, as well as being an excellent education tool for patient understanding and compliance.

The question remained why Ms P's functional MGs remained inspissated.

Spironolactone can help block androgen receptors at the site of the hair follicle to help thinning hair. Reduced production of androgens can slow down the progression of hair loss caused by androgenic alopecia and can also encourage hair to regrow.[4] Ms P had reported having high levels of testosterone prior to starting the medication—this potential drop in androgen levels may have been a contributor to her MGD (androgen deficiency is associated with the development of both ADDE and EDE) whereas the roles of oestrogen and progesterone in DED is less understood[5] but she was symptomatic prior to starting the medication.

Prolonged contact lens wear is well known to be a cause of DED[3] and as corneal cross linking is not known to normalise altered nerve morphology from kerataconus,[6] these two factors may also contribute to ongoing discomfort and contribute to the inflammatory cycle.

A trial of four IPL sessions, two weeks apart using the Eye-Light IPL/OPE followed by a 15 minute light modulation session using red LED lights was undertaken. Looking at Table 1, there were no changes in meibum secretions or symptoms until the third session. By the last session, the oil had softened significantly, she had decreased her frequency of drop use and was a lot less symptomatic and decreased bulbar redness was noted. Four weeks later she continued to improve and was hardly using any drops at all—an outcome expected from the cumulative improvement with IPL over time.[7] When I reviewed her recently, her use of drops had increased slightly, but we put that down to her probably requiring a further IPL session for maintenance and we have scheduled another session in a month's time.

IPL has been shown to be an effective tool in the management of MGD.[8] In the case of patients affected with MGD, destruction of abnormal erythematous blood vessels reduces a key reservoir of inflammatory mediators, thus removing a major source of inflammation from the eyelids and meibomian glands. MGD is associated with inflammatory skin conditions that occur near the lid margins such as Rosacea[9] and may also be used to control surface bacteria and demodex mites.[10] Ms P had been experiencing an increase in her dermatitis and there was a question from her dermatologist of a possible underlying, as yet undiagnosed, auto immune disease. IPL has been shown to decrease the levels of inflammatory markers in the tear film over a 12-week period.[11] As well, IPL has been found to improve the microstructure of the MG.[12]

The decrease of inflammatory markers may have improved meibum quality and it is possible actual MG function was improved. Certainly, despite the decrease in non-invasive break-up time (NIBUT) noted in her right eye (possibly due to less MG) her symptoms decreased, her ease of meibum expression increased and ocular redness decreased.

What remains of interest is the incorporation of light modulation (LM) with the sessions. It has been found that different compositions of ester in various meibum secretions can cause changes in the melting point of the meibum leading to MG obstruction.[13]

There has also been a positive hyper-thermal effect with the safe and effective application of near-infra red LED device to the eyelids in non-inflamed obstructive MGD-improving symptoms, decreasing orifice obstruction scores and improving tear evaporation times. Further to this, LM has been shown to be a safe method to decrease inflammation and increase healing properties (such as increasing fibroblasts and increased

Figure 3. Eye Light IPL/OPE and Light Modulation unit

synthesis of collagen, particularly of the skin.[14] Given that it has been shown to decrease inflammatory markers on the skin and decrease erythema, it is a possibility that LM is another tool to manage the inflammatory process of DED in the lid and surround surfaces as well as the lid margins.[15]

Summary

The Eye-Light IPL/OPE is proving to be a very useful tool in my dry eye tool box to manage obstructive MGD particularly—as presented in the case here—in the absence of inflammatory vascular conditions such as facial rosacea. Of particular interest is the additional use of the light modulation mask. As well as providing thermal heating to the upper lids (where IPL is not treating) for ease of MG expression, its use to decrease surface inflammation, and potentially treat surface bacteria and Demodex mites is very exciting. For those already in possession of an IPL unit, the My Mask is available as red LED light modulation device and a perfect addition to an IPL unit. A separate device, it can be used in conjunction with IPL or as a stand-alone treatment, and can be performed by ancillary staff

in a separate room.

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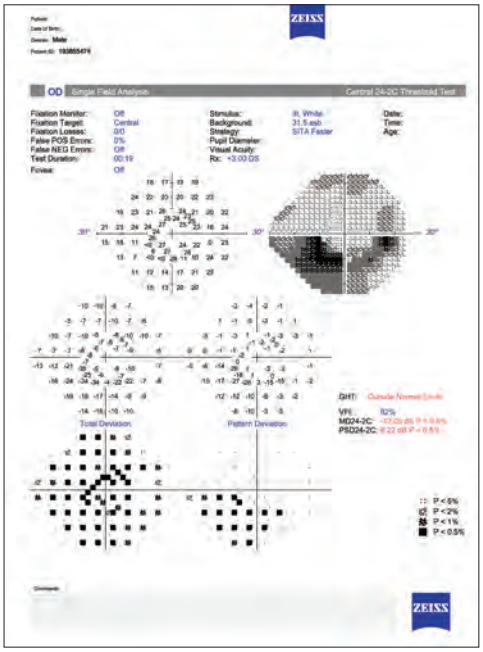
In the news ...

Industry innovations and announcements

SITA Faster 24-2C provides another level of clinical confidence

Glaucoma is one of the leading causes of blindness in the world, with approximately 300,000 people in Australia suffering from this 'silent thief of sight.' With 50 per cent of these people going undiagnosed, many in the health care field look to constantly innovate and develop new ways for eye care professionals to better detect change, monitor progression and treat the disease before irreversible damage from glaucoma occurs.



ZEISS is proud to announce the release of the latest update for the Humphrey Field Analyzer 3 (HFA3), which includes the new 'SITA Faster 24-2C' testing strategy for improved sensitivity to central field defects. For some patients, studies have shown that visual field damage may be detected within the central 10 degrees before the damage is apparent in a 24-2 pattern.[1,2] By testing ten additional points within the central 10 degrees that align with known nerve fibre loss, clinicians gain more confidence that central field defects are being detected without the need to conduct additional 10-2 tests in most cases.

Reduced test time

To drive further workflow improvements and to support the recommendation to conduct more frequent visual field testing for early and suspect glaucoma patients, ZEISS has integrated these ten additional points into the popular SITA Faster 24-2 test. This test, which demonstrates clinical equivalence and a reduction in testing time by 30-50 per cent compared to previous testing strategies,[3] has been welcomed by patients and staff using the HFA3 in independent and corporate stores across the country. Furthermore, some clinicians have noticed an improvement in test reliability with more attentive, less fatigued patients, not to mention a heightened patient experience on the device.

