After heavy pressure from the American Optometric Association (AOA), the online vision screening test from Visibly (formerly Opternative), is no longer available and has been recalled by the company, according to the U.S. Food & Drug Association (FDA).

The AOA has lobbied the FDA for several years about the online test not undergoing premarket review prior to marketing and not receiving FDA approval for safety and efficacy.

"Visibly has been held accountable for violating the law," says Barbara L. Horn, OD, AOA president, "and the AOA is grateful to the FDA for addressing the issue we raised back in 2016."

Says Jeffrey Sonsino, OD, FAAO: "This is a huge win by the incredible efforts day in and day out of the AOA to protect the public from companies who exist solely for profit."

With an explosion in the use of digital devices, shifts in diet and other likely contributing factors, eyecare providers are encountering a veritable epidemic of "dry eye."

Every day, a growing number of patients present and complain of dry, gritty, uncomfortable eyes, blurred vision and chronic eye redness. Despite "dry eye" being increasingly recognized as a complex, chronic, and progressive condition, and all of the attention being paid to the disorder, many patients still leave their eyecare providers' offices with a sample of artificial tears despite having tried and failed with similar products on their own. This creates a cycle of frustration for both patient and practitioner.

More persistent patients sometimes return, often with the exact same complaints. Those more frustrated or symptomatic may seek another opinion from another doctor, usually with the same result. More wetting drops, an Rx drug approved to make more tears, or punctal plugs to slow tear drainage usually follow. For most, relief is fleeting at best, suffering worsens, and the cycle continues its downward spiral.

Patients begin to feel increasingly hopeless and...
By Gretchyn M. Bailey, NCLC, FAAO
Content Channel Director, Editor in Chief

After heavy pressure from the American Optometric Association (AOA), the online vision screening test from Visibly (formerly Opternative), is no longer available and has been recalled by the company, according to the U.S. Food & Drug Association (FDA).

The AOA has lobbied the FDA for several years about the online test not undergoing premarket review prior to marketing and not receiving FDA approval for safety and efficacy.

"Visibly has been held accountable for violating the law," says Barbara L. Horn, OD, AOA president, "and the AOA is grateful to the FDA for addressing the issue we raised back in 2016."

Says Jeffrey Sonsino, OD, FAAO: "This is a huge win by the incredible efforts day in and day out of the AOA to protect the public from companies who exist solely for profit."

With an explosion in the use of digital devices, shifts in diet and other likely contributing factors, eyecare providers are encountering a veritable epidemic of "dry eye."

Every day, a growing number of patients present complain of dry, gritty, uncomfortable eyes, blurred vision and chronic eye redness. Despite "dry eye" being increasingly recognized as a complex, chronic, and progressive condition, and all of the attention being paid to the disorder, many patients still leave their eyecare providers' offices with a sample of artificial tears despite having tried and failed with similar products on their own. This creates a cycle of frustration for both patient and practitioner.

More persistent patients sometimes return, often with the exact same complaints. Those more frustrated or symptomatic may seek another opinion from another doctor, usually with the same result. More wetting drops, an Rx drug approved to make more tears, or punctal plugs to slow tear drainage usually follow. For most, relief is fleeting at best, suffering worsens, and the cycle continues its downward spiral.

Patients begin to feel increasingly hopeless and doc-
Anterior blepharitis means blepharitis on the outer eyelid margin, including the eyelashes.

From one of the inventors of the first doctor’s treatment for Blepharitis— the AB Max™ is a new Doctor’s Treatment for Anterior Blepharitis™ with a Patented PULSE functionality specifically engineered to remove even the most tenacious scurf and debris, while gently massaging the outer eyelid margins for better patient outcomes!

AB Max™ is offering you the chance to trade in our competitor’s device for an AB Max™ in our new Trade UP program. This innovative product delivers a newly Patented PULSE action for more efficient and rapid outer eyelid debridement. AB Max™ offers Affordable and Advanced Anterior Blepharoexfoliation.

As part of the Trade UP program, when you purchase the new AB Max™ Starter Kit and you trade in our competitor’s device, AB Max™ will reimburse you the original purchase price with NO CHARGE boxes of AB Max™ Procedure Packs. This is a value of $299/box with 20 Procedure Packs @$14.95ea.

For example, if you originally paid $1,195, we would trade you four (4) boxes of AB Max™ Procedure Packs ($1,195/$299 = 3.99 boxes).

Contact us today to Trade IN and Trade UP to an AB Max™ at www.AB-Max.com or 1-800-721-8006.
Earlier this summer, I came across a patient care scenario that I had to learn on the fly.

About a year and a half ago, I prescribed glasses for a 5-year-old. I diagnosed her with refractive amblyopia OS.

Her wet retinoscopy finding for that eye was +4.50 -2.75 x 180 with a best-corrected visual acuity of 20/20.

My typical modus operandi after discovering such a finding is to have the usual and customary “polycarbonate lenses full-time wear” conversation with the parent or guardian and schedule the patient back for a visual acuity check, which is typically in two to three months.

This particular patient missed, rescheduled, and subsequently missed several visual acuity checks in a row, then returned again (a little over a year later) for another comprehensive examination.

Fortunately, the child had been wearing her glasses with some degree of consistency, and best-corrected visual acuity in her left eye had improved to nearly 20/25.

I educated the parent on compliance and the need to keep follow-up appointments as prescribed so that I can detect a visual acuity plateau and patch if indicated.

The parent stated that she had checked with their family’s vision insurance, and she understood that follow-up visits were not covered.

The parent thought that because I was an eye doctor, only their family’s vision insurance worked at my office. It was then that I realized what was going on. Even though my staff had correctly obtained a copy of the patient’s medical insurance card, the parent thought that because I was an eye doctor, only their family’s vision insurance worked at my office.

I explained to her that refractive amblyopia, unlike hyperopia or astigmatism, was a diagnosis recognized by the child’s medical insurance as a condition requiring follow-up care as indicated. She was simply unaware and trying to avoid a pile of bills from out-of-pocket follow-up visits. She thanked me for letting her know, and we scheduled a subsequent visual acuity check for the child.

Since then, I have tried my best, when appropriate, to adopt a policy of casually stating that follow-up visits are billable to a patient’s medical insurance company. I’m trying to be careful so I don’t insult patients by causing them to think that I don’t believe they can afford healthcare.

I will let you know how this new strategy evolves over the coming months. Truly, anything I can reasonably and tangibly do to enhance patient compliance is worth a shot.

E

The parent thought that because I was an eye doctor, only their family’s vision insurance worked at my office.

Not just vision coverage

It was then that I realized what was going on. Even though my staff had correctly obtained a copy of the patient’s medical insurance card, the parent thought that because I was an eye doctor, only their family’s vision insurance worked at my office.

I explained to her that refractive amblyopia, unlike hyperopia or astigmatism, was a diagnosis recognized by the child’s medical insurance as a condition requiring follow-up care as indicated. She was simply unaware and trying to avoid a pile of bills from out-of-pocket follow-up visits. She thanked me for letting her know, and we scheduled a subsequent visual acuity check for the child.

Since then, I have tried my best, when appropriate, to adopt a policy of casually stating that follow-up visits are billable to a patient’s medical insurance company. I’m trying to be careful so I don’t insult patients by causing them to think that I don’t believe they can afford healthcare.

