Welcome to the February 2013 issue of *Optometry Times* magazine
This digital edition is brought to you by Advanstar Communications, Inc.

Below you’ll find an alphabetical index of the advertisers in this issue. If you’d like more information about the advertiser, you can click on the name or the page number to see their ad.

<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bausch + Lomb</td>
<td>CV3, 36</td>
</tr>
<tr>
<td>Allergan Inc</td>
<td>9, 13, 15</td>
</tr>
<tr>
<td>ICHE</td>
<td>20-21, 22-23</td>
</tr>
<tr>
<td>Marco</td>
<td>18-19</td>
</tr>
<tr>
<td>TTI Medical</td>
<td>25</td>
</tr>
<tr>
<td>ThromboGenics</td>
<td>CV4</td>
</tr>
</tbody>
</table>
Retinal blood vessels can be red flag for glaucoma

Changes in blood vessels appear to be warning that a person is at high risk, study shows

By Paul Matheis
Managing Editor, Content Channel Manager

A new study found that certain changes in retinal blood vessels can be an early warning that a person is at increased risk for glaucoma.

Using diagnostic photos and other data from the Blue Mountains Eye Study, researchers showed that patients who had abnormally narrow retinal arteries when the study began were also those who were most likely to have glaucoma at its 10-year endpoint. If confirmed by future research, this finding could give eyecare professionals a new way to identify and treat individuals who are most vulnerable to vision loss from glaucoma. The study was recently published by Ophthalmology, the journal of the American Academy of Ophthalmology.

The findings of the new study, led by Paul Mitchell, MD, PhD, of the Centre for Vision Research, University of Sydney, Australia, support the concept that abnormal narrowing of retinal blood vessels is an important factor in the earliest stages of open-angle glaucoma (OAG). Tracking nearly 2,500 participants, the study found that the OAG risk at the 10-year mark was about four times higher in patients whose retinal arteries had been narrowest when the study began.

Certain ODs welcome to participate in new ASCRS integrated program

By Gretchny M. Bailey, NCLC, FAAO
Editor in Chief, Content Channel Director

The American Society of Cataract and Refractive Surgeons (ASCRS) recently announced a new program at the organization’s upcoming 2013 annual meeting to which certain categories of optometrists are welcome.

According to a press release by ASCRS, the organization will offer a non-surgical educational program to advance an integrated eye care model in which optometrists and ophthalmologists work together. This model, called the Integrated Ophthalmic Managed Eyecare Delivery Model (IOMED) was created by the ASCRS IOMED task force, which included three ophthalmologists and five optometrists.

The new educational track will be held at ASCRS’s upcoming annual meeting in April, and optometrists who register for the track must certify that they meet one of the following categories:

- Employed by an ophthalmologist
- Employed by a medical school (not a college of optometry)
- Employed by a corporate center (such as TLC or Omni)
- Employed by industry/manufacturer
- Employed by the military
- Employed by a corporate center (such as TLC or Omni)
- Employed by the military
- Employed by industry/manufacturer
- Employed by a corporate center (such as TLC or Omni)
- Employed by the military
- Employed by industry/manufacturer

Note that as of 3 years ago, these categories of optometrists were permitted to attend the ASCRS annual meeting through the organization’s administrators association, American Society of Ophthalmic Administrators (AOSA).

Those ODs attending were required to attest that they would not use what they learned beyond the scope of practice in optometry.

Special Section
Allergies
Starts on page 24
Advertisement not available for this issue of the digital edition
Optometry Times is an optometry-driven publication that disseminates news and information of a clinical, socioeconomic, and political nature in a timely and accurate manner for members of the optometric community.

In partnership with our readers, we will achieve mutual success by:

- 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.
Warning
Continued from page 1

Integrated eyecare
Continued from page 1

Integrated eyecare

Integrated eyecare

Continued from page 1

Optometrists who attend this year’s track will earn continuing education (CE) credits, unlike in years past. “In the past, ASCRS would allow ODs to attend but not offer CE credits,” says Marcie J. Brown, OD, FAAO, of Minneapolis and member of the IOMED task force. “The other difference is that optometrists have been actively invited in, rather than simply ‘allowed.’ I feel the task force had a great deal to do with this.”

ASCRS’s initiative to create an integrated education track is about 5 years in the making, according to IOMED task force chairperson Stephen S. Lane, MD, of St. Paul, MN. “There’s going to be an explosion of patients who will need care,” he says. “With the cut-back in ophthalmology residency positions, from a manpower standpoint ophthalmologists alone or optometrists alone cannot possibly see all of the patients who will need care in the next decade or two.”

Dr. Lane explained that a better model is needed in order to effectively and efficiently see patients. “There’s an opportunity to have patients seen with a seamless continuity of care between optometry and ophthalmology—care can be more effective and efficient if done within an integrated model,” he says.

Dr. Lane does not refer to co-management, the traditional way that optometrists and ophthalmologists have shared patient care. In an integrated eyecare model, he says, MD and OD share the same ideals and principles of practice, and sometimes even the same building. “Patients stay within a single care model that’s not splintered,” he says, “and this allows for a friendly working relationship between optometrist and ophthalmologist rather than some of the antagonistic ways that have occurred in the past.”

However, some optometrists don’t see the initiative as integrated.

Says Birmingham, AL, private-practice optometrist Jack Schaeffer: “They are saying by their actions that this is a business decision to employ ODs to help their practices, not to educate ODs to help patients. Educa-

 tion is the key. It should never be restricted.”

Dr. Lane acknowledges that independent optometrists were not included because they aren’t part of an integrated care model. “The independent non-integrated OD, like the independent non-integrated ophthalmologist, is, in my opinion, a breed that with the expansion in population growth will have an ever increasingly difficult time caring for the number of patients who need to be seen,” he says.

Political concerns are another reason that independent ODs were not included. In the past, optometrists in Kentucky and Oklahoma used education they received at ophthalmology meetings as a jumping-off point to expand scope of practice.

Says Dr. Lane: “ASCRS does not want to provide an opportunity to have that fight so it can be used against our members. It’s unfortunate because I believe the vast majority of optometrists have no interest in doing surgery.”

Dr. Schaeffer claims that ASCRS members are looking to change a model that works perfectly well. “ODs are integrated already with MDs,” he says. “Our practice and many others work with retina, ocular plastics, pediatric, and general ophthalmologists. Is ASCRS saying these relationships deliver a lower level of care? Will all ASCRS practices incorporate this new model?”

The majority of ASCRS members employ ODs, according to Dr. Lane, and it follows to provide education to those employees. “That doesn’t include every optometrist in the United States,” says Dr. Lane. “We welcome our members who want to educate all members of their staff, including administrators, technicians, and yes, optometrists. This isn’t all that different from having our administrators attend our meeting. This concept may progress to where there may potentially be an AOSA-like group of optometrists who have an independent meeting inside our meeting.”

Dr. Brown also hopes that this year’s educational track is a small start of larger change. “I don’t disagree with the concern and anger of private practice optometrists,” she says. “But I don’t agree with the fact that this anger should exclude all ODs from being involved in an educational forum. The more we learn, the more we can share. I am looking at this as baby steps to integrate all of optometry with all of ophthalmology. I think the ODs who see this as an insult are a very small percentage. Many ODs who want to attend a meeting like ASCRS may not be in private practice.”

IOMED task force members are waiting to see how this year’s track is received before making more changes. “I personally hope we can allow more optometrists to attend in the future,” says Dr. Lane. “We need to be patient and have an open mind. We have to satisfy the needs of our membership, and this is a wonderful first step.”

Reference

Dr. Brown also hopes that this year’s educational track is a small start of larger change. “I don’t disagree with the concern and anger of private practice optometrists,” she says. “But I don’t agree with the fact that this anger should exclude all ODs from being involved in an educational forum. The more we learn, the more we can share. I am looking at this as baby steps to integrate all of optometry with all of ophthalmology. I think the ODs who see this as an insult are a very small percentage. Many ODs who want to attend a meeting like ASCRS may not be in private practice.”

IOMED task force members are waiting to see how this year’s track is received before making more changes. “I personally hope we can allow more optometrists to attend in the future,” says Dr. Lane. “We need to be patient and have an open mind. We have to satisfy the needs of our membership, and this is a wonderful first step.”

I just got my new iPad today and downloaded Hoya Vision Consultant HVC Viewer. It demonstrates lens properties like PALs, AR, photochromic, polarized, etc., using the iPad’s camera. You can enter the patient’s Rx and show him the distortion of a regular PAL compared to premium or personalized. You can actually see the different distortion as you point the camera at different things and change modes. You can demonstrate the same way with AR and other options. It is very cool.

—Annette Brabham, OD
Valparaiso, FL
The sky is falling

By Ernest L. Bowling, OD, MS, FAAO
Chief Optometric Editor

In my years in this profession, I’ve seen a lot of changes—besides those to my hairline and waistline. I’ve seen us go from a drugless profession to one in which we can care for patients using all forms of topical and oral therapeutics. I’ve seen us grow from a refract-and-refer profession to one in which we truly care for all of our patients’ visual and ocular health needs. These growths did not come easily but were necessary to attain the desired goal: to be better able to care for our patients.

During that time, I’ve also seen a lot of negativity. There was a time when I thought corporate optometry was The Devil. Now I see many of my former students not only surviving, but thriving, in that environment. I’ve lived through battles with ophthalmology, shrinking reimbursements, the explosion of vision care plans, the proliferation of new optometry schools, and the development of board certification programs. With the announcement of each new development, there are those members of our profession who wring their hands and predict the demise of optometry. I acknowledge that, at times, we seem to be our own worst enemies.

Yet here we are. Optometry is still rocking along. Why is that?

I like to think it’s because no matter the outside noise or internal squabbles, we are particularly good at one thing above all: taking care of our patients. Optometrists, on average, spend more time per patient in case history and consultation than other eyecare providers. Optometrists have historically garnered patient loyalty by thoroughly exploring our patients’ preferences, needs, wants, and desires. Our attention to patient care has been quantified: a 2010 Press Ganey survey of 3.1 million patients found optometry to be in the top 5 specialties for patient satisfaction.

In these times, when there are a lot of outside forces and internal struggles tearing at our profession, I think it’s important we always remember what makes us great: caring for the patients who grace our chair.

I learned a lot from the wise old optometrist whose practice I acquired more than 20 years ago, but nothing more important than this: “Just take care of your patients, Ernie, and they’ll take care of you.” When we get too focused, crunching practice benchmarks such as cost per OD-hour, number of exams per OD-hour, and revenue generated per OD-hour, all in the face of ever-declining reimbursements, I think it’s important that we always remember why we do what we do: the patients come first.

The truly successful optometrists in these times—and in the future—will be those who remember to always care for the needs of his or her patients first and foremost. That is what has made us great and what will see us through the times ahead.

References


Small gestures can be meaningful

By Gretchny M. Bailey, NCLC, FAAO
Editor in Chief/Content Channel Director

Like thousands of others during the month of January, I was hit by the flu.

I’ve spent the past 6 days mostly in a fog. From coughs that make me feel lightheaded to extreme fatigue, I have run the gamut of symptoms. Parked on the couch with me has been my cat Merlin, who is always happy when someone spends the day lounging with him.

One morning a few days ago I awoke to find a fresh glass of water and a plate of cheese and crackers. It was the handiwork of my 16-year-old daughter.

Her small gesture meant a lot to me.

It meant that even in the midst of age-appropriate teenage selfishness, she knew her mom was sick and offered a small something to help me feel better. Although cheese and crackers were not what I wanted in that moment, that didn’t matter. It was the gesture and what it signified that mattered.

Unfortunately, her gesture of kindness did not extend itself to laundry...

Just like my plate of cheese and crackers, small gestures can pay big dividends. I’m sure you can think of some that have happened to you.

Another small gesture is the one made by the Association of Cataract and Refractive Surgeons (ASCRS) membership via its Integrated Ophthalmic Managed Eyecare Delivery Model (IOMED) task force. (See the cover story “Certain ODs welcome to new ASCRS integrated program” for more.)

ASCRS will be holding an educational program at its 2013 annual meeting in April. Only certain categories of optometrists, notably not including private practice ODs, will be able to register.

Given the animosity between optometry and ophthalmology in the distant and sometimes not-so-distant past, optometrists could view such a gesture as a slap in the face. Only ODs employed by ophthalmologists allowed to rub shoulders with ophthalmologists at an integrated meeting? How can this be taken as anything but an insult?

Or, viewing the same situation through another lens, optometrists could take such a gesture as a tentative small step on the path to reconciliation and collaboration.

Wouldn’t optometrists prefer that all ODs be permitted to learn alongside their ophthalmologist colleagues? Of course. Do some ophthalmologists view optometrists not as colleagues but only as a means to an end? Absolutely.

Let’s not be so hasty to win the war that small victories can’t be savored.

Just like cheese and crackers is a small yet meaningful gesture, so is the opportunity for certain optometrists to attend ASCRS’s integrated educational track.

Sometimes small is simply that, small. Or sometimes it’s the start of something bigger.
Advertisement not available for this issue of the digital edition
Look for more than itching to diagnose allergies

I have often read that the number one symptom for allergic conjunctivitis is itch. In my experience, itch is very important, but it’s not the only sign. We are taught to rely heavily on case history for diagnosis.

The reason is simple: Case history is a very powerful tool. But just relying on the itch symptom leaves out a host of other symptoms that can characterize ocular allergy.

In my clinical practice, I like to use questionnaires. The questionnaire I rely on most is called the Total Ocular Symptom Score (TOSS). It’s very simple and takes seconds to administer. Using TOSS, we ask questions about four basic ocular allergy symptoms—itch, redness, tearing, and swelling—and score on a scale (see Figure 1).

The nice thing about the questionnaire is it gives us a numerical score for comparison. As the patient comes back for follow-up, we can tell whether or not he or she is improving with treatment. It’s not unusual for the patient to think he or she is not getting better, but with the TOSS score as a marker, we can show the patient that he or she is improving. This helps increase adherence to any treatment regimen.

The TOSS is simple enough for staff to administer and score. It also gives me a quick look at how the patient is doing in terms of allergy.