Finally, the intermixing of SITA Standard, SITA Fast and SITA Faster tests creates continuity for Guided Progression Analysis (GPA) reports and allows clinicians to monitor progression for the common 24-2 test points of all strategies in a concise, single page report. This allows for a seamless transition and immediate adoption of the newest SITA Faster 24-2C strategy for clinics that wish to offer shorter testing times to patients whilst adding another level of clinical confidence that central field defects are being detected in glaucomatous eyes.

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For more information, visit www.zeiss.com.au.

The REVO FC, fully automatic OCT and fundus camera announced

OptiMed, the Australian distributor for Optopol technology, has recently announced the introduction of the new REVO FC, a fully-automatic OCT with high-resolution fundus camera.

REVO FC enhances the versatility of the REVO OCT range by including an ultra-high resolution 12 mega pixel camera to capture images of the retina. These images can then be overlaid with high definition OCT tomograms to pinpoint pathology.

REVO FC's comprehensive software permits manipulation of the colour fundus image, much like any image management software, but adds the combination of OCT results to assist with diagnosis.

REVO FC's super-fast 80,000 A scans per second scanning speed provides the ability to efficiently perform routine macular, disk and anterior segment scans as standard but also allows the option of adding OCT-B (Biometry) for myopia monitoring, OCT-T (Topography of both surfaces of the Cornea) and OCT-A (Angiography) optional modules.

A comprehensive normative database allows comparison of scans against data collected for retinal, optic disk and ganglion cell layer assessments. The user can also predefine a series of scans to be automatically performed which is particularly useful when having an assistant perform the OCT examination.

With the new Visual Field Suite added, the REVO FC allows importation of Visual Field examinations from Optopol's PTS series of Visual Field Analysers, enhancing REVO's already comprehensive Glaucoma Analysis and the operator's diagnostic and reporting abilities.

REVO FC is a fully automatic device that can even provide voice prompts to patients, making a novice user an expert in a short space of time. If the follow-up scan is selected the device remembers not only the previous scans that it performed on the patient but even the position of the chin rest and scan position.

When located in a pre-examination room, REVO FC can provide comprehensive review station licenses with the choice of running a server or local client database. This extends the ability to access patient data anywhere from within the practice, creating reports or to assist optometrists in explaining exam results to patients.

For more information, visit www.optimed.com.au.

All-purpose ocular surface analyser introduced

Device Technologies has announced the Australian launch of the LacryDiag ocular surface analyser.

Compact and ergonomic, LacryDiag offers quick, complete diagnosis of the three tear film layers, produces images of the meibomian glands and measures the percentage of loss of the meibomian glands.

LacryDiag is an all-purpose dry eye device that complies with the dry eye diagnosis recommendations established in the DEWS II report...

- **Interferometry.** The interferometer performs a qualitative and quantitative analysis of the lipid layer, determining lipid layer quality and evaluating lipid layer thickness.
- **N.I.B.U.T.** Analysis of the aqueous layer and measurement of tear meniscus height (mm).
- **Tear meniscus.** Evaluation of tear film stability within the mucin layer including an automatic measurement of tear film break up time.
- **Meibography.** Infrared meibography is used to visualise meibomian gland condition and dysfunction, offering qualitative analysis of the meibomian gland and automatic calculation of the percentage of loss.

For more information, visit www.device.com.au.

HFA3 SITA Faster

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BOptom PhD FAAO FACO
Lecturer in Optometry and Vision Science
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Equipment
SITA Faster threshold visual field testing strategy for Humphrey Field Analyzer 3

Supplier
ZEISS

SITA Faster is the newest addition to the SITA family of testing strategies for the Humphrey Field Analyzer 3 (HFA3) perimeter. It was developed with the goal to create a threshold testing algorithm which was significantly faster than the legacy SITA strategies and able to replace SITA Fast, as well as to integrate SITA Faster into existing progression analysis software to facilitate adoption of the new strategy for clinicians.

Previous studies have suggested that patients with glaucoma may benefit from more frequent visual field testing in order to facilitate earlier detection of progression.[1-3] A significantly faster testing strategy may encourage the adoption of more frequent visual field testing. The improvement in test time with SITA Faster has the potential to improve clinical workflow and patient acceptance of perimetry. Furthermore, the HFA3 Guided Progression Analysis (GPA) allows for intermixing of all three SITA test strategies and thus clinicians won't need to 're-baseline' patients when making the transition over to SITA Faster.

SITA Faster was evaluated in an investigator-initiated multi-centre clinical study.[4] The five study sites were the Chinese University of Hong Kong (Hong Kong), Tajimi Iwase Eye Clinic (Japan), Tays Eye Center, University of Tampere (Finland), Lund University (Sweden) and University of California Berkeley (USA).

One hundred and twenty-five patients who either had a confirmed diagnosis of glaucoma or were glaucoma suspects underwent two separate visits of visual field testing on SITA Faster, SITA Fast and SITA standard. Mean Deviation values were similar among the three strategies (-6.42 dB, -6.11 dB and -6.44 dB for SITA Faster, SITA Fast and SITA Standard respectively).

There was a significant saving in average test time for SITA Faster (2.9 minutes) in comparison with both SITA Fast (4.1 minutes) and SITA Standard (6.2 minutes). In other words, test times for SITA Faster were on average 30.4 per cent shorter than SITA Fast and 53.5 per cent shorter than SITA Standard. These observed differences in test time were statistically significant for all three pairwise comparisons ($P < 0.001$).

In terms of significantly-depressed locations in Total Deviation (TD) or Pattern Deviation (PD) probability maps, there were no significant differences between SITA Faster and SITA Fast. SITA Standard demonstrated slightly higher numbers of statistically-significant defective test locations at the $P < 1$ per cent significance level in the PD map; however, this small difference was the same as previously shown between SITA Fast and SITA Standard.[5-7] Additionally, earlier work has demonstrated that time to detect

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SITA FASTER

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progression is unaffected.[8] Test-retest threshold variability of the three SITA strategies were comparable, as there was overlap of confidence limits across the entire dynamic range of threshold values.

From this validation study, SITA Faster saved considerable test time compared with SITA Fast and SITA Standard, and therefore provides a new time-saving alternative for visual field testing. It was also demonstrated that SITA Faster test results were clinically equivalent to SITA Fast and SITA Standard, which supports the idea of implementing SITA Faster as a replacement for either SITA Fast or SITA Standard.

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Reichert Ocular Response Analyzer

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Product
REICHERT Ocular Response Analyzer

Supplier
BOC Instruments

The Ocular Hypertension Treatment Study (OHTS)[1] first brought to light the importance of corneal parameters in the management of glaucoma, as patients with elevated intraocular pressure (IOP) and reduced central corneal thickness (CCT) were far more likely to develop glaucoma than those with thicker corneas.

