NOVEMBER 2014
VOL. 6, NO. 11

Optometry Times®

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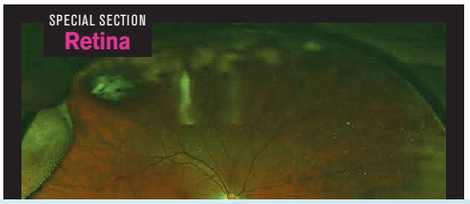
OptometryTimes.com

Determining value in genetic testing for AMD



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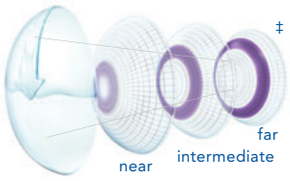

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References: 1. In a survey of 308 eye care practitioners; Alcon data on file, 2013. **2.** Ex vivo measurement of contact angles on lenses worn daily wear using CLEAR CARE® Cleaning & Disinfecting Solution for cleaning and disinfection; significance demonstrated at the 0.05 level; Alcon data on file, 2009. **3.** Nash W, Gabriel M, Mowrey-McKee M. A comparison of various silicone hydrogel lenses; lipid and protein deposition as a result of daily wear. *Optom Vis Sci.* 2010;87:E-abstract 105110. **4.** Eiden SB, Davis R, Bergenske P. Prospective study of lotrafilcon B lenses comparing 2 versus 4 weeks of wear for objective and subjective measures of health, comfort and vision. *Eye & Contact Lens.* 2013;39(4):290-294. **5.** Based on a third-party industry report, 12 months ending December 2013; Alcon data on file.

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Determining value in genetic testing for AMD

Current controversies and considerations for practitioners and their patients

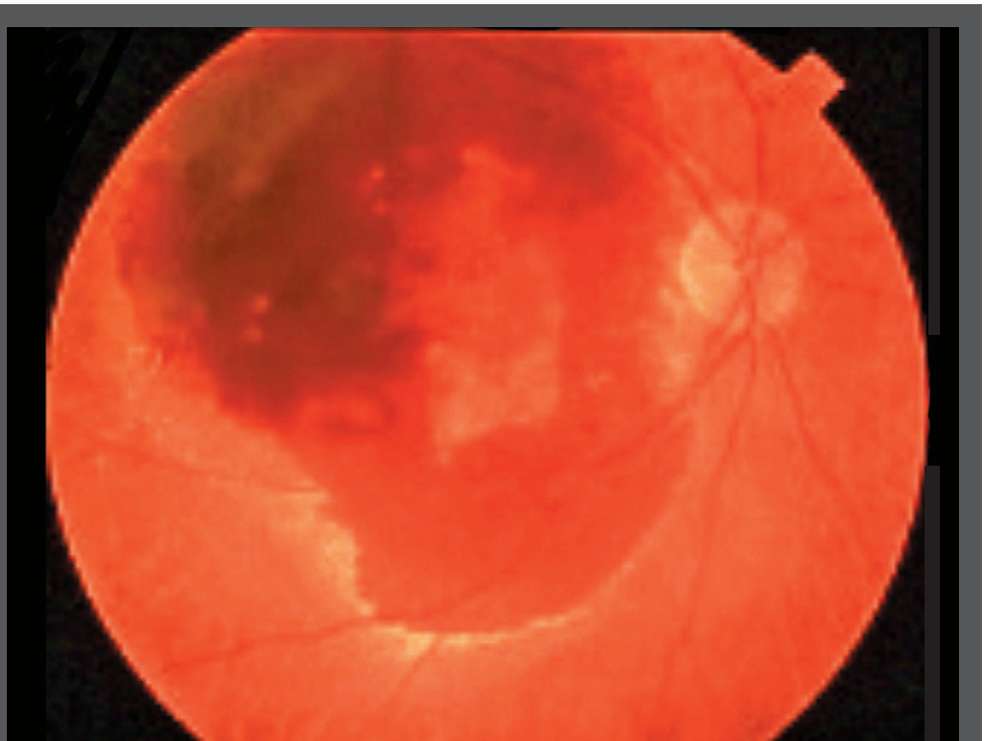


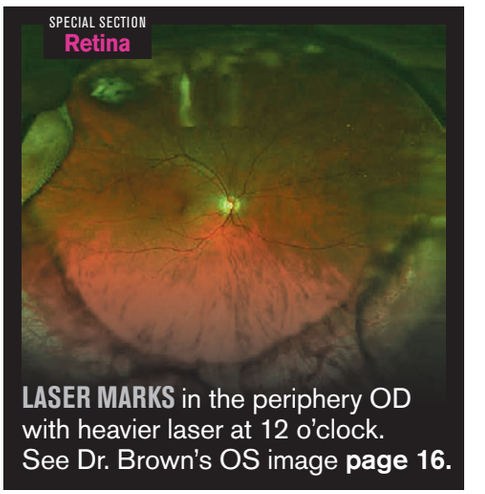
FIGURE 1. Extensive retinal hemorrhaging and exudation from untreated choroidal neovascularization. VA=20/200

By Sherry J. Bass, OD, FAAO

Note this clinical scenario: A 70-year-old man presents for an eye exam. He is noted to have a few small macular drusen and best-corrected vision of 20/20 in each eye. He is followed annually by the same doctor for 20 years with a take-home Amsler grid. The only changes noted throughout the years are a slight increase in the number of drusen with no decrease in visual acuity; Amsler grid testing is always negative. A few months after his last annual exam, at age 90, he notices that the vision in his right eye is blurry" when watching TV, but he thinks he is developing a cataract like his friends. He thinks he will wait until his next annual exam; he has misplaced his Amsler grid; he hates being dilated.

Three months later, the vision decreases markedly and even though it wasn't time for his annual exam, he thinks he ought to see his eye doctor because the "cataract" must have gotten a lot worse. To his surprise and dismay, his eye doctor tells him he has developed the wet form of macular degeneration and the amount of bleeding in the back of his

See **Genetic testing** on page 20



LASER MARKS in the periphery OD with heavier laser at 12 o'clock. See Dr. Brown's OS image **page 16.**

Experiencing retinal detachment as an OD

Words of comfort for patients come easily to me now

By Michael Brown, OD

When the retina in my left eye detached in early October 2013, I was on a tour bus, somewhere between Canter's Deli and Griffith Observatory, in Los Angeles.

There was a series of flashes, like warning flares, and then a black tide, an oil slick

See **Detachment** on page 16

ICD-10 now 1 year away, many ODs are unprepared

By Bob Pieper

The International Classification of Diseases, 10th Edition (ICD-10) code is scheduled for implementation in the U.S. on Oct. 1, 2015—less than a year from now. Many optometric practices will likely be unprepared and therefore at risk for serious claim-filing and cash flow problems, according to Rebecca Wartman, OD, the American Optometric

See **ICD-10** on page 5

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Q&A | **DEVIN SASSER** talks about student leadership, napping, and the cost of optometric education. SEE PAGE 30

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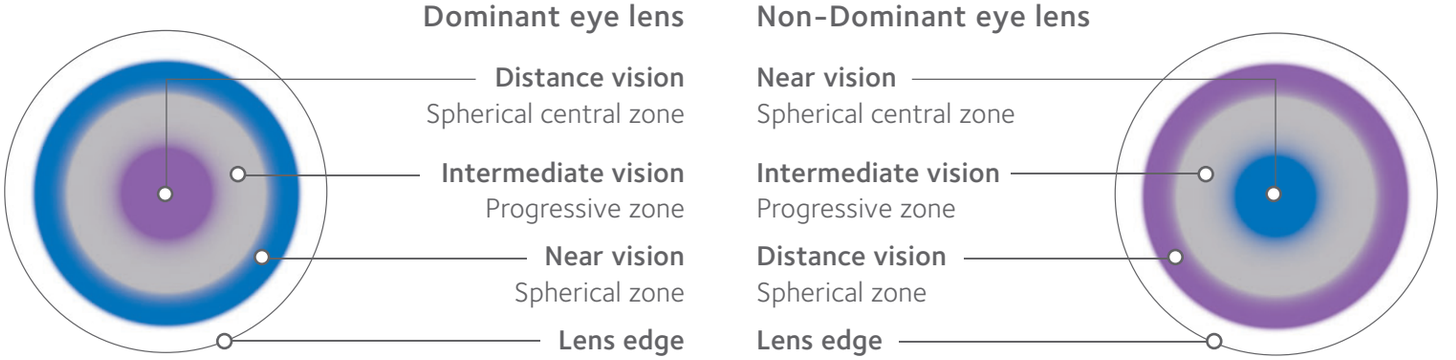

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Patients say the darndest things

By Ernie Bowling, OD, FAAO
Chief Optometric Editor
He is in private practice in Gadsden, AL, and is the Diplomate Exam Chair of the American Academy of Optometry's Primary Care Section
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Years ago, Art Linkletter had a TV show called, "Kids Say the Darndest Things." (Oh, I know I'm showing my age now). It was cute and funny and played upon children's limited knowledge of the world.

I'm sure all of us have had days like this, what I call, "Patients say the darndest things." See if these encounters sound familiar.

Patient A *(on a voicemail):* "Ernie, my eyes are really red and bothering me. Here's the number to my drugstore. Please call me in something as soon as you can." (I haven't seen this person in two years).

Me (to Patient B): "I know you're here to get new contact lenses today, but you have a small peripheral ulcer on your left cornea. You need to discontinue contact lens wear for a while as we treat this presentation."

Patient B: "You mean I got to give up my contacts?"

Me: "That's what I mean."

Patient B: "But I can't do that. I got a softball game tonight, and my team is in first place."

Me: "Just out of curiosity, what position do you play?"

Patient B: "Oh, I don't play. I just need to be able to hand out the beer after the game."

Me (to Patient C): "That's a nice red eye you got there. How long is it been that way?"

Patient C: "A week."

Me: "I'm certain that eye is red and painful. Had you been sleeping in your contacts before the red eye started?"

Patient C (sheepishly): "Yes"

Me: "How long has the contact been out of your eye now?"

Patient C: "It's still in there. I don't see well out of my old glasses."

Me (to Patient D): "It's good to see you again, but I'm a little confused. When I saw you last year, you were supposed to come back a week later for a contact lens check."

Patient D: "I was?"

Me: "Yes, you were. I see in my notes we made you a follow-up appointment, and my staff has called you several times when you didn't show. How long did that pair of contacts last you?"

Patient D: "I still have them on."

I know these may sound amusing, but the scenarios reveal a real problem. Perhaps the problem is mine or my staff's in failing to communicate proper lens care and wear. It is very frustrating when you try to ensure the patient understands, then you hear stories like this. Perhaps the problem is our patients often treat contact lenses as nothing more than a commodity, instead of the medical device they are. What's the answer? Constant patient re-education.

Don't think the problem is limited to contact lenses alone.

Me: "I'm sorry you're having trouble with your new glasses. What exactly seems to be the problem?"

Patient: "Well Doc, I see fine outta them when they're sitting on my nose, but I see better out of 'em when I turn them upside down." (No, he really didn't.)

I'd enjoy hearing any funny patient stories you have. Heck, they might show up in a future editorial! Send them to me at erniebowling@icloud.com.●

Want more? See page 6 for commentary on vision care plans.

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Dr. David Geffen makes a plea to contact lens manufacturers for increased research and development spending for gas permeable contact lens materials and care systems. For more, turn to page 11 to read Dr. Geffen's explanation on why new gas permeable products is so important. http://ow.ly/DCKee

PEROXIDE STILL A GOOD CHOICE

Dr. Ernie Bowling shares why he thinks peroxide care systems are still a good choice. http://ow.ly/DE6KV

THE SCHACHTER FACTOR

Dr. Scott Schachter explains his protocol for diagnosing and treating dry eye in his practice. http://ow.ly/DCNOZ

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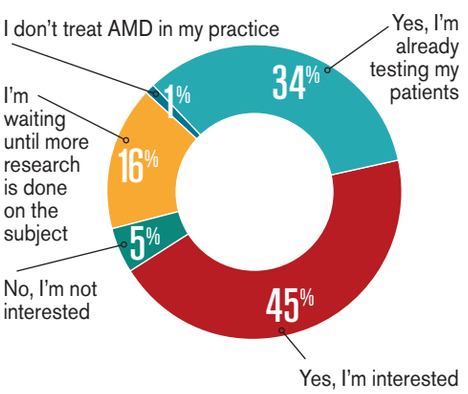

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- Being a forum for optometrists to communicate their clinical knowledge, insights, and discoveries.
- Providing management information that allows optometrists to enhance and expand their practices.
- Addressing political and socioeconomic issues that may either assist or hinder the optometric community, and reporting those issues and their potential outcomes to our readers.

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ICD-10

Continued from page 1

Association's (AOA) point person on ICD-10.

"I do not think that ODs have spent enough time on ICD-10 yet," Dr. Wartman told *Optometry Times*. "Most practices do not have a formal plan for transition. And many ODs are totally relying on their staff to do this for them or their EHRs to handle ICD-10—both not great ideas."

While healthcare institutions will be required to use both sections of the ICD-10 coding system—the ICD-10 Clinical Modification (CM) codes for diagnoses and the ICD-10 Procedure Coding System for procedures—healthcare practitioners will be required to use the ICD-10-CM only beginning next October and will continuing to use the American Medical Association's Current Procedural Terminology (CPT) to report services.

> **"Most practices do not have a formal plan for transition. And many ODs are totally relying on their staff to do this for them or their EHRs to handle ICD-10—both not great ideas," says Dr. Wartman.**

Changing the way ECPs do business

However, the transition will still represent a major change in the way small healthcare practitioners do business, Dr. Wartman said.

The ICD-10 code set is far larger and more complex than the ICD-9 coding it will replace. It is designed to provide much more highly detailed reporting—the ICD-10 code set has roughly 68,000 codes and is designed to allow for the introduction of additional codes. By comparison, the ICD-9 system has 13,000 codes and limited space for additions. ICD-10 codes are longer, in many cases, than ICD-9s, with a digit-seven extension used when necessary to provide additional detail. ICD-10 supports the use of combination codes that can be used to classify such things as multiple diagnoses or a diagnosis with a complication. Eyecare practitioners will notice that the use of ICD-10 codes requires specifying whether a condition pertains to the right, left, or both eyes.