Because there is a 40% to 60% crossover with dry eye, we also make TOSS part of every dry eye work-up. I like to cross-reference the TOSS score with the Ocular Surface Disease Index (OSDI) score. For example, if the TOSS score is 75 and the OSDI score is 18, we know that the patient is exhibiting more allergy than dry eye. If the TOSS is 20 and OSDI is 60, the opposite is true. From this understanding, we can tailor our treatments.

Double coverage

Sometimes the TOSS score and the OSDI score are both high. It is not uncommon for me to prescribe both a dry eye medication along with an allergy drop to treat both conditions.

What is interesting, though, is that both the TOSS and OSDI look at completely different domains. They ask very different questions. The domains for OSDI are vision-related: function, ocular symptoms, and environmental triggers. However, there is correlation between the questionnaires.

In a recent ARVO abstract, my co-authors and I found the correlation between the OSDI and TOSS to be high positive relationship (Pearson = 0.801, p = 0.000). Out of the four TOSS domains, the highest symptom that correlated with OSDI was itch (Pearson = 0.700), closely followed by redness (Pearson = 0.685).

So what does this mean? A patient suffering from both ocular allergy and dry eye will most likely have itch and redness as symptoms, not just itch alone.

By Milton M. Hom, OD, FAAO, FACAAI (Sc)

Dr. Hom practices in Azusa, CA. He is a Scientific Fellow of the American College of Asthma, Allergy, and Immunology. Contact Dr. Hom at eyemage@aaahawk.com.

Reference


Read more about allergies on page 24
**Toric IOLs enable comanagement opportunities**

ODs working with surgeons help make optimal vision a reality for patients

When we talk about premium intraocular lens (IOL) implants, our thoughts go straight to those cool presbyopic correcting lenses. However, another lens can provide as much refractive liberation and overall improved visual quality—the toric IOL.

Historically, toric IOLs were limited to a small subset of the patient population. Patients choosing the toric IOL paid a premium price. Because the lens was not custom lathed, the parameters were restricted and provided only a small amount of correction. Ironically, although there was a reduction in the magnitude of correction, most patients were still left with residual astigmatism, and therefore left feeling underwhelmed.

**Options for correction**

That was then. This is now. The toric IOL is a formidable option for our cataract astigmatic patient. Today’s toric lens provides greater range, enhanced efficacy, more precise visual recovery for the cataract patient, and reduced potential of complications in a single surgery.

The femtosecond laser has changed the landscape for patients by providing in-vivo astigmatic laser correction for astigmatism.

Because there are limitations due to the laser acting on the corneal surface, the magnitude of the astigmatism, and—even more important—the patient’s desire to have laser cataract surgery need to be factored. The same procedure can be accomplished with a blade—astigmatic keratometry—yet the limitations are similar to those of laser. Lastly, patients could opt to correct the astigmatism with a corneal refractive procedure, either LASIK or an Epi-LASIK, following lens implantation. Although this can lead to a more precise correction, the added cost, longer healing time, and the relative candidacy for corneal refractive surgery may be deterrents.

There are currently only two toric IOL options, the Elastic (STAAR Surgical) and AcrySof IQ (Alcon). Although both lens options provide some form of toric correction, there are differences between the lenses that some surgeons feel may benefit specific patients.

**Breakthrough technology**

STAAR was the first company to bring toric technology to market in 1998. Its first lens was 10.5 mm in length and had small fenestrations on the haptics. The lens tended to rotate in the bag, thereby mitigating the toric correction. Theoretical calculations show that approximately one-third of the correction is lost if the lens is rotated 10 degrees off axis. Two-thirds of the effect is lost with 20 degrees of rotation.

The STaar lens is a complement for patients who previously had corneal refractive surgery or corneal degenations, such as keratoconus. By making a significant reduction in the cylinder power, an AK or LASIK could still be accomplished to provide uncorrected best vision.

**Complement to corneal procedures**

The toric IOL is an exceptional opportunity for cataract patients with corneal astigmatism. Moreover, the toric lens is a complement for patients who previously had corneal refractive surgery or corneal degenerations, such as keratoconus. By making a significant reduction in the cylinder power, an AK or LASIK could still be accomplished to provide uncorrected best vision.

Post-operative treatment of patients with toric IOLs is consistent with care for patients who have a standard lens, except for the potential rotation of the lens. Although lens rotation is unlikely, circumstances exist that may cause the lens to rotate. At the 1-week to 1-month follow-up visit, it is important to ensure that best corrected acuity is achievable.

Because varying degrees of misalignment can decrease visual acuity, the sooner the lens is realigned, the patient will have a better chance to regain vision. Therefore, it is important to know the axis the surgeon has aligned the lens in the bag because this may vary from the patient’s keratometric astigmatism axis. Dilation will be necessary to look for the lens markings in that meridian to properly assess the orientation.

Cataract surgery is an opportunity for patients to achieve excellent uncorrected visual acuity. Patients with corneal astigmatism should not be left on the sidelines. The toric IOL can help make optimal vision a reality in a safe and efficacious manner.

---

**By Marc R. Bloomenstein, OD, FAAO**

Dr. Bloomenstein is director of optometric services at Schwartz Laser Eye Center in Scottsdale, AZ. E-mail him at mbloomenstein@gmail.com.
Advertisement not available for this issue of the digital edition
Lead by example

Use credibility to build and sustain CL compliance among young adult patients

Our first responsibility is to protect the health and safety of our patients. This is even more important when we are dealing with children and young adults.

We know that contact lens (CL) complication rates are higher for this demographic group. We also know that CL non-compliance problems are one of the main causes of these complications. It is our duty to do whatever we can to prevent these problems.

Some ways that our patients are non-compliant include improper CL replacement schedules, improper solution techniques, changing prescribed wearing schedules, sharing lenses, and sleeping in lenses.

No teen or young adult should be in an extended-wear (EW) program. Let me repeat that. No teen or young adult should be in an extended-wear program. The only acceptable exception should be orthokeratology or myopia control lenses.

Some practitioners may say, “Let’s put the patient in an EW lens just in case he sleeps in them.” This attitude promotes non-compliance. I have heard other practitioners say, “We need to build in for non-compliance.” By saying this, we are again accepting that we cannot change the patient’s behavior. Why do non-compliance problems exist?

Some patients cannot and will not subscribe to your rules about CL wear. You cannot be afraid to fire these patients and parents. (Choose one scenario from the options below.) By standing idly while non-compliance becomes the norm, you run the risk of increasing the rate of complications.

Additional protocols to implement:

1. Prescribe a comprehensive age-specific CL program
   - Initial comprehensive CL evaluation examination
   - Age-specific follow-up visit
     - Initial visit
     - Week 1-2
     - Every 6 months
   - Age-specific CL instructional session
2. Educate and re-educate the patient and parents at each visit
3. Develop a patient control system that monitors compliance
   - Wearing schedule
     - EW protocol does not exist
   - Solution prescription:
     - No substitutes
     - Recall system with no auto refills without compliance
   - Some patients cannot and will not subscribe to your rules about CL wear. You cannot be afraid to fire these patients and parents. (Choose one scenario from the options below.) By standing idly while non-compliance becomes the norm, you run the risk of increasing the rate of complications.

4. Instruct the patient to bring in their lenses, solutions, cases, drops, and any other item related to lens care

Often overheard in my practice, from doctors and staff: “She sees 20/20 or 20/15. Why does she need a toric lens?” Or, “He sees 20/20. Why should I check the over-refraction?”

The answer is simple. As doctors, it is the right thing to do.

We need to provide our patients with the clearest, most comfortable vision we can. This starts with you and ends with your staff. Staff will follow your actions. If you push yourself to practice at the highest level, so will they. This is not a change in attitude, but a change in culture around the office. Quality and accuracy take time and effort to develop. It takes commitment from you and your staff.

You, the doctor, should practice at the highest level of eye care. How can you expect your patients not to cut corners if you do? That patient with 0.75 D of astigmatism who sees 20/20 in his or her CLs will benefit from full correction. Prepare yourself to change lens materials if the patient is having mild problems.

There are so many ways to ensure ocular health in our young adult patients. Let’s step it up and do our part to protect the eyes of our youth.OCT

References

For patients with decreased tear production presumed to be due to ocular inflammation associated with Chronic Dry Eye

RESTASIS® MAKES MORE OF THEIR OWN REAL TEARS POSSIBLE

Prescribe RESTASIS® for your appropriate moderate and severe Dry Eye patients and increase their own real tear production over time with continued use

Indication and Usage: RESTASIS® ophthalmic emulsion is indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca. Increased tear production was not seen in patients currently taking topical anti-inflammatory drugs or using punctal plugs.

Important Safety Information

Contraindications: RESTASIS® is contraindicated in patients with active ocular infections and in patients with known or suspected hypersensitivity to any of the ingredients in the formulation.

Warning: RESTASIS® has not been studied in patients with a history of herpes keratitis.

Precautions: The emulsion from one individual single-use vial is to be used immediately after opening for administration to one or both eyes, and the remaining contents should be discarded immediately after administration. Do not allow the tip of the vial to touch the eye or any surface, as this may contaminate the emulsion. RESTASIS® should not be administered while wearing contact lenses. If contact lenses are worn, they should be removed prior to the administration of the emulsion.

Adverse Reactions: The most common adverse event was ocular burning (upon instillation)—17%. Other events reported in 1% to 5% of patients included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often blurring).

Please see brief prescribing information on adjacent page.
Managing nystagmus

By Graham B. Erickson, OD, FAAO, FCOVD

Nystagmus can present a difficult diagnostic challenge for even the most experienced clinician. Patients with nystagmus challenge a clinician’s skills in differential diagnosis, sensitive communication, and management.

Nystagmus appearing in childhood can be an even more difficult assessment than nystagmus of later onset due to limitations in subjective assessments. The appearance of nystagmus understandably causes considerable distress for parents and other family members. Its presence is usually interpreted as a sign of serious visual dysfunction or possibly brain damage.

Because nystagmus is typically not a discrete disease entity, examination and diagnostic emphasis is on determination of the underlying disorder. The clinician should attempt to determine if the condition is either congenital (infantile) or acquired. Acquired forms of nystagmus require immediate diagnosis and early management of the underlying condition to reduce long-term consequences of the condition. There are a variety of etiologic factors, including active pathology, and genetic and developmental anomalies. To properly manage nystagmus patients, it is necessary to describe the relevant characteristics, classify the condition, identify the possible causes and associations, and determine and implement appropriate management.

Differential diagnosis

The National Eye Institute supported a collaborative effort by interdisciplinary national experts to classify the many types of nystagmus, called the Classification of Eye Movement Abnormalities and Strabismus (CEMAS; see Figure 1). Nystagmus is typically described by its fast (jerk) phase, although the pathologic feature is the presence of a slow phase in one or both directions. So, clinical descriptions of nystagmus are usually based on the direction of the fast phase and may be horizontal, vertical, rotary, or any combination of these. The nystagmus may be conjugate or dysconjugate, or predominantly pendular or jerk waveforms. It is well documented that differences in waveform may be difficult, if not impossible, to differentiate clinically.

Recent advances in eye movement recording technology have increased its application in determining this expression of disturbances in the ocular motor system. For the clinician, observation of the nystagmus waveform can be improved with the magnification allowed in a biomicroscope or with ophthalmoscopy.

The first important step in the clinical management of nystagmus is to elicit a thorough case history. The clinician should probe the nature of the onset of the condition; any associated factors that may have caused the onset; any noticed variability in the nystagmus presentation; any developmental or neurological symptomatology; and a complete personal and family history.

CEMAS criteria for INS

Infantile nystagmus syndrome (INS) was previously called congenital nystagmus and motor and sensory nystagmus. It is characterized by development in early infancy—ocular motor recordings that show conjugate, horizontal-torsional accelerating slow phases that increase with attempted fixation; and a latent component. The nystagmus typically dampens with convergence and in certain gaze positions, and can progress from a pendular to jerk waveform. There is often a positive family history, such as abnormal head posture or head shaking, and the nystagmus can present with or without associated sensory system deficits (eg, albinism and achromatopsia), associated strabismus, or refractive error. The severity of visual impairment shows wide variation, depending upon its etiology.

Spasmus nutans is another nystagmus condition that begins in infancy. It presents as a rapid, small-magnitude, dysconjugate nystagmus that is typically accompanied by head nodding and abnormal head posture. The eyes appear to have a shimmering movement that may be horizontal, vertical, or torsional. It is usually asymmetric, and purely unilateral forms are not uncommon. Spasmus nutans may be a completely benign condition with resolution within 2 years. However, tumors of the diencephalon can cause a condition indistinguishable from spasmus nutans, requiring neuroimaging and careful monitoring.

Acquired nystagmus

There are many neurological and systemic causes of acquired nystagmus. A thorough case history and appropriate co-management with other specialists may be needed to determine the cause. Common conditions include multiple sclerosis; central and peripheral vestibular disease, such as Menière’s disease; cerebellar lesions or atrophy; Arnold-Chiari malformation; and CMV infection. In addition, nystagmus also can be a manifestation of toxicity to pharmaceutical agents, such as carbamazepine, lithium carbonate, phenytoin, morphine, and amiodarone.

Videos of various forms of nystagmus can be found at www.mrcophth.com/videos2.html, or by using an online search engine.

Treatment considerations

Referrals should be made for treatment of underlying pathology, if present. When nystagmus treatment is indicated, therapy is designed to dampen the oscillations and reduce symptoms, chiefly visual acuity. Virtually all nystagmus patients should be presented with treatment options following a careful diagnosis. It is not acceptable to simply monitor these patients without treatment. It is possible to improve acuity, ocular motor control, cosmesis, and visual comfort using sequential considerations of:

- Correction of refractive error with spectacles or contact lenses.
- Prisms to improve fusion, induce convergence, or reduce a head turn.
- Vision therapy to improve fusion capability and enhance stability of fixation.
- Surgery to reduce a head turn or increase foveation time.
- Medication in some cases to dampen the nystagmus.

Successful diagnosis and management of nystagmus requires a solid understanding of the causes of nystagmus, and a comprehensive appreciation of the various treatment options.

By Graham B. Erickson, OD, FAAO, FCOVD

Successful diagnosis and management of nystagmus requires a solid understanding of the causes of nystagmus, and a comprehensive appreciation of the various treatment options.
Successful management of nystagmus can be very challenging, and a limited number of controlled studies and randomized clinical trials are available. Many objective and subjective visual and electrophysiological outcome measures improve as a result of intervention in patients with nystagmus, suggesting that neuro-visual occur as a result of interventions.