The Reichert Ocular Response Analyzer (ORA) now provides clinicians with information on a new corneal property known as 'Corneal Hysteresis' (CH). Multiple research studies have shown CH to be a better predictor of glaucoma development, progression and treatment response than CCT.[2]

What is Corneal Hysteresis?

Corneal Hysteresis is a measurement of the visco-elastic response of the cornea to indentation by a non-contact tonometer air puff. The cornea contains collagen fibres that provide elasticity and extracellular matrix glucosaminoglycans (GAGs) that provides viscosity. Unlike CCT which is a structural parameter of the cornea and is quite symmetrical between eyes, CH is a behaviour of the cornea to mechanical stress which can vary dramatically between the two eyes.

What does CH tell us?

The population average CH is around 10.5 in healthy individuals and does not vary greatly with gender. However reduced CH values have been strongly associated with the development and progression of glaucoma. For example:

• Patients with either normal tension glaucoma (NTG) or primary open angle glaucoma (POAG) had significantly lower CH values than those without glaucoma.

• The eye with the poorer CH was more likely to go on to develop glaucoma and progress more rapidly than the fellow eye with better hysteresis.

• Conversely, patients with poor CH that were placed on IOP lowering treatment (either glaucoma eye drops or SLT laser) had a better response to therapy than those with more normal CH that were also under treatment.

• CH improves in patients on treatment for their glaucoma. Rather than aiming for a specific target IOP, treated IOP could instead be adjusted with the aim of restoring CH back to normal levels.

What else can the Ocular Response Analyzer do?

As a clinical instrument, ORA provides a number of benefits in addition to measuring corneal hysteresis. It is an excellent and highly repeatable automated non-contact tonometer that gives an intraocular pressure measurement equivalent to Goldmann/Perkins applanation tonometry called IOPg without the need for consumables such as fluorescein and anaesthetic drops.

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Reichert ORA

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The ORA also uses corneal biomechanical properties to provide an alternative intraocular pressure measurement known as IOPcc (corneal compensated) which eliminates some of the sources of error that occur in applanation tonometry due to assumptions regarding corneal thickness and curvature. IOPcc tends to be lower than IOPg if hysteresis is good, and becomes higher than IOPg if hysteresis is poor.

Research has shown IOPcc to be a better indicator of glaucomatous damage than Goldmann IOP.[3]

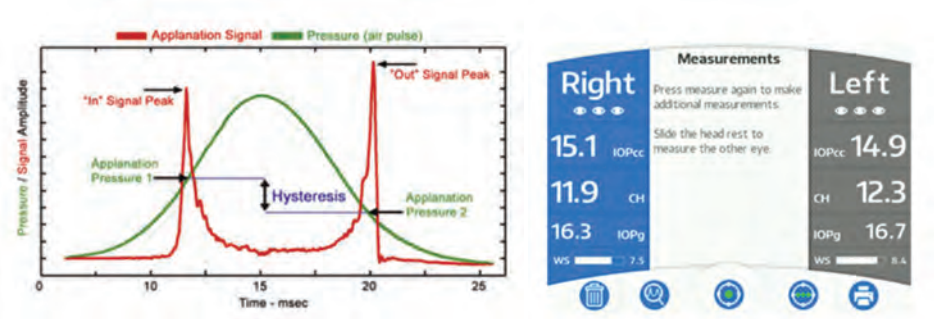

Figure 1. IOP waveform used to determine corneal hysteresis, with representative instrument data displayed showing CH, IOPg and IOPcc.

Conclusion

The Reichert ORA provides IOP measurements useful in everyday practice as well as unique clinical data to help with the management of both glaucoma suspects as well as those requiring treatment for their glaucoma.

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New NIDEK TS-610 Tabletop Subjective Refraction Workstation

BOC instruments has announced the Australian introduction of the NIDEK TS-610 Tabletop Subjective Refraction Workstation. The TS-610 boasts a ground-breaking design that integrates chart and refractor into a single unit.

The TS-610 redefines conventional refraction systems and significantly minimises the examination footprint. The compact design enables easy installation and office assimilation, while the stylish form complements the progressive image.

The TS-610 series is a flexible workstation especially for practices with space limitations. It incorporates a sophisticated refractor head, operation-rich control with colour touch screen, high resolution space-saving distance and near charts and built-in printer. It can also interface with NIDEK Autorefractor, Tonoref and Lensmeter models.

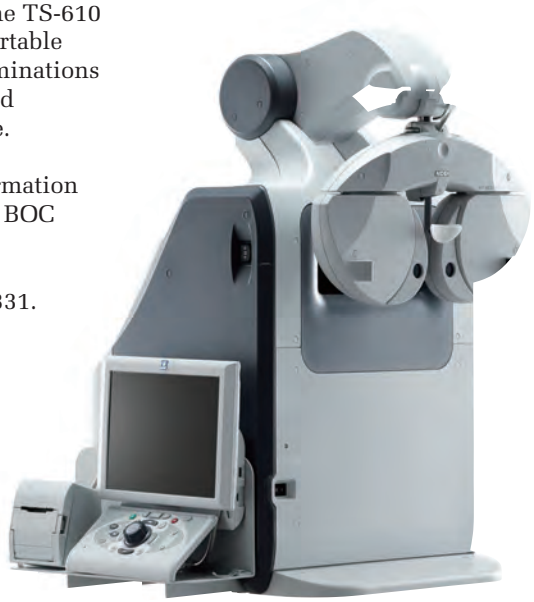
The enhanced capabilities of the TS-610 best serve operators who need the highest refractive performance. This all-in-one workstation improves usability and adapts to various usage situations.

A comfortable forehead rest reduces patient discomfort and stress, allowing for a more stationary and relaxed examination position. Smooth, quiet and speedy lens changes ensure reliable and comfortable measurement without distraction.

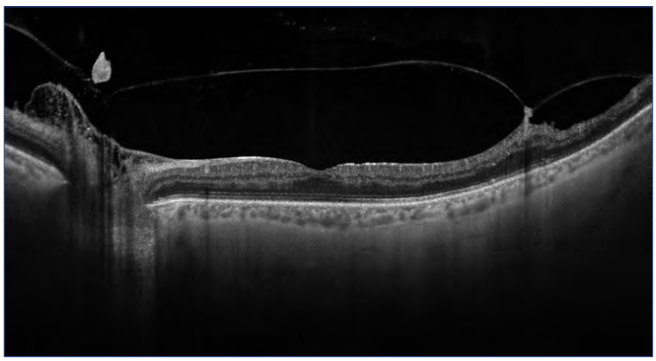
Regardless of personal measurement style, or sitting/standing ergonomic preferences, the TS-610 ensures comfortable refractive examinations for patients and operators alike.