While ICD-10 codes are similar to ICD-9 in some respects, coding will be somewhat different than before, Dr. Wartman warns. The U.S. Centers for Medicare & Medicaid Services (CMS) has prepared general equivalency maps providing "crossover charts" for common conditions. Most EHRs provide assistance in ICD-10 selection. However, the additional specificity of the ICD-10 will mean practitioners and their coders will need to understand how to effectively search for and select the proper code, Wartman said.

"ODs seem to have the most trouble with coding the more complicated encounters, particularly injuries, that require a lot of different codes to fully describe," Dr. Wartman said. "While the 'extra' codes are not required federally, I think that workers' comp and some states will require the full coding for injuries."

ICD-10 coding will be required of all healthcare providers covered under the federal Health Insurance Portability and Accountability Act (HIPAA) Security Rule, per CMS. That includes providers who submit claims to commercial and employer-based insurance plans, as well as Medicare, Medicaid, and other public health insurance programs, the agency says.

ICD-10 action plans

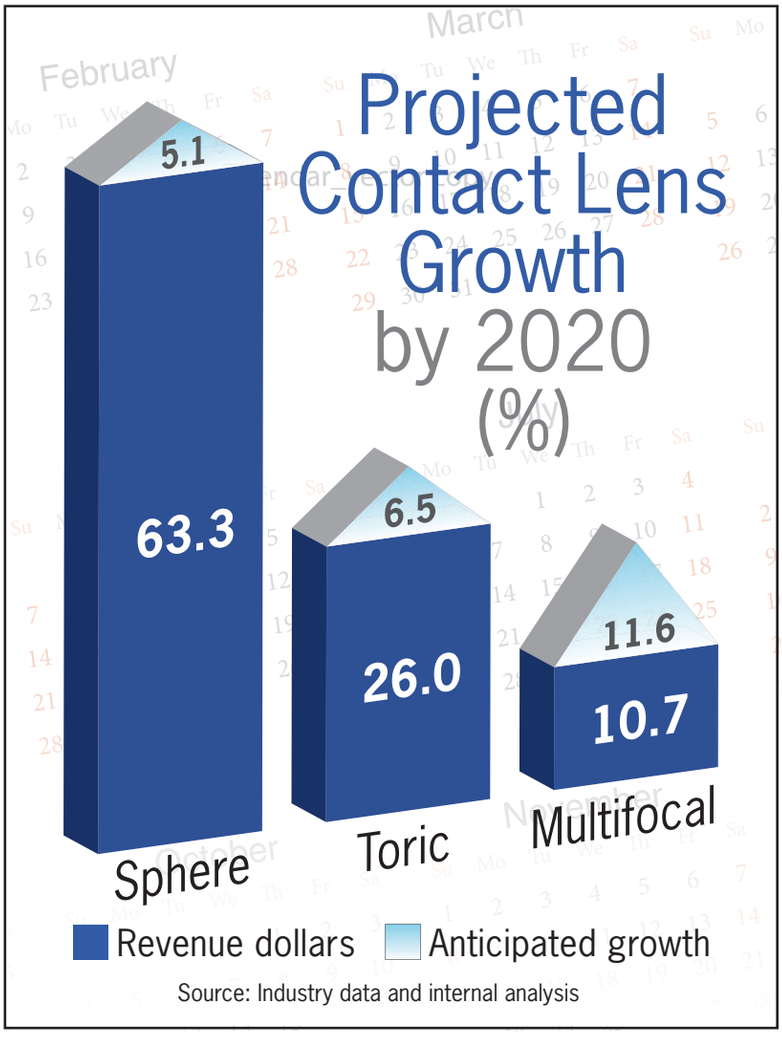
Although many healthcare practitioners may not yet be actively readying their practices for the new coding system, the Oct. 1, 2015 "deadline for ICD-10 allows healthcare industry ample time to prepare for change," CMS asserted in a July statement on the transition.

Under its new Road to 10 program (www.roadto10.org), the agency recommends healthcare practitioners adopt a formal, four-phase ICD-10 "action plan" encompassing:

- Planning
- Assessment
- Implementation
- Testing

It should include checking with

See **ICD-10** on page 21



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The vision care plan industry's vertical monopoly

Vision care plans became the bullies of ECPs, labs, and cosumers

By David Balto

DAVID BALTO is an antitrust attorney with over 25 years of experience in competition law.

There is no question that certain vision care plans have dominated the eyecare market for the last two decades. Nearly 100 million Americans are covered by just two of these plans.[1,2] As they have become dominant and integrated into new lines of business, they increasingly are coercing optometrists, ophthalmologists, independent laboratories, and consumers—the result higher, prices less choice, and reduced competition.

The most significant antitrust case against a vision care plan comes from nearly 20 years ago. In 1996, the Department of Justice Antitrust Division filed its only lawsuit against Vision Service Plan (VSP).[3]

The Department of Justice alleged that the "nation's largest vision care insurance plan" was reducing price competition through "most favored nation" clauses, a contracting provision designed to ensure that VSP would get the most favorable rates from providers, thus reducing fees to competing vision care plans.

While seen as a victory by the agency, the parties settled the matter by limiting only certain VSP conduct, including the usage of most favored nation clauses. The settlement agreement expired after five years in 2001.

Controlling every step of production

Since that 1996 case, vision care plans have faced limited scrutiny and have expanded the scope of their businesses through vertical mergers and contractual arrangements. Large plans such as Davis Vision, EyeMed (Luxottica), and VSP have acquired or opened retail stores, laboratories, and frame manufacturers, granting them control of the entire chain of vision care production.

To quote Luxottica, such vertically integrated structures are "one of the competitive advantages underpinning the Group's past and future successes."[4] These transactions have received limited attention from the federal antitrust agencies.

In fact, the federal government has approved recent transactions without a full assessment of the likelihood of anticompetitive harm.[5]

Yet, as noted in a 2012 Bain & Company report on independent optometry, vision care plans are purposefully applying pressure to independent eyecare providers through "aggressive… marketing strategies."[6] The reason? To increase plan profits by forcing consumers into a vertically integrated monopoly.

According to 2008 report by *Consumers Digest*, such aggressive tactics and vertical integration by vision care plans "could present problems to consumers"[7] by limiting choice, lowering quality, and raising prices.

One of the most common practices is the restriction of services an independent eyecare provider may offer. Patients of certain vision care plans are allowed to select an independent optometrist or ophthalmologist for their examination; however, that eyecare provider may be prevented from providing lenses, frames, or contact lenses to that patient.

And the eyecare provider may be limited to only using the vision care plan's laboratory. The patient is forced to make these secondary purchases through an entity owned or controlled by the vision care plan, regardless of the patient's or doctor's preference.

Such practices restrict choice and can often cost consumers more money. Along with limiting choice, vision care plans are also specifically targeting independent providers' patients. Some plans are directly contacting patients in an effort to switch them from their independent eye doctor to plan-employed or plan-associated eye care professionals and locations.

The vision care plans' conduct can also reduce competition. Before consolidation and vertical integration, providers could offer plan beneficiaries a wide range of vision care services and secondary sales.

With vision care plans consolidating power and forcing patients into an integrated system, these plans are effectively restricting the ability of independent providers to provide routine vision care, laboratory services, or secondary sales to plan beneficiaries.

Recent cases

Fortunately, the state and federal antitrust agencies are beginning the focus on these types of exclusionary conduct. In the 2010 case *FTC v. Transitions Optical*, the Federal Trade Commission barred Transitions Optical, now a subsidiary of Essilor, from engaging in exclusive dealing at "every level of the photochromic lens distribution chain."[8] Under Transitions' plan, the company was able to illegally maintain monopoly power by restricting the sale of competing photochromic products.

While the case is limited to the photochromic lens market, such conduct requires a degree of vertical integration providing an outline for more eyecare antitrust-related cases.

> **Given the recent success in litigation, the tide may slowly be turning on the practices of the integrated vision care plans within the eyecare industry.**

Providers have also had success at the state level challenging vision care plan practices under state competition and access laws. In the 2013 case of *Spectera, Inc. v. Wilson*, the Supreme Court of Georgia ruled in favor of independent optometrists finding that Spectera's conduct "limits independent participating providers."[9]

Plaintiff optometrists sued Spectera, claiming that independent participating provider (IPP) agreements violated Georgia's Patient Access to Eye Care Act. Using the IPPs, Spec-

tera limited independent optometrists from assembling lenses and frames and prohibited optometrists from providing contact lenses.

The court agreed with plaintiffs that such IPP agreements limited consumer choice and thus were in violation of the Patient Access to Eye Care Act.

Patient access to eyecare laws are becoming more prominent throughout the United States.[10] In 2014 alone, both Kansas and Vermont passed similar patient access to eyecare laws limiting the control of vision care plans over provider practices.[11]

Most recently, independent Acuity Optical Laboratories filed suit in federal court against Davis Vision.[12] The complaint alleges that Davis Vision's contractual provider agreements contain an anticompetitive mandatory laboratory requirement that forces providers to use Davis Vision's owned laboratories. As a "must-have" vision care plan in Chicago, area providers can ill afford to lose access to Davis Vision beneficiaries, forcing them to accept the mandatory laboratory requirement.

By lessening provider choice and access to independent laboratories, the mandatory laboratory provision also lowers the quality of lenses and raises prices on consumers.[12] Moreover, the conduct has caused significant foreclosure in the independent laboratory industry.[12]

Given the recent success in litigation, the tide may slowly be turning on the practices of the integrated vision care plans within the eyecare industry. Interested groups, federal and state agencies, independent laboratories, eyecare providers, and representative organizations, such as the newly formed Union of American Eye Care Providers, are beginning to openly challenge vision care plan conduct. With this renewed interest in the eyecare industry, it is incumbent upon eyecare professionals, businesses, and industry experts to continue to support procompetitive solutions and limits on vision care plan consolidation.

Eyecare professionals and industry participants should continue to seek advice and challenge deceptive and anticompetitive practices within the industry.

If you have any examples of your patients being harmed by these or other vision care plan practices, please e-mail info@theaado.org. To support or learn more about the Union of American Eye Care Providers, please visit http://www.uaecp.org. ●

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David Balto is an antitrust attorney with over 25 years of experience in competition law. Previously, he was policy director of the Bureau of Competition for the Federal Trade Commission. In private practice, David represents and counsels a number of associations and healthcare providers, including the newly formed Union of American Eye Care Providers.
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IN BRIEF

New software assess epithelial cell damage

SYDNEY, AUSTRALIA-The Brien Holden Institute recently announced it had developed a software program that can automatically assess damage to epithelial cells at the upper eyelid margin.

The Institute has not released details on how the software works. It was developed as part of a PhD thesis and is not intended for commercial use, but will be published in due course, according to the Institute. According to the institute, the software is intended to make up for the inconsistency between clinicians when it comes to grading cell damage using lissamine green staining.

"This research will extend knowledge of the influence of the eyelid margin on dry eye and contact lens wear, and hopefully lead to improving care for dry eye patients across the world," says Carolina Kunnen, the PhD candidate with the Brien Holden Institute who developed the software.●

Ocular surface hyperosmolarity may affect cataract surgery

SAN DIEGO, CA-TearLab announced the preliminary results of the TearLab Cataract Study, which evaluated the relationship of a hyperosmolar tear film on keratometry readings.

Hyperosmolar patients demonstrated a wider variation in keratometry calculations between visits relative to the normal osmolar group. In the hyperosmolar group, 16 percent of hyperosmolar eyes had more than 1.00 D of change in K cylinder values between the first and second visit.

"This study demonstrates the importance of evaluating osmolarity during surgical planning in order to ensure that presurgical keratometry readings are not compromised by hyperosmolarity of the ocular surface," says Doyle Stulting, MD.●

Glaucoma vs. physiologic cupping

One case made me reconsider how I've viewed the conditions as mutually exclusive

Big optic nerves make me feel good. I find them easier to evaluate, and I don't get as worked up about their respective big optic cups. With that being said, I saw one of the biggest optic nerve heads I can recall in recent history a couple of months ago (see Figure 1). I measured it as being roughly 3 mm by 3 mm.

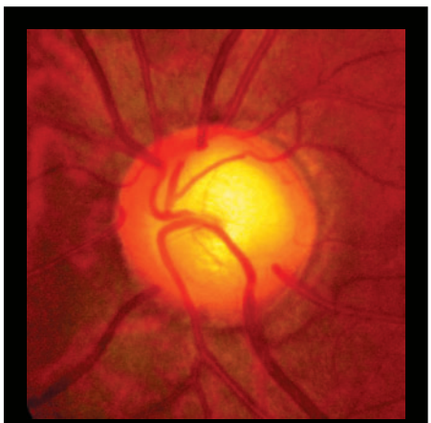

FIGURE 1. The patient's left optic nerve head measuring 3mm by 3mm.

I don't typically quantify optic nerve sizes. Instead, I qualify them as being big, medium, or small. I made an exception, however, for this one. Now, let me tell you about the patient attached to this optic nerve.

BY BENJAMIN P. CASELLA, OD, FAAO Practices in Augusta, GA, with his father in his grandfather's practice.

Case presentation

A 64-year-old African-American male presented to be "checked for new glasses." His medical history was remarkable for type 2 diabetes and hypertension, and both were controlled with metformin and hydrochlorothiazide, respectively. His family history was remarkable for glaucoma on his mother's side and cataracts on both sides. His corrected visual acuity was 20/20 in each eye with +1.00 DS OD and +0.75 DS OS and a +2.00 D add. His intraocular pressures (IOP) (measured by Goldmann applanation tonometry) were 26 mm Hg OD and 25 mm Hg OS at 2:15 p.m. His anterior segments were normal, and dilated fundus examination was as shown in Figure 2. At the conclusion of the examination, I told him I'd like to take some photos of his optic nerves because I had a question about the possibility of glaucoma. He basically cut me off and told me that he had already been seen for that before and was told he never needed to worry about it because his optic nerves were just big. I told him I agreed that he did have big optic nerves, but that I still had a suspicion of glaucoma (not to mention his IOP was high in both eyes). He agreed to let me take photos of his optic nerve heads and also let me schedule a follow-up appointment so that I could perform glaucoma testing and check his IOP in the morning. He requested a copy of his glasses prescription, and I have yet to see him again.

