

5 Questions With Robert D. Fechtner, MD

Dr. Fechtner makes a case for functional testing and divulges the secrets of brewing practically perfect espresso.



You completed three fellowships in glaucoma under different preceptors. How did these experiences differ and help to shape your view of glaucoma and its treatment?

Three glaucoma fellowships in 4 years—what was I thinking? I did not decide to apply for an ophthalmology residency until after my internship. That left what would now be called “gap years.” It was my good fortune that my first glaucoma teacher, Paul Lichter, MD, steered me to do glaucoma research with Bernard Schwartz, MD, PhD. As an Inteflex (6-year premedical/medical program) student at the University of Michigan, I had little exposure to the translational and clinical research environment. My year in Boston was followed by another year as a clinical research fellow with Richard Starita, MD, after I matched for residency. These two preresidency fellowships gave me an outstanding foundation of research experience that carried through my residency. It also left me wondering why we so poorly understand so many aspects of glaucoma. After residency, I pursued a 2-year fellowship with Robert Weinreb, MD, that was funded by the National Institutes of Health. His laboratory was full of bright scientists asking difficult questions and using advanced technologies and strategies to answer them.

I often feel there is a tradition of glaucoma care that we inherit from our mentor, who inherited that tradition from his or her mentor. I believe my early exposure to three very different but highly disciplined fellowship mentors in different institutions left me without the false comfort of following a tradition. I feel my entire career is instead one of discovery. It is still unsettling that I do not have a satisfying answer to the question, “What is glaucoma?” Do you?

What is the number one lesson you try to impart to your fellows?

It is simple: “Don’t just ask how. Seek to understand why.” With this teaching, I hope to instill in them a

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sense of curiosity and wonder. We are at risk of becoming little more than highly skilled technicians if our training is simply the transfer of a complex skill set. If instead we approach each patient, each clinical challenge, and every research question with a desire to understand, we have the opportunity to discover new and better solutions.

FAST FACTS

- Professor (2002-present), director of the Glaucoma Division (1998-present), and director of the Glaucoma Diagnostic Laboratory (1998-present), Department of Ophthalmology and Visual Science, University of Medicine and Dentistry of New Jersey in Newark, New Jersey
- Chair of the institutional review board (2006-present) at University of Medicine and Dentistry of New Jersey in Newark, New Jersey
- Executive vice president and member of the Board of Governors of the World Glaucoma Association, 2012 to present
- Founder and secretary/treasurer of the New Jersey Glaucoma Society, 2004 to present
- Recipient of the American Academy of Ophthalmology’s Senior Achievement Award, 2005
- Recipient of a National Institute of Health National Research Service Award, 1989

A recent study by Stein et al identified a dramatic increase in ophthalmologists' and optometrists' use of advanced ocular imaging but a sharp decline in their use of visual field testing.¹ Does the current state of these technologies support this change, and what does this trend mean for glaucoma diagnosis?

I read this study, and it seems to reflect the trends in clinical practice I observe in the Mid-Atlantic region. It is unfortunate. The reality of clinical practice and market forces has placed exciting technology in our hands at the same time that the funding for large studies to validate the technology has shrunk.

What test do I think has the greatest validation for detecting glaucoma by structural measures? A careful examination of the optic nerve. There have been wonderful educational initiatives to transfer this skill. An imaging device can do little more than compare measurements of the patient in question to a reference database and estimate a probability that the results fall at a particular percentile in comparison. We still have to look. None of the software has been validated to replicate the complex process of our innate pattern recognition. For detecting change, nothing has withstood the test of time like sequential stereo optic nerve photography. The stereo disc camera is a highly specialized piece of equipment, however, that is not a reasonable investment for a comprehensive practice, even if one could be found.

The latest iterations of optical coherence tomography are technological and computing wonders, yet we do not have the long-term studies to validate change or progression software. Tremendous potential is there, and the work is already underway. Computer-assisted structural testing is fast with high acceptance by our patients, a trained technician can perform the tests, and the graphical output is sophisticated. There is no rational basis, however, for abandoning functional testing in glaucoma. Visual field testing is an essential part of the strategy to detect disease and monitor patients for disease progression. We must continue to communicate this clearly within and outside the glaucoma community.

How can a physician conduct research on therapeutics without becoming or being perceived as a mouthpiece for one company or another?

My time as chair of an institutional review board has changed my thoughts about sponsored research. There is a perception that any research funded by industry leads to investigator bias. Although this is true in some instances, I believe it is an unfair and often baseless characterization. Without the participation of careful investigators who enroll

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patients as subjects, we would never have a clinical trial that is broadly applicable to the patients we treat. I had a surreal discussion with a member of our conflict of interest committee in which it was suggested that an investigator who, in the past, had received honoraria from a company would bias the results of a double-masked study if he measured IOP. Conflicts of interest must be avoided or mitigated, but even an investigator funded by the National Institutes of Health has the potential conflict of interest of needing to produce results that justify continued funding.

The risk of being perceived as biased is greatest when we present the results of sponsored research to our colleagues. Our honor and integrity are precious. We only get to sell them once and at what price?

What have your studies of the espresso machine revealed about creating the perfect cup?

I see someone knows about my coffee habit. The most honest answer to this question would be one that could be widely applied: leave this work to the professionals. In a world overrun by Starbucks, however, we must depend on ourselves if we want that transcendental espresso experience.

I do not yet have spousal clearance to start roasting my own beans, so I turn to a small roaster in New Jersey or order freshly roasted beans from Peet's Coffee & Tea (my laboratory prefers Major Dickason's Blend, and I have no financial interest in the product). If I order online, I can get them within 2 days after the roast. That is still fresh enough for me.

A high-quality grinder is crucial. Do not to skimp on this. Every batch (and sometimes each day's brewing) requires a slight adjustment to the grind. I use a double bottomless portafilter, because it is so revealing of technique and looks cool.

If you make it to the Berkshires, stop at Lenox Coffee on Main Street. They get it right every time. I am always looking for the best coffee in a new town. When you see me, tell me your favorite.

It is gratifying to see my colleagues still publishing about the effect of coffee on glaucoma patients. How about a study of the effect of coffee on glaucomatologists? Whom could we get to fund that? ■

1. Stein JD, Talwar N, LaVerne AM, et al. Trends in use of ancillary glaucoma tests for patients with open-angle glaucoma from 2001 to 2009. *Ophthalmology*. 2012;119:748-758.