A solid understanding of the causes of nystagmus, and comprehensive appreciation of the various treatment options, provides the clinician the opportunity to improve visual function in these patients.

**References**


**Author Info**

Graham B. Erickson, OD, FAAO, FCBO is professor of optometry at Pacific University College of Optometry. Dr. Erickson may be contacted at ericksog@pacificu.edu.

**Figure 1:** CEMAS catalog of nystagmus types

<table>
<thead>
<tr>
<th>Classification of Eye Movement Abnormalities and Strabismus (CEMAS)</th>
<th>Involuntary Ocular Oscillations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Peripheral vestibular imbalance:</td>
<td>Meniere, drug toxicity</td>
</tr>
<tr>
<td>2. Central vestibular imbalance:</td>
<td>Downbeat, upbeat, drug toxicity</td>
</tr>
<tr>
<td>3. Instability of vestibular mechanisms:</td>
<td>Periodic alternating nystagmus</td>
</tr>
<tr>
<td>4. Disorders of visual fixation:</td>
<td>Vision loss, seesaw nystagmus, drug toxicity</td>
</tr>
<tr>
<td>5. Disorders of gaze holding:</td>
<td>Gaze evoked, acquired pendular, drug toxicity</td>
</tr>
<tr>
<td>6. Acquired pendular nystagmus:</td>
<td>Central myelin; oculopapalatal; Whipple, H.E., Evaluation and Mechanisms of Drug Toxicity</td>
</tr>
<tr>
<td>7. Saccadic intrusions and oscillations:</td>
<td>Square wave jerks, macro saccadic oscillations, opsoconius, flutter, pulses</td>
</tr>
<tr>
<td>8. Miscellaneous eye movements:</td>
<td>Superior oblique myokymia, ocular motor neuronatomy</td>
</tr>
<tr>
<td>9. Infantile nystagmus syndrome:</td>
<td>Congenital, motor, sensory, idio-pathic, nystagmus blockage</td>
</tr>
<tr>
<td>11. Spasmus nutans syndrome:</td>
<td>With optic pathway glioma, without optic pathway glioma</td>
</tr>
</tbody>
</table>

**INDICATIONS AND USAGE**

RESTATIS® ophthalmic emulsion is indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca. Increased tear production was not seen in patients currently taking topical anti-inflammatory drugs or using punctal plugs.

**CONTRAINdications**

RESTATIS® is contraindicated in patients with active ocular infections and in patients with known or suspected hypersensitivity to any of the ingredients in the formulation.

**WARNING**

RESTATIS® ophthalmic emulsion has not been studied in patients with a history of herpes keratitis.

**PRECAUTIONS**

General: For ophthalmic use only.

**Information for Patients**

The emulsion from one individual-use vial is to be used immediately after opening for administration to one or both eyes, and the remaining contents should be discarded immediately after administration.

Do not allow the tip of the vial to touch the eye or any surface, as this may contaminate the emulsion.

RESTATIS® should not be administered while wearing contact lenses. Patients with decreased tear production typically should not wear contact lenses. If contact lenses are worn, they should be removed prior to the administration of the emulsion. Lenses may be reinstered 15 minutes following administration of RESTATIS® ophthalmic emulsion.

Carcinogenesis, Mutagenesis, and Impairment of Fertility

Systemic carcinogenicity studies were conducted in male and female mice and rats. In the 78-week oral (diet) mouse study, at doses of 4, 14, and 16 mg/kg/day, evidence of a statistically significant trend was found for lymphocytic lymphomas in females, and the incidence of hepatocellular carcinomas in mid-dose males significantly exceeded the control value. In the 24-month oral (diet) rat study, conducted at 0.5, 2, and 8 mg/kg/day, pancreatic islet cell adenomas significantly exceeded the control rate in the low dose level. The hepatocellular carcinomas and pancreatic islet cell adenomas were not dose related. Low doses in mice and rats are approximately 1000 and 800 times greater, respectively, than the daily human dose of one drop (28 μL) of 0.05%. RESTATIS® BID into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed.

Cyclosporine has not been found mutagenic/antimutagenic in the Ames Test, the V79-HGPRT test, the micronucleus test in mice and Chinese hamsters, the chromosomal-aberration tests in Chinese hamster bone-marrow, the mouse dominant lethal assay, and the DNA-repair test in sperm from treated mice. A study analyzing sister chromatid exchange (SCE) induction by cyclosporine using human lymphocytes in vitro gave indication of a positive effect (i.e., induction of SCE).

No impairment in fertility was demonstrated in studies in male and female rats receiving oral doses of cyclosporine up to 15 mg/kg/day (approximately 13,000 times the human daily dose of 0.001 mg/kg/day) for 9 weeks (male) and 2 weeks (female) prior to mating.

**Pregnancy—Teratogenic Effects**

Pregnancy category C.

**Teratogenic Effects:** No evidence of teratogenicity was observed in rats or rabbits receiving oral doses of cyclosporine up to 300 mg/kg/day during organogenesis. These doses in rats and rabbits are approximately 300,000 times greater than the daily human dose of one drop (28 μL) of 0.05%. RESTATIS® BID into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed.

**Non-Teratogenic Effects:** Adverse effects were seen in reproduction studies in rats and rabbits only at dose levels toxic to the mother and offspring. No evidence of embryotoxicity or teratogenicity was observed in reproduction studies performed in rats and rabbits at 100 mg/kg/day. Cyclosporine oral solution, USP, was embryo- and fetotoxic as indicated by increased pre- and postnatal mortality and reduced fetal weight together with related skeletal anomalies. These doses are 3,000 and 100,000 times greater, respectively, than the daily human dose of one drop (28 μL) of 0.05%. RESTATIS® BID into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed. No evidence of embryolethal toxicity was observed in rats or rabbits receiving cyclosporine at oral doses up to 17 mg/kg/day or 30 mg/kg/day, respectively, during organogenesis. These doses in rats and rabbits are approximately 17,000 and 30,000 times greater, respectively, than the daily human dose.

Offspring of rats receiving a 45 mg/kg/day oral dose of cyclosporine from Day 15 of pregnancy until Day 21 postpartum, a maternally toxic level, exhibited an increased in postnatal mortality; this dose is 45,000 times greater than the daily human dose of 0.001 mg/kg/day, assuming that the entire dose is absorbed. No adverse events were observed at oral doses up to 19 mg/kg/day (15,000 times greater than the daily human dose).

There are no adequate and well-controlled studies of RESTATIS® in pregnant women. RESTATIS® should be administered to a pregnant woman only if clearly needed.

**Nursing Mothers**

Cyclosporine is known to be excreted in human milk following systemic administration but excretion in human milk after topical treatment has not been investigated. Although blood concentrations are undequate after topical administration of RESTATIS® ophthalmic emulsion, caution should be exercised when RESTATIS® is administered to a nursing woman.

**Pediatric Use**

The safety and efficacy of RESTATIS® ophthalmic emulsion have not been established in pediatric patients below the age of 18. No adequate and well-controlled studies of RESTATIS® in pregnant women. RESTATIS® should be administered to a pregnant woman only if clearly needed.

**Geriatric Use**

No overall difference in safety or effectiveness has been observed between elderly and younger patients.

**ADVERSE REACTIONS**

The most common adverse event following the use of RESTATIS® was ocular burning (11%). Other events reported in 1% to 5% of patients included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often blurring).

**Rx Only**

**ALLERGAN**

Based on package insert: 71876US14B Revised February 2010

**02010 Allergan, Inc.**

**Irvine, CA 92612, U.S.A.**

**marks owned by Allergan, Inc.**

**APC82/VX12**

**U.S. Patent 5,474,979**

**Made in the U.S.A.**
Building the case for and against CXL with LASIK

Simultaneous crosslinking to prevent post-LASIK ectasia may not be worth the risks

By Cheryl Guttman Krader

Corneal collagen crosslinking (CXL) should not be performed routinely with primary LASIK as a strategy for preventing postoperative ectasia, said Perry S. Binder, MS, MD.

"An assessment of the risk-benefit ratio based on current evidence does not justify the routine application of CXL at the time of LASIK. Furthermore, how do we justify the additional cost to patients in lieu of what is known about the risks of CXL and post-LASIK ectasia and the limited peer reviewed studies of CXL with primary LASIK?" said Dr. Binder, clinical professor of ophthalmology at the Gavin Herbert Eye Institute, University of California, Irvine.

"Instead of performing CXL with LASIK in a case where there is doubt about the risk of ectasia, surgeons can consider implanting a phakic IOL or, in some cases, performing PRK," he said.

Lower rates of ectasia

The fear of not being able to identify cases at risk for ectasia is one reason why surgeons might consider routine CXL at the time of LASIK. However, Dr. Binder pointed out that the risk of post-LASIK ectasia has been decreasing due to a variety of factors. There is better awareness of the risks leading to better patient selection as well as better methods for screening. In addition, flap thickness has become more reliable with use of the femtosecond laser, and there are more ways to measure postoperative flap and residual bed thickness.

"We are now much better at detecting and eliminating eyes at risk for developing ectasia, so the incidence of the risk of ectasia has decreased," said Dr. Binder.

On the other hand, the routine addition of CXL to LASIK introduces potential complications, including no effect, under- or over-response, corneal scarring, corneal infiltrates, delayed epithelial healing, and endothelial cell damage or loss. Moreover, there is little known about the safety and benefit of combining the two techniques. Further compounding the uncertainties is the broad variability in the radiation and riboflavin dosages being used for CXL.

Compounding risk factors

Pertinent to performing CXL with LASIK, questions remain about how the intact epithelium will affect UVA penetration to the riboflavin in the interface and what the diffusion of riboflavin in either direction would be after instillation into the LASIK interface.

The safety of performing CXL at the time of LASIK is also not well characterized due to the limited data on the combined procedure. In theory, however, adding CXL may introduce additional risks. For example, there may be increases in risk of infection due to longer operative and bed exposure time as well as for loss of deeper stromal cells. Flap adhesion might also be affected with the potential for an increased risk of dislodgement by superficial trauma.

Moreover, it is unknown how simultaneous CXL will affect the refractive outcome of LASIK and the stability of the treatment effect considering the CXL procedure might change the excimer laser ablation rate, corneal compactness, refractive index, and curvature. The possibility that CXL might have an effect on post-LASIK IOL power calculations must also be considered.

Standardizing, understanding combined effects

Establishing a benefit of combining CXL with primary LASIK for reducing the risk of ectasia will difficult considering the low incidence of ectasia and the multiple variables that would need to be controlled.

"Because of the limited data on the combined procedure, it is not clear what the treatment effects are," said Dr. Binder. "A study designed to detect a treatment difference for an adverse event with an incidence of 1% would require an enrollment of 300 patients. A study of primary CXL with LASIK would have to stratify patients based on numerous clinical parameters, including thickness of the cornea, flap, residual stromal bed, patient age, and variables in the CXL technique.

Considering the confounders and that the risk for post-LASIK ectasia is very low, a study investigating the effect of CXL on ectasia would have to be extremely long, include a huge number of eyes, and even then, it may not provide an answer."

‘Instead of performing CXL with LASIK in a case where there is doubt about the risk of ectasia, surgeons can consider implanting a phakic IOL or in some cases, performing PRK.’

Perry S. Binder, MS, MD

Moving forward, certain goals for standardizing and understanding the effects of CXL should be met before adding CXL to LASIK. One such goal would be the development of techniques and technology to allow predictable irradiation of focal areas of the affected cornea and to determine the treatment depth. In addition, according to Dr. Binder, there is a need for more scientific data on deviations from the standard Dresden CXL protocol, particularly regarding modifications in the irradiation protocol and methods for riboflavin delivery. Plus, researchers should evaluate the use of photosensitizers other than riboflavin.

Take-Home Message

Taking into account the current low risk of post-LASIK ectasia together with a long list of unknowns about corneal collagen crosslinking (CXL) by itself and combined with LASIK builds an argument against performing CXL routinely with primary LASIK for ectasia prevention.

FYI

Perry S. Binder, MS, MD
E-mail: garrett23@aol.com
Dr. Binder has no financial interest in the material discussed.
Advertisement not available for this issue of the digital edition
Both bromfenac 0.09% once daily (Bromday, Bausch + Lomb) and nepafenac 0.1% (Nevanac, Alcon) appear to be safe and effective in preventing anterior segment inflammation and clinical cystoid macular edema (CME) after cataract surgery, even in high-risk patients. However, results from retrospective and prospective comparative studies suggest there may be an advantage for using bromfenac.

"Both nepafenac and bromfenac are new generation non-steroidal anti-inflammatory drugs (NSAIDs) with molecular structural modifications that confer enhanced potency relative to previous NSAIDs. Bromfenac offers the convenience of QD dosing, but both products are known to be efficacious and well tolerated based on placebo-controlled pivotal trials. However, to my knowledge, the 2 products had never been compared in a head-to-head trial," said Melissa Morrison Toyos, MD, in Independence, MO.

Prospective, retrospective studies

The results of a small, pilot prospective study suggested advantages of bromfenac, and a benefit of bromfenac was also observed in a subsequently conducted retrospective analysis comparing these NSAIDs in a much larger patient cohort," Dr. Toyos said.

The prospective study randomized 20 patients undergoing unilateral cataract surgery to treatment with nepafenac TID or bromfenac QD. Both NSAIDs were started 3 days before cataract surgery and continued for 21 days after the procedure. Diabetic patients were eligible for the study unless they had pre-existing macular or retinal edema or two or more microaneurysms within the fundus.

Endpoints and results

Primary endpoints assessed included Early Treatment of Diabetic Retinopathy Study (ETDRS) best-corrected visual acuity (BCVA), summed ocular inflammation score (SOIS), and OCT-measured macular volume and retinal thickness. Evaluations were conducted at 1 day and 1, 3, and 6 weeks after surgery.

How will you use the 5-7 minutes saved per refraction in your practice?

The OPD-Scan III ARK/Aberrometer and the TRS-5100 digital refractor assess the total visual system. In less than 1 minute patients requiring only minimal refinement to achieve 20/20 are identified.
The two treatment groups were well matched at baseline, and there were no statistically significant differences between them for any endpoints at any follow-up visits. However, findings from intragroup analyses of changes from baseline showed some evidence of better clinical outcomes in the bromfenac group compared with the nepafenac-treated patients in terms of less retinal thickening, more stable macular volumes in the immediate postoperative period, and a trend toward greater improvements in BCVA from baseline, she said.