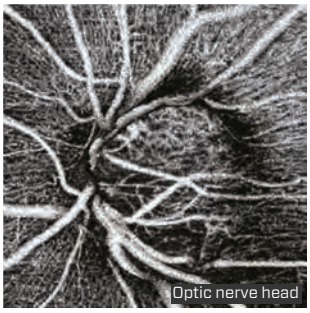
For more information please contact BOC Instruments.

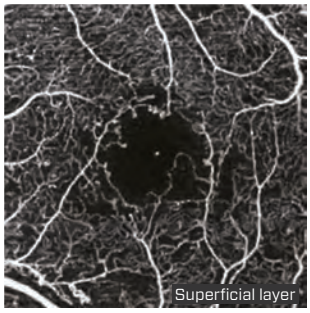
Ph. 180 080 4331.



Topcon Triton Swept-Source OCT







Dr Ehsan Vaghefi

BSc MSc PhD

Senior Lecturer in Ophthalmic Imaging

University of Auckland School of Optometry and Vision Sciences

Co-Founder and Director of Toku Eyes

Equipment

Topcon Triton Swept-Source OCT

Supplier

Device Technologies

I have a MSc in biomedical imaging and a PhD in bioengineering, through which I have accumulated knowledge on biomedical imaging of the eye. Through the past 10 years, I have worked as a scientist (and now a senior lecturer) at the School of Optometry and Vision Science, University of Auckland. Here my research is focused on multi-modal imaging of the aging eye. I believe that no single imaging modality is capable of revealing all the aspects of a functional eye, and hence, multi-modal imaging and analysis is essential for comprehensive eye exams.

My recent research has been focused on multi-modal imaging of 'high-risk' dry AMD patients, in order to look for biomarkers of conversion to neovascular AMD. Consented participants (high-risk AMD and age-matched controls) are recruited and processed through a battery of ophthalmic tests, including OCT and OCT-A. This research has been running for two years.

During the first year, we were using the Topcon DRI OCT-1 Atlantis device. Although we achieved good results from scanning 'controls' using the Atlantis, it was not always easy to scan AMD patients. Consistent eye tracking and motion artefact correction are essential for OCT-A imaging. The Atlantis eye tracking system was not as efficient, and overall, slower scans were not well tolerated by our older AMD patients.

This year, the School of Optometry and Vision Science invested in a new Topcon Triton Swept-Source OCT. We continued our AMD study, but with the new Triton SS. The difference was night and day. The Triton SS OCT not only performed better in scanning 'control' participants, it truly excelled when imaging the high-risk AMD patients.

The scans are much faster now and the eye tracking system is remarkably improved. This meant that the OCT-A scans were faster (and better tolerated by patients), eye tracking was superb and motion artefact correction worked great. We also noticed a better depth penetration (clearer choroid images) compared to the previous generation. Overall, we are very satisfied with the performance of Topcon Triton Swept-Source OCT in our study, (the outcome of which will be published very soon).

TOPCON

YOUR VISION. OUR FOCUS.

Topcon SL-D701

Topcon's premium digital ready Slit Lamp with tower style illumination column.

- Homogeneous LED illumination
- 5-step magnification up to 40x
- 14mm Slit illumination
- DC-4 Digital Camera option
- Optional enhanced filter system for Meibomian gland observation and Superior Fluorescein observation

Topcon CV-5000

Computerised Vision Tester - optional integration with PC-50s LCD Visual Acuity Chart.

- Automated Refractor Head controlled by KB-50 colour touch screen & dial controller
- Advanced integration – pull through previous script and/or auto-refraction. Export final subjective data to practice management software

Topcon TRK-2P

Completely automated alignment, focus and measurement acquisition.Flexible colour touch-screen for versatile positioning. Integration with Practice Management Software.

All four measurements, in both eyes, in less than 60 seconds!

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- Non-contact Tonometry
- Auto-Keratometry
- Non-contact Pachymetry

Topcon CA-800

Corneal Analyser with Infra-Red Placido disk topography.

- Automated alignment, focus and capture – controlled by colour touchscreen or digital control stick
- Includes Meibomian Gland imaging, tear film breakup time, and Zernike Analysis reports

DEVICE TECHNOLOGIES

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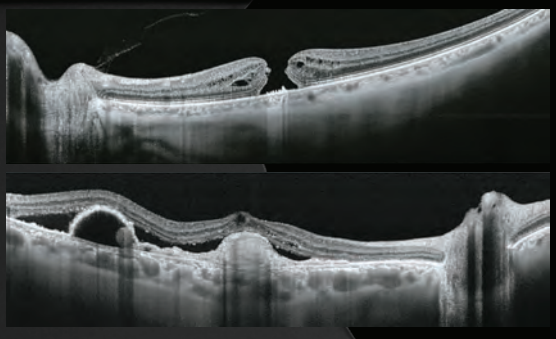
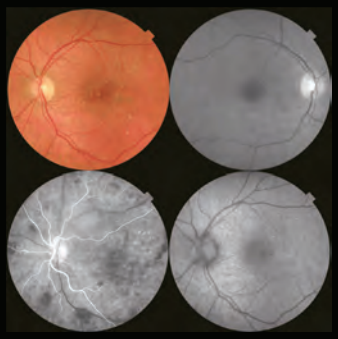
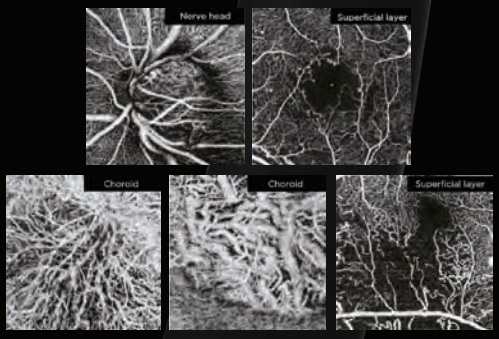


Swept Source OCT – 1 micron Light source



Multi-Modal Imaging



Swept Source OCT Angiography

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A new era of refraction

Dominique Meslin

Membre du Collège National des Opticiens de France

Directeur Solutions Refraction chez Division Instruments Essilor International

Créteil, Île-de-France, France

Equipment

Vision-R 800 phoropter

Supplier

OptiMed

For many years, subjective refraction techniques have hardly changed. But the recent introduction of the Vision-R 800 phoropter by Essilor Instruments represents a major advancement in refraction. Thanks to its continuous power changes, this new advanced phoropter makes refraction more precise, easier to perform for the practitioner and more comfortable for the patient.

A more accurate phoropter

Vision-R 800's exclusive optical module utilises liquid crystal optics, and controls powers at 0.01 D, and offers continuous and instantaneous changes of sphere, cylinder and axis at the same time. Refraction is made more accurate and prescriptions can be made in 0.01 D steps, which offers patients the ability to get the full potential of their vision.

