

# CONTINUING THE SEARCH FOR KNOWLEDGE

How do glaucoma subspecialists use print and digital resources to further their education?



BY ARSHAM SHEYBANI, MD

One of the most challenging yet essential parts of practicing medicine, especially in the field of glaucoma, is staying current while not getting swept away by the new knowledge wave. Essentially, one must balance three (sometimes countering) forces:

1. Practicing what is evidence based (it is to be hoped that this is each doctor's current practice pattern)
2. Adapting to novel clinical and surgical advances when they make sense, even if data do not yet exist for a potential paradigm shift (someone has to be on the frontier producing those data)
3. Avoiding trying something new just because it is something new

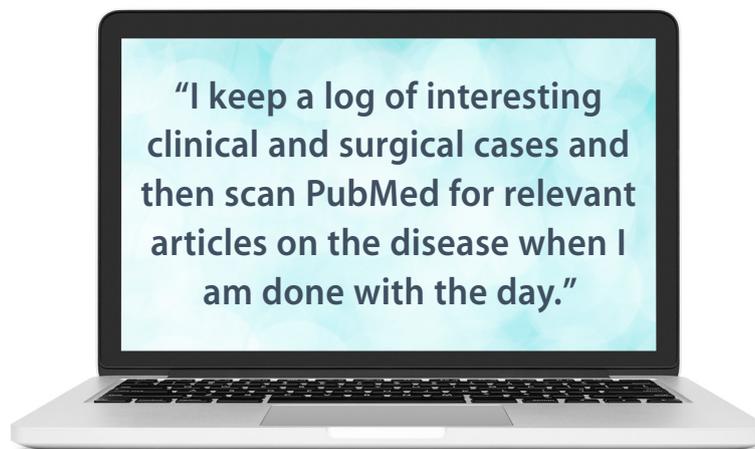
## LEARNING CASE BY CASE

My first step in advancing my own knowledge blends forces 1 and 2. My approach centers on patients' care. I keep a log of interesting clinical and surgical cases and then scan PubMed for relevant articles on the disease when I am done with the day. Usually, what I find leads to more questions. Sometimes, it actually changes the way I currently practice, and at other times, it solidifies what I already find myself doing in managing that disease. I urge residents and fellows in clinic and the OR to use this approach, and I am known to assign them topics based on patients we see together.

I find that this technique solidifies new knowledge, because the effort links directly to a case experience. For surgical cases, I find YouTube and Eyetube.net to be great resources. I have gained so much from them that I now upload my own videos to continue to propel this addictive form of knowledge expansion.

## A WIDER NET

My second step involves literature searches that I perform when writing scientific articles, planning research, or preparing talks. This effort casts a wider net by many times leading me to journals I do not regularly read and pushing me into fields of medicine and bioengineering that I do not routinely keep up with.



No one doctor will see every possible iteration of every disease. Each glaucoma subspecialist has highly focused research interests, so the strategies I have described leave huge gaps in my continued learning. For that reason, I read through *Ophthalmology* as it arrives as well as the *Journal of Cataract and Refractive Surgery*. I try to remain current in general medicine by reading the *Journal of the American Medical Association*. With these regularly published journals, I am able to maintain a broad understanding while finding inspiration for new ideas. I also rely on other experts around the country to keep me current, and the ONE Network from the American Academy of Ophthalmology has been a fantastic resource. From surgical videos to reviews of the most recent literature to case presentations, I cannot overstate the efforts by this organization to maintain current relevant content.

## MINDFULNESS

I pride myself on being able to teach residents and fellows the newest advances in glaucoma and anterior segment disease and surgery. With this objective comes a powerful conflict: not buying into marketing hype, which is usually how innovation hits the doorstep. This is where forces 2 and 3 interact to sometimes change my practice pattern.

Aside from the scientific literature, I think there is value in print trade publications. As long as physicians understand the motives of the source, such publications can enhance their knowledge. The key is for doctors to be mindful of how and when they incorporate such materials into practice.

## INERTIA

Inertia is the resistance of an object to change its state of motion. The application of what I learn usually takes energy, because standard practice has significant stationary inertia. I can use inertia in my favor by transforming it into active inertia—making my standard practice one that remains current and open to change and questioning. By constantly educating myself through various outlets, I hope to keep my

practice evolving to provide not just the newest but the best possible care.

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### BY RICHARD K. PARRISH II, MD

The world is changing rapidly, as is the rate at which medical information is disseminated. Do you remember going to the library in medical school and searching the Index Medicus after you successfully identified the “subject” only to proceed to the stacks and discover that the journal had been checked

out or was not available? To those training today to become glaucoma subspecialists, this scenario seems so silly that they are not likely to believe that this was my generation’s way of obtaining medical information. After opening Google Scholar and entering either the name of the author or subject, several hundred abstracts rapidly become available for review. For example, after entering *MIGS glaucoma* and hitting enter on December 2, 2016, the site took me to 436 references in 0.05 seconds.

## NO WAITING

Did you used to spend a rainy Sunday morning curled up in your favorite chair with a cup of coffee and leisurely leaf through the weighty *New York Times* that promised to deliver “All the News That’s Fit to Print”? How many of you now scour the online edition late on Saturday afternoon and find everything you are interested in reading based on your specific interests well before the hard copy arrives at your doorstep?