The retrospective study included data for 600 patients who were treated postoperatively with bromfenac once daily and 591 patients treated postoperatively with nepafenac. Reported frequency of dosing with nepafenac varied from QD to QID, but nearly all patients (93.5%) used nepafenac TID. The two groups had similar proportions of patients with diabetic retinopathy (10%) and proliferative diabetic retinopathy (5%), but the rate of pre-existing epiretinal membranes was about twofold higher in the bromfenac group compared with the nepafenac group (15% vs. 7%).

According to the patients’ records, clinical CME occurred in just 1 patient in the bromfenac group (0.15%) and in 5 patients using nepafenac (0.8%). The bromfenac-treated patient who developed clinical CME had a pre-existing epiretinal membrane. Among the 5 nepafenac-treated patients who developed clinical CME, 1 had mild diabetic retinopathy and 1 had proliferative diabetic retinopathy, but 3 had no risk factors. All 5 of the patients used nepafenac TID.

Reference

FYI
Melissa Morrison Toyos, MD
E-mail: mcable@discovervision.com
Dr. Toyos is a speaker and consultant for Alcon and Ista, and received research funding from Ista and Bausch + Lomb.

in a Fraction of the Time
With XFRACTIONS taking less than 1 minute:
• See, on average, 5-7 more patients daily
• Display old and new Rx and set accurate patient expectations
• Discern differences between patient’s day/night vision
• Spend more quality time in patient consults
• Invest the time in marketing other practice services
• Achieve up to 20-30% gains in Optical revenue
• Elevate the total patient and staff experience

Greatest efficiencies and best patient care coexist in thousands of Marco practices. You can choose to have it all.

XFRACTION: WAVEFRONT OPTIMIZED REFRACTION

TRS-5100 completes minimal refinements or traditional refractions with digital speed and accuracy.

*Data based on national averages.
Corneal Ulcer: Where Inflammation and Infection Meet

G.G., a 28-year-old woman who has worn soft contact lenses for 10 years, presents with the chief complaint of foreign body sensation and discomfort in the left eye, starting 2 days ago. She reports that her eye keeps tearing up and says she has the “feeling that something is under my contact lens.” She also has blurred vision and photophobia. Slit-lamp examination with fluorescein staining reveals a corneal ulcer in the midperipheral inferior cornea of her left eye.

Background
Ulcerative keratitis, also known as a corneal ulcer, is frequently associated with contact lens wear. An estimated 30,000 cases of microbial keratitis (including bacterial, fungal, and Acanthamoeba strains) occur in the United States each year. One of the principal predisposing factors for bacterial keratitis is contact lens wear.1

Although some bacterial corneal ulcers may not result in vision loss, in many cases they can lead to corneal scarring and surface irregularities that can lead to loss of vision. In the most severe cases, corneal perforation can occur, increasing the risk for developing endophthalmitis and requiring removal of the eye. Therefore, prevention, early detection, and treatment are paramount in minimizing the potential for vision loss.2

Refresher
In the previous article on glaucoma and iritis, we learned the following key learning points:

- Glaucomatocyclitic crisis, also known as Posner-Schlossman syndrome (PSS), is typically characterized by mild unilateral ocular inflammation associated with intraocular pressure (IOP) elevation out of proportion to the degree of inflammation observed.
- Treatment of PSS should address both the inflammatory and ocular hypertensive components of the syndrome.
- It is advisable to choose medications for PSS that do not worsen existing symptoms, i.e., an anti-inflammatory agent that does not raise IOP and an ocular hypotensive agent that does not exacerbate the inflammation.
- PSS is associated with primary open-angle glaucoma in as many as 45% of cases, so it is advisable to establish baseline measurements and follow patients closely, not just to the resolution of the current crisis.

Workup and Diagnosis
Optimal management of bacterial keratitis entails rapid recognition of the condition, timely therapy, and appropriate follow-up. Evaluation of a patient with presumed bacterial keratitis should include a detailed medical history, including information about the patient’s contact lens history and related practices. The practitioner should ascertain the patient’s lens-wearing schedule; type of lens and solution used; lens hygiene practices; and exposure of the lenses to water, such as tap water for lens cleaning or showering, swimming, or use of a hot tub while wearing lenses. Ocular history should include other risk factors such as history of herpes simplex or varicella-zoster keratitis, ocular trauma, dry eye, and previous ocular surgery; including refractive surgery.

The physical examination should include visual acuity, external exam, and slit-lamp biomicroscopy. Fluorescein staining of the cornea can provide additional information about causative factors, such as the presence of dendrites, exposed sutures, foreign bodies, or epithelial defects. Examination of the contralateral eye may reveal the presence of similar pathology and give clues to etiology.3

In most cases, corneal ulcers resolve upon empirical treatment with topical antibiotic therapy, making smears or cultures unnecessary.2,3 Smears and cultures can, however, be helpful to identify the causative pathogen in severe cases of keratitis with large corneal infiltrates extending deep into the stroma, ulcers that have not responded to previous therapy, or ulcers that have distinctive features suggestive of a nonbacterial (ie, fungal, amebic, or mycobacterial) cause. Smears and cultures are also indicated when there is a history of trauma with vegetable matter, such as a tree branch (suggesting fungal infection), or if the patient reports wearing contact lenses in a pool or hot tub (suggesting Acanthamoeba).1

Treatment Options
Topical broad-spectrum antibiotic drops are the preferred method of initial empiric treatment in most cases of bacterial keratitis. When the causative agent is unknown, a fluoroquinolone or a combination of ceftazolin with tobramycin or gentamicin is recommended. Due to the increased incidence of methicillin-resistant Staphylococcus aureus and S. epidermidis, many clinicians have stopped using ceftazolin and have switched to vancomycin. A loading dose (eg, every 5-15 minutes for the first 30-60 minutes) followed by frequent application, every 30 minutes or 1 hour, may be called for in cases of central or severe keratitis, but less intense dosing is suitable for milder cases.1

Disclosures
Relationships are abbreviated as follows: E, Educational Planning Committee; G, Grant/ research support recipient; A, Advisor/review panel member; C, Consultant/Independent Contractor; S, Stock shareholder; SB, Speaker bureau; PF, Promotional Event Talks; H, Honoraria; O, Other.

Faculty
Eric D. Donnenfeld, MD, FACS: Allergan Inc., Bausch + Lomb, Alcon/C
Mark T. Dunbar, OD, FAAO: Allergan, Carl Zeiss Meditec, Inc., Alcon Nutritional, ArticDX / A, C, SB; Reed Exposition (Vision Expo)/A, C
Clark Springs, MD: Alcon, Merck/A

Peer Reviewer

Activity Development and Management Team
Cathy Pagano, CCMEEP, Allison A. Muller, Pharm.D, D.ABABAT; Scott Kober, CCMEEP; April Reynolds, MS, ELS, Sandra Davidson; and Tina Chiu, MEd; are employees of the Institute and have no relationships to disclose.

Freelance Writer: has no relationship to disclose.

Off-label Product Disclosure
This educational activity includes discussion of published and/or investigational uses of agents that are not indicated by the US. Food and Drug Administration. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.
Monotherapy with a fluoroquinolone has been shown to be as effective as combination fortified antibiotic therapy. Topical ophthalmic fluoroquinolones specifically approved by the U.S. Food and Drug Administration (FDA) for the treatment of bacterial keratitis include ciprofloxacin 0.3%, ofloxacin 0.3%, and levofloxacin 0.5%. The ophthalmic fluoroquinolones moxifloxacin and gatifloxacin, while not labeled for use in bacterial keratitis, are widely used for this indication. In randomized clinical trials, these agents performed at least as well as combination fortified antibiotic therapy and the earlier-generation fluoroquinolone ciprofloxacin. Besifloxacin 0.6% ophthalmic suspension, although also not labeled for use in bacterial keratitis, has potency against ocular pathogenic bacteria similar to moxifloxacin and gatifloxacin.1 Moreover, besifloxacin was recently FDA approved to treat bacterial conjunctivitis infections caused by Pseudomonas aeruginosa, a rare but potentially virulent pathogen associated with corneal ulcers and blindness.2

The use of combination fortified antibiotics — that is, antibiotics with increased concentration over commercially available topical antibiotics — may be an option for treatment of severe infection or cases in which initial therapy does not lead to improvement or stabilization within 48 hours. Methicillin-resistant Staphylococcus aureus (MRSA), which has been seen with increasing frequency in isolates from patients with bacterial keratitis, is often not susceptible to fluoroquinolones. Vancomycin is generally effective against MRSA isolates.3

Subconjunctival antibiotics may be necessary if there is ocular perforation or a spreading infection, or if the patient’s ability to adhere to a topical regimen is questionable. Systemic antibiotics are generally not needed; however, in severe cases, or when the infection has spread to adjacent tissue such as the sclera, they may be deemed necessary. Frequency of follow-up depends on the extent of disease. For those with a deep stromal ulcer or one that extends greater than 2 mm with extensive suppuration, daily re-evaluation is warranted until stabilization or clinical improvement is seen.1 Topical therapy can be tapered based on clinical response. If there is no stabilization or improvement within 48 hours, it may be necessary to modify the therapeutic regimen.1

**Role of Steroids**

The use of topical corticosteroids in treating bacterial corneal ulcers has been controversial. The American Academy of Ophthalmology (AAO) Preferred Practice Pattern: Bacterial Keratitis, revised in 2011, noted that although topical steroids “may have a beneficial role in treating some cases of infectious keratitis … [l]there is no conclusive scientific evidence indicating that corticosteroids alter clinical outcome.” The potential advantage of topical steroid therapy involves the possibility of suppressing inflammation, thereby reducing resultant corneal scarring and vision loss. Potential disadvantages include recurrence of the infection, local suppression of immune function, inhibition of collagen synthesis possibly leading to corneal melting, and increasing intraocular pressure. Despite the potential risks, according to the AAO, “many experts believe that the judicious use of topical steroids can reduce morbidity.”

Results of the Steroids for Corneal Ulcers Treatment (SCUT) multicenter clinical trial of corticosteroid therapy for bacterial keratitis showed no overall difference between treatment with adjunctive corticosteroid therapy and placebo in the primary efficacy outcome of best corrected visual acuity at 3 months. The trial compared prednisolone sodium phosphate 1.0% to placebo for the treatment of bacterial corneal ulcers. Enrolled patients (n=500) had been receiving topical antibiotic therapy for at least 48 hours prior to randomization. No safety concerns were seen in the trial. Although no difference was seen in efficacy in the overall study population, a benefit of steroid therapy was seen in the following prespecified subgroups: patients with vision of counting fingers or worse at baseline (P=0.03) and those with ulcer completely covering the central cornea at baseline (P=0.02). These subgroup analyses suggest that patients with the most severe ulcers, and with the most to gain in terms of visual acuity, may benefit from the use of steroids as adjunct therapy. Importantly, the authors noted that these patients who stand to gain the most from treatment may be the very ones that practitioners are most reluctant to treat with corticosteroids.3,4

In treating bacterial keratitis, it is vital to use the least corticosteroid therapy required to achieve control of inflammation. This requires optimal timing and dosing, adequate concomitant antibacterial therapy, and close follow-up. With antibacterial therapy, topical steroids may be added after 2 to 3 days of noted improvement, preferably after identification of the pathogen, and the antibiotic therapy should be continued. The importance of drug adherence must be stressed to the patient, and follow-up should be scheduled within 1 to 2 days after initiation of the steroid.1

Steroids should not be part of initial therapy, and, ideally, they should not be used until culture determines the causative organism. Furthermore, the use of corticosteroids as initial treatment for corneal ulcers has been identified as a risk factor for corneal transplant.1

**Case Resolution**

For a patient such as G.G. with a presumed bacterial corneal ulcer, empiric treatment with a broad-spectrum antibiotic, such as a later generation fluoroquinolone, should commence immediately. If the lesion does not begin healing, the antibiotic regimen may be altered and the addition of a topical corticosteroid may be considered, ideally after the infectious agent has been identified. Frequent follow-up should continue until the resolution of G.G.’s ulcer, as well as any associated pain and inflammation, and therapies should be tapered appropriately.

**Key Learning Points**

- Most community-acquired cases of bacterial keratitis resolve with empiric therapy, without the need for cultures or smears.
- Topical broad-spectrum antibiotic drops are the preferred method of initial empiric treatment in most cases of bacterial keratitis.
- Steroids may have a role in treating bacterial keratitis, although evidence for their efficacy is lacking.
Diagnosis and Management of Comorbid Allergic Conjunctivitis and Dry Eye Disease

Mrs. Roth is a self-referred perimenopausal woman who presents with itchy, irritated eyes in the spring. She reports a history of recurring seasonal allergies that has escalated in severity this year. Self-medication with an over-the-counter antihistamine, which had been sufficient treatment in past seasons, has apparently aggravated her ocular symptoms. Examination of her ocular surface reveals corneal staining findings consistent with dry eye disease.