Not mutually exclusive diagnoses

I may be wrong, and I know we're looking at Figure 1 in only two dimensions, but I think the superior aspect of his left optic nerve head looks as though there is hardly any rim tissue at all. This could possibly be a variant on normal because there seems to be ample room for the 1 million or so ganglion cell fibers to spread

See **Physiologic cupping** on page 10

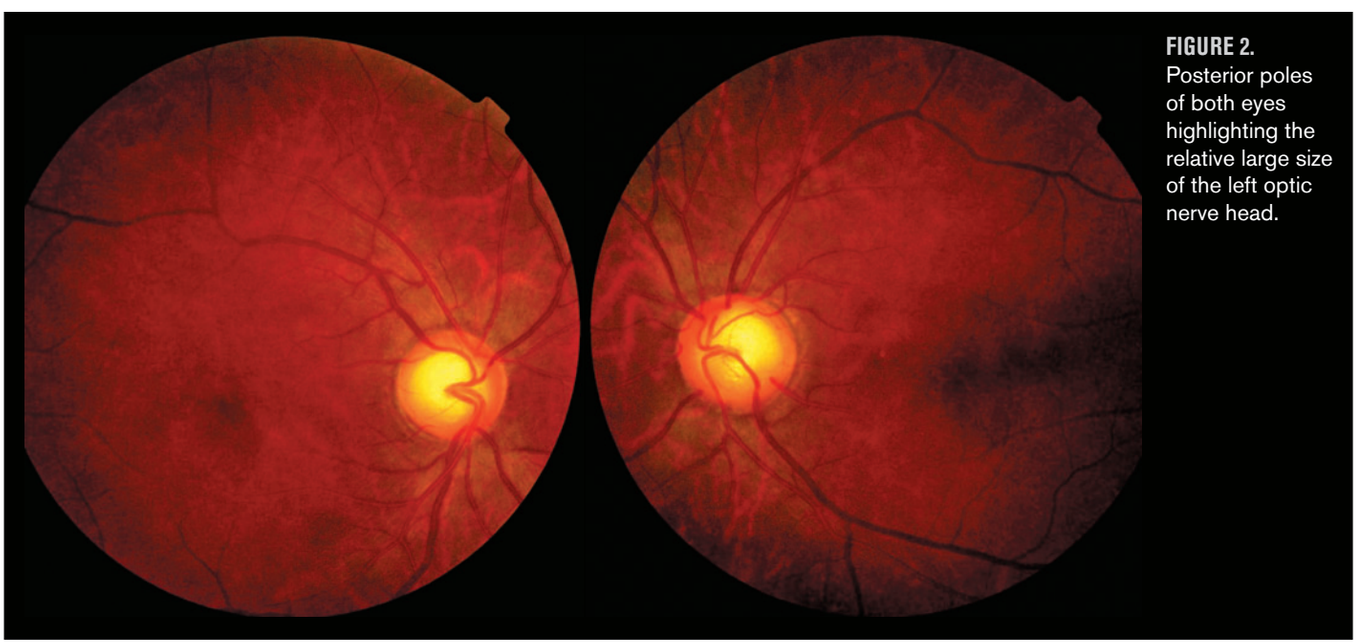

FIGURE 2. Posterior poles of both eyes highlighting the relative large size of the left optic nerve head.

Sagging lids are optometry's responsibility

An oculoplastic surgeon will help improve your patient's ocular health, quality of life

I recently read that the restaurant in Tampa, which licenses the name Hogan's Beach from the professional wrestler Hulk Hogan, is under fire for its controversial dress code. One area of concern for ODs is the fourth item: "No excessively baggy attire."

You may be questioning how this is germane to comanagement or, frankly, what this has to do with the doctoring of the eyes. Well, we are enablers to the excessive bagging of our patient's eyes, the lids, and the conjunctiva. Chalasis is the relaxation of a bodily opening, and our patients need the 411 on how to care for their lids and conjunctival chalasis (CCh).

BY MARC R. BLOOMENSTEIN, OD, FAAO Director of optometric services at Schwartz Laser Eye Center in Scottsdale, AZ.

In order for us to prepare our patients for patronage at Hogan's Beach, we have to determine the medical necessity of the lids and/or the conjunctiva. Both conditions seem to be overlooked and underdiagnosed, leaving our patients with sad, red eyes that are not accurately allowing the superior visual fields to be seen. The etiology of the dermatochalasis is not unlike the normal aging changes of the skin seen elsewhere in the body. There is thinning of the epidermal tissue with a loss of elastin, resulting in laxity, redundancy, and hypertrophy of the skin. Thus the normal facial expression, such as smiling, laughing, squinting, crying, etc.—combined with the action of gravity—over many years induces the drooping. Unlike the natural forces, the conjunctiva becomes loose as a result of the loss of Tenon's fascia.

In the case of the lids, dermatochalasis describes a common, physiologic condition seen clinically as sagging of the upper eyelids, and to some degree, the lower lids. It is typically bilateral and most often seen in patients over 50 years of age, but it may infrequently occur in some younger adults. Inspection of these patients' lids reveals redundant, lax skin with poor adhesion to the underlying muscle and connective tissue. Dermatochalasis patients are Allergan's best clients because the frontalis muscle is working overtime to pull up the lids, avoiding a ptosis, and in turn creating a furrowed forehead; can you say Botox?. The dermatochalasis itself presents a cosmetic challenge for some patients, but the loss of field is the real medical necessity. On rare occasion the loose skin will cause entropian, induce some trichiasis, and induce some discomfort.

Conjunctival chalasis

The diagnosis of CCh is not nearly as straightforward as having to lift the folds of tissue to see what is underneath. Although CCh is relatively common and asymptomatic, the risk factors include age greater than 50 years, dry eye history, and prior surgery, particularly if a peribulbar or retrobulbar anesthetic was used. Some have theorized that the use of peribulbar or retrobulbar anesthetic causes chemosis, which may lead to loosening of tethering of Tenon's fascia between the globe and conjunctiva.[1]

Patients tend to describe a pain in their eye that is often misdiagnosed as dryness. However, we do not tend to assign pain as the common symptom for dry eye. Thus, in the presence of CCh, you can localize the discomfort by asking the patient to describe where it is emanating. The clinician can apply gentle pressure on that same area to further substantiate the CCh diagnosis. This must be done when there is no anesthetic in the eye. This maneuver can reproduce the characteristic pain that the patient has experienced with CCh. The classic sign of CCh is redundancy of the conjunctiva at the lower lid margin. Most typically, this occurs on the temporal side. Naturally, this redundancy occurs in some asymptomatic individuals.

Oculoplastic surgeon referral

So, we have identified our patients, and we are prepared to take the first step of initiating management of these excessive conditions. The referral is destined for the oculoplastic surgeon to provide the necessary steps to reduce the burden that the bagginess is creating for your patients. To prepare for the referral, a visual field is needed to determine the extent of the field loss. This is performed in the lid's natural position and with taped lids to demonstrate the difference. Another good practice would be to take a photo of your patient's lids. I like to show the patient the picture before and after her procedure, thus solidifying your investment in the welfare of your patient's appearance and vision.

Bilateral upper lid blepharoplasty (BULB) is an outpatient procedure that can be performed to remove the excess skin, or hooding, seen in dermatochalasis, as well the removal of fat and muscle that may cause bulging. BULB does not address asymmetrical eyebrows, however.

> **When I think of comanagement, I always look to the benefit that is provided to both the patient and the provider.**

Surgeons measure the excess tissue and can use a scalpel or a laser to remove the disparaging tissue. A single running suture (often dissolvable) is made to bring the tissue back, and the patient is sent home. Postoperatively, the use of an antibiotic-steroid ointment is applied until fully healed. I will see these patients back in the office at the one-week mark to assess the healing and remove any sutures that may still be in place. Swelling may persist for a few more weeks, and the use of cool compresses and lubricating drops can be essential. A return visit in another month to further assess the patient is advised.

CCh surgery is an outpatient procedure as well and involves the use of amniotic tis-

See **Sagging lids** on page 10

Physiologic cupping

Continued from page 8

out thinly along the rim of this enormous optic nerve. However, I'm convinced that the retinal nerve fiber layer leading to the superior aspect of this optic nerve head has a subtle wedge defect in it as well (see Figure 3), and I cannot dismiss such a correlation of suspicions. In addition, the ISNT guideline is disobeyed. (See the July issue for more on this.)

So, given this evidence (in addition to the presence of ocular hypertension), do I think he has glaucoma or physiological cupping? I believe the answer is very likely both, and this case really made me think about how I tend to construe glaucoma and physiologic cupping as mutually exclusive diagnoses. With an optic nerve head that measures 3 mm, I'm sure there was a large cup to begin with, but I'll bet that if I had access to the left optic nerve head 25 years ago, I'd see a little more rim tissue superiorly.

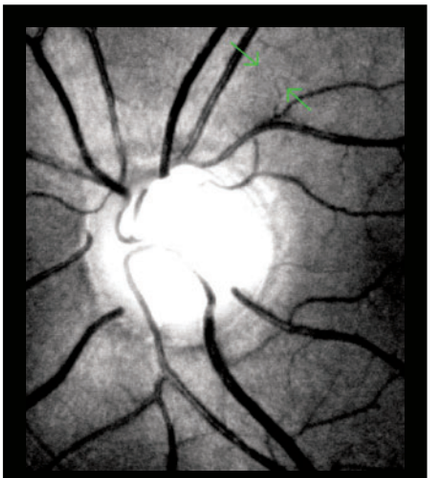

FIGURE 3. Red-free photo of the left optic nerve head. There appears to be a subtle retinal nerve fiber layer defect between the green arrows.

My efforts to attain previous optic nerve head photos have thus far been unsuccessful, but I did manage to reach an optometrist on the phone who had seen this patient before. He actually told me that he wanted to treat the patient for glaucoma and had discovered a visual field defect in the left eye. The patient never returned to him, either.

I'm worried about this patient because he is only 64 and in reasonably decent health. If the glaucoma that I suspect goes untreated for some time, he could really stand to lose significant vision. I have called him twice and sent him a certified letter. I also mentioned these findings in the letter to his primary-care physician stating that he had no diabetic retinopathy. I hope he decides to come back soon.

Optic nerves can look however they want to look, and differentiating variants on normal from the presence of disease is often challenging. However, dealing with the patients attached to these eyes is often the hardest and most troublesome part.●

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Focus On CO-MANAGEMENT

Sagging lids

Continued from page 9

sue. Optometrists have just started working with this placental tissue to stimulate the healing of recalcitrant corneal conditions. Its use in CCh surgery is designed to stimulate the regrowth of the Tenon's fascia that is inducinged by the redundant conjunctiva. The surgeon will identify the relaxed conjunctiva and, with the aid of a peri-bulbar anesthetic, excise the tissue. A dehydrated amniotic membrane is cut to the same shape, slightly larger, and a fibrin adhesive is then applied prior to the insertion of the amniotic membrane. The eye is patched, and the patient is sent home with a shield. Postoperatively, the patient will use a antibiotic, steroid, and non-steroidal topical drops. I see these patients back at the one-week visit to assess the extent of the swelling and to provide verbal Valium. The one-month visit is when you can expect to see significant reduction in the swelling and start to assess the pain level of these patients.

> **Chalasis is the relaxation of a bodily opening, and our patients need the 411 on how to care for their lids and conjunctival chalasis (CCh).**

When I think of comanagement, I always look to the benefit that is provided to both the patient and the provider. The appearance of excessive hooding is not just cosmetic and needs our vocal intervention to get the excessive skin excised. The same is to be said for those wrinkly looking conjunctival tissues. These patients most likely have been treated for dry eye, and with the fornix filled with excessive conjunctival tissue, that treatment is not helping. The use of the amniotic membrane and your comanagement can make a significant difference in your patients' well being. And of course, they can now enter Hogan's Beach, well, unless they are breaking the other 13 dress code violations. On second thought, maybe just fix the bagginess and skip Hogan's Beach.●

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R&D needed for new gas perm care systems, materials

An appeal to large manufacturers to fill gaps in new contact lens products

Within the contact lens world, there has been a great shift toward the use of large-diameter rigid gas permeable lenses. Scleral and semi-scleral lenses are rapidly becoming the standard for use with corneal irregularities such as keratoconus, pellucid marginal degeneration, corneal transplants, and most other irregular topography.

There are many independent laboratories providing us with unique designs, enabling us to enhance the lives of many patients. However, with this advancement in lens design, there is a dramatic duo of forgotten items. Where is the research and development in care systems for these patients? Where is the development of new gas permeable materials?

BY DAVID I. GEFFEN, OD, FAAO
Director of optometric and refractive services in San Diego, CA.

Mismatched care systems and lenses

Unfortunately, the smaller independent lab cannot make the necessary investment to get through the FDA approval process for a new care system. It seems that the larger manufacturers do not see enough profit to continue to invest in this area directly. This leaves the practitioner to sort through a hodgepodge of older approved gas permeable solutions or approved soft lens solutions. So most doctors have resorted to going with off-label use of many cleaners, disinfectants, and tears.

Through trial and error, we have found that currently available gas permeable wetting solutions cannot be used with these large diameter lenses. The large size of the lens reduces the tear interchange. If we wet the lens with an available gas permeable wetting system, we trap that solution under the lens with its preservatives and typically see corneal staining and comfort problems. So, many of us started to use our soft lens multipurpose care systems to wet the lenses but once again found many patients end up with comfort problems. I have now switched to using non-preserved tears as my wetting agent for all my larger diameter gas perm patients. With many of our newer lenses coated, the older abrasive cleaning systems are no longer appropriate as they end up scratching the surface and cause unwettable lenses. So, I have switched to using peroxide care systems to disinfect and clean my patient's larger diameter gas perms.