I will let you know how this new strategy evolves over the coming months. Truly, anything I can reasonably and tangibly do to enhance patient compliance is worth a shot.
Contact lenses
ODs talk healthcare rankings in their states
BY ALEX DELANEY-GESING WalletHub compared measures of cost, accessibility, and outcome of coverage for each state. ODs talk about why their states ranked as they did. 6

Modernize contact lens wear in 2019
BY CRYSTAL M. BRIMER, OD, FAAO New contact lens technology and innovation can change patients’ quality of lives for the better. 6

Diagnostic technology
Overlooked causes of dry eye
BY ARTHUR B. EPSTEIN, OD, FAAO
Consider IOP fluctuations
BY CRYSTAL M. BRIMER, OD, FAAO
Use aesthetics to treat lid and periorbital conditions
BY WYN T. DANG, OD, FAAO
AS SEEN ON TV: Doing harm instead of help to the ocular surface
BY KATHERINE M. MASTROTA, OD, FAAO
Dry eye can be exacerbated by poor advice and harmful products. 30

Use aesthetics to treat lid and periorbital conditions
BY WYN T. DANG, OD, FAAO Add supplements to a treatment regimen and educate patients to improve compliance. 17

Glaucoma
Consider IOP fluctuations ahead of diagnosis
BY BENJAMIN P. CASELLA, OD, FAAO Diagnosing normal-tension glaucoma means separating it from primary open-angle glaucoma 10

Ocular surface disease
How to incorporate nutrition into a dry eye practice
BY VN T. DANG, OD, FAAO
How to incorporate nutrition into a dry eye practice
BY VN T. DANG, OD, FAAO
As seen on TV: Doing harm instead of help to the ocular surface
BY KATHERINE M. MASTROTA, OD, FAAO
Dry eye can be exacerbated by poor advice and harmful products. 30

Refractive Surgery
Follow new norm for managing patient pitfalls
BY MARC R. BLOOMENSTEIN, OD, FAAO
Recognize and treat the signs of ocular surface disease before potential problems arise after surgery. 13

Retina
How inflammation may play a role in retinal disease
BY BENJAMIN P. CASELLA, OD, FAAO
Retinal microglia become overly engorged and overly active in the presence of degenerative retinal disease. 16

OCT
OCCULAR DISEASE, TRAVEL, CHEESE, GOING HIGH AND LOW
42
Visibly (formerly Opternative) recalls test

Continued from page 1

Dr. Sonsino is in practice in Nashville, TN. He is also an executive board member of the Healthcare Alliance for Patient Safety (APS) and past chair of the AOA Contact Lens and Cornea Section.

“This is a huge victory, and the AOA will continue to educate optometrists as we evaluate other devices and services,” says Dr. Horn. “This is one more step in making sure that the important doctor-patient relationship will be maintained, as critical as it is.”

Visibly declined comment to Optometry Times about the recall.

Looking back
Opternative launched in 2015 as a tool for patients who may not require a yearly eye exam to obtain a new glasses or contact lens prescription.

Optometrists immediately showed concern about members of the public misunderstanding the nature of the online vision screening and assuming they had received an ocular health exam.2

In April 2016, the AOA filed a complaint with the FDA about Opternative protesting the lack of safety and efficacy approval.

In May 2016, lawmakers in South Carolina overrode a government veto to ban online eye exam technology, joining Georgia and Indiana.3

During the summer of 2016, Opternative (at the time) partnered with 1-800 Contacts to offer online vision testing to 1-800 customers interested in renewing their contact lens prescriptions.4 The vision screening service was called ExpressExam.

The companies renewed their partnership 18 months later. At some point, 1-800 Contacts no longer had a relationship with Opternative by referring to its service as Rx Renewal, LLC.

In October 2017, the FDA issued a warning letter to the company, stating that its online screening test violates the Federal Food, Drug, and Cosmetic Act because of its intended use to diagnose conditions.5

The FDA instructed the company to pull the vision test from its website:

“Our office requests that Opternative, Inc. immediately cease activities that result in the misbranding or adulteration of the On-Line Optometric Eye Examination Mobile Medical App device, such as the commercial distribution of the device through your online website.”

In December 2018, Opternative rebranded itself as Visibly to better represent the eyecare industry, according to the company.6

In a press release, founder and Chief Science Office Steven Lee, OD, says: “We understand that our previous company name, Opternative, carried a negative connotation in the eye care industry and positioned the brand as an existential threat to optometrists. This is why it was important for us to rebrand the company with a name that better represents the partnerships we’re building with eye care providers and eyewear retailers in the industry.”

This is one more step in making sure that the doctor-patient relationship will be maintained, as critical as it is.

In an Optometry Times guest editorial, Dr. Sonsino cautioned ODs to remind their patients that although the company name had changed, the online refraction offered by Visibly had not.7

What is a recall?
Recall is a voluntary action undertaken by a company to remove or correct marketed products that violate laws administered by the FDA.

By contrast, market withdrawal involves a company’s removal or correction of marketed productions in minor violation not subject to legal action by the FDA.

According to the FDA, recalls fall into three categories to indicate the degree of health hazard posed by the recalled product:

- **Class I:** Reasonable probability that the use of, or exposure to, a violative product will cause serious adverse health consequences or death
- **Class II:** Use of, or exposure to, a violative product may cause temporary or medically reversible adverse health consequences or where the probability of serious adverse health consequences is remote
- **Class III:** Use of, or exposure to, a violative product is not likely to cause adverse health consequences

Visibly’s online refraction screening is a Class II recall.

According to the recall notice, “The Visibly Online Refractive Vision Test is being recalled since the firm has not received authorization from FDA to market the product.”

**REFERENCES**


ODs talk healthcare rankings in their states

By Alex Delaney-Gesing
Associate Editor

Over 87 percent of the U.S. population has a usual place they go to for medical care, according to the Centers for Disease Control and Prevention (CDC). In 2017, the National Health Expenditure (NHE) Data from the Centers for Medicare and Medicaid Services (CMS) found that the average American spends more than $10,000 per year ($10,739, to be exact) on personal health care—accounting for 17.9 percent of the nation’s gross domestic product (GDP).

Recent NHE data clocked the national health spending in the U.S. at $3.5 trillion. Under current law, that number is projected to grow at an average rate of 5.5 percent per year—reaching $6 trillion by 2027.

Among developed countries in the world, the U.S. ranks highest in healthcare spending. But while the average amount surpasses any other country, all 50 states and the District of Columbia (D.C.), vary on the quality of the coverage that is offered.

Evidence-based care and cultural competency are now crucial components of optometry

Ranking the states

WalletHub compared the measures of cost, accessibility, and outcome of healthcare coverage for each state and D.C. to determine the most recent national rankings.

Minnesota ranked No. 1 for the best overall healthcare system with a total score of 63.8. Massachusetts came in at second (62.3), while Rhode Island followed closely behind (62.1). In contrast, Alaska took the spot for worst healthcare system (44.5), with North Carolina (42.6) and Mississippi (47.8) ranking second and third from the bottom.

We consulted a few ODs from around the country to get their feedback on how their own states ranked and why.

Ben Casella, OD, FAAO Chief Optometric Editor, Georgia

#46 HEALTHCARE SYSTEM Georgia’s rank on this list seems to speak to access to care more than anything. Georgia is still vastly agrarian, and our lawmakers should pay special attention to this with regard to optometry and our willingness to help these patients with limited or no access.

Of course, one should always grade a study’s evidence profile before taking any outcomes too seriously.

James F. Hill III, OD, FAAO Editorial Advisory Board member, South Carolina

#48 HEALTHCARE SYSTEM I am not surprised to find my home state at the bottom of this list. South Carolina has a lot of poverty and many rural areas with a lack of access to care, which may times can lead to higher healthcare costs due to sicker individuals waiting until it is too late to seek care.

Optometry plays a very small part in the cost of health care, but one thing the South Carolina Optometric Association (SCOPA) leadership is working on is to increase access to eye care in every county of our state. We believe in preventative health care, are on the front lines, and understand dilated eye exams can be crucial in diagnosis of systemic disease.

Dori Carlson, OD, FAAO Editorial Advisory Board member, North Dakota

#9 HEALTHCARE SYSTEM North Dakota has benefited from its medical school, with the University of North Dakota (UND) School of Medicine and Health Sciences having trained the majority of the primary-care physicians in the state. UND also has been successful in providing residences and internships throughout the state; it has found those who are trained in the state will be more apt to stay in the state. Without the med school, there would be a tremendous shortage of physicians.

As for the optometry perspective, our clinic is in a rural part of the state. We have a very medical practice as a result and work well with the physicians, physician assistants, and nurse practitioners who regularly refer patients to us.