A constellation of ocular symptoms — itchy, red, and tearing eyes — is a common complaint of many patients who present to their eye care provider.1 When symptom onset is acute, especially during allergy seasons, allergic conjunctivitis (AC) is often the culprit.2 Because it is constantly exposed to the environment and lacks a mechanical barrier to prevent attachment of allergens to the ocular surface, the eye is a common site of allergic inflammation.3 Seasonal AC (SAC) and perennial AC (PAC) are the most common types of allergic eye disease (Table 1).4 The prevalence of allergic reactions is rising, with up to 40% of the U.S. population experiencing allergic rhinitis each year.5 Among allergy sufferers, 70% to 80% experience ocular symptoms.6 Ocular allergy is often aggravated by dry eye disease (DED) either as a pre-existing condition or as a sequela of allergy treatment.7 At the same time, DED can increase a patient’s susceptibility to AC because it impairs removal of ocular surface allergens. In one outpatient optometric setting, 57.7% of the 194 patients complaining of clinically significant ocular itchiness associated with AC also exhibited clinically significant dryness, while 61.9% exhibited redness.8 In another study, an assessment of patients with seasonal AC found that 78% had comorbid DED, evident by significant thickening of the tear film lipid layer.9

Detailed Patient History
When the most likely cause of ocular surface inflammation is AC possibly compounded by DED, a thorough patient history is an invaluable resource for creating the appropriate management plan.10 Pertinent factors to establish are timing, severity, and anatomical location of ocular symptoms; any recent exposure to potential allergens or other sources of irritation; past history of atopic, autoimmune conditions, dermatitis or DED; and current use of prescription and/or over-the-counter medications.10 The timing of symptoms can usually differentiate SAC from PAC, as onset of ocular symptoms in

<table>
<thead>
<tr>
<th>SUBTYPE</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td>• Type-I hypersensitivity reaction (IgE-mediated mast-cell response) • Environmental triggers can occur in spring, summer, or fall seasons • Most common ocular allergy • Prominent symptom is bilateral itchy eyes • Relatively benign clinical course</td>
</tr>
<tr>
<td><strong>Seasonal allergic conjunctivitis</strong></td>
<td>Environmental triggers occur throughout the year • Prominent symptom is itchy eyes, usually bilateral • Relatively benign clinical course</td>
</tr>
<tr>
<td><strong>Perennial allergic conjunctivitis</strong></td>
<td>Type-I hypersensitivity reaction (IgE-mediated mast-cell response) Environmental triggers occur throughout the year • Prominent symptom is bilateral itchy eyes</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td>• Type-I plus type-IV hypersensitivity reactions (IgE-mast-cell and eosinophil-mediated responses) • Occurs predominately in warm climates • Prominent symptoms are photosensitivity, intense itching with thick, mucus discharge • Pathognomonic sign is cobblestone papillae of the superior tarsal conjunctiva • Potential for significant damage to ocular surface</td>
</tr>
<tr>
<td><strong>Vernal conjunctivitis</strong></td>
<td>Type-I plus type-IV hypersensitivity reactions (IgE-mast-cell and eosinophil-mediated responses) • Occurs in patients with clinical history of atopy • Relatively uncommon • Prominent symptom is papillary hypertrophy on the lower tarsal conjunctiva • Potential for significant damage to ocular surface</td>
</tr>
<tr>
<td><strong>Atopic keratoconjunctivitis</strong></td>
<td>Lymphocyte-mediated immune response • Not a true allergic reaction • Conjunctival papillary hypertrophy triggered by prolonged mechanical irritation, such as contact lenses</td>
</tr>
<tr>
<td><strong>Foreign body</strong></td>
<td>Lymphocyte-mediated immune response • Not a true allergic reaction • Conjunctival papillary hypertrophy triggered by prolonged mechanical irritation, such as contact lenses</td>
</tr>
<tr>
<td><strong>Giant papillary conjunctivitis</strong></td>
<td>Lymphocyte-mediated immune response • Not a true allergic reaction • Conjunctival papillary hypertrophy triggered by prolonged mechanical irritation, such as contact lenses</td>
</tr>
</tbody>
</table>

Table 1. Allergic conjunctivitis classification4,9,11-13,15,25

Related articles series

the months between spring and fall is typically suggestive of SAC. A detailed history should reveal medical conditions or medications that can diminish production of the aqueous tear layer and contribute to DED, such as autoimmune diseases, older age, and decreased levels of estrogen, as well as the use of oral antihistamines. AC and DED, both characterized by tear film instability and eye discomfort, can exhibit similar symptoms. The defining symptoms of AC are bilateral itchy eyelids associated with allergic rhinitis and a patient history of asthma or eczema. However, bilateral itchy eyelids can also be a symptom of blepharitis or DED when accompanied by burning or foreign body sensation. Distinguishing DED symptoms include photophobia and prominent redness at the end of the day or following extended periods of intent visual activity (eg, computer use, driving, watching television, or reading) since a decrease in blink rate increases tear film evaporation.

**Clinical Diagnosis**

A highly sensitive indicator of AC is the presence of IgE in tear film, but AC is primarily a clinical diagnosis. Typical signs of AC include bilateral edema of the conjunctiva and upper and lower eyelids, conjunctival hyperemia, and mucous discharge. Similarly, the diagnosis of early or mild dry eye typically relies on patient-reported symptoms, which often precede measurable signs of DED. Examination of lid margins for increased vascularity and closure of meibomian gland openings are suggestive signs of DED. The most specific and sensitive indicator of DED — tear film hyperosmolarity — had not been routinely assessed in clinical practice, but that may change with the recent approval of an office-based assay (TearLab Osmolarity Test). In more advanced cases of DED, ocular surface damage, a hallmark of DED, may be visualized via staining of the ocular surface. Other measures of advanced DED include the tear breakup time test for tear film instability, Schirmer test of aqueous tear production, and fluorescein clearance test of aqueous tear turnover.

**Stepwise Treatment Plan**

Once a diagnosis of comorbid AC plus DED has been reached, the first consideration should be removal of aggravating factors. Because the anticholinergic effects of systemic antihistamines and drying effect of preservatives in eye drops can contribute to DED, these treatments should be discontinued. On the other hand, preservative-free artificial tears can facilitate the removal of surface allergens and help relieve DED symptoms. Exposure to allergen triggers, identified by patient history and allergy sensitivity tests, should be limited as much as possible. If the allergen triggers occur seasonally, prophylactic treatment with a mast-cell stabilizing agent can be scheduled prior to the next period of exposure to limit future episodes. Additional strategies to reduce exposure to seasonal allergens include staying indoors when pollen count is high, such as during windy days or during the early morning hours (4 to 6 a.m.); keeping bedroom windows shut at night; showering and washing hair in the evening to limit exposure to allergens while sleeping; and cleaning contact lenses vigorously before insertion, or suspending contact lens use during periods when allergen exposure is high. Recommendations to reduce exposure to environmental allergens that cause PAC include frequently changing air filters in the house and car; using allergen-free pillowcases and mattress covers; washing bedding linens regularly; lowering ceiling fan speed or turning it off; thoroughly vacuuming the environment to remove possible allergens (eg, fungus, animal dander); and reducing indoor humidity.

Symptomatic relief is the primary treatment goal for both AC and DED. Thus, a treatment plan should take into consideration the predominant condition and the severity of the symptoms. Because a type 1, IgE-dependent hypersensitivity reaction causes allergic inflammation of the conjunctiva, the characteristic itching symptoms of AC are the consequence of inflammatory mediators such as histamine released from degranulated mast cells. For patients who initially present with mild AC, cold compresses to reduce the inflammatory response may be sufficient to provide symptomatic relief.

**Drug Therapy**

Several classes of ophthalmic drugs treat the symptoms of moderate AC by addressing the hypersensitivity reaction. Topical mast-cell stabilizers, which inhibit the release of histamine from mast cells, provide best results when treatment is initiated prior to allergen exposure. Among newer treatment options, pemrolat potassium, nedocromil sodium, and lodoxamide tromethamine are the more potent mast-cell stabilizers. However, mast cell stabilizers alone are typically less effective than dual acting anti-histamine/mast cell stabilizers once an allergic reaction has begun. Ophthalmic H1 receptor antagonists are the preferred treatment for ocular allergies. Second generation antihistamines, such as levocabastine, azelastine and emedastine, are considered relatively rapid acting. However, ophthalmic antihistamines can be irritating and require frequent dosing.

Dual acting agents that combine a topical antihistamine and mast-cell stabilizer — such as olopatadine, alkaflinate, azelastine, or bepotastine besilate — may be used to treat moderate AC. Olopatadine also improves tear function and loss of ocular surface goblet cells. These combination preparations have the added convenience of once or twice daily dosing.

The anti-inflammatory actions of ophthalmic corticosteroids often make these agents rapidly effective in the treatment of severe or refractory AC. A short-course of a low-dose topical corticosteroid, such as loteprednol 0.2% or 0.5%, can minimize the risks of elevated intraocular pressure and cataract formation associated with corticosteroid use. Intranasal corticosteroids are effective in treating allergic rhinitis and may inhibit the nasal-ocular component of ocular allergy symptoms.

Another class of ophthalmic drugs that provides effective treatment of refractory or severe AC is topical immunomodulators, such as cyclosporine and tacrolimus, which inhibit T cell activation and cosinophilic infiltration of the conjunctiva. While topical immunomodulators have few side effects, these slower-acting agents are typically reserved for the treatment of severe chronic cases of allergic eye disease, typically those associated with atopic or vernal keratoconjunctivitis.

As with AC, contributing factors should be identified and eliminated or minimized when the dominant condition is DED. For example, the use of oral antihistamines and eye drops with preservatives should be discontinued, and drug regimens should be adjusted to substitute systemic medications with less of an ocular drying effect. Environments may be modified to minimize conditions that contribute to DED, such as lowering the level of one's computer screen so that users’ eyes are looking downward.

Symptoms of mild DED may improve with hot compresses and lid scrubs to facilitate meibomian gland secretions, and with use of preservative-free artificial tears to increase ocular lubrication.

The goal of treating moderate-to-severe DED, as with moderate AC, is rapid reduction of ocular inflammation. Short-term treatment with a low-dose ophthalmic corticosteroid such as loteprednol 0.5% can inhibit production of inflammatory mediators. Similarly, ophthalmic cyclosporine, the first agent approved to treat the cause rather than the symptoms of DED, is an immunomodulator that may be used to increase tear production suppressed by ocular inflammation.

Other topical immunomodulators, such as tacrolimus, are additional treatment options.

**Claiming Credit**

Please go to www.wicce.edu/eye10 to claim AMA or COPE credit. A complete set of references can be found online.
5 tips that can benefit your patients with allergies

By Milton M. Hom, OD, FAAO, FACAAI (Sc)

Anytime. Nighttime. Any time of year, allergies can make life miserable for many of your patients. Many factors can trigger a potentially debilitating allergic reaction, which affects more than just the eyes. However, by keeping the following 5 guidelines top of mind, you can effectively help your patients who have allergies.

1. **Don’t focus on just the eye.** Allergists will tell you the entire body is affected by allergies, not just the eyes. The one-airway philosophy considers the ocular surface as part of the airway that includes the nose, throat, and lungs. Gearing treatments for the entire airway will reduce ocular symptoms related to allergy.

   Some 70% of your patients with ocular allergy also have rhinitis. Treatment of rhinitis can alleviate or reduce ocular symptoms. Nasal sprays, oral non-sedating antihistamines, and nasal rinses can help reduce the patient’s overall symptoms.

2. **Monitor pollen counts.** Pollen counts are pretty easy to monitor, thanks to the Internet. Pollen.com gives a pollen prediction for the week by ZIP code. During an allergy work-up, I look up the pollen forecast while the patient is in the chair. The site also reports the most predominant pollens in that ZIP code. This is extremely helpful in diagnosing what the patient is allergic to. Patients appreciate this knowledge in helping them to avoid allergens.

   We try to schedule visits according to pollen counts. If the patient is especially vulnerable to particular pollen at a particular time, we like to schedule them right before that time. Many of my patients already know when their allergies will be acting up. We believe in arming our patients with medications and avoidance strategies before the allergy attacks.

   I like to tell my patients that prevention makes life so much easier. Once the inflammatory cascade has started, it is so much harder for us to control. It’s like an avalanche of inflammatory factors making the patient’s life miserable. If the patient has prevention strategies already in place, the allergy attack will become much milder. In some cases, allergies are debilitating. Patients with severe cases cannot leave their home or function properly when their allergies are raging. We want to avoid worsening it at all possible.

3. **Maintenance therapy is the new norm.** Pollen counts are off the charts. Never before in recorded history have pollen counts been so high. In past years, most of my patients have used allergy medications during seasonal intervals. Recently, however, most patients are using the medications year round.

   I have few reservations about prescribing...
maintenance regimens. The safety margins for topical anti-histamines or mast cell stabilizers are high. They are probably the safest topical ocular drugs you can prescribe.

For flare-ups, I will add steroids on a short-term—less than 1 week—basis. But patients continue on the topical allergy drops throughout the year.

4 Love your pets. I’ve heard other lecturers tell patients to get rid of their pets if they are allergic to them. I find this advice to be quite disturbing. The old way of compliance is to tell the patient what to do, and they follow your instructions without questions. This is no longer the case. With the advent of the Internet, patients sometimes know just as much as we do about treatments for a condition or disease. The new mantra is coming to an agreement with the patient over treatment plans. Most of the time, this does not include removal of pets from the patient point of view. People love their pets.

Managing pet allergies so the patient can keep their animals is a more modern approach. Studies show that male cats have higher glycoprotein (allergen) levels than females. But castrated males have much lower levels. Neutering male cats is advisable if the patient has allergies to cat. Use of HEPA vacuums alone or HEPA filtration alone are not very effective. Use of both in combination can be quite effective. Keeping the pet out of the bedroom is helpful, too. Finally, keep in mind that the results of giving your cat a bath lasts for only 3 hours. After that, the glycoprotein levels return to their pre-bath level.

5 Sleep well, my patient. We constantly hear that getting enough sleep is healthy. Sleep is one of the areas that is vulnerable to allergies. The majority of allergy patients are tired. Sleep disturbance is a probable cause. Rhinitis and congestion can have a profound effect on getting a good night’s rest. Keeping the airway clear can go a long way to making the patient feel comfortable. There are cohorts of patients that wake up in the middle of the night with tremendous itch.

What are some causes? Blocked or narrowed airways from rhinitis causes sleep disturbance. We commonly prescribe a non-sedating oral antihistamine, lavage with a Neti Pot, and nasal spray prior to going to bed. We want to clear the airway at night. The nasal lavage clears the nasal passages as well as rinsing out the pollen. Washing hair before retiring is ideal. The hair collects pollen like a sponge and irritates the patient at night. But washing every night is not convenient, especially with “big hair.” We tell our patients to cover their hair at night.

With the QD topical allergy drops, we have to decide to use either in the morning or in the evening. If the patient is tired and we suspect sleep disturbance due to allergies, we recommend evening dosing.

Finally, controlling allergies is important. Pollen counts are on the increase. One study shows more than 50% of us skin test positive to one or more allergens. But, only 20% to 30% of us suffer from symptoms. As pollen counts increase in the future, we will see this number explode.

References
Double-team your allergy and dry eye patients

Distinguishing between the two conditions is difficult, especially when they can coexist.