Appeal to manufacturers

Now, we get to the point of this month's department; I am making an appeal to the larger manufacturers to look at this growing market and use some of the technological advancements you have made in soft lens care and invest time and money into providing us with better systems for our gas permeable lens wearers. This market may be smaller than the soft lens market, but it is not threatened by daily disposables, and these patients are not likely to have a surgical procedure to avoid wearing contact lenses. These patients *need* to wear their gas lenses full time. They need them because most cannot see with most any other type of correction. They are our most loyal patients, and they will be *your* most loyal customers. That is my soapbox for this month. I look forward to hearing from you.●

> **It seems that the large manufacturers do not see enough profit to continue to invest in new care systems.**

Dr. Geffen sits on the advisory board and speaks for Alcon, Bausch + Lomb, and Vmax and sits on the advisory board for TearLab and Accufocus. He speaks for Allergan and AMO.
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IN BRIEF

CXL may manage microbial keratitis

A study published in *The British Journal of Ophthalmology* found that corneal collagen crosslinking (CXL) appears to be an effective procedure in the management of superficial microbial keratitis.

The study looked at 15 eyes of 15 patients with microbial keratitis—nine with bacterial keratitis and six with fungal keratitis. The depth of the infiltrate was determined clinically with slit lamp and measured manually using anterior segment OCT. The patients were treated with antibiotics/antifungals, and those who did not respond to at least two weeks of topical medications underwent CXL, followed by the same preoperative topical medications. Follow-up appointments were scheduled every third day to observe signs of resolution of the microbial keratitis.

According to the study, six of the nine patients with bacterial keratitis and three of the six patients with fungal keratitis resolved after the CXL procedure. Patients with deep stromal keratitis or endothelial plaque failed to resolve.●

Measuring LASIK patient satisfaction

Why understanding satisfaction data is essential to practice health, growth

Most of us would probably say that the vast majority of our patients are quite satisfied with the care they receive in our offices. But how do we know this for sure? At the end of the day, our job is to make patients see and feel better. Maintaining and growing an optometric practice is all about patient satisfaction.

So what percentages of optometrists are really taking the time to find out if our patients are truly satisfied? And furthermore, what exactly are we doing correctly to drive future patient satisfaction? Understanding this data on our patient experience is essential to the health and vitality of our practices.

BY WILLIAM TULLO, OD
Vice president of clinical services for TLC Vision

Patient satisfaction studies are not new to eye care. There are several reputable companies that specialize in creating validated patient satisfaction studies, but for some reason these services are not commonly utilized by the majority of optometric practices in the United States.

Why it is important to understand patient satisfaction

There are many reasons why I believe it is important for every practicing optometrist to understand the rate of patient satisfaction in their offices, but more importantly, optometrists need to know why are some patients dissatisfied with the services they receive. We all want to make 100 percent of our patients completely satisfied with their experience, but we also know that a 100 percent satisfaction rate is essentially impossible to achieve.

So, what rate of patient satisfaction is acceptable? Is it 90 percent? 95 percent? 99 percent? What does that number need to drop below for you to identify that a problem exists which needs to be confronted, adjusted, or changed? Identifying that target number and taking an honest look of where you fall on that spectrum will help you gauge the amount of work you will need to do in order to change a negative trend.

How to improve patient satisfaction

Understanding what makes a patient dissatisfied is one of the best ways to drive an improved patient experience. Patient satisfaction measures are somewhat universal and common to all practice types. Factors such as waiting time, appointment availability, thorough doctor examination, and successful treatment plan are important factors in a general eye care practice. Specialty surgical practices, such as refractive surgery centers, often have difference indicators of patient satisfaction. Patient dissatisfaction in surgical practices often includes patients with complications or unexpected outcomes.

Problems with patient satisfaction surveys

The only practical method to get statistically significant information regarding patient satisfaction is to survey every patient you treat in your office. Experts say your survey should be brief (five or fewer questions) to get enough of your patients to respond. On average, most doctors report a five to 10 percent response rate to patient satisfaction surveys. Today's most successful surveys are typically electronic (e-mail or text message) and can be easily accessed by patients from any computer, tablet, or smartphone.

LASIK satisfaction

LASIK surgery is one of the most commonly performed elective procedures in medicine today with more than 28 million LASIK procedures worldwide to date.[1] In 2013 alone, more than 500,000 procedures were performed in the United States.[1] Additionally, LASIK eye surgery is one of the most closely studied elective procedures with more than 16,500 eyes in clinical trials between 1993 and 2005.[2] Despite these overwhelmingly impressive facts, questions about the safety of LASIK surgery still remain.

In 2008, in response to patient concerns regarding the safety of LASIK in the United States, the U.S. Food and Drug Administration (FDA) asked American Society of Cataract & Refractive Surgeons (ASCRS) to develop a task force to investigate patient satisfaction after LASIK surgery. In 2009, the LASIK Task Force published its results of a world literature review of LASIK patient quality of life, reporting a patient satisfaction of 95.4 percent.[3] A more recent look in 2013 at more than 2,500 LASIK patients revealed a satisfaction rate of 96.6 percent.[4] LASIK surgery patient satisfaction compares more favorably with other common elective procedures including rhinoplasty, liposuction, and breast augmentation/reduction.[5]

In a recent report by Erickson, LASIK patient satisfaction is determined by both visual (uncorrected visual acuity [UCVA]) and non-visual factors such as post-surgical visual function, pre-operative patient expectations, and other psychological characteristics.[6] Currently, we typically measure post-LASIK visual function in the exam room with high-contrast Snellen visual acuity tests. These tests do not access patients' full quality of vision because they do not measure vision under poor illumination, such as driving at night. Tests such as low-contrast visual acuity and contrast

TABLE 1 Reasons for patient dissatisfaction
(Patient dissatisfaction rate 2013 - LASIK = 3.4% PRK 4.1%)

Reason Dissatisfied	LASIK N=2,269	PRK N=270
Near vision	37.5 = 48%	1 = 9%
Distance vision	30 = 38%	2 = 17%
Recovery of vision	0 = 0%	7 = 64%
Dry eye	3 = 4%	0 = 0%
Night Vision	2.5 = 3%	0 = 0%
Other	5 = 7%	0 = 0%

sensitivity have been helpful in identifying quality of vision problems in patients who measure 20/20 UCVA but complain of inadequate visual function.

A better understanding of a patient's pre-operative expectations, such as the need for "perfect vision" or total spectacle independence, may help avoid the patient's post-operative dissatisfaction. More patients are expecting total spectacle independence following refractive surgery, which may explain this trend. This highlights the need for all doctors who prepare their patients for LASIK to spend more time demonstrating presbyopia with contact lens trials. Patients who select monovision as a surgical treatment target also exhibited an increased risk for additional laser treatment to maintain visual function as compared to patients who choose full distance correction in both eyes.

Psychological characteristics such as optimism, adaptability, and subjective sense of wellbeing are all traits that correlate with post-LASIK satisfaction.

Psychological characteristics such as optimism, adaptability, and subjective sense of wellbeing are all traits that correlate with post-LASIK satisfaction. A greater increase in quality of life (QOL) is found after LASIK surgery as compared to spectacles and contact lenses. An increased sense of subjective wellbeing, adaptability, and a more optimistic attitude to life and increase perceived QOL after surgery.[7]

LASIK dissatisfaction

So, naturally, the follow-up question is, "Why are some LASIK patients dissatisfied?" In a review of 109 dissatisfied LASIK patient charts referred to Wills Eye Institute Corneal Service between 2004 and 2006, Levinson reported the most common causes of LASIK dissatisfaction were poor distance vision (63 percent), dry eyes (19 percent), redness/pain (seven percent), and glare and halos (five percent).[7]

Almost a decade later, it has been my experience that the causes for LASIK dissatisfaction may be changing. In a recent patient satisfaction survey in 2013 at TLC Laser Eye Centers, 3.4 percent of LASIK patients reported dissatisfaction. The most common cause of patient dissatisfaction was near vision complaints (48 percent), followed by distance vision complaints (38 percent) (See Table 1).

The largest shift over the past decade is the decrease in night vision disturbances and dry eye complaints—probably due to improvements in excimer and femtosecond laser technology. The emergence of presbyopic-related complaints may be surprising given the decrease in average age of patients having LASIK today.

While it is clear we may never reach 100 percent patient satisfaction in our practices, it is important to measure our patient satisfaction. No matter your practice setting, understanding why your patients are dissatisfied is the first essential step in improving your patient's satisfaction. Happy patients are a key to building a successful practice and maximizing your job satisfaction. And just remember, in today's digital age, a dissatisfied patient can post his reasons for being dissatisfied to millions of people around the world at the touch of a button. So, be proactive and find out why those small populations of your patients are not happy, then make sure you have a firm action plan to reverse those concerns. Always remember to ask yourself "Are my patients satisfied?"—because if you aren't doing so, your competition will.●

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IN BRIEF

Bono says glaucoma is why he wears shades

BY BENJAMIN P. CASELLA, OD, FAAO

Bono, the iconic Irish rocker and front man for the band U2, recently revealed on *The Graham Norton Show* that he does not wear his avant-garde designer shades for fashion alone.

He wears them because he has suffered from glaucoma for the last two decades.

In 2005 interview with *Rolling Stone*, Bono said that he is very light sensitive, especially to camera flashes. This would be especially annoying for one of the most photographed rock legends of our paradigm.

Bono did work in a joke about perception of his condition by saying, "You're not going to get this out of your head now, and you will be saying 'Ah, poor old blind Bono.'"

He went on to give a hint of his prognosis by saying, "I have good treatments, and I am going to be fine."

The type of glaucoma from which Bono suffers was not readily apparent. Anyone from anywhere can develop any type glaucoma, but persons of northern European ancestry are more likely than others to develop pseudoexfoliation syndrome, which can lead to a relatively more aggressive form of glaucoma.●

Current views on genetic testing for AMD

Genetic testing will lead to personalized medical care for our patients

Earlier this year, I presented a lecture on age-related macular degeneration (AMD) to a large group of fellow optometrists. During the lecture, I asked the audience how many of them have administered genetic testing for their AMD patients. If I had asked this question to the same audience two years ago, no one would have raised a hand, but this time around, several hands went up. Genetic testing in AMD is a relatively new focus for optometrists and an important one to ensure that we are getting a complete view of our patients' risk for developing advanced AMD. Although we are making some progress, we still have work to do to gain a better understanding of how to incorporate its use into clinical practice. I expect many more hands to rise the next time I ask this question in a lecture.

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71% **of an individual's risk of developing advanced AMD is tied to his genetics**

Genetic testing

Genetic testing for AMD is important on several fronts. Up to 71 percent of an individual's risk of developing advanced AMD is tied to his genetics.[1] This influence has a significantly greater impact in AMD than nearly any other disease, including obesity, cardiovascular disease, and even breast cancer, which we will discuss in greater detail. Genetic testing can help determine which patients are most at risk for developing advanced AMD and allow us to manage them accordingly. For example, if a patient faces a high level of genetic risk for AMD progression, we may want to examine that patient more frequently than we would if the patient showed similar signs and symptoms, but possessed a more favorable genetic profile. By adjusting our monitoring schedule based on risk, we can catch conversions to choroidal neovascularization (CNV) or wet AMD as quickly as possible and refer the patient for treatment sooner. As we know, earlier intervention with anti-VEGFs typically yields better long-term results.[2]

Additionally, there is some evidence that indicates genetic testing may predict patients' response to certain treatments. In a study conducted by Peter J. Francis, MD, patients who had the CFH gene showed less improvement in their visual acuity while receiving ranibizumab therapy. Patients who had the C3 gene had reduced thickening and improved retinal architecture, and those who had vascular endothelial growth factor (VEGFA), FLT1, and CFH genes were reported to require fewer ranibizumab injections during the 12-month study.[3] A second study by Hermann et al looking at the VEGFR2/KDR genes also seem to show difference in responses to ranibizumab based on genetic variation.[4] The CATT Study, however, did not seem to demonstrate such a difference in response rates based on genetic variance.[5]

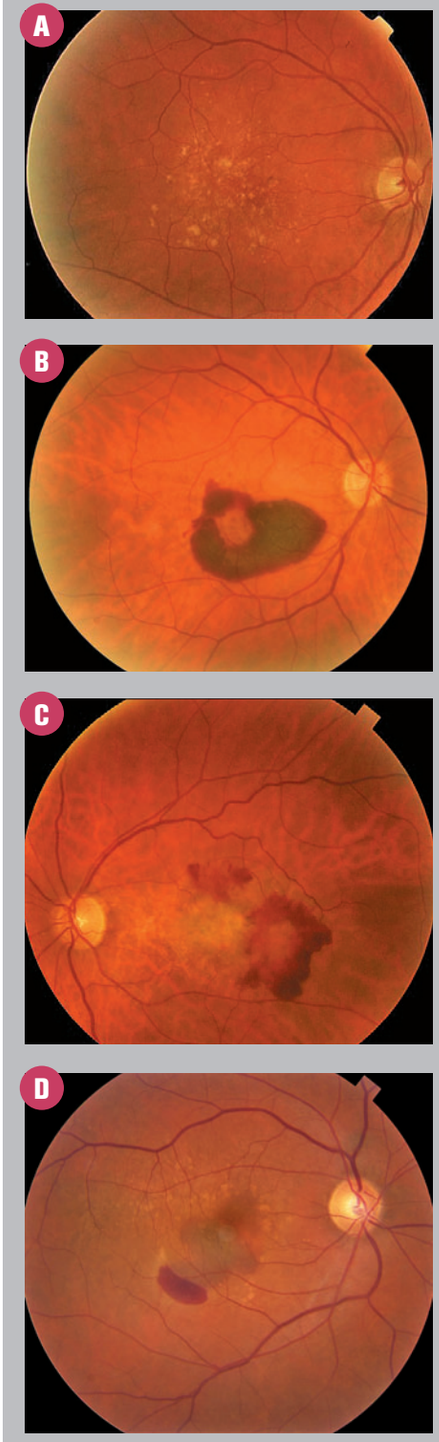
Conceptually, genetic testing may seem foreign to eyecare professionals, but this approach is employed quite frequently in other fields of medicine. For example, there are studies related to breast cancer indicating that certain genes, such as the BRCA 1 and 2 genes, may predict a person's risk of developing breast cancer as well as what treatment may be most beneficial in certain cases.[6] I have little doubt that within eye care, genetic testing will become more important as data establishes the benefit of predictive action regarding AMD.