Michael Ohlson, OD, FAAO Minnesota

#1 HEALTHCARE SYSTEM Minnesota’s high rating may perhaps be attributed to a combination of factors, including a low uninsured rate, demonstrated high-quality outcomes, effective collaboration among involved entities in health care, and a population of patients placing a high priority on wellness.

Optometry can certainly provide a contribution depending upon significant efforts by the majority of optometrists. Comprehensive vision care is a hallmark of optometry and probably an unrecognized or underestimated benefit to the population’s health. One could highlight environmental optometry and occupational vision. Evidence-based care and cultural competency are now crucial components of optometry.

Early diagnosis and treatment of ocular disease/injury certainly contribute to population health.

It is important to recognize that a chief complaint of “blurred vision” is nondescript to patients, payers, and much of the healthcare system. Thorough histories, dilated fundus examinations, excellent communication, and frequent correspondence regarding mutual patients to related healthcare professionals are important aspects to optometric care. Practicing competently at full-scope; optimal, continuing professional development; and political advocacy will remain crucial components if optometrists seek recognition as significant contributors to health at the population level.

Jacob Lang, OD, FAAO Minnesota

#1 HEALTHCARE SYSTEM From an eyecare standpoint, I would suggest that the Midwest values of hardwork and helping each other out (referred to as “Minnesota-Nice”) have helped eye care stay near the top of the list.

Some influential ophthalmologists were trained at the University of Minnesota (Drs. Stephen Lane and Ed Holland, for example) and have had a great influence on what Minnesotans expect and experience from eye care.

Their foresight to work alongside optometry in an integrated eyecare model has furthered and shaped eye care in Minnesota as well as other areas of the nation that have adopted the clinic models of these thought leaders, which I think has had a major role in providing a higher level of eye care to this state and region.

Dan Zismer, PhD Minnesota

#1 HEALTHCARE SYSTEM A majority of providers, across multiple categories of providers, are “home-grown;” largely attending the University of Minnesota. U of M provided a multi-disciplinary approach to the education and training of healthcare professionals in excess of 100 years.

Those who remained in Minnesota were steeped in a culture of collaboration and innovation. A high number of these professionals—across disciplines—have remained dedicated to advancing the health status of the Minnesota population.

REFERENCES


THE HEAT IS ON!

Don’t be fooled. Heating devices for MGD expression shouldn’t cost $5,000, $10,000 or more. OCuSOFT®’s Thermal 1-Touch™ is only $2,650 and includes patient home care treatment for improved outcomes. Significantly, the Thermal 1-Touch™ eliminates costly treatment cartridges or other disposables drastically reducing cost per patient and making the Thermal 1-Touch™ with Digi-Lens™ technology practical for every office.

With Just 1-Touch

Designed for office-based procedures, the Thermal 1-Touch™ offers preset modes and temperature settings and can treat all 4 eyelids simultaneously providing improved patient convenience. So, before you buy an in-office eyelid heating device... try OCuSOFT® Thermal 1-Touch™.

Contact OCuSOFT® and have a representative come by to demo TODAY!

Taking orders now for shipment September 16, 2019
(800) 233-5469

© 2019 OCuSOFT Inc., Rosenberg, TX 77471
*Take-home products included
Modernize contact lens wear in 2019

New technology and innovation can change patients’ quality of lives for the better

While lecturing at SeaVision earlier this year, I found myself sitting in a dining room enjoying the view of the Mediterranean. It was right about then that my colleague reached into each eye to extract a contact lens and place it in her napkin, as if none of the optometrists at the table would notice.

The irony is that I had done the same thing the night before. We sat and marveled at why there are not better lens options for post-LASIK corneas. This evolved into a discussion as to why there are not more toric multifocals, colored torics, or high-oxygen daily disposables in toric or multifocal powers.

The wish list can grow quickly, but let us take a minute to acknowledge the latest entries into the contact lens space.

**Acuvue Oasys with Transitions Light Intelligent Technology**

It is not often that a contact lens finds itself on the **Time** Best Inventions list, but that is exactly what happened in 2018 with Johnson & Johnson Vision’s Acuvue Oasys with Transitions.

Most patients experience strain and discomfort in bright light, but few complain. This is likely because it is expected. One of the conversations in which I come across most emphatically is when I am speaking to patients about prescription sunglasses.

However, because outdoor light sensitivity is expected, there are likely more ocular surface disease (OSD) patients complaining about the lights inside big box stores than the sunlight.

**Most patients experience strain and discomfort in bright light, but few complain.**

Fortunately, Acuvue Oasys with Transitions works indoors too. Of course, the conundrum is that patients who are that light-sensitive inside may not be able to tolerate contact lens wear of any kind, especially a reusable lens.

Inside Acuvue Oasys with Transitions, photochromic molecules are bonded to the lens matrix. The light exposure causes a chemical reaction that changes the physical structure of the molecules, allowing them to absorb visible light.²

Because this lens is not a coating, its effects should endure the two-week wearing period—provided it is stored away from light. The lens blocks up to 15 percent of light in normal indoor conditions and up to 70 percent outdoors.

While the lens protects the eye by blocking ultraviolet (UV) light, it also has blue light-blocking capabilities and claims to reduce halos and starbursts at night.

**Lens darkening begins immediately when exposed to light. The fade to clear occurs within 90 seconds of reducing the stimulus. Photochromic spectacle lenses tend to be influenced by temperature, getting darker when it is cold outside. However, a contact lens is always at the ocular temperature, making the outside temperature irrelevant.**

As for the aesthetics of the lens when activated, it is noticeable that the tinted lenses overlap the limbus. Also with light-colored eyes, there is a noticeable but not always dramatic change in the perceived color of the iris.

Acuvue Oasys with Transitions is made of senofilcon A, which has a Dk/t of 147 and water content of 38 percent. The lens is available in an 8.4 mm base curve, 14.0 mm diameter, and powers ranging from -12.00 D to +8.00 D in 0.25 D steps.

**Ultra Multifocal for Astigmatism**

This standard issue multifocal toric contact lens uses Bausch + Lomb’s 3-Zone Progressive Design to provide presbyopic correction and the company’s OpticaAlign design for toric stabilization.³ These are the same design elements already familiar in Bausch + Lomb Ultra for Presbyopia and Bausch + Lomb Ultra for Astigmatism.

The lens is made of senofilcon A with MoistureSeal technology, and it has a Dk/t of 163 and water content of 46 percent. Although it is a monthly disposable, it is not yet approved for seven-day extended wear.⁴

Bausch + Lomb Ultra Multifocal for Astigmatism is available in a base curve of 7.6 mm and a diameter of 14.5 mm. The powers range from +4.00 D to -6.00 D in 0.25 steps and extend to -9.00 D in 0.50 steps.

Cylinder choices include -0.75 D, -1.25 D, and -1.75 D and axes 10° to 180° in 10° steps. The low add covers spectacle add powers +0.75 D to +1.50 D, and the high add is prescribed for spectacle adds of +1.75 D to +2.50 D.

As always, ODs must embrace the technology present before a company takes the next step toward further specializing a lens. Keeping it as a monthly modality also helps control the cost for the patient.

**MiSight 1 day**

CooperVision’s myopia control soft lens is not yet available in the U.S., but it is already on the shelves in Canada, the UK, Asia, and Europe.⁵ Aside from self-image concerns and inconvenience of a large myopic refraction, myopia presents serious pathological consequences such as retinal detachment and glaucoma.⁶

Historical treatments have included atropine, orthokeratology (ortho-K), progressive addition lenses (PALs), or bifocal spectacles. Over the past decade, ODs have also learned that time spent outdoors has an impact on the onset of myopia. Though there is not yet a consensus on the minimum amount of time needed, more time spent outside is better.⁷

The lens is designed as a bull’s-eye pattern with a distance center and 2.00 D of defocus in the peripheral treatment zone. Some wearers may experience shadowing during adaptation, but it often dissipates in approximately one week.

MiSight is made of omafilcon A—the same material as CooperVision’s Proclear. The high wettability and water content of 60 percent—as well as the daily disposable wear modality—makes it an ideal option for fitting pediatric patients.⁸

This reduces the influence of questionable hygiene habits and over wear. The parameters currently available in approved countries are -0.25 to -6.00 D in 0.25 D steps with an 8.7 mm base curve, 14.2 mm diameter, and 28 Dk/t, and it is sold in a 30-pack.

