

Focusing In on OCT

Almost 20 years ago, optical coherence tomography (OCT) was a technology used in the laboratory only; but now, every retinal specialist refers daily to OCT scans for guidance in patient care management decisions. The beauty of the technology is in the simple yet powerful way it affords anatomic and biometric information on complex structures such as the macula or optic disc. OCT was first introduced commercially in 1996 and we still remember the enthusiasm of retinal OCT pioneers Carmen A. Puliafito, MD, MBA, James G. Fujimoto, PhD, and colleagues. At that point in time, we knew OCT would play a role in our retinal practices but we did not know exactly to what extent. Today, could we imagine practice without it?

At the 2006 American Academy of Ophthalmology in Las Vegas, several manufacturers debuted next-generation OCTs, interchangeably referred to as spectral-domain (SD), Fourier-domain, and 3-D OCT. This new technology relies on a platform promising higher-resolution for a more finely detailed image providing additional information to better understand underlying retinal pathology.

There are currently no fewer than seven different SD OCT systems that are either currently available or that are awaiting US Food and Drug Administration approval. A significant challenge to manufacturers is to provide the proof that the information their technology supplies will significantly improve outcomes—toward the end of making the added cost of the technology worth the investment.

So, how are these new-generation OCT systems different? Which provide the most applicable and valuable information? How do we measure this information against that obtained with time-domain (TD) OCT in long-term follow-up of our existing patients? In the end, one must decide for himself which system works best. Consider what some of our contributors have to say and then test drive the systems—there are certainly plenty from which to choose.



PERSPECTIVES ON EVOLUTION OF OCT

This issue of *Retina Today* focuses on OCT technology and evolution. In preparation, we invited several prestigious retina specialists who have had early access to SD OCT or who were involved in the development of the technology to author articles on their clinical experience with the various systems.

First, we offer an article by Jay Duker, MD, and colleagues from Tufts University School of Medicine that outlines the evolution of OCT, from the first reports of its development from the Massachusetts Institute of Technology to the first clinical use at the New England Eye Center, to its commercialization and widespread use. Seven separate articles follow by experts with experience using SD-OCT systems both clinically and in the laboratory setting. In accompaniment, we have also included an article on the Latin American experience with OCT.

Finally, our cover focus includes a comprehensive review of what is still considered the gold standard of retina imaging: fluorescein angiography (FA). This article reviews the use of FA and its current and future role.

Some of our regular columns also focus on imaging: "Retina Pearls" provides tips on how to get the most out of an OCT (TD) scan, and "Global Perspectives" features an article that discusses the advantages that SD OCT offers over TD technology.

We would like to personally thank the authors and contributors for sharing their views and experiences on OCT imaging and other evolving technologies that shape the way we provide the best possible care for our patients. This issue's approach to OCT technology is entirely consistent with the mission of *Retina Today*: to provide timely, cutting edge, opinionated, and relevant information for retina specialists around the world. ■

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