TAKE-HOME MESSAGE Genetic testing is a new tool for ODs to better manage their AMD patients. Use of genetic testing is common in other diseases, such as breast cancer, and interest is growing within eye care. Two AMD genetic tests are currently availabile, with a third coming soon. Controversy exists in the role of genetic testing with nutrition in AMD patients. More study is needed to understand the role of vitamins and genes in this condition.

Controversy

It is worth noting that within the topic of genetic testing for AMD, there exists some degree of controversy regarding the role of genetic testing and nutrition. Carl Awh, MD, and his colleagues reported that certain nutritional supplementations might be better for certain patients based on their genetic profile. They analyzed patients from the original Age-Related Eye Disease Study (AREDS) study and reported that patients who had the CFH gene responded well to antioxidants alone, but zinc seemed to speed up the progression of AMD. Conversely, they reported that patients with the age-related maculopathy sensitivity 2 (ARMS2) responded well to zinc, but their condition worsened

By adjusting our monitoring schedule based on risk, we can catch conversions to CNV or wet AMD as quickly as possible and refer the patient for treatment sooner.



A Patient with stage 3 dry AMD OD. This patient would be a good candidate for AREDS 2 supplementation as well as genetic testing. **B** An old choroidal neovascular membrane in a patient's right eye prior to advent of anti-VEGF agents. At that time, no treatment was available. **C** Same patient as Figure B. Second eye developed exudative AMD several years later, and patient went on to have serial anti-VEGF injections OS. **D** Example of a patient with wet AMD. This patient went on to have serial anti-VEGF injections OD.

when they took antioxidants.[7]

However, Emily Y. Chew, MD, and her colleagues recently conducted a study that did not find a relationship between CFH and ARMS2 genotypes and vitamin response. They reported that the supplements reduced the rate of AMD progression across all genotype groups, and the genotypes at the CFH and ARMS2 loci did not statistically significantly alter the benefits of supplements. The study suggests genetic profile provides no benefits in managing nutritional supplements for patients with AMD.[8] Findings from both studies are undoubtedly interesting. Ultimately, additional research is required before we can truly know, one way or the other, how vitamin therapy is affected by genetic profile.

Protocol

Genetic testing for AMD can positively impact an optometrist's practice protocol. If we find patients are at high risk for AMD, we will want to see those patients more frequently. We can utilize technologies, such as ocular coherence tomography or dark adaptation, to monitor AMD patients more closely. Further, we can discuss modifiable risk factors, such as stopping smoking, UV protection, and improper body mass index, more forcefully and sooner in higher risk patients. Also, we may start vitamin therapy sooner in higher risk patients and stress their importance even more. Perhaps the most tangible benefit may be because those patients at higher risk will be seen more frequently, and will have their conversion detected earlier, it will lead to sooner treatment and better overall acuity.

Currently, several genetic tests for AMD exist in the marketplace. RetnaGene (Nicox) has two such tests: one evaluates the risk of early or intermediate AMD progression to advanced choroidal neovascular disease within two, five, and 10 years, while a second assesses a patient's lifetime risk for developing advanced AMD. Macula Risk PGx (ArcticDx) determines a patient's risk of progression to advanced AMD over the same period. A third company, AutoGenomics, is currently working on a test as well that may be available soon.

Ultimately, I believe that genetic testing is here to stay. Although more time, research, and acceptance is needed, I believe it will help us take better care of our patients with AMD and lead to less vision loss. In the broader eyecare space, genetic testing for AMD will, hopefully, lead us down the path to true personalized medicine for our patients.●

I have little doubt that within eye care, genetic testing will become more important as the data establishes the benefit of predictive action regarding AMD.

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Dr. Ferrucci currently serves on the advisory board for MacuLogix, ArcticDx, Autogenomics, Science Based Health, and Nicox.

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Detachment

Continued from page 1

of a blind spot that started down and to the left and crept toward the center of my vision, arcs of lightning heralding its advance. I knew what was happening, but I didn't want to believe it. My wife and I had snuck out to California from Alabama for some much needed R&R—and now this.

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No stranger to ocular procedures

It was little wonder that I'd arrived at this point, though. After many years of diagnosing eye disease and battling vision loss in others, I had, from June 2012 until May 2013, experienced in order: a posterior vitreous detachment; retinal tear; and vitreous hemorrhage in the right eye which had been treated with laser retinopexy and vitrectomy; a myopic shift from rapid-onset nuclear sclerosis following the vitrectomy which caused several diopters of anisometropia; another retinal tear in the left eye (at 10:30 o'clock) with laser repair; an epiretinal membrane in the right eye; and finally, cataract surgery in both eyes.

That's a lot of ICD-9s and RVUs that simply don't do the experience justice.

From the location of my scotoma, I reasoned that the laser repair in my left eye had failed for some reason. It was late on a Friday afternoon, and I didn't want to be *that patient* who rushes into the office at the end of the week with a major problem. I judged that my macula was still on, and I knew that if I had surgery within a couple of days, my prospects remained good. I tried to enjoy the rest of the tour as much as possible, and later that evening we met up with our friends in Malibu.

I decided not to totally ruin the grand reunion by telling them right away. We had dinner, and afterward, I closed my eyes in an effort to quiet the currents of liquefied vitreous that pulled on the retinal tear and held my head to down and to the right, enlisting gravity as my ally to prevent my macula from unraveling.

Eventually, they noticed. "You must really be tired," one of them observed.

"Yes," I replied, "but my retina is also detaching."

> **I knew what was happening, but I didn't want to believe it.**

Seeking treatment

We spent the rest of the evening planning for the day ahead. I knew my best bet was an academic medical center that could scramble the resources necessary for major eye surgery on a Saturday. Only one question remained: Would I go with the Bruins or the Trojans? UCLA was closer than USC, so the plan was hatched.

After going NPO after midnight, I presented to the emergency department at Ronald Reagan UCLA Medical Center at 9 a.m. the next morning. The waiting room was calm and empty. A security guard greeted us warmly and offered his assistance. He

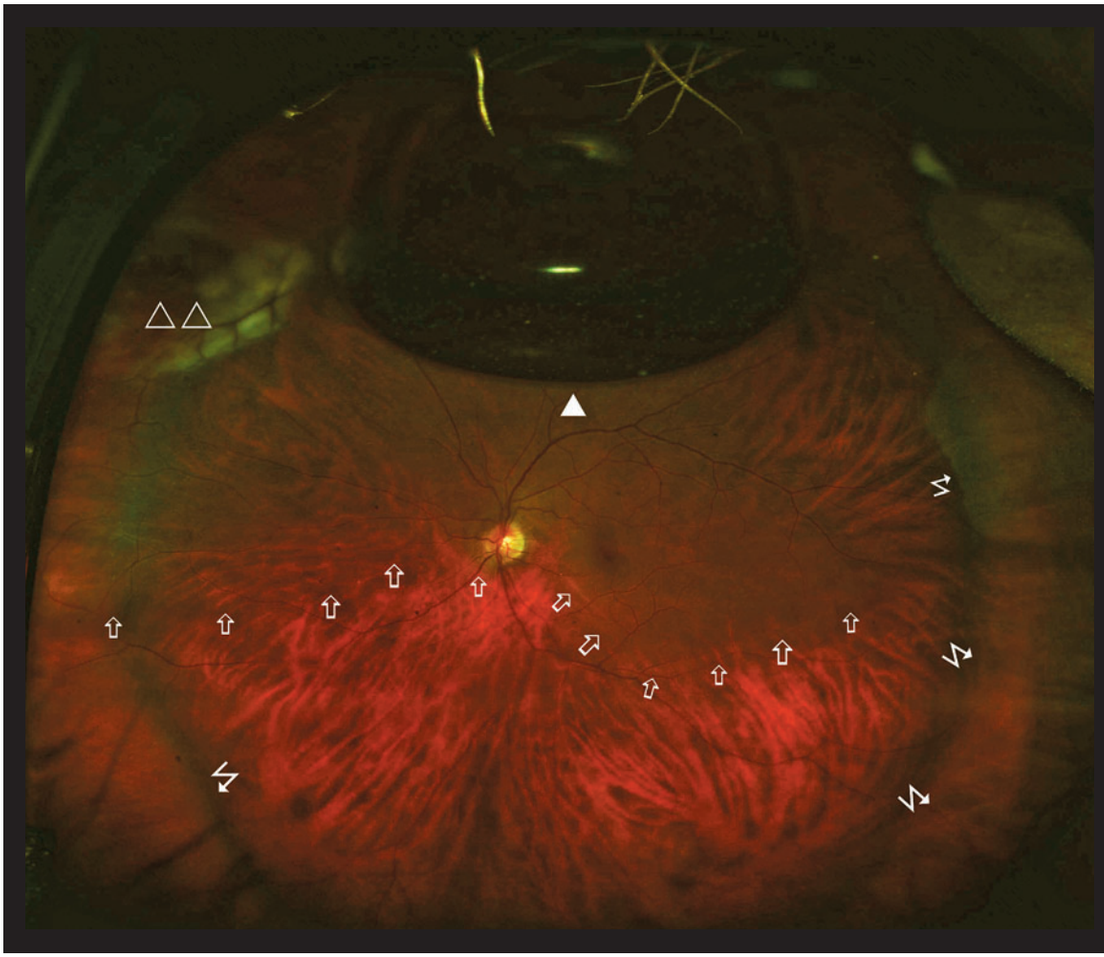

FIGURE 1. Double open triangles = the retinal tear and laser retinopexy at 10:30 o'clock

Single solid triangle = gas bubble at 12 o'clock

Open arrow = the demarcation line showing the full extent of the detachment from 9-1 o'clock with extension into the macula (In the unmarked image on the cover, the area of detachment is a slightly different color from the normal retina inferiorly, and there is a visible demarcation line in the inferior macula)

Bent arrow = the scleral buckle

ushered us to the front desk where the triage nurse was waiting. I explained to her who I was and what was happening. She took my blood pressure (it was high), but moreover, she took me seriously.

The ER doctor had already been briefed on my situation by the time he walked into the exam room pushing the B-scan cart. He listened to my story, squirted some gel on my left eye, and placed the probe gently. He took a brief glance at the screen and then turned it toward me.

It was late on a Friday afternoon, and I didn't want to be that patient who rushes into the office at the end of the week with a major problem.

"What do you think?" he asked.

I looked at the bulging, reflectile arc in mid-vitreous and shook my head. "It's even worse than I thought," I said.

I remembered what it had been like to be the neophyte doctor with a wrinkleless face who no one took seriously, so I didn't dare ask the young resident who escorted us to the eye exam lane how old she was. Instead I asked, "What year are you?"

She knew exactly what I was getting at. "I'm a first year—but don't worry, Dr. Brown, I'm just going to get things started. I've already called the retina fellow. He's totally awesome."

She was a little nervous, which I found both endearing and appropriate considering that I'd seen over 70,000 patients in my career and she was barely out of the gate.

Once I was dilated and behind the slit lamp, she quickly found the bullous retinal detachment that spread from 9-1 o'clock in my left eye. But she seemed just as fascinated with my right macula.

"Look's like you've got…drusen," she said.

I decided she needed a little help. "What you're seeing is an epiretinal membrane. Try using the red-free filter; it'll really pop out then."

She did and was pleased. A professor's work is never done.

The retina fellow who ambled into the room wasn't much older than the first-year resident, but with his morning stubble and tired, puffy eyes, he appeared a bit more grizzled. He found the tear on the anterior side of the detachment near the vitreous base. A bare slit, it was only visible with the gaping that comes from scleral indentation.

He excused himself to talk with the retina chief and plan my surgery. I knew what was likely coming, and when he returned, he confirmed that they planned to do a scleral buckle, vitrectomy with gas tamponade, and laser retinopexy—the proverbial "kitchen sink."

Throttling down while face down

"You're not going to be able to travel for several weeks," he said. I held my head in my hands as a vision of all the work that I "needed" to do back home flashed before me. The fellow was young and still searching for the right words of comfort to match his prodigious surgical skills, but in the long pause that followed, he reached down deep and found them.

"Dr. Brown," he said, "you've spent your life taking care of others, and now it's time to let someone else take care of you."

What followed in the next few days was, well, a blur. For 25 years, almost half my life, I had run full throttle. But after my surgery, it was as if someone had pulled the plug. Face down in the world, with my eyes closed, I was forced to become a good listener.

I listened to good books and old music. Through the screen door of the Pepperdine University condo where I was holed up, I could hear the howls of coyotes and the click-clack of mule deer hooves echoing off the rocks of the craggy Santa Monica Mountains. Sea breezes blew in from the Pacific, cooling my skin and massaging my ears. I heard the playful banter of our hosts' young daughters and tapped my foot to the beat of the domestic routine. At other times, the darkness and silence enveloped me like a womb.

See **Detachment** on page 18

Detachment

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Our friends and my wife (when she wasn't busy spotting some of her favorite stars at local Malibu haunts) brought me good food—and lots of wine! The chief of retina at Jules Stein Eye Institute, Dr. Stephen Schwartz, became both my doctor and my friend. He reassured me at my follow-up visits that things were going well, but he held me in a hard gaze when I admitted that I was cheating on my "face-down" time.

> **For 25 years, almost half my life, I had run full throttle. But after my surgery, it was as if someone had pulled the plug.**

"We gave you a 'smart person'-sized gas bubble for compliant patients—maybe we were wrong!" he scolded.