**Conclusion**

These contact lens advances require ODs to present technology that may take more time to fit, require additional patient coaching, or be more costly. But they are also technologies that can change a patient’s quality of life, both now and for years to come. It is an opportunity for ODs to embrace technology, become early adapters, and differentiate their services to the patient.

**REFERENCES**


Combined Visual Fields and Confocal Imaging
For the benefit of your patients and your practice

BY DR. JOHN WARREN, ODT; SPONSORED BY CENTERVUE

The Compass by Centervue is a remarkable instrument. In a footprint that resembles an autorefractor more than a visual field instrument, you have two very useful technologies: Threshold and suprathreshold visual field testing and Confocal Imaging in one easy to use device. The Compass is controlled by a tablet and its data and reports are available throughout the office via simple networking, with no extra fee or licensing to worry about. Visual field reports and photos can easily be imported into your electronic medical record also.

The Compass is a projection perimeter, instead of displaying the stimulus on a screen for the patient to view, the stimuli are projected onto the fundus of the patient. This means no trial lenses are needed, and no occlusion is needed either. Negating the potential for trial lens artifacts means no trial lenses are needed, and no occlusion is needed.

The Compass projects testing stimuli on known points of the fundus. Infrared fundus registration insures that the same point is stimulated not only during initial testing, but also on follow up assessment. Follow up tests register to the same points to points tested in the previous tests. This insures the same point on the retina and in the visual field is tested each and every time the patient is examined.

Instead of using “catch trials” to check for patient fixation or monitoring the position of the patient’s pupil during visual field testing as is done in standard Static Automated perimeter or SAP, Fundus Automated Perimetry or FAP for short, projects the stimulus to desired point on the fundus, compensating for any short fall in the patient’s fixation. While utilizing a fixation point, FAP insures that patient fixation isn’t a factor in any issues with testing. I like to think as “Fluctuation Absent Perimetry” since patient loss of fixation or inaccurate fixation is not a factor in testing. I’ve seen much less of the fluctuation in Visual Field results since switching to FAP with the Compass a year ago.

When you look at the reports that the Compass produces for Visual Field testing, you will find them quite similar to those from the HFA and not much different than those from the Octopus. You can see the numerical indices that are familiar to you from the HFA at the top of the VF report. The grey scale of the raw values as well as the total deviation and pattern deviation are next to the image of the fundus with the actual threshold values superimposed on the point on the fundus measured. This makes it very easy to correlate the values with the underlying fundus. In the case shown you can see that the values of zero (in red) are due to the area of retinal atrophy superiorly. In cases of RNFL dropout, you can also correlate the visual field values with those areas of structural damage.

Metrics that may be new to you are unique to the Compass and are related to the accuracy of the patient’s fixation and how much the perimeter needed to compensate for mis-fixation. The higher up on the graph, the more the perimeter compensated for the mis-fixation when presenting the stimulus on the correct location on the retina. This gives me a very quick and graphical understanding of how well the patient was able to fixate. Due to his central defects, this patient needed to be adjusted for somewhat, but considering his defects, he really did a good job of fixating. Imagine how much “slop” could enter into the testing if mis-fixation were not compensated for. This is something that other peripherals simply cannot achieve. I have the utmost confidence in the testing results, on initial testing and especially for follow up tests.

On the follow up report, you can see not only the series of Total Deviation and Pattern Standard Deviation values, but how much each point tested varied from the previous test, powerful data when looking for progression or stability. The confocal images from the Compass are outstanding as well. Not only ultra high resolution fundus and optic nerve images, but also outstanding stereo optic nerve images as well. These images are much, much less impacted by media opacities than traditional fundus photography also. I’ve been getting far superior fundus images on patients with moderate cataracts than I got with previous fundus photography technology.

Because we get high resolution true color photography, typically through un-dilated pupils, the Compass has become an integral part of my evaluation of my patients with macular/fundus pathology right along with my OCT. It has become my go to technology for visualization as well as photo documentation of the posterior pole. When we perform our threshold visual field testing, immediately after the completion of the field testing, the stereo imaging of the optic nerve is completed in just a minute of additional technician and patient time.

When reporting testing on the Compass, I usually use one of these two CPT codes, 92083 for threshold visual field testing (I usually use the 24-2 Zest test which is analogous to the 24-2 SITA on the HFA) and 92250 when I perform optic nerve stereo imaging or fundus imaging. Both of these codes are well accepted by all major medical payors with minimal limitations on the frequency of use. It is necessary to use an ICD-10 code that justifies the procedure.

For 92083 the Glaucoma codes, Optic Nerve Disease codes and Visual Field defect codes are ones that I frequently use. For 92250, the Glaucoma codes, Macular Pathology such as Macular Degeneration, Epiretinal Membrane, Choroidal Nevus, Diabetic Retinopathy etc are typically used.

The two images below are of the same patient, same day. One was taken with the Compass and the other with my Maestro. The patient has moderate nuclear sclerotic cataracts as well as small focal PSC cataracts. Best corrected vision in this eye is 20/40. You can appreciate how much less the Compass image is impacted by the media opacities.

Contact your CenterVue representative or call 1-888-512-3575 or eMail info@centervue.com
Consider IOP fluctuations ahead of diagnosis

Continued from page 1

prior insult to the optic nerve, which is non-progressive.

As far as its distinction from “high-tension” glaucoma is concerned, my diagnostic capabilities are precluded by my office hours.

Taking action

Simply put, there is a great deal of time between the hours of 5 p.m. and 9 a.m. for intraocular pressure (IOP) to spike, and I am sure that I am missing a number of my patients’ highest IOPs.

If I never record an IOP outside of so-called “normal” ranges on a glaucoma patient prior to the initiation of treatment—and subsequently make a diagnosis of normal-tension glaucoma—I am technically wrong if the patient’s IOPs are in the mid-20s three hours before his appointment time.

Although this really does not affect my plan—which is typically to initiate treatment with a prostaglandin analog—the semantics of the whole thing bother me.

On the other hand, all ODs learned in optometry school that glaucoma is progressive by nature and by definition. Couple that with the fact that non-progressive conditions may likely not require treatment, and it becomes readily apparent that the prudent course of action in a glaucoma suspect without ocular hypertension may be to check for progression before treating.

If I am unsure, then I may decide to obtain a few sequential visual studies and optical coherence tomography (OCT) studies before initiating treatment.

Patient profile

Patient history can also be useful in such a situation. Careful questioning may elicit a history of, say, hemodynamic crisis, long-term steroid evaluation. Careful questioning may elicit a history of say, hemodynamic crisis, long-term steroid intoxication. Careful questioning may elicit a history of.

In other words, did something happen in the past that is doing something? This is in an attempt to have a degree of specificity (not treating those patients who do not require treatment) in the arena of glaucoma.

All of this can be difficult to keep mind of to guide their treatment approach.1

Out of this study came the notion that a 30-percent reduction in IOP leads to a lesser chance of progression of normal-tension glaucoma. Such a strategy seems relatively straightforward and mathematically simple.

However, for those patients in whom baseline IOPs are on the low end to begin with (12 or 14 mm Hg), there really is not much room for a decrease at all, and a 20 or 30 percent reduction may be all that is attainable.

Not many glaucoma studies examine the profile of patients with such low baseline IOPs.

Low-teens normal-tension glaucoma

However, a study was recently published in British Journal of Ophthalmology that led to intriguing factors to consider with so-called “low-teens normal-tension glaucoma.”

This retrospective cohort study included 102 eyes of 102 normal-tension glaucoma patients with baseline (pretreatment) IOPs of ≤12 mm Hg.

All patients had been followed for a period of at least five years. The patients were divided into so-called “progressor” and “non-progressor” groups based on their visual field studies over time as well as changes to their optic nerves and retinal nerve fiber layers.

Diurnal IOP measurements and 24-hour blood pressure measurements were compared as well. Of the entire cohort, 35.3 percent were determined to be “progressors.”