An easier procedure for the practitioner

Thanks to its continuous and simultaneous changes of sphere power, cylinder axis and cylinder power, the Vision-R 800 phoropter reaches the final refraction more quickly than the traditional refraction methods. In addition, 'Smart Tests' and their unique algorithms assist the practitioner in conducting the whole refraction procedure.

A more comfortable experience for the patient

Smooth power changes and wider field of vision make refraction very comfortable for the patients. The procedure is shorter and there is no fatigue experienced. At the end of the exam, the Vision-R 800 phoropter offers the opportunity to easily compare refractions on visual acuity charts and images of real-life situations.

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TAKAGI 700 GL

This new LED slit lamp from Takagi will open your eyes to a new standard of clinical observation. Easy to upgrade to digital option.

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OptiMed
MAKES YOUR PRACTICE PERFECT

OPTICARE

Envision the Possibilities

A high-performance wireless refraction system.

The Vision SC wearable wireless phoropter and the 2Win autorefractor are two leading products in the market today for practices aiming to deliver faster and more accurate examinations.

Both devices work together in a synchronised way: the 2Win catches the objective refraction of the patient, then it sends data to the tablet controlling the Vision SC that automatically sets according to the 2Win's values to test the subjective refraction.

This system is tried and tested by many of our clients Australia-wide. Here is one interesting account from **Michael Young Optometrists.**

VISION SC

For the past 17 years, I have been exclusively doing remote and rural country areas and I've almost forgotten what a refractor-head looks like (not really!).

I've become super fast at changing lenses in a trial frame, doing hand-held crossed-cyl and the like. I saw one mobile refractor-head at a trade-fair a few years ago but it required the patient to hold it up to their face. I gently handed it back and walked off.

Then at another conference I walked past Opticare's stand and saw the Vision SC. I initially thought it was a new type of BIO, so I asked George Nasser a stupid question, "What's that thing?"

"It's a mobile refractor", was his reply. When he said the word "mobile" he had my attention.

> "It's a mobile refractor", was his reply. When he said the word "mobile" he had my attention.

Vision SC's benefits according to Dr. Young:

- I can sit back in my chair with the tablet in my lap. No more sore backs, sore necks, sore shoulders, sore fingers (I have some osteo-arthritis – this will extend my career!).
- Refractions are much more accurate – to +/- 10.00 sphere as well as to -10.00 cyl. To go to higher spheres, you can use an add-in trial lens.
- Optometrists use 0.25 Dioptre steps. The Vision SC can go to 0.12 Dioptre steps – or even 0.05 Dioptre steps.
- Crossed-cyl goes to individual degrees.
- The tablet is fully customisable. I have mine set to adjust the sphere as I'm adjusting the cyl.
- Retinoscopy is very easy. Dial in your working-distance lens and adjust the lenses from the tablet. No more need to use a Ret-Rack.
- Probably my favourite feature is the ability to enter the old Rx into memory then at the touch of the screen, you can flip between the old Rx and today's Rx. (Very helpful when they've got glasses from somewhere else, and I can demonstrate a clearer result!).

He handed me a Samsung tablet and asked me what my 'script was, dialled it into the tablet, then put the Vision SC on me. Wow – I could see. On the spot I did a quick refraction on myself – fogging out the LE, adjusting the spheres, doing a crossed-cyl.

I should mention that my Rx is around +2.25/-6.50*172. The crossed-cyl was just so easy and so deadly accurate.

My new Vision SC has now travelled about 100,000km and I've probably done about 3,500 refractions. Absolutely brilliant!

How does it work? It's the world's first Fluid Lens Refractor. Take a look at some Youtube clips on Adaptive Optics and how they've managed to untwinkle the stars – with Adaptive Optics and Deformable mirrors. The Vision SC is an upshot of that technology.

The Vision SC can also mount to a refractor-arm, and there is a table-mount available too.

> "My new Vision SC has now travelled about 100,000km and I've probably done about 3,500 refractions. Absolutely brilliant!"

2WIN

When I purchased the Vision SC, I also purchased the 2Win autorefractor. I'd been using a Retinomax for 10 or more years and was very happy with that.

This means you can do the autorefraction, press a button, put the Vision SC on the patient, and they can be wearing the autorefraction.

Overall I'm delighted with my Vision SC – the advance in accuracy, easy-as to use, much more comfortable for the optometrist.

They are more expensive than standard refractor-heads, but you should consider the benefits – you wouldn't be disappointed.

The advantages of the 2Win are:

- Smaller and more compact – ideal for us mobile optometrists.
- The autorefraction compensates for the patient's age – and is more accurate.
- Works at 1 metre, so there's less chance of accommodation affecting the results and, the best part, - it transmits the results to the Samsung tablet (via Bluetooth).

Vision SC and 2Win are available through Opticare. Contact us to receive more information.
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When precision, quality and design come together

Inez Hsing
BAppSc(Optom)(Hons)
GradCertOcTher
Clinical Optometrist,
OKKO Eye Specialist Centre, QLD

Equipment
TOPCON SL-D701 LED slitlamp and DC-4 camera

Supplier
Device Technologies

I have had the pleasure of using the Topcon SL-D701 slitlamp and DC-4 camera unit for the past three years. Together, these two devices offer me a powerful range of features as well as high-quality observation and imaging, all bundled into an innovative and slimline design.

The slitlamp boasts five levels of magnification that allow me to focus on even the finest detail in my anterior segment examination. Image quality remains remarkably sharp and detailed at high magnification (Figures 1 and 2). The slitlamp itself is easy to manoeuvre and responds effortlessly and precisely to joystick movements.

The built-in LED light source provides an unparalleled level of illumination, and light intensity is easy to adjust with a continuous rheostat adjacent to the joystick. Other slitlamp controls are all within easy reach – there are four built-in filters and these, along with slit height (incorporating a continuous scale), can be easily adjusted with dials along the top of the unit.

Thanks to the superb optics of the SL-D701, images viewed through the oculars of the slitlamp and captured with the DC-4 camera are beautifully clear and vivid, and reflect true colour with minimal shadowing. Examination with fluorescein instillation is particularly impressive – the cobalt blue filter offers a high degree of contrast such that even subtle areas of fluorescein staining can be accurately identified (Figure 3).

The DC-4 camera is integrated seamlessly into the Topcon SL-D701 and gives the whole unit a very sleek appearance and feel. Taking a photograph with the DC-4 camera is as simple as intuitively tapping the trigger button on the joystick. The images are then instantly transferred to the EZ Capture software installed onto my computer.

Innovatively, the EZ Capture software also automatically detects which eye has been photographed based on the position of the slitlamp unit. Impressively, there is no delay in the image transfer process—a series of photographs can be taken in rapid succession for perusal and selection at a later time. All photos can then be saved in high-resolution format to a pre-determined location on my computer, and then imported into my electronic medical record (EMR) for total integration.