By Ernest L. Bowling, OD, MS, FAAO

Spring brings renewal. Green returns to the trees, and flowers grow. For optometrists it means the return of ocular allergy season. The Asthma and Allergy Foundation of America estimates that 50 million people in the United States have allergies. More than half (54.6%) of all Americans tested positive to one or more allergens. Of these individuals, 83% suffer ocular symptoms. So, approximately 42% of your patients probably suffer from some allergy symptoms. Seasonal allergies can drive everyone crazy. Allergies can be especially difficult for patients who also suffer from dry eye. And a large number of times the two conditions co-exist. When a patient presents complaining of itchy, watery eyes, the question becomes: Which is it, allergy or dry eye? How do you tell the two conditions apart in your office, especially when they may co-exist?

As always, the best place to start is the patient history. A recent study found the patient history was the key element in making the diagnosis. Internal medicine researchers found that more than 80% of newly admitted internal medicine patients could be correctly diagnosed on admission and basic clinical skills remain a powerful tool, sufficient for achieving an accurate diagnosis in most cases.

Where one might use questionnaires, such as the Ocular Surface Disease Index for a dry eye diagnosis, the best question to ask is: Does it itch more or burn more? The old saying, “If it itches, then it’s allergy,” is very true. This refers to the pathophysiology of ocular allergy. Allergy is the primary trigger of mast cell degranulation and subsequent histamine release. With histamine release comes itch; if there’s no itch, it probably isn’t an allergic condition.

The patient may also present with a family history of atopic disease, such as allergic rhinitis, bronchial asthma, or atopic dermatitis. Be sure to question the patient about sneezing, nasal discharge, and congestion. Dry eye presents with patient symptoms of grittiness, burning, and foreign body sensation, so if it burns more, think dry eye first.

Eye rubbing—allergy vs. dry eye
Another question that can help with the diagnosis is to ask the patient what happens when she rubs her eyes. In dry eye, rubbing stimulates the accessory lacrimal glands and may produce some symptom relief. In an allergic condition, rubbing causes further mast cell degranulation with further histamine release and, as a result, more intense itching.

While burning is a definite characteristic of dry eye, dry eye can exacerbate ocular allergy because there’s not enough of the patient’s natural tears to wash away the offending allergens, which potentiates the ocular allergic response.

A slit lamp exam is the next step in the process. Patients suffering from ocular allergy will present with erythema (redness) of the palpebral conjunctiva and may have mucous present in the inferior fornix. A papillary reaction may be present on the tarsal conjunctiva that is usually absent in dry eye. The eye may water heavily, and the tear film may be thicker than normal, while the tear film is usually decreased or absent in aqueous deficient dry eye. A complete dry eye workup can be performed to test for the quantity of the tear film if the diagnosis is in doubt.

Categories of ocular allergy
Allergy is a form of inflammatory ocular surface disease, typically divided into five primary subcategories:

- **Seasonal allergic conjunctivitis** is caused by pollen released into the air by flowers, trees, grasses, and weeds. Symptoms are most severe when the pollen counts are highest—during spring and fall.
- **Perennial allergic conjunctivitis** (PAC) produces year-round symptoms because the causative allergens are always present. Dust mites and pet dander often cause PAC.
- **Atopic keratoconjunctivitis** (AKC) is a perennial disorder usually seen in men aged 30 to 50 years. The primary symptom of AKC is intense bilateral itching of the lid skin, periorbital area and conjunctiva.
- **Vernal keratoconjunctivitis** (VKC) is a disease seen primarily in boys and young men ranging from 3 to 20 years of age. Patients with VKC complain of intense itching and tearing; a hot, tight, sensitive feeling to the eyes; and photophobia. A VKC patient may also present with ptosis, conjunctival injection, large, non-uniform cobblestone papillae, limbal bumbs, and Horner-Trantas dots.
- **Giant papillary conjunctivitis** (GPC) is an immune response and is not a true allergy. However, the condition is still classified as an allergic reaction. It is caused by repeated mechanical irritation and is aggravated by concomitant allergy.

More than 90% to 95% of all ocular aller-
Allergies are characterized as SAC or PAC, and the two are the vast majority of ocular allergy cases seen in practice.

**Treatment and management**

Treating ocular allergy is not a one-step process. The first important step is to remove the offending allergen if possible. Yet in the spring with pollen everywhere, this is almost impossible. Individuals afflicted with seasonal allergies should shy away from outdoor activities during pollen season. Advise your patients to use air conditioning in their home and car, and keep the car windows rolled up. Wash clothes, hands, and hair frequently, and wear wrap-around eyewear and brimmed hats outdoors. I recommend patients wear disposable dust masks that can be found at hardware stores when working outside. Keep pets out of the bedroom, and use protective covers for pillows and mattresses as barriers against dust mites.

No allergy treatment will be complete without the use of artificial tears to wash away offending allergens and irritate the ocular surface.

Of course, no allergy treatment will be complete without the use of artificial tears to wash away offending allergens and irritate the ocular surface. One nice trick the patient can do to provide even more relief is to chill the artificial tears in the refrigerator before instilling them. Ice packs applied to the eye also can provide comfort and reduce swelling.

**Avoid topical OTC agents**

In addressing pharmacological treatment, the first point I make to patients is to avoid topical over-the-counter (OTC) vasoconstrictors. Many patients first try OTC antihistamine/decongestant drops before presenting to your office. OTC agents enjoy a long-standing safety record, yet their duration of action is limited to 2 to 3 hours, and they typically require frequent dosing because the amount of antihistamines—even the newer non-sedating agents—can cause dry eye, especially if a patient already has mild dry eye.

Combination antihistamine/mast-cell stabilizers are the most commonly prescribed agents for allergic conjunctivitis. These medications are considered the standard of care for ocular allergy; they do not require loading and can be used throughout the entire allergy season. Several of these are available OTC; I prefer the patient use these instead of the vasoconstrictors. I recommend the patient use these drops throughout allergy season and not just when their symptoms are present, just as I recommend the dry eye patient use artificial tears on a regular basis and not wait until symptoms arise.

Even though many of the new combination drugs are recommended to be used daily, I will advise the patient to add a second drop during peak allergy season to provide additional relief. In more severe cases, a topical NSAID or mild steroid may be needed to get the patient past an acute episode and quiet the eye. Inflammation is a key in most causes of ocular surface disease, including dry eye, meibomian gland dysfunction, and allergic conjunctivitis and needs to be controlled to prevent ocular surface damage.

**OTC drops.** Because many patients with nasal symptoms will use OTC antihistamines, it is important to remember that all oral antihistamines—even the newer non-sedating agents—can cause dry eye, especially if a patient already has mild dry eye.

**Combination antihistamine/mast-cell stabilizers** are the most commonly prescribed agents for allergic conjunctivitis. These medications are considered the standard of care for ocular allergy; they do not require loading and can be used throughout the entire allergy season. Several of these are available OTC; I prefer the patient use these instead of the vasoconstrictors. I recommend the patient use these drops throughout allergy season and not just when their symptoms are present, just as I recommend the dry eye patient use artificial tears on a regular basis and not wait until symptoms arise.

Even though many of the new combination drugs are recommended to be used daily, I will advise the patient to add a second drop during peak allergy season to provide additional relief. In more severe cases, a topical NSAID or mild steroid may be needed to get the patient past an acute episode and quiet the eye. Inflammation is a key in most causes of ocular surface disease, including dry eye, meibomian gland dysfunction, and allergic conjunctivitis and needs to be controlled to prevent ocular surface damage.

**References**


---

**FYI**

Ernie Bowling, OD
Dr. Bowling is in solo private practice in Gadsden, AL, and is chief optometric editor of *Optometry Times.*

---

**Optometry Times**

_Bringing Eye Health into Focus_
All eyes on the Internet

Dispensing eyeglasses online seems here to stay, but should ODs beat ‘em, join ‘em—or both?

By Brian P. Dunleavy

Michael Nason grew up around the eyecare profession. He spent his afternoons after school in the dispensary at the optometry practices where his parents worked “making glasses” for patients. Now, Nason brings his history with the field to his business venture, Zip Eyewear (www.zipeyewear.com).

Zip Eyewear is an online eyeglasses retailer. However, Zip does not simply sell glasses to cost-conscious patients with the simple click of a mouse. Visitors to Nason’s site can select from a full catalog of frames and lenses and make a decision to purchase. But instead of buying these products directly from Zip, the site provides consumers with a voucher for the suggested retail price and refers them to one of its more than 500 registered eyecare professionals (ECPs) in the patient’s local area for refraction—if they don’t already have a prescription—fitting, and purchasing.

“Consumers are going to go on Google and search for ‘online eyewear,’ or something like that, looking for deals,” Nason said. “We hope they choose our approach, which we think is the best of both worlds. Consumers get a good deal on high-quality eyewear, and they get professional care from a trained ECP.”

E-commerce and eyeglasses

Consumers are drawn to Web sites offering eyewear for sale because of their relatively low prices for frames and lenses. Even so, various industry estimates peg current online eyeglasses sales at less than 5% of the market. Most industry experts believe eyewear e-commerce will top out at 10% to 15% of e-commerce sales when it reaches its peak.

So why all the fuss?

For some ECPs, e-retailing of eyewear strikes a familiar chord. In the 1980s, warehouse retailing (WHR) was on the rise, and it gained momentum with the invention of the Internet. E-commerce will top out at 10% to 15% of e-commerce sales when it reaches its peak.

Business is business

“We have concerns about some products coming in from overseas and being dispensed online, but we also work with an online retailer and provide it with the same products we sell to our independent optometry, ophthalmology, and opticianry clients,” said an executive with a wholesale laboratory who requested that his name be withheld.

“Online retailing is growing; it’s not going away. We want to support our independent doctors but, as a business, if that’s the way the market is going, then we have to look out for our own interests and adapt our business. Optometrists need to look at this the same way. They can’t fight against it. They have to figure out a way to work with it,” the source added.

Optometry goes online

To that end, based on the findings of the aforementioned study, one might think the AOA would be dead-set against selling eyeglasses online. On the contrary, the organization’s position is that as long as eyelash dispensing is “doctor directed”—meaning, according to Dr. Pierce, that “the doctor has input into and feedback on the prescription and how it’s filled”—the prescription doesn’t necessarily have to be filled in-office.

“In fact, some of our members are selling glasses online, through their practice Web sites and other services,” Dr. Pierce notes. “We’re fine with that as long as the doctor is in control.”

Indeed, several businesses and organizations, like Nason’s zipeyewear.com, have developed services to assist independent optometrists in the process of bringing at least some of their practices online. One such effort is Essilor’s My Online Optical, www.myonlineoptical.com, designed to assist independent ECPs in setting up their own customized e-commerce site for a price far less than the cost of designing and launching a conventional Web site. Patient orders submitted online are sent to Essilor labs for processing and fulfillment. To date, more than 1,000 practitioners have signed up for the program.

‘Optometrists can’t fight against it. They have to figure out a way to work with it.’

Executive with wholesale laboratory

“Essilor would prefer that every pair of glasses be dispensed across the dispensing table,” said Howard Purcell, OD, vice president of customer development at Essilor of America. “The reality is that consumers want information and availability 24/7. Optometrists can either stay on the sidelines and allow consumers to dictate how eyewear is dispensed, or they can learn from what happened with contact lenses and have a presence online.”

Another company, Wolf Bioscience, offers PatientWire, http://info.patientwire.com, a sys-

Take-Home Message

Online eyewear retailing has staunch supporters in the pro and con camps. Patients want value for their money; practitioners are justifiedly concerned about their patients’ sight, as well as their practice’s bottom line. Is there a way to have the best of both worlds?

Pay your money, take your chances

As anyone who has ventured into cyberspace knows, you can buy anything online, but you often take your chances regarding quality and service. This has been particularly a problem with healthcare products and devices, including eyeglasses and contact lenses. In a study led by Karl Citek, OD, PhD, nearly half of the 154 prescription eyeglasses purchased online by researchers failed to meet prescription requirements or quality standards, most notably impact resistance standards, for spectacle lenses.

According to Dr. Pierce, for these and other reasons, some states require that all prescription eyeglasses or contact lenses must be purchased through an ECP. What concerns Dr. Pierce and other industry observers, however, is that online retailers continue to proliferate and sell products online—even to residents of states where the practice is theoretically illegal. In turn, some online retailers, including one who spoke with Optometry Times on the condition of anonymity, accuse the optometric professional societies of trying to put them out of business. The online retailers say that not all e-commerce entities sell poor-quality eyewear.

Consumers are drawn to Web sites offering eyewear for sale because of their relatively low prices for frames and lenses. Even so, various industry estimates peg current online eyeglasses sales at less than 5% of the market. Most industry experts believe eyewear e-commerce will top out at 10% to 15% of total eyeglass sales when it reaches its peak.

So why all the fuss?

For some ECPs, e-retailing of eyewear strikes a familiar chord. In the 1980s, warehouse retailing (WHR) was on the rise, and it gained momentum with the invention of the Internet.
In Brief

Pro cycling team to use Rudy Project sunglasses

**Denver**—For the third consecutive year, the Cannondale Pro Cycling Team will rely on Rudy Project sunglasses and helmets.

According to Rudy Project, the collaboration with Cannondale Pro Cycling enables continuous improvement of its products and the development of new technologies.

The Cannondale Pro Cycling champions will wear Rudy Project Noyz Racing Pro and Genetyk Racing Pro cycling sunglasses. According to the company, the sunwear helps increase visual performance by contributing to concentration, protection, peripheral visibility, and an optimal view of the route.

Cannondale Pro Cycling rider Pete Sagan (above) is shown wearing Rudy Project Genetyk sunglasses.

ABB CONCISE, ODG consolidate efforts

**Coral Springs, FL**—ABB CONCISE and Optical Distributor Group (ODG) have merged, effective December 28. According to the companies, by consolidating their efforts, ABB CONCISE and ODG will be able to deliver more services and programs to help eyecare professionals better compete in this competitive marketplace.

Angel Alvarez, chief executive officer of ABB CONCISE, said: “Our leadership teams are enthusiastic about building a platform that our customers can trust and will be an overall win for them and our industry.”

Jeff Rems, president and chief operating officer of ODG, said: “We’re excited to bring new programs and services to increase efficiency and profitability in today’s competitive environment.”