I obeyed, and things went well. The large gas bubble, which had filled my vitreous cavity and jiggled with every micro-movement, grew smaller each day, eventually shrinking to a single dot. One morning I woke up, and it was completely gone.

I grabbed some scissors and clipped the green warning bracelet from my wrist as if I was unlocking a shackle. I was now free to move about the country.

We booked a flight home, and when it came time to call airport taxi service, we spent the extra $20 for a Lincoln Town Car and traveled down PCH toward LAX in style.

The author and his wife Sandy during their "medical destination vacation" to Southern California. The vacation didn't turn out as planned, but Dr. Brown came through the experience with a new understanding and better able to offer words of comfort to his own patients.

It's been a year now. My left eye aches when the weather changes, but I count myself a fortunate man. I have some micropsia and metamorphopsia in my left eye, but it's become less noticeable, and I'm correctable to 20/20.

The induced myopia from the scleral buckle is only about 1.50 D, and much to my surprise, I've adapted well to the unplanned monovision.

The mild vision loss I've suffered is nothing compared to that of many of my patients, and I'm thankful that I can still do the work I love.

Recently, one of my patients presented with a fresh retinal tear and detachment in the exact same location as mine. I explained to her what was happening and what needed to be done. I saw her eyes well with tears as reality hit home.

I leaned forward slightly, the veteran welcoming the new initiate with words of comfort, and spoke softly. "I've been where you are. You're going to get through this, and you're going to be okay."●

Dr. Brown is an adjunct associate professor with the University of Alabama School of Optometry, his publications and presentations have focused on the diagnosis and management of ocular disease. He has a special interest in complex corneal and anterior segment cases.
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IN BRIEF

FDA approves VisionCare's telescope implant for AMD

SARATOGA, CA–The U.S. Food and Drug Administration approved VisionCare Ophthalmic Technologies' implantable miniature telescope for use in patients living with bilateral end-stage age-related macular degeneration (AMD) who are age 65 or older.

The telescope implant is the only FDA approved surgical device for end-stage AMD and is Medicare eligible.

According to the company, the telescope implant improves visual acuity and quality of life for suitable patients with AMD whose sight is permanently obstructed by a blind spot in their central vision, making it difficult or impossible to see faces, read, and perform everyday activities such as watching TV, preparing meals, and self-care.

"Despite all the great pharmacotherapy advances in AMD treatment, some patients will unfortunately progress to end-stage AMD where their straight ahead, central vision is permanently blocked," said Dr. David Boyer, of Retina Vitreous Associates Medical Group, Beverly Hills, CA. "Once end-stage AMD patients have lost their central vision, cataract surgery will not provide them with as much benefit to their quality of life as the telescope implant."

The telescope implant is not a cure for end-stage AMD.

According to the company, possible side effects include decreased vision or vision impairing corneal swelling.●

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Genetic testing

Continued from page 1

eye is so great at this point that nothing can be done (Figure 1). He eventually develops a scar and finger-counting vision (Figure 2). This was especially frustrating because the patient was the eye doctor's own father. Remarkably, he lives to over 100 years, complaining for his last decade about the dark blind spot right in the center of his vision.

Years later, this eye doctor learns of a simple genetic test for patients with signs of age-related macular degeneration (AMD) that involves taking a sample from the inside of a patient's cheek using a brush. The sample is analyzed to determine if a patient has certain high-risk alleles that will increase the risk of progression to a more advanced form of AMD and thereby, along with smoking history, is used to determine a risk category and frequency of follow-up.

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The risk categories range from one to five. A risk category score of one or two means that the patient is at no greater risk than the general population to progress to a more advanced form of AMD and could be followed every six months to a year. A risk category score of three to five means that the patient is at a higher risk than the general population to progress and should be followed more frequently, perhaps every three to four months. The eye doctor decides to test this now 90-year-old patient who was followed for the past 20 years. The results indicate a risk category score of four, which meant that this eye doctor would have followed this patient every three to four months (had this information been available at the time) and not just once a year. It is likely that the patient's wet AMD would have been detected much earlier, and his vision might have been easier to save because by the time this patient developed choroidal neovascularization (CNV), effective clinical intervention was already available.

AMD is the leading cause of irreversible blindness in people over 55 in the developed world. Of the estimated 9.1 million people who have AMD in the U.S., approximately 1.75 million people have late-stage disease and another seven million are at high risk of developing advanced disease.[1] About 90 percent of patients with AMD exhibit the dry, atrophic form of the disease, for which there is currently no clinical intervention, with the exception of the Age-Related Eye Disease Study (AREDS) formulation which reportedly reduces risk to advanced AMD by 25 percent in patients with intermediate AMD. About 10 percent of affected patients with AMD develop CNV, which is responsible for 90 percent of severe vision loss. The potential for vision loss from all forms of AMD increases if the disease is undetected, untreated, unsuccessfully treated, or inappropriately treated.[2]

Genetic testing allows for early detection

For any treatment to be successful, early detection is key. For that reason, genetic testing may play a role in determining the frequency of follow-up in patients who are determined to have high-risk alleles, as exemplified in the scenario above. Patients like the one above with no risk factors and with just a few small macular drusen and good visual acuity are typically followed once a year. But one phenotype (a few small drusen) with differing genotypes may require different follow-up regimens.

The progression of AMD is difficult to predict in any given patient because there are a number of factors that contribute to the risk of development and progression of this disease. Some risk factors can be changed, such as diet, smoking habits, body mass index, and cholesterol levels. Other factors are fixed, such as age, gender, and family history (genotype).

In 2005, three landmark studies were published that confirmed an association of certain variations in specific genes that increased the relative risk of the development and progression of AMD. Specifically, variations in the complement factor genes (CFH and C3), ARMS2 genes, and other mitochondrial genes have been identified that play a role in the regulation of inflammation in the retina.[3-5] So far, more than 20 genetic variants that influence AMD risk have been identified.

In the last few years, noninvasive genetic testing for the presence of the more common mutations or single nucleotide polymorphisms (SNPs) associated with increased risk of AMD progression has become a reality. Obtaining samples does not involve blood draw, which is not available to most OD practices. Instead, the test involves obtaining a cheek swab using two brushes, one for each side of the mouth. The results, which include a macula risk score of progression to advanced AMD, are available within a few weeks. The higher the score, the greater is the risk. Many practitioners have already been using these tests in their patients with drusen and/or diagnosed AMD to help determine frequency of follow up, but more recently, genome-directed therapy, or GDP, has been reported to determine the optimal nutritional supplementation for the patient with intermediate AMD.[6]

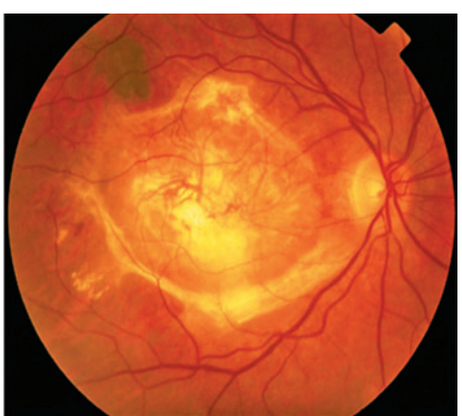


FIGURE 2. Disciform scar secondary to the extensive retinal hemorrhage and eventual finger counting vision at one foot.

FIGURE 3 **The Macula Risk score**

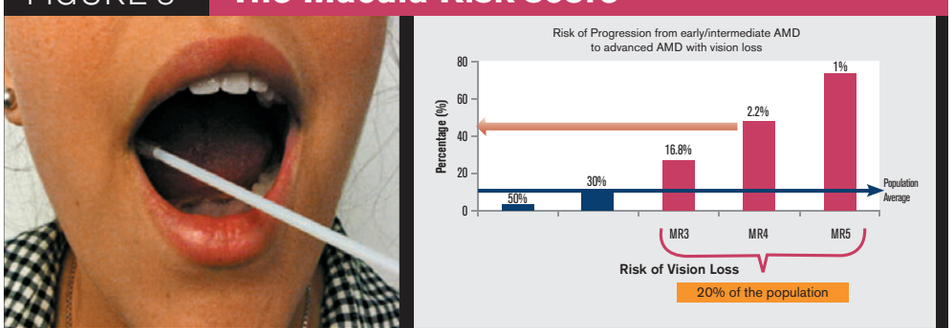


FIGURE 3. Obtaining a sample from the cheek and the significance of the macular risk score. The patient described had a macula risk score of four with close to a 50 percent lifetime risk of progression to advanced AMD (red arrow).

Commercial availability

If the patient has drusen and/or AMD, in the U.S., insurance will cover the cost of the testing. Currently, two companies offer commercial genetic testing for AMD: Macula Risk NXG test from ArcticDx and RetnaGene from Nixon. These tests predict a patient's risk for progression to advanced AMD within two, five, and 10 years using an analysis of genetic variants (SNPs) associated with AMD, clinical AMD status, and significant non-genetic risk factors, smoking, and for Macula Risk NXG, body mass index (BMI). In 2013, ArcticDx added its Vita Risk pharmacogenetic analysis to the Macula Risk NXG test; it provides a genotype-directed selection of appropriate ocular vitamin treatments for intermediate AMD patients based on their testing results (see Table 1). Vita Risk is also available as a stand-alone test.

TABLE 1 **Suggested optimal treatments based on the number of CFH and ARMS2 alleles**

CFH Alleles	ARMS2 Alleles	Optimal Treatment	Study Frequency
1	1	AREDS	23%
0	0	Zinc Alone	6%*
0	1		5%
0	2		1%
1	2		7%
1	0	Antioxidants Alone	22%
2	0		12%
2	1		17%*
2	2		7%*

*no statistical treatment benefit observed

The value of genetic testing

The question is why some patients progress to CNV and geographic atrophy (GA), and how can we predict which patients will progress? In addition, why do some patients respond very well to treatment of CNV with anti-VEGF, while others do not? The answer most certainly involves a list of factors, including phenotypic risk factors such as age, sex, smoking status, body mass index, nutrition, and education, but it is becoming increasingly evident that genetics may play a role.

Perlee et al developed a CNV prediction model based on the genetic results from the AREDS population with early or intermediate disease. DNA specimens from the AREDS study subjects were genotyped for 14 single nucleotide polymorphisms (SNPs) in genes previously shown to be associated with development of CNV. They found that CNV prediction models that combined both genotype results with phenotypic risk factors improved CNV prediction when compared with phenotypic risk factors alone.[7]

What about response to treatment in advanced AMD? Why do some patients respond

See **Genetic testing** on page 22

ICD-10

Continued from page 5

technology and service partners—including EHR and practice management system vendors, as well as billing services and clearinghouses—to assess readiness to properly use ICD-10s. Practitioners should also contact all third-party payers—including commercial insurance plans, Medicare carriers, state Medicaid programs, and military health plans—to establish a "bridge to readiness" with each, the agency says.

The CMS Road to 10 website offers a primer on ICD-10 coding as well as examples of ICD-10 codes that will be commonly used by various healthcare specialties. However, the website provides no information specific to primary eye care.

Specialized information on ICD-10 coding for optometry is available through the AOA, which offers its members a series of 10 webinars on the coding system. Most major national and state optometric meetings have offered ICD-10 education over the past year or will do so in the coming months, Dr. Wartman said. However, she fears many practitioners and optometric office managers are not taking advantage the educational opportunities offered them. Moreover, "many may not yet be putting the information they have on ICD-10 codes to the test," she fears.

"Practice is extremely important in mastering the proper use of the ICD-10 codes," Dr. Wartman said. Both Dr. Wartman and CMS officials urge practitioners to phase-in the utilization of ICD-10 codes over time by completing a gradually increasing number of test claims each month.

"Practice coding the encounters you have in your office every week—especially the more complicated and unusual encounters," Dr. Wartman said.

Practitioners should then work with payers to see if their test claims will be accepted or would be paid, Dr. Wartman says. Medicare carriers will offer practitioners a series of frontend ICD-10 system test weeks, beginning this month.

Don't get caught off guard

CMS has twice postponed ICD-10 implementation; however, the agency insists the Oct. 1, 2015 deadline is firm. Implementation of updated ICD coding in the U.S. is required under an agreement with the World Health Organization (WHO). ICD-10 codes are already used for claims and reimbursement in 25 nations. The CMS sees ICD-10 as critical to not only improving healthcare record keeping in the U.S. but implementation of a planned value-oriented reimbursement system.

Nevertheless, some groups, including the American Medical Association, are still urging the CMS to again delay ICD-10 implementation or skip it entirely and implement the WHO's more advanced ICD-11 coding system.

However, most coding experts who spoke with *Optometry Times* believe an update of the nation's healthcare-coding system is inevitable. And when it occurs, well-prepared practitioners will be at an advantage, while those caught off guard could risk severe disruption in their practices, they say.

In addition to practicing ICD-10 coding and test filing claims, some consultants suggest healthcare practitioners arrange lines of credits for working capital, in case the transitions results in substantial claims denials or payment delays in their practices.●

Genetic testing

Continued from page 21

better to anti-VEGF than other patients with similar disease? A number of recent studies have reported the effect of certain CFH polymorphisms on the response to the treatment of AMD with intravitreal anti-VEGF agents. For example, the CC genotype of CFH has been documented to have a poor response in some studies, whereas the TT genotype was associated with a good response to therapy.[7-11] However, there are still conflicting studies, so genetic testing is not yet recommended to choose which patients will benefit from intravitreal injections of anti-VEGF.