With the DC-4 camera, I can be confident that my anterior segment photographs accurately reflect what I see through the oculars. The DC-4 camera also supports video mode and live feed which has proven invaluable when teaching a novice slitlamp user. With time, I have been able to quickly expand the imaging capabilities of the DC-4 camera to other slitlamp based investigations such as Meibomian gland expression, posterior segment examination and gonioscopy (Figures 4, 5 and 6).

The Topcon SL-D701 slitlamp and DC-4 camera unit have quickly become an integral part of my practice over the past three years. They have improved

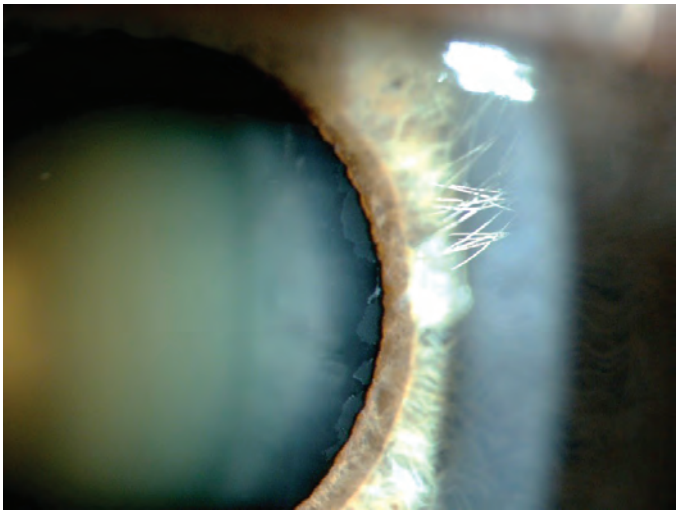

Figure 1. Pseudoexfoliation material at the pupillary ruff (captured under 40x magnification)

Figure 2. A small amount of blood in the anterior chamber at a 1 day postoperative review following cataract surgery and iStent insertion (captured under 40x magnification)

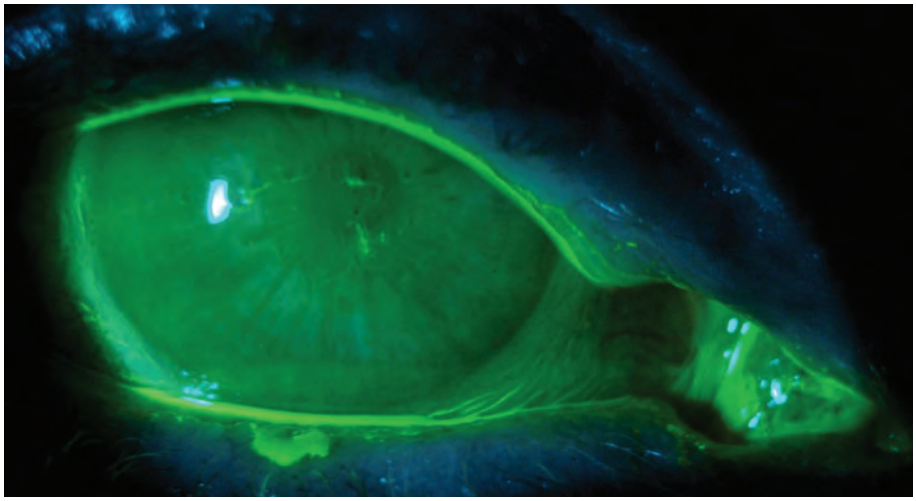

Figure 3. Fluorescein examination of a patient with epithelial basement membrane dystrophy (EBMD) (captured under 16x magnification)

Figure 4. Meibomian gland expression with a Matroska paddle (captured under 25x magnification)

my efficiency in a busy practice and have also proven useful as an educational tool for slitlamp users and patients alike. For example, Figure 7 was used to show a patient with acute anterior uveitis (AAU) the gradual resolution of their posterior synechiae which facilitated better understanding of their condition and improved compliance with their treatment.

Finally, technical support for both the Topcon SL-D701 slitlamp, DC-4 camera and EZ Capture software, ranging from installation to troubleshooting, is readily available when required.

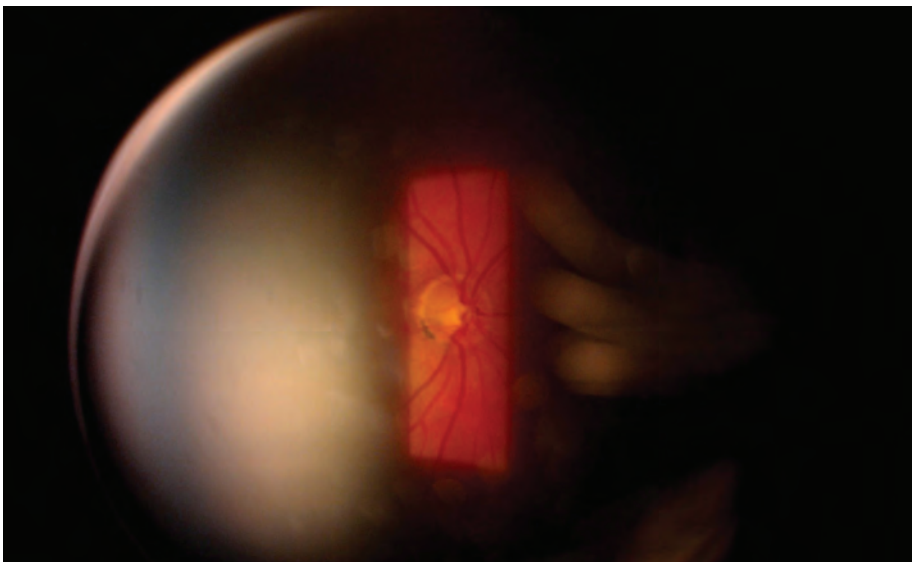

Figure 5. Examination of an optic nerve head with a VOLK Digital High Mag Lens (captured under 16x magnification).

Figure 6. Gonioscopy of an anterior chamber angle (captured under 16x magnification).