Transitions re-energizes ‘What to Expect’ flyers

**Pinellas Park, FL**—Transitions Optical Inc. has refreshed its popular “What to Expect” brochure series with new imagery and updated eye health statistics. According to the company, the revitalization is part of Transitions’ support of eyecare professionals in their efforts to serve and to educate culturally diverse patient populations about their unique eye-health needs and risks.

The collection of brochures—which includes African-American Eyes, Asian Eyes (English and Mandarin), Hispanic Eyes (English and Spanish), Adult Eyes, and Kids Eyes—is available for eyecare professionals to display in-office or share in their community outreach efforts.

Printed copies of the brochures are available free of charge through Transitions Optical Customer Service at CService@Transitions.com or 800/848-1506. Printable PDF versions are also available online within the “My Practice” section of MyMulticulturalToolkit.com.

In Brief

**American Optometric Association (AOA)**—The AOA has rebranded its “what to expect” education series, aiming to raise awareness about eye health and vision care among culturally diverse populations.

The series includes brochures that address different eye needs and risks, and it is available free of charge for eyecare professionals to display in-office or share in community outreach efforts.

“Many of our patients have unique eye health needs and risks,” said Renee Jacobs, OD, practice management consultant, educator, and *Optometry Times* editorial board member. “To compete and succeed in e-retail, optometrists must evolve their traditional business model.”

They need to inform patients about attributes of top-tier products, unbundle service fees from product fees so that smart patients can make appropriate comparisons, and promote a la carte services patients need when they elect to buy online. The only way e-retailing can be a threat is if optometrists don’t do this.”

**Reference**

Secrets for successfully fitting MFCLs

Education, good communication are key to optimal vision, comfort for your patients

By Ron Rajek

The secret to successfully fitting multifocal contact lenses (MFCLs) is communication.

“Most patients don’t even know multifocal contact lenses exist. So the first step is to educate your patients about the facts of multifocal contacts. They exist, they cost more, and they work well,” said Milton M. Hom, OD, FAAO, a private practitioner in Azusa, CA.

According to Dr. Hom, MFCLs provide better intermediate visual acuity and better near stereopsis than monovision contact lenses, and research has found that a majority of patients rate their vision with MFCLs better than their vision with monovision lenses. In addition, the benefits of multifocals can be provided easily because fitting a first-time presbyopic correction with multifocal contact lenses requires the same chair time as fitting monovision lenses.

Ensuring performance
To ensure the best overall performance from a multifocal, it’s important to establish a patient’s sighting dominance.

One test is the “swinging plus” test to obtain the near point of convergence. Have the patient hold a +1.50 D trial lens over one eye while walking around the room. The eye with the patient’s sighting dominance.

Dr. Hom prefers to use the “hole in the card” test. Have the patient look across the room through a makeshift opening using his or her hands and determine which eye the patient uses for distance.

“Dr. Clarke Newman pointed out an interesting fact about multifocal fitting to me,” Dr. Hom said. “He says that sometimes there is a difference between the dominant eye and the preferred eye in a certain percentage of cases. We usually assume the dominant eye is the preferred eye, but that is not always the case. This is when switching the eye function— exchanging the distance-biased lens with the near-biased lens—will solve the problem.”

Design differences
Be aware that there are distinct differences in the designs of lenses from various manufacturers. Some manufacturers have dramatically different power profiles for low-add and high-add lenses. In some low-add lenses, the plus power gradually increases toward the near center in one eye and a near center in the other eye. Knowing how the lenses work can help you select the proper lens for different patients’ needs and better troubleshoot any complaints patients might have once they are in their lenses.

“Most education surrounding multifocal lenses covers one type or brand. In a clinical practice, nothing can be further from the truth,” Dr. Hom said. “Mixing and matching lenses from different manufacturers is common. Despite what the manufacturer’s fitting guidelines tell you, there is no law stating we must stay within one system or with one type of lens. Any fitter will tell you: We do what works.”

Take patients’ pupil sizes into account when fitting MFCLs. Large pupils may cause a distance compromise in aspheric distance center and a near compromise in center near vision. Small pupils are more likely to cause a distance compromise in center-near vision.

Although the best vision from MFCLs will come after patients’ brains have had the chance to adjust to them—which usually takes 1 to 2 weeks—Dr. Hom recommended seeing patients in their MFCLs after 4 days.

“There’s a simple golden rule to determine if your multifocal patients are experiencing good distance vision with their new lenses,” he said. “If patients are experiencing good distance vision, they’ll wear their lenses into your office. If they aren’t, they’ll carry them in.”

Following up
At the 4-day follow up, Dr. Hom suggests checking patients’ acuity in high and low light, at distance, intermediate, and near. Other optional performance tests are stereopsis and reading speed. And, of course, ask patients for their subjective assessment of their vision with their new lenses.

Be prepared to make adjustments, the most common being adding minus or plus to the distance eye.

“MFCLs work for the majority of patients,” Dr. Hom said. “Educate your patients and manage their expectations. Make them aware that over-glasses are sometimes needed. Some of my colleagues view over-glasses as a failure. I completely disagree. Also remember that even a 0.25 D change can be significant with multifocals. Don’t over-minus. Bias the low add, and don’t be afraid to use mixed adds.

“Just remember, virtually every lens works for the early presbyope,” Dr. Hom said. “Almost anyone can fit an early presbyope. What makes a fit challenging is the +2.50 D add. This is when the follow-up visits become way too long and way too many.”

Finally, spectacles with progressive addition lenses (PALs) can be complementary to MFCLs. Consider prescribing spectacles with PALs for a patient’s stationary precise vision and MFCLs for his or her social and more active endeavors.

Reference

Take-Home Message
Multifocal lenses generally work well and can provide many patients with better vision than monovision lenses in the same amount of chair time. However, there are fitting considerations for multifocals that differ from those required for monovision lenses. These tips can help maximize lens performance and patient satisfaction.

FYI
Milton M. Hom, OD, FAAO
Phone: 626/963-7100
E-mail: eyemage@mminternet.com
Dr. Hom receives research support from or serves as a consultant to Abbott Medical Optics, Allergan, Bausch + Lomb, Ciba Vision, CooperVision, Essilor, and Inspire Pharmaceuticals.
A practice goes lean—and you can, too

Careful analysis, time management can reduce patient down time and increase staff productivity

By Brian P. Dunleavy

Scott Philippe, OD, remembers his patients playing the waiting game.

Dr. Philippe and his partner, Michael J. Johnson, OD, had been in practice in Charlotte, NC, for nearly 5 years when it seemed like they had more patients than they could handle. Online consumer reviews lauded the practice for its excellent care, but bashed it for long wait times. Dr. Philippe recalled patients complaining to him that they had been waiting for more than an hour to start their exams.

“The practice was experiencing rapid growth, maybe more than we expected early on,” he said. “We knew we had a problem. My partner and I and our staff were all frustrated. We’d see patients sitting around in the waiting room, waiting to get into pretest or waiting to get into the office, and we had no idea what to do about it.”

In 2009, Dr. Philippe attended the executive education program for optometrists at the University of Pennsylvania’s Wharton School of Business. There, he met a representative of ODLean, a then-fledgling program offered through Vistakon’s The Vision Care Institute.

ODLean is designed to assist optometry practices in improving efficiencies by reducing patient wait times and improving patient throughput without compromising care. The program has helped hundreds of optometry practices across the country. Organizers are in the planning stages for new initiatives in the years to come, designed to expand its offerings to a larger audience of eyecare professionals.

“It was the best investment I ever made in my practice,” Dr. Philippe said in retrospect.

Desperate times, desperate measures

At the time Drs. Philippe and Johnson retained ODLean, the partners were considering options for improving patient flow in their practice. Among them was installing a new pretest room, complete with a new lensometer, visual field screen, and autorefractor. The cost of such a move would have exceeded $50,000.

“The first thing the ODLean folks said to us was, ‘Maybe you don’t need that,’” he recalled. “As they do with practices that retain them for the program’s highest service offering, ODLean consultants asked the staff to fill out timesheets chronicling the total time it took patients to pass through the practice, from the time they walked in the door to the time they entered pretest, from their time in the exam to their wait times in the optical.

Drs. Philippe and Johnson provided this data for more than 100 patients over a 7- to 10-day period. The timesheets revealed that their patients averaged more than 22 minutes of downtime (meaning time sitting around waiting) per visit.

ODLean also asked the partners to film multiple patient encounters—which clearly required obtaining patient permission in advance—to get a sense of the full patient experience in the practice, from check-in to check-out.

Using the timesheets and video, ODLean consultants reviewed the practice’s processes and made recommendations on how to reduce patient downtime. The first change was fairly simple. ODLean worked with the staff to develop a patient flow schedule that set target times for patients as they passed through each department in the practice.

Once that schedule was fully implemented, they recommended that staff take on more patient care responsibility to lessen the load on the ODs. Several certified staff members were trained in refraction to perform those duties during pretest.

Finally, ODLean recommended that the practice ask new patients to fill out their pre-first visit paperwork online via the practice Web site. Now, with a click of a button, all important patient information—including patient history—is uploaded directly to the practice’s electronic medical records system.

“The key is keeping patients on the clock,” Dr. Philippe said. “It’s working, and I didn’t have to buy $50,000 worth of equipment to make it happen.”

The ODLean team

ODLean was the brainchild of Johnson & Johnson professionals who were experienced in business efficiency. Since the company was incorporating many best practices developed by the team to improve its own operations, the late Pat Cummings, OD, former vice president of the Professional Development Group, Vistakon, and Chuck Smith, a field consultant for ODLean, thought some of J&J’s clients—physicians and medical professionals in a number of fields—might benefit from some of the team’s business approaches. ODLean was born, using optometry as a test case, with the idea of eventually expanding offerings to other professions.

The tools and resources used by ODLean have been developed, according to Smith, over the past decade and applied internally at J&J in departments ranging from accounting to R&D. Patient flow is the core of the program, but ODLean will also advise on a number of other business-related matters, ranging from digital marketing to electronic information flow. Fees vary, but ODs considering ODLean should expect to spend several thousand dollars.

“We have found that for every minute a patient waits, he spends roughly $25 less on contact lenses or eyeglasses,” Smith said. However, he emphasized that ODLean’s objective is not simply to cut time from the patient experience but to add quality time to it. “Patients might spend less time overall with their optometrist, but more time discussing what they need and want to discuss,” he said.

Dr. Philippe is a believer. “The more patient flow was improved, the better the work environment in our practice,” he said. “Staff stress is way down. Everybody’s happy—our patients, our staff, and especially the ODs.”ODT

| TIP FOR PRODUCTIVITY |
| PATIENT FLOW: ‘Now the key is keeping patients on the clock. It’s working, and I didn’t have to buy $50,000 worth of equipment to make it happen.’ |

Scott Philippe, OD

Piedmont Eyecare Associates

(FYI) Scott Philippe, OD

Phone: 704/926-3937

E-mail: sphilippe@Carolina.rr.com

Neither Dr. Philippe nor Dr. Johnson had any disclosures to report.
Creating an optometric practice: Apply an entrepreneurial approach

Turn your patients into repeat customers. Create a practice that will make them feel special.

By Sara Heikali, MBA
Southern California College of Optometry
Class of 2015

Many optometrists build optometry practices that are what most people would call typical. They offer the same services and the same products that every other optometry practice seems to offer. Patients come, get their refractions and dilations, buy frames and lenses, and then go back to their regular lives.

What most optometrists should realize is that many people are open to being favorably surprised with the next new approach, experience, service, and products. Optometrists and most healthcare professionals forget that customers want to feel special. We often forget that customers appreciate a break from their regular routines, if it can be done in a constructive and exciting way.

We can change this and get patients to feel special through the entrepreneur’s approach.

A new aesthetic
Entrepreneurs think outside the box. They look for connections among ideas and forge new constructs that may not have existed before. For example, an optometrist could incorporate the concept of a spa—an “eye spa”— into his or her practice. Imagine creating a practice that, upon patients’ arrival, could present them with the soothing sound of a waterfall and the sight of beautiful, colorful plants. Patients might be asked to walk into a room and sit on a yoga mat as a doctor completes entrance exams. Automated machines, such as auto-refractors and non-contact tonometers, could be used in this room as well. This room is not the dull, white color of many hospitals but rather painted with a more aesthetic color pattern, such as the color plates for color vision testing.

Once the entrance exams and case history are completed, the patient could be taken to another room and asked to sit in a comfortable, tan-colored examining chair. Notice that the examining chair in our imaginary practice is not the simple, dull black color of most uncomfortable examining chairs we see at many offices. Further, a phoropter might be placed in front of the patient’s eyes and a refraction could be taken. A slit lamp exam would then be completed. Patients could lie down comfortably on a bed while their lids and lashes are scrubbed and massaged, and the meibomian glands are expressed with hot compressors.

The patient is treated to an around the eye massage for 5 minutes and dilated to check for the health of the back of the eye. Fundus and retinal images are taken, and biomicroscopy is completed. Patient results and any prescriptions are then dispensed. From there, the patient might be escorted to the optical room where color and lighting are similar to those of a regular spa. A friendly staff member would assist the patient in selecting and purchasing a pair of glasses, enabling the patient to leave the office stress free.

Exceptional patient experiences
What kind of overall experience would this present to the patient? Would it be novel? When coupled with a caring optometrist’s personal attention and competence, wouldn’t this keep patients coming back? I think it could. The patient not only walked out of the office with a product and service, but also with an entirely new and relaxing experience. He or she might now be bound to return the following year for his or her annual exam. Further, you’d probably get the best kind of advertising: word of mouth. The patient would likely talk with friends and family about his or her great experience, thus setting up the Eye Spa to being booked weeks into the future.

Our envisioned Eye Spa probably qualifies as what many business people call a “dynamically continuous innovation.” The system disorders a consumer’s customary optometry exam routine in such a way that the service is new, but little “new” learning is needed on a patient’s end to receive the novel service. Clearly, our Eye Spa would advertise these new services—the massages, the meibomian gland expressions, and the relaxing experience. By the time competitors catch on to the Eye Spa experience, our Eye Spa has become a branded, leading optometry practice. And as other practices follow Eye Spa’s example by giving massages and meibomian gland expressions, Eye Spa pushes a step ahead by offering hour-long classes for at-home education on meibomian gland expression, lid/lashes cleaning, and maybe offering the clients a special kit for at-home use. Our Eye Spa would anticipate its competition and follow a business model to remain at the top by surpassing others with Eye Spa’s novelty and novel approach to servicing their clientele.