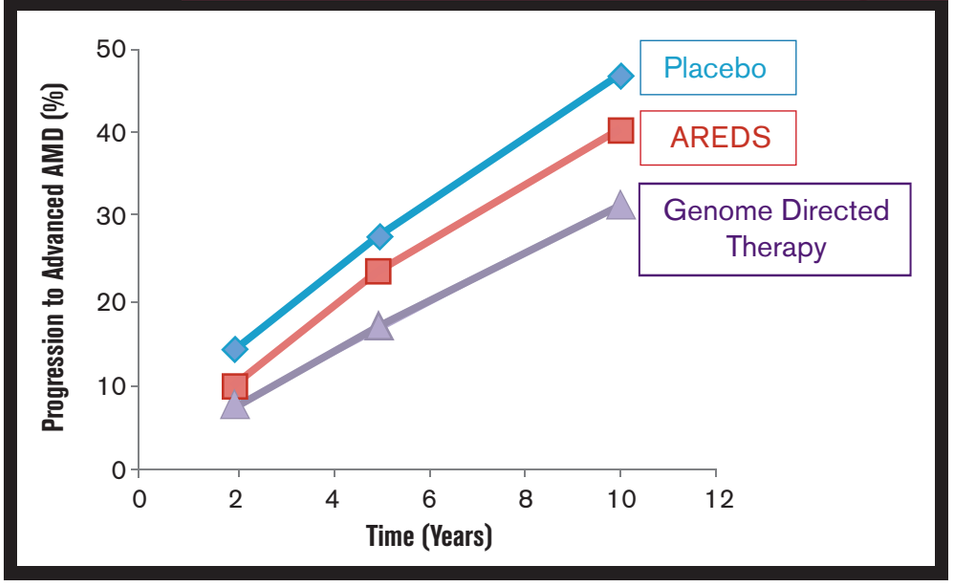
AREDS formulation

Millions of Americans are currently taking the AREDS formulation (antioxidants plus 80 mg zinc) on a daily basis. AREDS, published by the National Eye Institute (NEI) in 2001, was the first study to demonstrate that a combination of vitamin C, beta-carotene, vitamin E, 80 mg of zinc, and 2 mg of copper (the AREDS formulation) reduced risk of progression to advanced disease by 25 percent in intermediate AMD patients.[12] For the next 12 years, this was the only formulation recommended by eyecare practitioners, with the exception of a smoker's formulation without beta carotene because of its association with lung cancer.[13]

Then, in 2013, the NEI released the results of AREDS2, which examined the benefit of carotenoids (lutein and zeaxanthin); formulations without beta-carotene; and formulations with low-dose (25 mg) zinc on the risk of progression.[14] Researchers concluded that carotenoids reduced risk by 18 percent in the sub-group without beta-carotene (presumably because of better absorption of the carotenoids without beta-carotene) and by 20 percent in the sub-group with an original diet poor in carotenoids. In addition, AREDS2 concluded that there was no statistically significant difference between the 80 mg of zinc and 25 mg of zinc in progression to advanced AMD. Despite this finding, the NEI has not made any recommendations to change the current formulation of zinc (80 mg).

There is ongoing controversy whether genetic testing is advised to determine which formulation, if any, intermediate AMD patients should be using and if patients should be on low-dose zinc formulations, considering AREDS2 did not find any difference between the two doses. The concept of using genetic information to tailor treatment, genome-directed therapy, has been gaining momentum over the past few years for a number of systemic diseases. As for AMD, should all patients be on the same AREDS formulation (except for the smokers formula, without beta carotene)? Should some patients be on antioxidants and zinc, or on zinc alone, or on antioxidants alone? Is there value to genome-directed therapy?

FIGURE 4 **Genome-directed treatment nearly doubled the effect of the AREDS treatment in reducing risk**



Awh et al[15] evaluated a comprehensive set of AMD genetic risk predictors in 995 white patients from the original AREDS study who were in category three disease in one eye and category one, two, three, or four disease in the fellow eye at enrollment. Disease progression was defined as the development of AREDS category four in either eye of patients without category four at enrollment or the development of bilateral category four in patients with unilateral category four at the time of enrollment. Patients were divided into nine groups depending on genotype and treatment group over time. They found significant differences in progression rate for patients having risk alleles in CFH and ARMS2 treated with antioxidants and zinc vs. zinc alone. In their study, they reported that patients with *no* CFH risk alleles and *one or two* ARM2 risk alleles benefited most from a zinc-only supplementation, whereas patients with *one or two* CFH risk alleles and *no* ARMS2 risk alleles derived maximum benefit from antioxidant-only supplementation—and in these patients treatment with zinc was associated with increased progression to advanced AMD. Dr. Awh stated at the American Academy of Ophthalmology Retina Sub-Specialty meeting in November 2013 that if all of the AREDS patients were treated with genotype-directed therapy, the reduction in the 10-year progression to advanced AMD could potentially be 33 percent with the genotype-directed therapy vs. only 14 percent with the AREDS formulation (see Figure 4). The authors have disclosed a commercial relationship with ArcticDx, Inc., one of the two companies that perform genetic testing.

Following this publication, Chew et al[16] analyzed the same patient data using an alternative statistical approach in which they did not find any association between CFH and ARMS2 genotypes and response to the AREDS formulation, which refuted Awh's data. However, scrutiny of their statistical model by Awh et al in a second publication[6] revealed that because patients in Chew's study were divided into 27 subgroups, it was underpowered to refute the data of the original Awh study.

What about the dosage of zinc? Recall that the AREDS formulation contains 80 mg of zinc, which is eight times greater than the recommended daily allowance. Because 80 mg is a high dose of zinc, AREDS2 looked at any statistically significant differences in progression between patients using 80 mg of zinc versus the group using 25 mg of zinc and found that there were none; in other words, a patient benefiting from the AREDS formulation would get the same benefit (lower risk to AMD progression) if that formulation contained only 25 mg of zinc. Then why should a patient take 80 mg of zinc when he could gain the same benefit from 25 mg of zinc? High doses of zinc have been associated with a significant increase in genitourinary problems, some of which have required hospitalizations.[17] High doses of zinc can cause GI upset and have been implicated in Alzheimer's disease.[18] High levels can inter-

fere with the absorption of some antibiotics[19] and may decrease high-density lipoproteins, the so-called "good cholesterol."[20] The NEI has not, as yet, suggested making any modifications in the AREDS formulation containing 80 mg of zinc. The clinical director of the NEI has publicly acknowledged that he and others have a patent on the formulation containing 80 mg of zinc but not on 25 mg of zinc. So, what about the intermediate AMD patient whose genetic profile suggests a recommendation free of zinc but the patient is taking the AREDS formulation with 80 mg of zinc? Should that patient remain on that formulation? Other formulations are available (see Table 2).

Lutein and zeaxanthin

In AREDS2, in the overall group, no benefit was found in patients who took lutein and zeaxanthin in reducing the risk of progressing to advanced AMD. However, two subgroups were later identified which did benefit—those who took lutein and zeaxanthin with no beta carotene (18 percent reduced risk of progression) and those who had low amounts of lutein and zeaxanthin in their diets (median 0.7 mg per day). That sub-group experienced a 26 percent risk reduction.[14]

Does genetic testing yet play a role in determining who will respond to lutein and zeaxanthin supplementation? Yonova-Doing et al[21] recently demonstrated an association between SNPs in SCARB1, RPE65, ABCA1, and FADS1 and response to carotenoid supplementation (MPOD response) and ELOV12 and changes in lutein concentration. These genes code for proteins affecting carotenoid transport and fatty acid metabolism, and hence SNPs or variants in these genes might determine whether or not patients would benefit from carotenoid supplementation. These genes are currently not included in the commercially available tests but may be in the future.

Conclusion

In 2012, a task force from the American Academy of Ophthalmology issued a recommendation[22] to avoid "routine" genetic testing for genetically complex disorders like AMD until specific treatments are shown in published clinical trials to be of benefit. This could take years. Practitioners should decide whether their patients would benefit now from genetic testing. However, most experts agree on one thing: genetic testing for the prognosis and treatment of AMD will play a role in the management of the AMD patient. The question is when. Will it be now for some and in the future, for others?●

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TABLE 2 **Manufacturers of AREDS-based eye vitamins with and without zinc and with low-dose zinc**

Manufacturer	Contact Information/Websites
Doctor's Advantage	info@doctorsadvantage.net
Doctors Optimal Formula	www.doctorsoptimalformula.com
Fortifeye Vitamins	www.fortifeye.com
iRx	1-855-479-3937
Macular Health	www.macularhealth.com
MacuHealth	www.macuhealth.com
Pure Encapsulations	www.PureEncapsulations.com
VisiVite Eye Formulations	1-800-427-7660 Ext 2
Viteyes	1-800-890-EYES
ZeaVision	www.EyePromise.com

Dr. Bass has a commercial relationship with ArcticDx, Inc.
sbass@sunyopt.edu

How 'shopable' is your dispensary?

3 tips for creating a more enticing, more profitable optical shop

By Barbara L. Wright, CID

Competition for eyewear dollars is more intense than ever—online frame sales are increasing, insurance reimbursements are shrinking, and discounters seem to be everywhere. How to combat these trends and win more sales in the dispensary? Increase the "shopability" of the optical shop and increase the capture rate, up the average sale, and gain higher optical profits.

BARBARA L. WRIGHT, CID is an eyecare office design specialist who helps ECPs maximize profits and productivity.

Score your practice for the following three key "shopable" factors on a scale of 1 to 10, with 1 being poor, 5 being average, and 10 being outstanding. Better yet, survey patients on these factors before they leave the practice. Find out what they really think of your optical dispensary. Improve the factors with below-average scores and optical revenue and profits will improve, too.

1 THE 'WOW' FACTOR: THE OVERALL APPEARANCE OF THE DISPENSARY HAS HIGH VISUAL APPEAL.

Does your optical dispensary "wow" patients the moment they see it? Does it look clean, up to date, and uncluttered? Are frames and other products the focal point? Does the environment send a message to patients that their eyewear needs and desires will be satisfied here?

If it's been more than seven years since your optical dispensary opened or has undergone any remodeling, the score is likely to be less than 5.

> **Does your dispensary "wow" patients the moment they see it? Does it look clean, up to date, and uncluttered?**
>
> — Barbara Wright

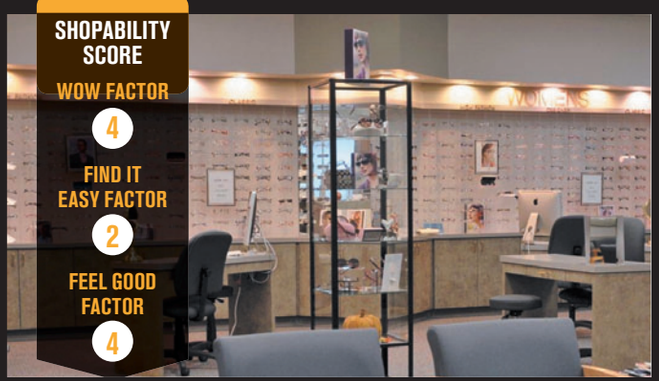
One quick fix that can help is to improve lighting. Major advances in lighting technology over the past few years now make it possible to replace the lamps in older track lights with bright, energy-efficient LED lamps.

A dispensary that looks old, dingy, and tired is a real turn-off for patients you most want to keep.

Patients who want fashionable, high-quality frames and are willing to pay a premium for the right style will walk if they are not convinced your optical dispensary is worth a look.

The patients who do stay will expect bargain prices and deals, because the atmosphere does nothing to persuade them otherwise.

See **Dispensary** on page 29



Shopability is the ease with which an optical dispensary arouses patients' interest in the merchandise displayed and converts that interest into sales. The high and low scores for two different optical dispensaries illustrate their appeal across all three shopable factors.
(Images courtesy of Barbara L. Wright, CID)

TAKE-HOME MESSAGE In order for your optical dispensary to maximize profits and compete in today's market, it needs to be shopable for your patients. It needs to have high visual appeal with a "wow" factor, be well-organized, and make shopping an enjoyable and convenient experience for the patient. Keep your products feeling fresh and new.

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Reduce photosensitive epilepsy seizures with BPI® Deep Blue Zee™. This dark blue tint was found to reduce the number of seizures dramatically in about 95% of the patients using it (see a study in Epilepsia, 2006 Mar;47(3):529-33: "Suppressive efficacy by a commercially available blue lens on PPR in 610 photosensitive epilepsy patients." by G. Capovilla, et al).

Red / Green color blindness. BPI® Deep Red Monochrome 600™ has long been used to allow those afflicted with red/green color blindness to differentiate between red and green.

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May help patients with dyslexia, BPI® Mu™ needs to be applied to tintable prescription lenses. It is lime green in color.

Tremors, BPI® IR Blue™ (see the article "Transient and sustained processing: effects of varying luminance and wavelength on reading comprehension." By **Harold Solan**, et al, in the Journal of the American Optometric Association,1997, 68(8): 503-510).

Parkinson's Disease Tremors, BPI® Electric Blue™ has been beneficial to those suffering from tremors such as those sometimes associated with Parkinson's disease.

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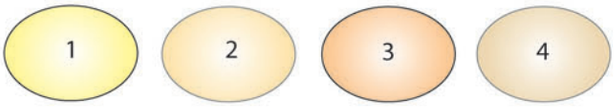

Autism, Donna Williams, author of "Autism: an inside out approach", has observed that some tinted lenses have helped her and others afflicted with Autism. Among those tints that she mentions are **BPI® Sahara™** (brownish tan), **BPI® IR Blue™** (blue/black), **BPI® Signal Green™** (a pure green) and **BPI® Signal Blue™** (a pure blue).

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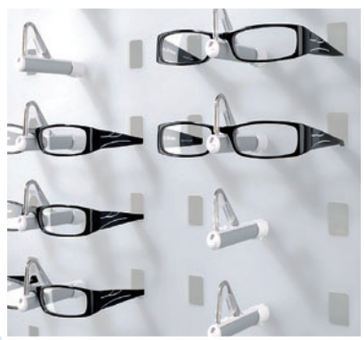
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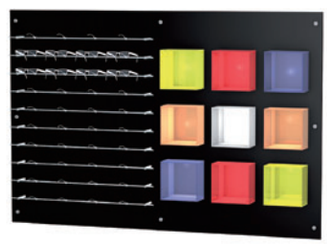
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Dispensary

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Stand out from the crowd

With all choices people have today, an optical retailer cannot succeed by being just average. The look and feel of the retail area has to have a magnetic, intriguing quality to it that makes patients excited to explore the frame selection and confident that the optical dispensary has something that's "just right" for them.