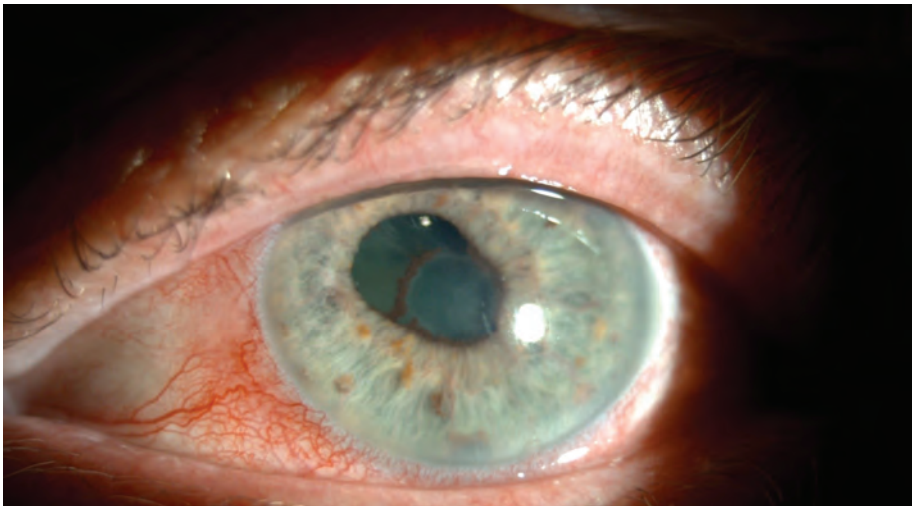

Figure 7. Gradual breaking of a posterior synechiae secondary to acute anterior uveitis (AAU). Note also the clarity and vividness of the surrounding ciliary injection and engorged iris vessels (captured under 16x magnification).

ADAPTICA

Mobile Wireless Refraction Systems

VISION SC

Wearable Wireless Phoropter

The Vision SC is an innovative, electronically programmable, mobile and wearable all-in-one system of adaptive lenses. Subjective refraction can be performed in 0.12, 0.25 and 0.5D accuracy without loss of vision due to liquid lens technology. It enables examination in usual working environment and posture.

KALEIDOS

Unique Wireless Binocular Vision Analyzer

Kaleidos is a mobile binocular refractometer and vision analyzer that measures both eyes at the same time, in real life vision conditions.

The Vision SC and KALEIDOS can be controlled by the same tablet and data is transferred via wirless to the Vision SC.

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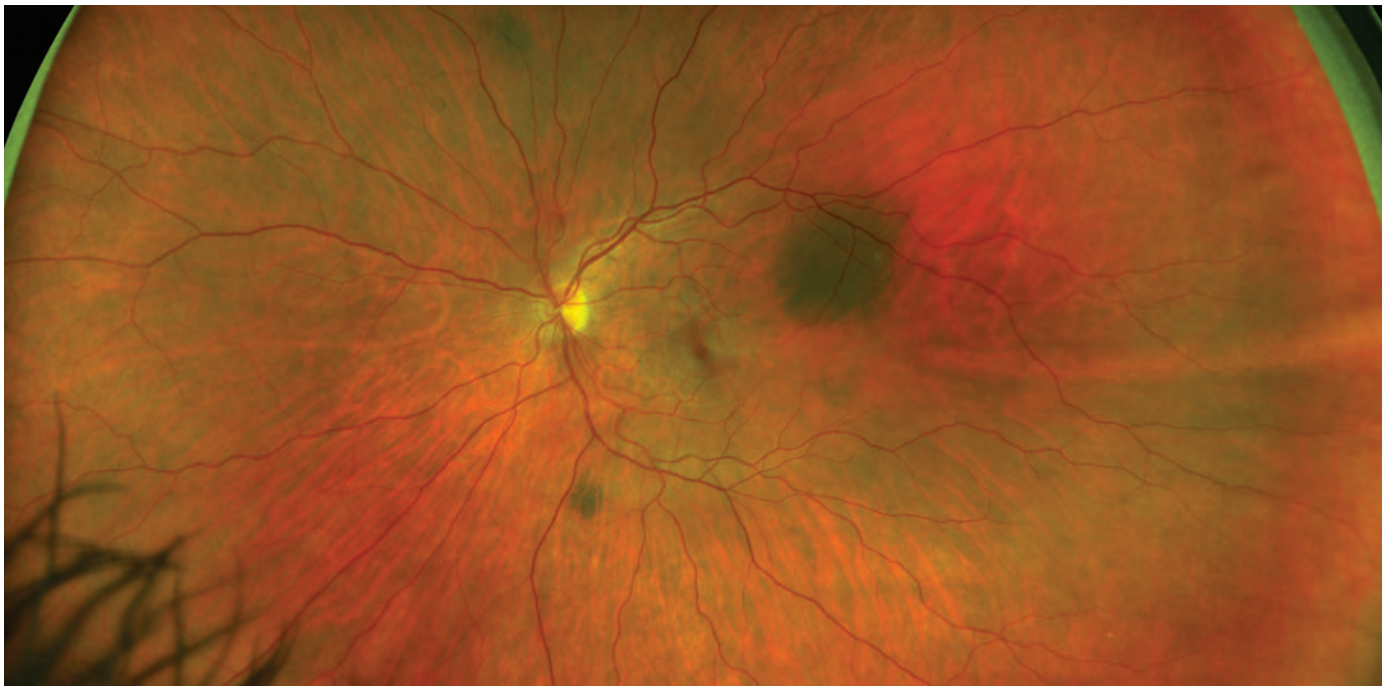
Positive patient experiences



Nick Hansen
B Optom (Hons) FACBO
Hansen Optometrists
Orange, NSW

Equipment
optomap Ultra-Widefield Retinal Imaging

Supplier
Optos

Hansen Optometrists in New South Wales is the oldest, continuously-operated optometry practice in Australia. The secret to the longevity of our business is the result of providing optimal patient care while employing the most advanced technology.

Choosing optomap

In our determination to continue to provide leading-edge services, we were in the process of considering our options to upgrade our technology when I encountered optomap ultra-widefield (UWF) retinal imaging at a national conference. At the time, our practice was utilising a digital camera which only captured 20 degrees of the posterior pole. optomap's UWF technology can image up to 200 degrees of the retina in a single capture.

Patient satisfaction

In the year that we have been utilising the technology it has impressed patients and differentiated the practice from the competitors in the region. The Optos device creates a big 'wow factor' with our patients. They are amazed when they see a comparison of the 20-degree field of view that we could obtain of their eyes previously, and the 200-degree view of optomap. It is really quite impressive to realise how much farther out we are seeing now even through an undilated eye. It is because of these positive patient experiences with optomap that acceptance rates for the exam and word of mouth referrals have increased.

It is the clinical aspect of optomap that has convinced us of its permanent value in our practice. Some of what we are detecting now is mind-boggling, especially since we have been seeing many of these patients for some time and now we are picking up peripheral pathology, such as choroidal naevus or diabetic signs, that we hadn't been able to see before. The dynamic capabilities of optomap have increased detection of a myriad of pathologies from tumours to retinal tears. With optomap, assessing a patient for a retinal detachment, as opposed to a posterior vitreous detachment, is quite a bit easier—and that is significant.