Of these patients, fluctuations in diastolic pressure, IOP fluctuations, and the presence of optic disc hemorrhages were significant risk factors for the presence of progression.

Three take-home points pulled from this study include:

- Glaucoma patients (and all patients, for that matter) should be receiving routine physicals—both in light of searching for systemic variables with respect to glaucoma and in light of good overall health and well-being.

- Lowering IOP comes before nothing with respect to glaucoma treatment, but squishing the diurnal IOP curve is important as well. A good way to ensure this and tailor therapy accordingly is to check IOP at different times of the day. I do not typically perform serial tonometry, but I instead check IOP at different parts of the day over an extended period of time—which is not judgment on serial tonometry.

- Taking a quick look at optic nerves at an IOP check through an undilated pupil with a preconeral lens is a great way to check for the presence of an optic disc hemorrhage, which may be an indicator of progression.

REFERENCES


WE WANT TO HEAR FROM YOU!

Like something we published?, have a suggestion? Send your comments to gbaley@mmhgroup.com. Letters may be edited for length or clarity.
There’s no substitute.²,⁴
Check out patient resources, insurance coverage, and more at Xiidra-ECP.com

Xiidra, the first in a class of LFA-1 antagonists for Dry Eye Disease, is a prescription eye drop FDA-approved to treat both signs and symptoms of the disease.¹,³

Indication
Xiidra® (lifitegrast ophthalmic solution) 5% is indicated for the treatment of signs and symptoms of dry eye disease (DED).

Important Safety Information
Xiidra is contraindicated in patients with known hypersensitivity to lifitegrast or to any of the other ingredients.

In clinical trials, the most common adverse reactions reported in 5-25% of patients were instillation site irritation, dysgeusia and reduced visual acuity. Other adverse reactions reported in 1% to 5% of the patients were blurred vision, conjunctival hyperemia, eye irritation, headache, increased lacrimation, eye discharge, eye discomfort, eye pruritus and sinusitis.

To avoid the potential for eye injury or contamination of the solution, patients should not touch the tip of the single-use container to their eye or to any surface.

Contact lenses should be removed prior to the administration of Xiidra and may be reinserted 15 minutes following administration.

Safety and efficacy in pediatric patients below the age of 17 years have not been established.

References:
1. Xiidra [Prescribing Information]. Lexington, MA: Shire US.

For additional safety information, see accompanying Brief Summary of Safety Information on the adjacent page and Full Prescribing Information on Xiidra-ECP.com.
BRIEF SUMMARY:
Consult the Full Prescribing Information for complete product information.

INDICATIONS AND USAGE
Xiidra® (lifitegrast ophthalmic solution) 5% is indicated for the treatment of the signs and symptoms of dry eye disease (DED).

DOSEAGE AND ADMINISTRATION
Instill one drop of Xiidra twice daily (approximately 12 hours apart) into each eye using a single-use container. Discard the single-use container immediately after using in each eye. Contact lenses should be removed prior to the administration of Xiidra and may be reinserted 15 minutes following administration.

CONTRAINDICATIONS
Xiidra is contraindicated in patients with known hypersensitivity to lifitegrast or to any of the other ingredients in the formulation.

ADVERSE REACTIONS
Clinical Trials Experience
Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in clinical studies of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice. In five clinical studies of dry eye disease conducted with lifitegrast ophthalmic solution, 1401 patients received at least 1 dose of lifitegrast (1287 of which received lifitegrast 5%). The majority of patients (84%) had ≤3 months of treatment exposure. 170 patients were exposed to lifitegrast for approximately 12 months. The majority of the treated patients were female (77%). The most common adverse reactions reported in ≥25% of patients were instillation site irritation, dysgeusia and reduced visual acuity. Other adverse reactions reported in 1% to 5% of the patients were blurred vision, conjunctival hyperemia, eye irritation, headache, increased lacrimation, eye discharge, eye discomfort, eye pruritus and sinusitis.

Postmarketing Experience
The following adverse reactions have been identified during postapproval use of Xiidra. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Rare cases of hypersensitivity, including anaphylactic reaction, bronchospasm, respiratory distress, pharyngeal edema, swollen tongue, and urticaria have been reported. Eye swelling and rash have been reported.

USE IN SPECIFIC POPULATIONS
Pregnancy
There are no available data on Xiidra use in pregnant women to inform any drug associated risks. Intravenous (IV) administration of lifitegrast to pregnant rats, from pre-mating through gestation day 17, did not produce teratogenicity at clinically relevant systemic exposures. Intravenous administration of lifitegrast to pregnant rabbits during organogenesis produced an increased incidence of omphalocele at the lowest dose tested, 3 mg/kg/day (400-fold the human plasma exposure at the recommended human ophthalmic dose [RHOD], based on the area under the curve [AUC] level). Since human systemic exposure to lifitegrast following ocular administration of Xiidra at the RHOD is low, the applicability of animal findings to the risk of Xiidra use in humans during pregnancy is unclear.

Animal Data
Lifitegrast administered daily by intravenous (IV) injection to rats, from pre-mating through gestation day 17, caused an increase in mean preimplantation loss and an increased incidence of several minor skeletal anomalies at 30 mg / kg / day, representing 5,400-fold the human plasma exposure at the RHOD of Xiidra, based on AUC. No teratogenicity was observed in the rat at 10 mg / kg / day (460-fold the human plasma exposure at the RHOD, based on AUC). In the rabbit, an increased incidence of omphalocele was observed at the lowest dose tested, 3 mg / kg / day (400-fold the human plasma exposure at the RHOD, based on AUC), when administered by IV injection daily from gestation days 7 through 19. A fetal No Observed Adverse Effect Level (NOAEL) was not identified in the rabbit.

Lactation
There are no data on the presence of lifitegrast in human milk, the effects on the breastfed infant, or the effects on milk production. However, systemic exposure to lifitegrast from ocular administration is low. The developmental and health benefits of breastfeeding should be considered, along with the mother’s clinical need for Xiidra and any potential adverse effects on the breastfed child from Xiidra.

Pediatric Use
Safety and efficacy in pediatric patients below the age of 17 years have not been established.

Geriatric Use
No overall differences in safety or effectiveness have been observed between elderly and younger adult patients.

NONCLINICAL TOXICOLOGY
Carcinogenesis, Mutagenesis, Impairment of Fertility
Carcinogenesis: Animal studies have not been conducted to determine the carcinogenic potential of lifitegrast.
Mutagenesis: Lifitegrast was not mutagenic in the in vitro Ames assay. Lifitegrast was not clastogenic in the in vivo mouse micronuclear assay. In an in vitro chromosomal aberration assay using mammalian cells (Chinese hamster ovary cells), lifitegrast was positive at the highest concentration tested, without metabolic activation.

Impairment of fertility: Lifitegrast administered at intravenous (IV) doses of up to 30 mg/kg/day (5400-fold the human plasma exposure at the recommended human ophthalmic dose [RHOD] of lifitegrast ophthalmic solution, 5%) had no effect on fertility and reproductive performance in male and female treated rats.
Follow new norm for managing patient pitfalls

Recognize and treat the signs of ocular surface disease before potential problems arise

Do you ever sit back and think about eye-related proverbs?

“Onion, smoke, and women bring tears to your eyes.” “Mine eyes have seen the glory.” All right, maybe that last one is a little over the top. However, I think a new proverb that should be eye-physician centric is: You see it, treat it.

Much of what ODs do as eyecare clinicians is predicated on verbal responses and cues from patients. In fact, the vast majority of ODs’ time in the lane is problem-specific to patients’ concerns.

Yet, they see much more that is potentially ailing or has the potential to create problems with patients. So what they see should start to be the new norm for driving problem-specific evaluations. As ODs prepare patients for surgery, this cannot be an any more exemplary than what they see on patients’ ocular surface and—more specifically—their lid margins.

Diagnostic technology

The optometric profession is always integrating new technology to afford patients early diagnoses, and providing timely treatments to ensure good quality of vision.