If the optical dispensary as been let go for too long and the office is hopelessly outdated, then nothing short of a major remodel will reverse a lackluster sales trend. If a majority of patients do stay and shop, then the optical dispensary is on the right track. If patients spontaneously start shopping for frames rather than sit down in the waiting area, then the optical dispensary is better than average in visual appeal.

2 THE FIND-IT-EASY FACTOR: PRODUCTS ARE ORGANIZED BY EASY-TO-UNDERSTAND CATEGORIES AND DISPLAYED IN WAYS THAT COMMUNICATE THEIR VALUE.

This is where shopability fails miserably in many practices. One glance at the optical dispensary must convince patients they can find the price, the fashion, and the quality they want.

Too often, frames are simply hung on multiple frame boards in a boring sea of sameness, making it impossible for the patient to distinguish one brand from another or one price category from another. Why is this frame $100 and the one right next to it $250? The frames all end up looking the same, and patients become overwhelmed by too many choices.

These same patients would be willing to spend more for a brand they know, but if that brand is not presented as a collection and identified with a show card or logo plaque, they never notice it and do not buy it.

Trying to compete on price is a losing strategy for most practices. A better strategy is to offer superior customer service with a selection of good to high-quality frame brands different from the competition—brands that cannot be bought online.

Get organized

In a well-designed optical dispensary, each price category is displayed in a different way to communicate price, quality level, and value of the product. Typically, frames in a practice will be 80 percent middle priced, 10 percent will be low end, and 10 percent high end.

No-frills frame boards and acrylic frame rods are good for low-end frames. Middle-priced frames can be displayed on a combination of frame boards for non-branded and lesser-known brands, plus glass shelves for better-known brands, where frames are grouped together as a collection.

High-end frames must be displayed like jewelry in brightly lit showcases, always clearly identified by brand or designer name. Patients perceive the value and quality of frames by how they are presented—the higher the price, the more open space they need around them to emphasize their exclusivity and high quality. Shelves offer much-needed flexibility for displaying brands and grouping different numbers of frames together. Frames displayed on shelves require a variety of risers and frame holders to bring them up off the shelf and present them at an attractive angle. Displays should be kept as simple as possible with a limited number of display props allowed.

> **Patients perceive the value and quality of the frames by how they are presented—the higher the price, the more open space they need around them to emphasize their high quality.**
>
> — Barbara Wright

3 THE FEEL-GOOD FACTOR: THE SHOPPING EXPERIENCE IS CONVENIENT AND ENJOYABLE.

The final key measure of shopability is how good patients feel from start to finish. Convenience is part of the feel-good quality of any shopping experience, but it is patients' definition of convenience that counts. Convenience could mean easy parking and easy payment options or, for time-crunched executives and working mothers, it could mean adhering to an on-time schedule with minimal waiting time. Making patients feel good during the time they spend in the optical dispensary requires an investment of both time and money.

Consider how to create a multilayered experience that involves all of the senses:

- ***Vision:*** The colors, materials, and lighting of the interior make a huge impact on how good people feel in the space. Work with a professional optical designer to create the right atmosphere that sends the right message to patients.
- ***Hearing:*** Background music or the soothing sound of flowing water can add to the mood of the optical dispensary and also help to disguise conversations. Employees who speak clearly in patients' native tongue and are able to explain complex health or technical issues in simple terms can add immeasurably to patients' satisfaction with their shopping experience.
- ***Smell:*** Experiment with various ways to add a subtle scent to the retail area. Some practices test different scents and settle on one to be their signature scent. Tie a good experience to a certain scent and it triggers the memory of that good experience when the person encounters that scent again. Bakeries are not the only businesses that can use scent to influence customer behavior positively.
- ***Taste:*** Offer refreshments to make patients feel welcome and pampered—cold water, hot beverages, mints, candies, for example.
- ***Touch:*** Everything the patient touches during an office visit—door knobs, reception desk/countertop, pens, clipboards, chairs, tables, sinks, eyewear, cases, accessory products, take-home bags—communicates a message about the quality of services and products. For a "Medicaid-to-millionaires" practice that serves a wide range of income groups, it is essential to use finish materials that are good-looking and practical, but not ostentatious or intimidating to lower-income groups. For a practice that targets strictly middle-to-upper-income patients, it is essential to use higher-end materials that convey the impression of high quality and high fashion that those patients are expecting. ●

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Devin Sasser President, American Optometric Student Association, and fourth-year student at University of Missouri–St. Louis, College of Optometry

Student leadership, napping, it didn't stay in Vegas

What's the hardest part about being in optometry school? It's a balancing act for me. (AOSA presidency) is a very demanding position. Being a student and also being on top of your game where you go to these meetings and you're basically the face of the students—that can be challenging. Just finding that balance has always been hard because I'm more of a go-getter. I want to say "yes" to everything. Yes, I'll speak for this, or yes, I'll do this. You have to have discipline, and I've developed that more this past year.

What's one thing your colleagues don't know about you? I used to be a pseudo-singer, just friendly little gigs here and there. I never told anyone that.

How did you get involved with student leadership? It started in college. I fell in love with the fact that you can make changes as a student. When I was in college, there were things that students were always, you know, like, "We need to change this, we don't like this!" Well, I'm like, "Somebody oughta step up and do the job and actually try to get some of these things changed." I became a student government association president in my senior year. When I went to optometry school, the first thing I did was look for an opportunity to continue developing that leadership ability and those skills. The first thing I came into was the AOSA. There are so many things that this organization does for students that it's impossible not to want to be involved. And I somehow became president.

Some ODs say today's high cost of education would keep them out of optometry. How does that make you feel?

I empathize with that. I have felt the brunt of having to take out student loans from undergrad all the way to now. I can honestly say, if I could start over again, I would still go to optometry school. I could not see my life without having gone to optometry school. I love it that much. As long as you have that passion and knowing that this is what you want to do, this is how you want to use your abilities to help people, then the cost will work itself out in…15 or 20 years. [Laughs]

How do you see your career path? I want to do a residency in ocular disease at a VA or a referral center. After that, I want to work in a hospital setting for four to five years post residency just to get the experience and see a lot of interesting cases so when I go out to practice, I'm able to handle certain types of ocular diseases without feeling less confident.

What do you do in your spare time to unwind? I'm a huge gym-rat. I go to the gym about six days a week, mostly weight training, but I also do some cardio. I'm also a heavy and chronic napper—I nap at the drop of a dime. I know it's not a real hobby but I love do it, it's one of my favorite things in the world.

What should students know, but no one tells them? Students going straight into a practice as an associate should be mindful of how that works with a doctor who's already established. A lot of students go in with the expectation they will be made a partner within the first few years. You have to be mindful of inner workings, and I wish that we as students received more of that. A lot of organizations are trying to do a better job of telling us this is what you need to do to prepare. Some schools have an excellent business program for their students, and some don't. Universalizing that type of education would be a good idea for everyone.

What's the craziest thing you've ever done? I was in Vegas—this isn't going end well. [Laughs] The Stratosphere is a really high building with thrill rides on the top. One shoots you down toward the ground but stops you right on the edge. There's no net. I kept saying to myself, "Why am I doing this?" I think it was the most thrill-seeking thing I've been able to do so far. Bungee jumping's next…probably.

—Vernon Trollinger

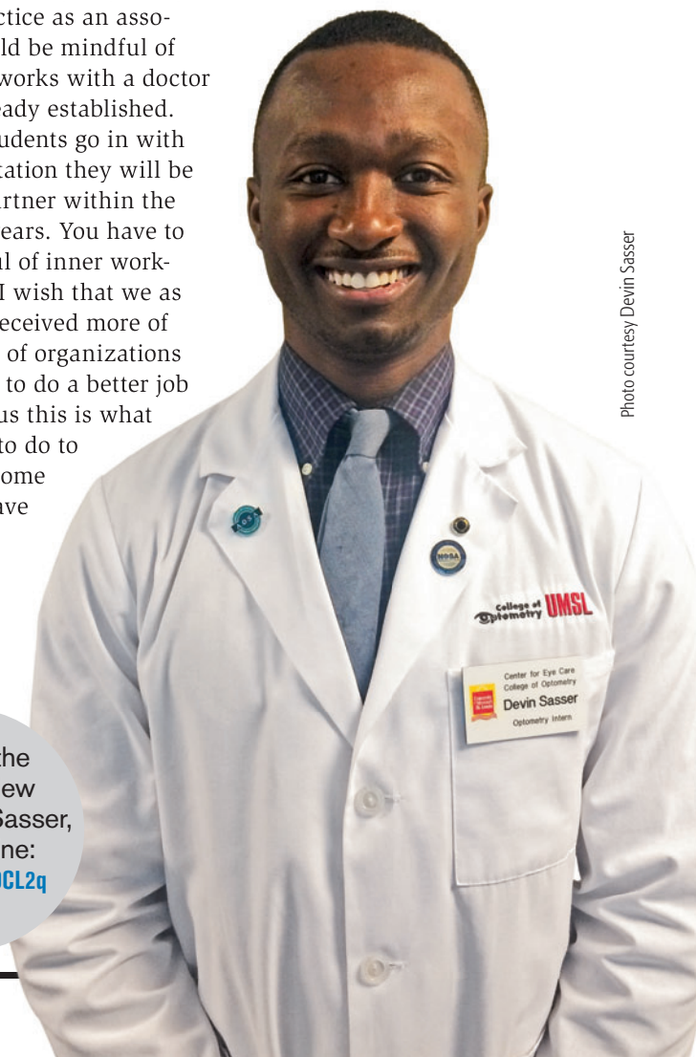

Photo courtesy Devin Sasser

To hear the full interview with Devin Sasser, listen online: http://ow.ly/DCL2q

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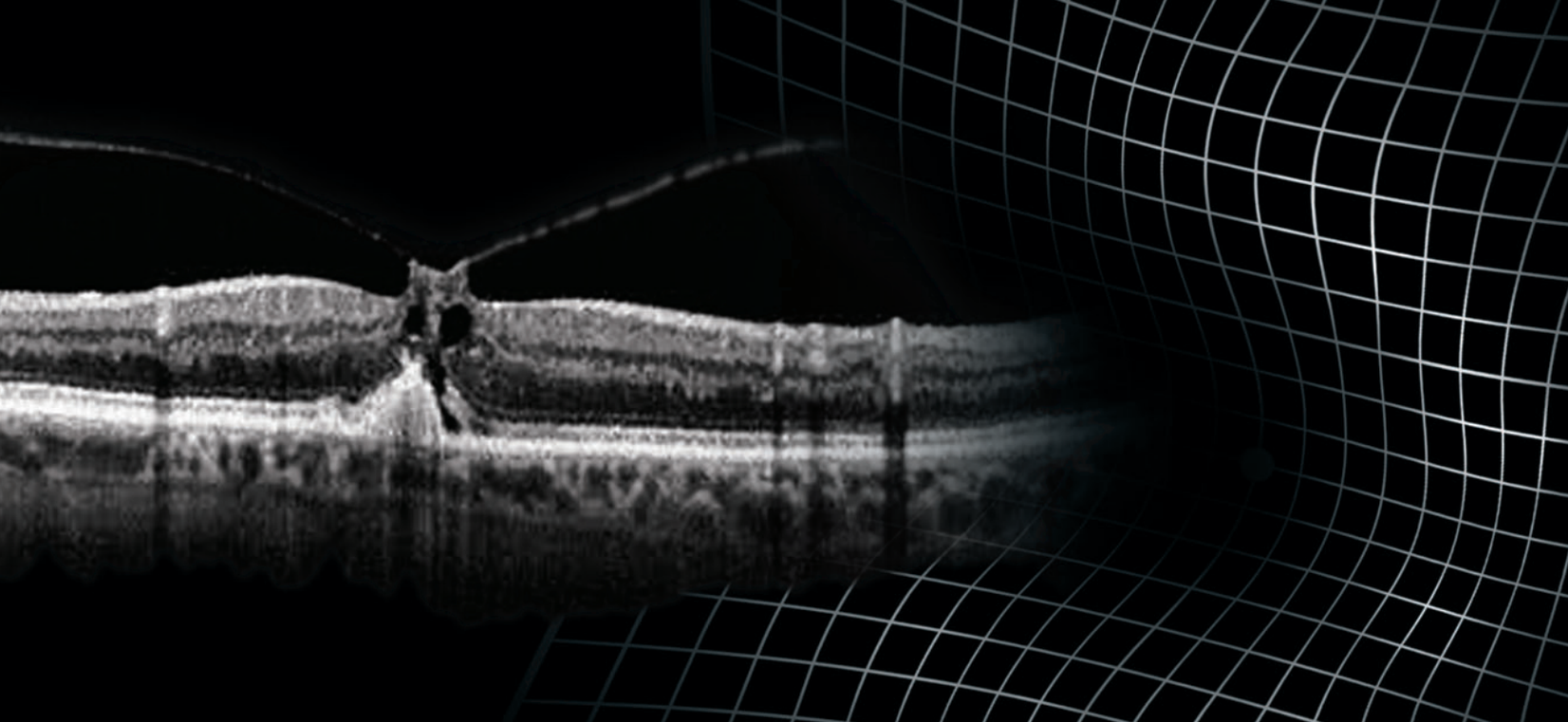

SYMPTOMATIC VITREOMACULAR ADHESION (VMA)

SYMPTOMATIC VMA MAY LEAD TO VISUAL IMPAIRMENT FOR YOUR PATIENTS[1-3]

IDENTIFY | Recognize metamorphopsia as a key sign of symptomatic VMA and utilize OCT scans to confirm vitreomacular traction.

REFER | Because symptomatic VMA is a progressive condition that may lead to a loss of vision, your partnering retina specialist can determine if treatment is necessary.[1-3]

THE STEPS YOU TAKE TODAY MAY MAKE A DIFFERENCE FOR YOUR PATIENTS TOMORROW

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