Develop business savvy
Most healthcare professionals don’t start out with a business or sales background. Most of them are not trained businesspeople, but they get seasoned when they’re out in the real world. Many practicing doctors probably know the important business saying, “Customer service is number one.” But what does that mean? Should we as optometrists (and future optometrists) find ways to make customer service a little different and enhanced than others? Could our Eye Spa accomplish this?

So, take the entrepreneurial approach. Be creative. The ideas presented in this article are not all smash hits, yet the idea of making a patient’s experience more unique could yield greater patient appreciation and favor for your practice. While we shouldn’t compromise the quality of our exams, we should likely pay more attention to our practices being different. It could potentially become as important as having optometric standards that are consistent with the best of practices.

We should consider looking for ways for our practices and services to be different so we may better contend in a competitive environment.
BPI® STRIP & TINT™
Recycle AR coated lenses into sunglasses!

BPI® SIX-STEP, EASY TO USE RE-CYCLING SYSTEM REMOVES ANTI-REFLECTION COATINGS AND ALLOWS LENSES TO BE TINTED IN ONLY A FEW MINUTES!

1. Load lenses into the plastic lens holder provided with the kit.
2. Immerse lenses into the solution kit only thirty seconds.
3. Rinse well with cold water. Repeat the immersion step if any AR coating remains.
4. Immerse lenses into BPI® Lens Prep™ for one minute.
5. Immerse lenses into BPI® rinses for about five minutes.
6. Move lenses in BPI® Lens Prep™ for one minute.

BPI® SPECIAL OFFER DIGITAL 6™ & AR DRY KIT™ CONVERT AR COATED LENSES TO REAL SUNGLASSES FOR DRIVERS

SAVE 20%

WAS $619
FIRST 15 UNITS
NOW $495

*PROMOTION CODE 07984

TURN YOUR AR COATED LENSES INTO SUNGLASSES

The BPI® AR Dry™ kit contains: Safety gloves. Goggles, plastic tank with integral lens holder, operational and safety instructions. One pack will remove AR and hard coatings from 50 pairs of lenses. The solution will stay active for 6 months or more. This is a quick and easy way to remove damaged and scratched coatings from plastic lenses. The safety instructions must be read and understood before the AR Dry™ is mixed or used.

**NEW IMPROVED BPI® FL-41™**

*All BPI® Sports and Therapeutic spectral curves and spectral performance or facsimile are protected by copyright and trademark and various BPI® patents. May not be reproduced.

**CHOOSE FROM OUR SPECIALITY BPI® CHEMISTRY & SAVE UP TO 50%**

BPI® UV Crystal Clear™
100% ANSI UV PROTECTION IN 2 MINUTES
**PROMOTION CODE 07155**

BPI® UV Diamond Dye™ 400um
BPI® UV Diamond Dye Kit™ 400um

BPI® H2O Neutralizer™
BPI® FC60 is a water based lab safe neutralizer that removes dyes from CR-39 lenses

BPI® UV Dye Neutralizer™

NEW BREAK THROUGH FORMULATIONS
Absolute Black™
Absolute Brown™
Ultra Gray™

The longest lasting, maximum concentration fade-resistant tints for dark (uncoated Absolute series) and coated (Ultra series) sunglasses lenses

**SAVE 15%**

**BPI USA CALL: 305-264-4465**
Skype: callbpi

Visit our online Catalog and select from more than 4,000 products: www.callbpi.com

**FREE INFORMATION!**
Marketplace

PRODUCTS & SERVICES

CONFERENCES/EVENTS

American Academy of Optometry
New Jersey Chapter
11th Annual Educational Conference

April 24-28, 2013
Myrtle Beach, South Carolina
Hilton Embassy Suites at Kingston Plantation

Carlo Pelino, O.D., F.A.A.O.
Diana Sheehman, O.D., F.A.A.O.

Registration: $475.00
One, Two or Three Bedroom Suites
Accommodations Include a Daily Breakfast Buffet
and Evening Cocktail Reception

PACK YOUR CLUBS!
Golf details to follow.

Sponsored by Essilor of America

CONTINUING EDUCATION

SCUBA & CE IN BELIZE

JULY 1-5, 2013
AMBERGRIS CAYE, BELIZE
16 COPE HOURS OF CE

MEETING SPONSOR:
INTERNATIONAL ACADEMY OF OPTOMETRY
CONTACT DR. EDWARD PAUL
910-256-6364
WWW.CEINBELIZE.COM

PRACTICE FOR SALES

39 year old practice
Retirement • Solid patient base • Beautiful city on Lake Champlain • 45 minutes to Stowe/Smugglers ski areas • Approx 400k gross working 3 days/week 35 weeks/year • Turn key ready
$225,000 some financing

For more information
Call 802-862-0023

SOFTWARE

QUIKKEYES
Web-Based Optometry EHR

• $99 per month after low cost set-up fee
• Quick Set-Up and Easy to Use
• No Server Needed
• Corporate and Private OD practices
• 14 Day Free Demo Trial
• Users Eligible for 44K incentives

www.quikeyes.com

Marketplace Advertising
Darlene Balzano: (800) 225-4569 x2778;
dbalzano@advanstar.com

Recruitment Advertising
Jacqueline Moran: (800) 225-4569 x2762;
jmoran@advanstar.com

Repeating an ad ENSURES it will be seen and remembered!
PRODUCTS & SERVICES

DISPENSARY

OPTICAL DISPENSARY MAKEOVER
In Less Than 4 Weeks

COMPLETE NEW DISPENSARY for $49/Month*
• First 6 Months of $49 through financing. 
• Ask Art Displayed. Call for Details.

COMPLIMENTARY DISPENSARY DESIGN SERVICE
• Free 1 product per purchase from CNS.

Call 1-877-274-9300 • www.framedisplays.com
BEPREVE® (bepotastine besilate ophthalmic solution) 1.5% HIGHLIGHTS OF PRESCRIBING INFORMATION These highlights do not include all the information needed to use BEPREVE® (bepotastine besilate ophthalmic solution) 1.5% safely and effectively. See full prescribing information for BEPREVE®.

**INDICATIONS AND USAGE**

BEPREVE® is a histamine H_1 receptor antagonist indicated for the treatment of itching associated with allergic conjunctivitis. (1)

**DOSAGE AND ADMINISTRATION**

Instil one drop of the affected eye(s) twice a day (BID). (2)

**DOSE FORMS AND STRENGTHS**

Solution containing bepotastine besilate, 1.5%. (3)

**CONTRAINDICATIONS**

Hyposensitivity to any component of this product. (4)

**WARNINGS AND PRECAUTIONS**

- To minimize the risk of contamination, do not touch dropper tip to any surface. Keep bottle tightly closed when not in use. (5.1)
- BEPREVE® should not be used to treat contact lens-related irritation. (5.2)
- Remove contact lenses prior to instillation of BEPREVE®. (5.3)

**ADVERSE REACTIONS**

- The most common adverse reaction occurring in approximately 25% of patients was a mild taste following instillation. Other adverse reactions which occurred in 2-5% of subjects were eye irritation, headache, and nasopharyngitis. (6)

**DESCRIPTION**

BEPREVE® (bepotastine besilate ophthalmic solution) 1.5% is a sterile, topically administered solution containing bepotastine besilate. (1.1)

**PRECAUTIONS**

1. Pregnancy
2. Nursing Mothers
3. Pediatric Use

**FULL PRESCRIBING INFORMATION: CONTENTS**

1. INDICATIONS AND USAGE
2. DOSAGE AND ADMINISTRATION
3. DOSAGE FORMS AND STRENGTHS
4. CONTRAINDICATIONS
5. WARNINGS AND PRECAUTIONS
6. ADVERSE REACTIONS
7. USE IN SPECIFIC POPULATIONS
8. Geriatric Use

**FULL PRESCRIBING INFORMATION: CONTENTS**

1. INDICATIONS AND USAGE
2. DOSAGE AND ADMINISTRATION
3. DOSAGE FORMS AND STRENGTHS
4. CONTRAINDICATIONS
5. WARNINGS AND PRECAUTIONS
6. ADVERSE REACTIONS
7. USE IN SPECIFIC POPULATIONS
8. Geriatric Use

**FULL PRESCRIBING INFORMATION: CONTENTS**

1. INDICATIONS AND USAGE
2. DOSAGE AND ADMINISTRATION
3. DOSAGE FORMS AND STRENGTHS
4. CONTRAINDICATIONS
5. WARNINGS AND PRECAUTIONS
6. ADVERSE REACTIONS
7. USE IN SPECIFIC POPULATIONS
8. Geriatric Use
Climbing
Continued from page 38

the cable car was filled with people questioning their sanity.

Steep learning curve
The most humbling rock climbing experience that Dr. Stoltzfus recalls occurred at Red Rock Canyon National Conservation Area in Las Vegas. After climbing four or five mountains, he and his friend decided to climb just one more that day. He was at 600 feet, roughly 15 feet from the mountain’s peak. Unfortunately, the only way he could make it to the top was to leap or jump. But by then, he was exhausted. So he spent the next 20 minutes gathering his energy, then with all his might, jumped, missed, and ended up falling about 10 feet.

“It was debilitating mentally,” he said, adding that the experience earned him a few bumps and scratches as souvenirs. “I was too tired to try again. That was the worst time a mountain beat me up.”

Instructional method
Besides the physical and mental challenges demanded by rock climbing, Dr. Stoltzfus said the sport is also motivational. As a lecturer, he sometimes invites groups to rock climb with him. To novices, he said the face of the mountain is intimidating and looks impossible to climb. But he shows them how to take it all one step at a time until they reach the top. Then when the novice climbers return to their offices after a climb, any work task or challenge “seems like a piece of cake,” he said.

In the meantime, he hopes to return to Table Mountain and other mountains he previously climbed, which include Seneca Rocks in West Virginia and Rattlesnake Mountain, near Cody, WY.

Until then, he’ll just have to be satisfied with other outdoor adventures like his future plans to climb Mount Kilimanjaro the old-fashioned way. “Rock climbing is like vertical chess,” he said. “It takes both physical and mental strength for making the best use of your time and energy.”

ODT

Jay Stoltzfus, OD
Phone: 717/397-4044
E-mail: jay@imagicorp.com

Dr. Stoltzfus did not indicate a financial interest in the subject discussed.
Several years ago, Jay Stoltzfus, OD, watched employees through their office windows, typing on their computers or talking on the phone. It wouldn’t be a big deal except that he was suspended almost 1,000 feet in the air from Table Mountain in Cape Town, South Africa.

Dr. Stoltzfus, who practices in New Holland, PA, is a self-proclaimed adrenaline addict. In his spare time, he mountain climbs, rock climbs, skydives, dives with sharks, takes white water rafting trips, and even went heliskiing, where a helicopter dropped him off at the top of a 11,000 mountain in the Canadian Rockies so he could ski all the way down on virgin snow.

While he hasn’t broken or cracked anything important—yet—he can sometimes show people a few bruises for his efforts. That’s pretty remarkable, considering he began rock climbing 20 years ago after a few drinks at a party. The host rented a portable, 20-foot high, rock climbing wall.

“1 was fascinated by the fact that it was safe,” he said, explaining that rock climbers wear a harness to avoid falling backward. “It’s very strategic. You decide how to use the least amount of effort to get from the base to the summit so you don’t become exhausted along the way and can still reach the top.”

Inside vs. outside

Dr. Stoltzfus learned to climb at Climnasium, an indoor facility with rock climbing walls. He trained indoors for almost a year before testing his skill on a real mountain. Dr. Stoltzfus said indoor climbing is easier, partly because all the rocks are different colors. He often challenged himself by climbing to the top by just using rocks of the same color.

But outdoors, a mountain’s surface is pretty much the same color, forcing climbers to think strategically, he said. That makes it difficult to see small cracks that you can grab to hoist yourself up to the next step or level.

Dr. Stoltzfus said he first learned about Table Mountain in 2007. He said the 3,550-foot mountain, which resembles a table because it’s wide and flat, is covered by clouds called “the tablecloth.”

“When I looked up, I saw the clouds,” he said, adding that the less adventurous ride is a cable car that travels along the steep side of the mountain. “But for the first time in my life, when I looked behind me, I could see into the buildings where people in offices were working. I could also see the coastline, the southern tip of South Africa. It was an unbelievable panoramic view.”

Usually, Dr. Stoltzfus rappels back down, which he said is the fun part. But that morning, he and his climbing buddy opted to ride the cable car, which traveled for at least 15 minutes before reaching solid ground. He said
For allergic conjunctivitis

THE POWER TO CALM THE ITCH

BEPREVE®—FIRST-LINE, YEAR-ROUND, WITH BROAD-SPECTRUM ALLERGEN COVERAGE

INDICATION AND USAGE
BEPREVE® (bepotastine besilate ophthalmic solution) 1.5% is a histamine H₁ receptor antagonist indicated for the treatment of itching associated with signs and symptoms of allergic conjunctivitis.

IMPORTANT RISK INFORMATION
BEPREVE® is contraindicated in patients with a history of hypersensitivity reactions to bepotastine or any of the other ingredients. BEPREVE® is for topical ophthalmic use only. To minimize risk of contamination, do not touch the dropper tip to any surface. Keep the bottle closed when not in use. BEPREVE® should not be used to treat contact lens–related irritation. Remove contact lenses prior to instillation of BEPREVE®.

The most common adverse reaction occurring in approximately 25% of patients was a mild taste following instillation. Other adverse reactions occurring in 2%-5% of patients were eye irritation, headache, and nasopharyngitis.

Please see the accompanying prescribing information for BEPREVE® on the following page.


BAUSCH & LOMB
For product-related questions and concerns, call 1-800-323-0000 or visit www.bepreve.com.
©/TM are trademarks of Bausch & Lomb Incorporated or its affiliates.
©2013 Bausch & Lomb Incorporated. US/BEP/12/0026A 1/13
FOR ORDERING INFORMATION, VISIT: www.JETREACARE.com

JETREA™
(ocriplasmin)
Intravitreal Injection, 2.5 mg/mL

NOW AVAILABLE