Look no further than the diagnostic influences that optical coherence tomography (OCT) and topography have made in ODs’ daily examinations.

I could not think of diagnosing or following a glaucoma patient today without the use of the Ocular Response Analyzer (ORA, Reichert Technologies) and the hysteresis value it generates. OCT, corneal topography, and ORA are tools that provide an objective perspective—unlike the subjective values ODs receive when simply asking patients, “Do you have any problems?”

Treat the ocular surface

Now take the ocular surface mentioned in the beginning. ODs have always tried to correlate patients’ symptoms with the appearance of the lids, cornea, and tears. For decades they have worked on the assumption that patients are not going to undergo prophylactic treatment unless there is something in it for them.

Sure, ODs can tell patients that if they do not start using artificial tears, they may not be able to wear their contacts lenses, or if they do not start using a surfactant to clean their lids, they may lose their lashes—and permanently change their lid margins.

I get it, I do. Without the presence of a life-threatening consequence or even a sight-threatening possibility, Homo sapiens are prone to just let it ride.

Yet, a patient cannot say that when a doctor shows him what normal looks like, and then demonstrates that the patient is abnormal, it does not induce a small tingle of concern.

Show patients a picture

With the modern-day demands on vision, an OD cannot rely on waiting until a problem appears before attempting to find a solution. There are now different modalities to visualize the retina, curvature of the front and back of the eye, and meibomian glands.

Donald Korb, OD, FAAO, educated eyecare professionals on the persistent demands placed on ODs and severe drop out and truncation. Images courtesy Johnson & Johnson Vision

In fact, the most important tool with which I treat or diagnosis dry eye with is a slit lamp. And yet it appears that the greatest obstacle ODs have when it comes to early diagnosis and treatment of this multifactorial disease is the patient’s understanding of what is actually happening.

So, although ODs can put into words what they are seeing on their lids, the patients need to see it, too.

Therefore, the previous answer of the most important tool for an OD to treat dry eye with should be amended to include a picture. A slit-lamp camera is not needed, although it can be an educational tool.

Rather, ODs can download photos of similar patients’ conditions and show their patients what they are seeing. Or snap a picture through the slit lamp’s ocular with a smartphone.

Demonstrate normal function to patients and compare that to their abnormality. This can be seen in real-time at the lids. Visualizing the lids and monitoring progression of any meibomian gland changes is not a bourgeois diagnostic tool.

An OD’s job

I would argue that much like topography, meibography is an essential tool to help visualize changes in patients’ lid morphology. There are devices to fit an OD’s practice style and treatments that can be brought into the practice. Some may question if just showing the changes—without symptoms—will move patients to want to treat their lids.

Well, Doctor, that is an OD’s job. ODs must ensure patients understand the ramifications long-term consequences, and not give them an option that is not prophylactic.
How pain gates affect dry eye and chronic pain

These patients may report discomfort despite clinical signs showing improvement with treatment.

By Tracy Schroeder Swartz, OD, MS, FAAO

If an OD sees a lot of dry eye patients or has relatives with chronic pain, she may be familiar with how people feel pain differently. I am fortunate enough to be in both situations.

I see a large number of dry eye patients, most with significant chronic pain complaints. These patients often suffer from pain that is out of proportion to the clinical signs. Common treatments often do not relieve their symptoms, leaving us both frustrated.

My view on these patients is certainly colored by experiences with chronic pain in my family. I have a child with hypermobility joint syndrome (HJS) (think Ehlers-Danlos syndrome [EHS]) who has been dealing with chronic pain since 2013. It is extremely difficult to undergo tests, scans, scopes, surgeries, and countless doctor’s visits, only to be told nothing can be found.

It took five years for a proper diagnosis—primarily because our specialists narrowed their wheelhouse so much that they could not see the forest through their own set of trees.

Pain theory

I was educated about pain gate by a rheumatologist. The Gate Control Theory of Pain is credited to psychologist Ronald Melzack and biologist Patrick Wall in 1965. Since that time, the Gate Control Theory was modified in 1978 and 1996. Even as knowledge of the nervous system developed, the theory has remained consistent.

According to this theory, pain messages travel from peripheral nerves to nerve “gates” located in the spinal cord and continuing to the brain. These central nervous system “gates” describe how some pain messages are allowed to continue to the brain while others are blocked.

In addition to controlling pain message “traffic,” the gates can also amplify or diminish pain signals. According to this theory, patients who suffer more pain have more open gates. Those who suffer less pain have fewer open gates.

Acute and chronic

In order to understand this theory, it is necessary to understand the difference between acute and chronic pain.

Fast pain signals use A-delta fibers. These are crucial to protecting the body from injury, such as removing one’s hand from a hot plate. This may be referred to as “warning pain.” A-delta signals do not last long and are delivered to the brain’s sensory cortex.

Chronic pain messages move more slowly along C-fibers, and these signals last longer. This pain may be described as nagging, aching, dull, or burning—this may be referred to as “reminder pain.” These signals may be responsible for reminding the brain that it has suffered an injury.

Unfortunately, chronic pain may continue after the injury heals. The signals are delivered to the hypothalamus and the limbic system to release stress hormones and handle emotions. Thus, stress, depression, and anxiety are associated with chronic pain.

Pain gates

Factors that open the pain gates and increase suffering may be sensory, cognitive, and emotional.

Examples of sensory factors include musculoskeletal injury, physical inactivity, problematic body mechanics, and long-term narcotic use.

Cognitive factors include a focus on the pain, lack of pleasurable interests, anxiety about pain, and perseverating on things associated with it.

Emotional factors include stress, anger, depression, anxiety, frustration, and feelings of hopelessness.

Factors that close the pain gates reduce suffering. Sensory factors including increasing physical activity and aerobic exercise, short-term use of pain medication, relaxation training, and meditation.

Emotional factors include a positive attitude, reducing depression, and understanding that the pain is not harmful.

Learning to take control of the pain, taking control of non-pain aspects of life, and learning stress management techniques are also beneficial.

According to the pain theory, open gates allow pain signals to reach the brain while closed gates block the signals. If a fast stimulus can close the spinal gates, the slower messages are blocked—reducing the pain.

Management

Pain control options that close the gates include peripheral stimulation, acupuncture, and auditory interventions. Peripheral stimulation includes transcutaneous electrical stimulation (TENS) and peripheral nerve field or spinal cord stimulation. TENS units are widely available without prescription and are typically battery-powered. Pads are placed on the skin over the pain area and connected to the TENS unit to supply a current. These produce a less painful buzzing or tingling feeling, which competes with chronic pain signals.

TAKE-HOME MESSAGE: Patients with more open pain gates feel more pain than patients with fewer open pain gates, according to the Gate Control Theory of Pain. Understanding this concept means knowing how acute and chronic pain differ: fast pain signals use A-delta fibers while chronic pain messages move more slowly along C fibers and last longer. Closing pain gates can help patients with chronic disease, including ocular surface disease.

FIGURE 1 Neurotrophic keratitis manifested into a neurotrophic ulcer. FIGURE 2 Scleritis presented in the eye. FIGURE 3 Superficial punctate keratitis.
For example, both the threshold and tolerance of tooth pain have been effectively controlled using electrical activation of dental nociceptors for 7 minutes.6

Peripheral nerve field stimulation involves surgical implantation of electrodes directly on nerves or under the skin in the region of pain. Spinal cord stimulation involves surgical placement of the stimulating device at the spinal cord, where the nerve originates.7

Acupuncture or dry needling uses thin needles to activate small pain fibers to close pain gates. A meta-analysis of studies using acupuncture for treatment of chronic pain found that acupuncture treatment was better than no acupuncture treatment, and the effect lasted up to 12 months after treatment.8

Melatonin, an endogenous neurohormone that contributes to circadian rhythms, may also be used to address chronic pain. When circadian rhythms are disturbed, the body produces hormones, chemicals, and neurotransmitters in aberrant amounts or at the wrong time of day. Exogenous melatonin analgesic and neuroprotective effects may be useful for chronic pain.8

Because chronic pain is closely tied to depression, its treatment may include various antidepressants, including tricyclics, selective serotonin reuptake inhibitors, serotonin norepinephrine reuptake inhibitors, other miscellaneous antidepressants, and atypical antipsychotics in the treatment of chronic pain.9

Wrapping up
An increasing number of my patients take amitriptyline nightly for pain. Unfortunately for those patients suffering from ocular surface disease (OSD), the use of antidepressants may exacerbate dry eye symptoms.