The notion that anyone must wait until a hard copy of new information is available has passed. That textbooks and peer-reviewed ophthalmic journals in their paper format are even relevant for today’s subspecialists runs contrary to current wisdom. For example, *Investigative Ophthalmology and Visual Science*, arguably one of the most prestigious and trusted sources of new and important medical information with strong basic underpinnings, vacated mailboxes in 2010 and took flight online. Although the big three general clinical ophthalmic journals are all still available in print, residents, fellows, and most faculty members I know read the current literature on their cellphones or tablets. Members of the American Academy of Ophthalmology have access to full-text articles in *Ophthalmology* and the *American Journal of Ophthalmology* at [www.aao.org](http://www.aao.org). Monthly updates

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are available to subscribers for new original pieces as soon as they are ready for publication.

The widespread availability of websites like YouTube and Eyetube.net for “how to” information on specific surgical techniques has transformed how ophthalmologists are introduced to newer surgical procedures. For example, entering *MIGS glaucoma* on YouTube on December 1, 2016, produced 675 presentations that discussed virtually every conceivable variation on a theme of how to lower IOP.

## CRITICAL THINKING

With the growing panoply of available medical information, the onus for sorting the new, true, and important material from the imposters is shifting from the editor to the reader. Editors still have the responsibility of ensuring that what is published in their journal is truthful and, one hopes, important, but I believe their role in and impact on what is regarded now as medical literature are diminishing. The recent spate of fake news stories should serve notice that the adage *caveat emptor* refers to consumers of newly available medical information.<sup>1</sup>

1. Sydell L. We tracked down a fake-news creator in the suburbs. Here’s what we learned. NPR website. Published November 23, 2016. Accessed December 12, 2016.

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**BY FAHAD KHAN, MD;  
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Like much of medicine today, the field of glaucoma is evolving. Our education as future ophthalmic surgeons and/or



glaucoma specialists depends on our ability to keep up with the current literature. There has been a paradigm shift, however, in technology and its incorporation into our lives. This change permeates medical education, as evidenced by the growing number of physicians who favor digital versions of textbooks and journals.

### TEXTBOOKS

Textbooks are the foundation of the comprehensive depth of knowledge required to be an adept ophthalmic surgeon. During medical school, residency, and fellowship, a quality textbook can be a key source of factual knowledge, step-by-step surgical directions on procedures, and most important, the wisdom of the distinguished contributors and editors. Some of the best glaucoma books are from writers and editors who have contributed significantly to the field.<sup>1,2</sup>

### JOURNALS

We consider peer-reviewed ophthalmic journals to be the best way to keep up with the latest information in any subspecialty. Articles on pathophysiology, diagnostic technologies, and surgical techniques and outcomes as well as case reports provide a vast array of educational material. Peer-reviewed journals also offer the easiest access to credible information that can influence practice.

### TRADE PUBLICATIONS

In print or digitally, trade publications such as *GT* can be extremely useful. They highlight new and emerging technologies in the field, they can be a handy source of studies and review articles from the United States and other countries, and they can notify readers of trends in management. Trade publications also shed light on new discoveries earlier than peer-reviewed journals and textbooks, because the former are published more quickly. Finally, trade publications can supplement physicians' knowledge and experience as well as keep them up to date on the current and future course of the specialty.

### WEBSITES AND APPS

A quick search of PubMed or Google Scholar delivers the top major publications in an instant and allows subspecialists to access a wide array of subspecialty-specific data. Accessing journal articles online is quick, and users can easily save the information for later recall on their smartphones or tablets.

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Unfortunately, many websites that seem to offer reliable information lack credible sources, so we cannot overemphasize the importance of thoroughly assessing sources and affiliations.

Eyewiki is useful for quick synopses. The American Academy of Ophthalmology's Pathology Atlas offers detailed pathophysiologic reasoning behind clinical presentations. Many ophthalmology training programs also offer educational materials through their respective university websites. YouTube and Eyetube.net are excellent sources of surgical videos.

Multimedia and smartphone applications deliver a wide array of practical tools for glaucoma subspecialists. Eye Handbook (Cloud Nine Development) is a useful source of diagnostic clues. Eye Drops (HarPas International), Gone Project (Specialists Apps), iExaminer (Welch Allyn), and SV One (SmartVisionLabs) among many others offer everything from reminders to optic disc imaging and retinal nerve fiber layer evaluations to autorefractometry, facilitating patients' adherence and even home monitoring.<sup>3</sup>

The future is bright, as new technologies offer the hope of improving the quality of care. ■

1. Damji KF, Freedman SF, Moroi SE, et al, eds. *Shields' Textbook of Glaucoma*. 6th ed. Philadelphia, PA: Lippincott, Williams & Wilkins; 2010.
2. Tombran-Tink J, Barnstable CJ, Shields MB, eds. *Mechanisms of the Glaucomas: Disease Processes and Therapeutic Modalities*. New York: Humana P; 2008.
3. Chang R. The role of smartphones in glaucoma care. *Glaucoma Today*. May/June 2015;13(3):26-28. [http://glaucomatoday.com/pdfs/gt0515\\_f\\_chang.pdf](http://glaucomatoday.com/pdfs/gt0515_f_chang.pdf). Accessed December 19, 2016.

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