



Choosing the Right Optical Coherence Tomography (OCT) System for Our Practice

Queensway Optometric Centre, Mississauga, Ontario, Canada

Choosing the right new equipment is not an easy task for any practice or clinic involved in optometry. Usually, we must rely on manufacturer brochures, sales people, and exhibitions at trade shows or word-of-mouth from other practitioners. While these measures are helpful, hands-on examinations using the machines on patients with our own clinic members is an even better way to evaluate which machine provides an ideal balance between cost and functionality.

In May, my practice had a rare opportunity to do an independent trial of three, recently released Optical Coherence Tomography (OCT) models from three major suppliers, which were marketed at a similar price point. The units were placed in our clinic at the same time for one week. Afterwards, our team of optometrists and staff evaluated each OCT unit for ease of use and image quality. At the end of this process, we chose the Topcon Maestro (3D OCT-1) because of its space-saving compact instrument design, enhanced diagnostic tools, simplicity of use and spot-on measurement of optic nerve and macula in one scan. Less expensive options sacrificed image quality. The Maestro machine has since helped us improve our standard of patient care as well as enhance our practice's efficiency.

Flexibility of Space

All offices have challenges with space utilization but the compact design of the Maestro unit made it extraordinarily versatile for placement in our

“My practice had a rare opportunity to do an independent trial of three, recently released OCT models from three major suppliers. At the end of this process, we chose the Topcon Maestro because of its space-saving compact instrument design, enhanced diagnostic tools, simplicity of use and spot-on measurement of optic nerve and macula in one scan.”

office. The size of the other machines dictated where they would need to be set up. Because of the Maestro's adjustable control panel, we were able to change the machine's configuration. The unit can be moved at will and it enabled our staff to interact with patients from virtually any position.



Figure 1: The user-friendly design of the 3D OCT-1 Maestro and easy access to patient data and reports facilitates patient interaction and consultation.

Having OCT technology in the office changed the way we looked at certain eye conditions, including diabetes, macular degeneration, glaucoma, retinal lesions and macular holes. The detail we received from the machine's 12 mm x 9 mm OCT scan provided measurement and topography of the optic nerve and macula in one scan. This allowed us to diagnose particular conditions we weren't able to before we acquired this machine.

Focus on Diagnostics

Approximately a dozen patients allowed our practitioners to test them on all three machines during the week of our trial. One patient had an impending macular hole. The Maestro generated an outstanding image where it was very clear what the problem was and helped us identify it.

We also used the Maestro to examine a diabetic physician who had just seen a retinal ophthalmologist three months earlier. We found perimacular edema, a fairly significant complication of diabetes, that the doctor himself was unaware of. While his vision was quite good, the swelling was there and the Maestro OCT picked up on it.

Traditionally, for patients who are suspicious for glaucoma, we would do a visual field, which we found was not as reliable as the Maestro OCT, which provided additional data regarding their intraocular pressure or large optic nerve cupping.

Ease of Use

Because of its one-touch, auto-alignment feature, the whole measurement process is done automatically on the Maestro with the results displayed on the PC screen. Positioning and focusing the machine was a snap for our technicians.

After registering the patient into the Maestro system, all the technician had to do was select the capture icon on the PC screen. The system includes auto focus and auto shoot functions and auto chin-rest

adjustment. Topcon incorporated a stereo-matching automatic alignment™ method in the 3D OCT-1 Maestro – which made the alignment process smoother than the other models we tested. Plus, it took less than an hour to train the staff on the key features they needed to understand in order to successfully operate the machine.

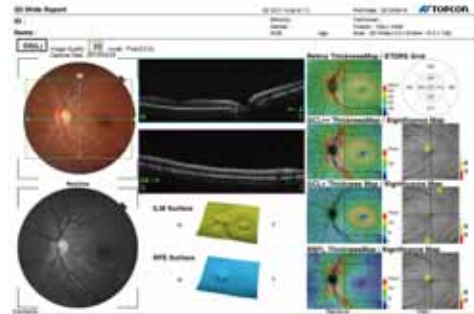


Figure 2: The 3D OCT-1 Maestro incorporates a 12x9mm wide OCT scan which provides measurement and topography of the optic nerve and macula in one scan.

Robust Software

We had the Maestro software installed in each of our exam rooms, so we could remotely retrieve the data the unit generated. This allowed us to bring patients back to our offices to review their results in more detail. The reports were generated almost instantaneously. The full-featured software was user-friendly and offered a versatile array of options to view including rich functions such as optic disc analysis and 3D macula analysis. The Maestro also offered the widest OCT scan available at 12 mm x 9 mm, an ideal protocol for screening since it allows both the optic disc and macula to be scanned in a single capture.

Built-in Fundus Camera at the Right Price

It was our practice's idea to do a trial on three different OCT models. We already had a retinal camera, so in the beginning, the idea that the Maestro included the fundus camera was not the most attractive feature to us. But in retrospect, we found that the fundus camera was particularly useful. When we viewed the back of a patient's eye with the ophthalmoscope, we could identify certain points of interest to us – such as a retinal lesion or areas of swelling. When we

received the OCT reports, it was a nice feature to see the two images side by side.

The built-in fundus camera in the Maestro was a valuable tool for both interpreting OCT images as well as for patient consultation. This combination is invaluable in providing a correlation between the OCT scan and the fundus image within the same report. While other OCT units with fundus cameras do exist, we found they are typically available at a higher price point. In addition, the high scanning speed (50,000 A-scans/second) enabled the Maestro to capture OCT images quickly, reducing the artifacts created by eye movement and blinking.

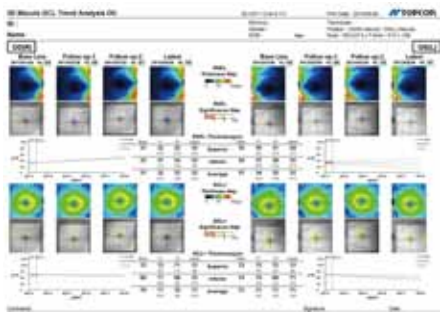


Figure 3: The trend analysis report allows the physician to compare and analyze up to 4 scans periodically, which is useful for glaucoma follow up.

A Sound Investment

Having an OCT is an investment well made. Retinal imaging has always been around, but the Maestro OCT gave us detail that is not possible anywhere else with traditional equipment. The Topcon Maestro offers a lot to any optometrist with its usability and outstanding image quality. After trialing all 3-OCT's, we decided to purchase the Topcon 3D OCT-1 Maestro. Everyone in the practice uses it. It is easy to roll into day-to-day activities. For the budget we had in mind it's a very good value and the best machine to fit our needs.

Top Reasons to Invest in a Topcon Maestro OCT

1. Compact and ergonomic design requires minimal space in examination room
2. Simple and fast operation, which can be taught to staff in under an hour
3. Auto alignment, focus and capture of OCT and color fundus photo
4. 50,000 A Scan/sec SD OCT with color fundus camera
5. 12 mm x 9 mm OCT scan provides measurement and topography of optic nerve and macula in one scan
6. Data can be stored, shared with patients and accessed easily

Dr. Joseph Chan is an Optometrist at Queensway Optometric Centre in Mississauga, Ontario, where he has a special interest in the care of diabetic patients, children, contact lens wearers and those with ocular pathology. Dr. Chan has served as president of the Vision Institute of Canada, a non-profit organization, as well as the Ontario Association of Optometrists. He can be reached at chan@qopt.ca