Patients with chronic dry eye and other chronic pain syndromes will be more difficult to treat—they may continue to report symptoms of pain and discomfort when the clinical signs have improved with treatment.

I often use topography, aberrometry, and slit-lamp photos to illustrate OSD pre- and post-treatment.

If the clinical picture improves significantly but the pain fails to improve, I often instill proparacaine. If the pain fails to improve with topical anesthesia, I will educate the patient that the pain is not ocular, and begin to investigate other methods of pain control.

As primary-care providers, optometrists need to bear this in mind when diagnosing and treating these patients.

REFERENCES
8. Vickers AJ, Vertosick EA. Acupuncture for chronic Pain:
How inflammation may play a role in retinal disease

By Benjamin P. Casella, OD, FAAO
Chief Optometric Editor

Whenever I deem a case of viral conjunctivitis to be significant enough to warrant the prescription of a topical steroid, I have a very brief discussion with the patient beforehand.

I explain that I’m not targeting the virus itself, but rather the patient’s immune response to the viral insult. I liken it to a cold in which supportive therapy and anti-inflammatory medications don’t kill the virus but rather make the patient feel better as the condition runs its course.

It’s possible that similar conversations may be had in the future with respect to common retinal diseases as we become more familiar with the underlying mechanisms of action (however complex and multifactorial they may be).

Retinal immune response

An August 2019 review published online in Frontiers in Immunology does well to lay out where we stand with respect to our understanding of the link between the immune system and the various structures and chemicals that make up the neurosensory retina.1

This paper focuses specifically on microglia, the macrophages of the retina whose function is to go around eating up undesirable particles.

In addition to giving a nice synopsis of the history and discovery of microglia in the nervous system, the authors explain what we know about the role of these agents with respect to the formation and progression of several common degenerative retinal conditions. Additionally, the role of microglia during retinal development and subsequent retinal function is discussed.

Age-related macular degeneration (AMD) is discussed in detail with regard to the immune system. Complement factors and other inflammatory proteins have been found in elevated levels in the presence of AMD.

Enlarged microglia have been isolated in close proximity to retinal drusen, as drusen are chemotactants for microglia, thus yielding an explanation for their movement into the subretinal space in those with AMD. This provides further evidence for a dysregulated immune response as having a causal role in AMD.

As the most common hereditary retinal degeneration, retinitis pigmentosa (RP) is also discussed in detail with respect to the immune system’s response as an exacerbating factor.

Microglia have been found to become enlarged with the cellular debris of diseased rods in RP, and these enlarged microglia have been shown in animal models to secrete pro-inflammatory proteins which are neurotoxic to adjacent unaffected retinal cells.

As for diabetic retinopathy, enlarged ameboid-shaped microglia have been shown to be present at all stages of this common cause of blindness.

In the early non-proliferative form, these cells are seen in elevated numbers around retinal hemorrhages and microaneurysms. As the disease progressed, so does their presence, which is especially high in the vicinity of cotton-wool spots and engorged blood vessels. Finally, in proliferative diabetic retinopathy, these enlarged microglia are found in high quantities around areas of neovascularization—both at the optic nerve head and the nerve fiber layer of the retina.

Why is this important? It is important because these reactive cells—through their communication with inflammatory molecules—are thought to have an association with the increase in vascular permeability seen in diabetic retinopathy.

Glaucoma in the mix

With respect to glaucoma, the authors do well to point out the fact that “to date, the only proven therapeutic approach to prevent development and slow down disease progression is the lowering of intraocular pressure.”

However, insult to the optic nerve can persist in spite of and in the presence of so-called “normal” intraocular pressure. You can tell where this is going… There exists a neuroinflammatory process in glaucoma (yes, microglia play a role). As glaucoma progresses, these enlarged and reactive microglia (which serve to dispose of unwelcome cells and molecules) seem to play a role in furthering the premature death of the cells that converge to form the optic nerve head.

What’s next

The authors of this paper do well to point out the fact that we still do not have an adequate understanding of the process by which retinal microglia become overly engorged and overly reactive in the presence of retinal disease.

However, a more comprehensive understanding of such may lead to a pharmacological future in which we make use of targeted immunosuppressive therapies which address this very concern—overall blocking of microglial expression would do more harm than good because these cells clearly serve a purpose in normal healthy retinas in addition to healthy portions of diseased retinas.

This paper is deserving of optometrists’ time and certainly worth the read. As a clinician, I found myself happy to get down into the weeds of this paper and came out with a more comprehensive understanding of where we stand with respect to this concept.

REFERENCE

How to incorporate nutrition into dry eye practice

Start with a good history, customize treatment for the patient, and add in nutritional supplements

By Vin T. Dang, OD, FAAO

Let’s face it, dry eye will only become more prominent in our practices by the year 2030. It is estimated that over 61 million patients will reach geriatric ages and need extensive medical care.1

Thanks to a host of changing environmental factors, the dedicated use of liquid crystal display (LCD) screens, various facial products,2 and systemic medications, dry eye treatment will continue to be a necessary and important toolset within most practices.

Optometrists come prepared with abilities to diagnose and treat, but how do they implement different treatment options, diagnostic systems, and nutritional supplements fully within our practices to benefit patients? There are many options, but here is what I have found to be helpful.

Our practice heavily incorporates vital dyes and views them as a gold standard for our approach to diagnosing and monitoring dry eye

Diagnosis is half the battle
It is optometrists’ responsibility to elicit a complete history from patients. This can be achieved in several different ways, including questionnaires (such as the Standardized Patient Evaluation of Eye Dryness [SPEED] Questionnaire), electronic surveys, simple paper forms, or my personal favorite—talking with the patient. Patients already fill out a lot of forms, so I take the time to personally take their history and include the questions that would be found in a validated questionnaire.

Our practice heavily incorporates vital dyes and views them as a gold standard for our approach to diagnosing and monitoring dry eye. In the initial visit with a patient, I take a three-fold approach to tackling dry eye:

- Objective measurement of tear-break-up-time (TBUT) using sodium fluorescein
- Visualization of meibomian glands using meibography
- Clinical evaluation at the slit lamp

A lot of practices use MMP9 (InflammaDry, Quidel) and tear osmolarity (TearLab Osmolarity Test) to objectively evaluate and follow their patients. ODs should use the approach that works best for them and their patients.

Treatment takes many paths
Start with the basics: warm compresses, artificial tears, and a supplement that is high quality.

Because ODs practice in an environment that is financially complex, they sometimes cannot offer certain treatments immediately, but that is fine. Adding and subtracting treatments to customize the plan for each patient is the best part about optometry—making customized decisions in a constantly changing landscape.

For inflammatory patients, unfortunately insurance companies usually do not allow the jump to Restasis (cyclosporine ophthalmic emulsion 0.05%, Allergan) or Xidra (lifitigrast ophthalmic solution, Novartis) without first demonstrating the use of artificial tears four times a day for three to six months; however, I start them off with a mild topical steroid like FML (fluorometholone ophthalmic suspension, Allergan) 0.1% twice daily.

For aqueous deficiency, I like to start patients on an artificial tear along with punctal occlusion. Lastly, for evaporative dry eye, I start with lipid based artificial tears like Retaine MGD (OcuSoft) (Figure 1). In this early phase, supplements complement this approach, working gradually from a cellular level, while tears provide fast-acting topical relief.

Results take time, follow closely
Set a return appointment for the patient in one to two months. This should be adequate time to evaluate a response to supplements and other treatments while also checking for compliance. Discussions with the patient can then explore what has been working well and what hasn’t.

If compliance is high and results are suboptimal, I then begin looking at medications like Xidra or Restasis if appropriate, along with advanced surface procedures like LipiFlow (Johnson & Johnson Vision) or intense pulsed light (IPL) therapies. Although these procedures come with a price, do not be afraid to offer sooner rather than later.