Lifesaving technology

Recently a young mother in her early 30's came to the practice for a routine eye exam. She presented as healthy and completely asymptomatic but the optomap exam revealed a retinal melanoma in the far periphery. Detecting the melanoma earlier in its manifestation allowed her to receive critical treatment sooner. This early discovery with optomap was life saving for her. I've been in practice for 43 years and you only have to pick up one pathology like that in your career and it can be life changing and quite powerful.

I would even say that the scope of the optomap image is better than nine out of 10 dilated exams. I believe it would be wise to bring it into any practice sooner rather than later.

While employing the technology does streamline the exam flow, it also allows us to take additional time with our patients explaining what has been revealed about their ocular and systemic health.

An integrated system for dry eye

Rory Gordon
BOptom
Complete Eyecare Contact Lens and Orthokeratology Centre
Templestowe and South Caulfield, VIC

Equipment
SBM Sistemi I.C.P. Ocular Surface Analyser

Supplier
BOC Instruments

Since its inception, Complete Eyecare has built a reputation for its dedication to innovative ideas that help improve the way we provide eye care for our patients. As an optometrist with a keen interest in complicated contact lens fitting and dry eye disease, I have found the I.C.P. Ocular Surface Analyser (OSA) to be an easy-to-use integrated diagnostic platform.

There are many ocular surface devices on the market with varying degrees of accuracy and capability. I liked the SMB OSA from a technical point of view. It offers a comprehensive and complete cross section of tests, including...

- Quantitative analysis and diagnosis of lipid, aqueous and mucin deficiency
- Meibomian gland imaging, analysis and classification of MGD
- Analysis of tear break up time
- Measurement and grading of lipid layer thickness and stability
- Tear meniscus analysis, quantification and categorisation
- Evaluation of corneal integrity

The software is well-written and is easy to use and all the current research and popular tests are included. Results from other tests are entered and reflected in the dry eye summary report, something which I find invaluable.

The Meibomian glands really stand out and the computer grades the severity of gland loss. The tear meniscus test is accurate and easy to use and this helps to diagnose the type of dry eye disease.

The tear breakup function is good and offers useful information.

CASE REPORT

Patient A has suffered with dry eyes for years. He was using lubricant drops four times a day and he said he felt like he wants to 'rip his eyes out' at night. His vision was patchy and he reported severe discomfort. He had been from doctor to doctor looking for help and not much other than lubricant drops has offered any relief.

An assessment with the I.C.P. OSA helped demonstrate to him the obvious diagnosis of meibomian gland dysfunction. It clearly showed the reduction in the oil layer and nearly 40 per cent dropout in his Meibomian glands. As a result of this, he was treated with IPL and has regained 80 per cent of his functionality and now uses drops very occasionally.

In use, the I.C.P. OSA offers a way for the patients to gain a much better understanding of their condition.

I have noticed that it is much easier to proceed with IPL when indicated and much less explanation is necessary. It is very useful to demonstrate the difference in function after treatment.

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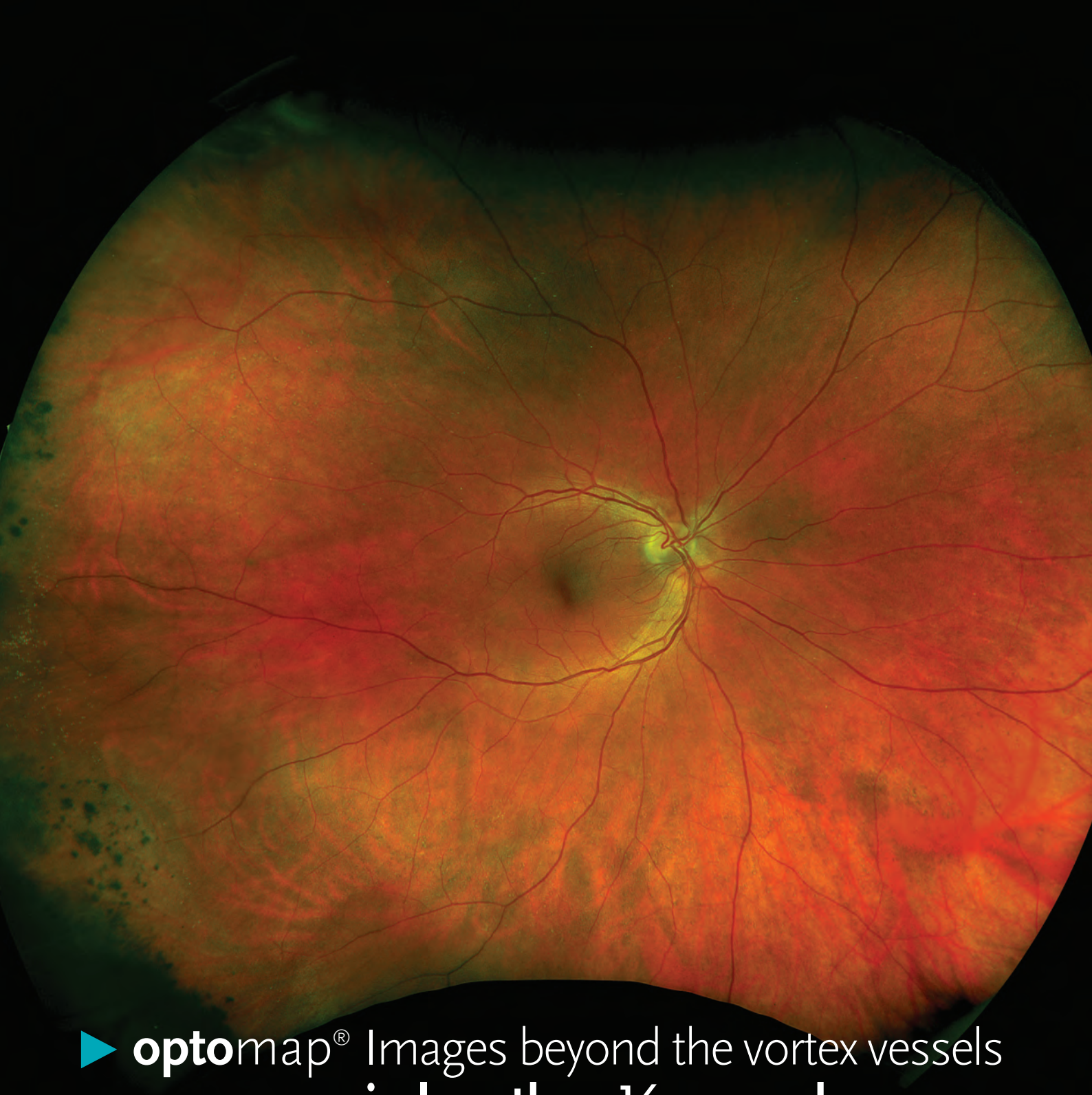

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