Once I start seeing gland drop out on meibography with high symptoms, I begin offering these services aggressively. If patients are unable to pursue this option due to financing, I advise a Bruder Moist Heat Eye Compresses (Bruder), but I clarify that the treatment does not evacuate the melted lipid from the gland.

Omega replacements
Because not all supplements are created equal, I see Incorporate nutrition on page 20

TAKE-HOME MESSAGE
As patients’ environments continue to change and as patient populations continue to age, the need for dry eye treatment grows. One OD shares how he addresses dry eye in his practice. First, a solid patient history is key, and vital dyes help guide the diagnosis. Next, treatment starts with the basics of warm compresses, artificial tears, and a high-quality nutritional supplement. Finally, the treatment plan is customized to the patient’s needs.

FIGURE 1. Treatment and therapy plan for dry eye patients based upon the type of dry eye patients are experiencing
BPI® Cut-Off tints block high energy light in minutes!
Newest protection and vision enhancement for color blind patients

Cut-Off tint helps patients with color blindness

BPI® 550/570nm Cut-Off tint

BPI introduces another cut off tint, joining the ranks of BPI UV-Blue Barrier 440, BPI Winter Sun 450, BPI Diamond Dye 500/550, and BPI Deep Red Monochrome 600.

This red-orange to red tint is beneficial when the short wavelength end of the spectrum (violet, blue green) needs to be blocked. These uses include blue blocking for greater cut-of-doors contrast against the blue sky and blocking of blue/violet for ARMD purposes. It may also provide a higher transmittance lens option for red-green color blind patients.

For those seeking a true 550nm cut-off, this tint will reach that point much more quickly than the 500/550 tint.

BPI PC: 37889

Prevent cataracts, macular degeneration and retinal damage

BPI® UV - Blue Barrier™ 440 Protective Series

Newest protection and vision enhancement for AMD patients

Sunlight contains UV and blue light. UV light is part of the non-visible light spectrum that we are exposed to every day. It can cause damage to our eyes, particularly the surface and deeper layers of the cornea and the crystalline lens of the eye by cataract formation as well as the increased potential for dry eyes, dystrophies, pinguecula and pterygium of the cornea. Blue light, which is part of the visible light spectrum, may also be a cause for concern. It reaches deeper into the eye than the UV and its cumulative energy effect can cause irreparable damage to the retina.

Blue light is one of the main causes of damage to our eyes as we age and is an important factor that can cause the worrisome loss of sight-enabling pigmentation in the back of the eye.

Tint your own therapeutics or let BPI® do it for you

Reduce the scattered blue/violet light within the eye with BPI® Blue Filter Vision 450™. A saturated yellow tint that blocks blue/violet light with wavelengths shorter than 450nm. It blocks a minimum of the visible spectrum.

Macular Degeneration. BPI® Total Day™ is a tan colored tint that provides blue/violet attenuation with minimal color distortion.

Night driving. BPI® Total Night™, a light saturated yellow tint, is especially useful in blocking the blue/violet component of HID headlamps encountered in night driving.

Retinitis Pigmentosa, Macular Degeneration. BPI® Diamond Dye 500/550™ is an orange to red/orange tint, which blocks wavelengths shorter than the 500nm to 550nm range.

Blue light absorbing BPI® Blue Filter Vision 460™. A true sunglasses brown with no color distortion that blocks still further into the visible spectrum.

Useful in bright light situations. BPI® Blue Filter Vision 540™. A dark amber brown tint that blocks wavelengths shorter than 540nm. A sunglass color that blocks violet and blue.

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

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

Reduce eye strain, blepharospasms and migraines! BPI® FL-41™, a rust red/pink tint, has proven useful in reducing the incidence of blepharospasms and migraines.

Helpful with brain trauma and also useful for patients with dyslexia, BPI® Omega™ is magenta in color.

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


Parkinson’s Disease Tremors, BPI® Electric Blue™ has been beneficial to those suffering from tremors such as those sometimes associated with Parkinson’s disease.
Why your practice should have a BPI® Spectrometer
A must have instrument for Optometrists

Verify proper tinting densities for therapeutic tints

- Absolute Spectrum, the intensity of light received at each wavelength, plotted as a graph, and the basis for all other measurements.
- Illuminance, the human perception of the brightness of visible light received at the eye (lux).
- Chromaticity, the color of light based on the wavelengths and intensity that combine to make a color.
- Correlated Color Temperature, the temperature of a black body light source that would produce similar shade of white to the measurement—how blue or red a white light appears.
- Color Rendering, how truthfully a color is shown by the light measured compared to if the color was lit by bright sunlight.
- Flicker, the speed and characteristics of repeated changes in light intensity particularly noticeable with LED lighting or fluorescent.
- Equivalent Melanopic Lux, a measure of the light intensity in wavelengths that promote alertness (melanopic range), which can cause sleep and health problems.

Visit us at Vision Expo West, Las Vegas, September 19th-21st 2019, booth # LP10073

Get accurate UV and blue light readings

Measure the total light energy passed by lenses. Blue light, macular degeneration and the Wertheim Protection Factor™ (WPF)

Recently, the blue/violet wavelengths between 400nm and 500nm have been implicated in the development of macular degeneration. BPI has developed a simple meter, the BPI® UV & Blue Light Analyzer™ (BPI# 119518), that is designed to check the transmittance of lenses for these wavelengths and provide a figure of merit, the Wertheim Protection Factor™, to use in comparing and producing lenses that protect patients from radiation in this wavelength range.

Air (no lens) affords no protection and has a Wertheim Protection Factor™ of “0”. A black lens passes no light and has a Wertheim Protection Factor™ of “0”. A lens with high luminous transmission and minimal high energy blue/violet transmission such as BPI® Total Day™ has a Wertheim Protection Factor™ of about “40”. For more information on therapeutic and blue light protection visit: www.colorlenses.com

Tint your own lenses with the best equipment!

$250 bonus available with unit purchase

Stainless steel tinting systems have a 5 year limited warranty, the longest in the industry!

Call our technical service to ask about our 4,000 + products: www.callbpi.com

© 2019 BPI®. All specific names mentioned herein are trademarks of Brain Power Inc. Miami, FL. The following are registered trademarks with the US Patent Office and with similar offices in other countries: Transchromatic®, Solar Sort®, There’s a lens we can’t improve®Safari®, Designed Spectrum®, Blue Barrier®; Brain Power Inc®; BPI®; Buy now, save later®; Dye Hard®; EVA®; SpectraColor®; Safari®; Solar®; The PIN® and Ziptint®. The BPI® bottle shape and design are trademarks of BPI®. BPI® is not responsible for typographical errors. Offers are subject to change without notice. Prices quoted do not include sales tax or shipping charges. Item availability and price are subject to change without notice. OT / August 2019
Incorporate nutrition

Continued from page 17

start by asking the patient what is in his current supplement, if he takes one. Asking the patient to review what is inside his supplement at home is a valuable opportunity to explore why brand quality matters. If he is not currently taking a supplement and exhibits dry eye signs and symptoms, I start the patient on HydroEye (ScienceBased Health). When I direct a patient to take a supplement, I give him a pamphlet and hand him a bottle to purchase at checkout. This avoids patients going to the nearest drug store and purchasing the least expensive option. In my experience, this facilitates compliance.

For dry eye, I prefer to use a supplement with the omega fatty acid gamma-linolenic acid (GLA). GLA is not easily acquired from the diet, is lacking from sources such as fish or flaxseed oils but has been shown to improve dry eye in a variety of clinical studies.8,9 GLA is precursor to prostaglandin E1 (PGE1) which supports tear production and reduces inflammation. Research demonstrated that a balanced ratio of GLA to eicosapentaenoic acid (EPA)/docosahexaenoic acid (DHA) prevents elevations in serum arachidonic acid (ARA) accumulation in humans.6

In addition, the ratio of GLA to omega-3s are important in a supplement. Other nutrients such as magnesium, vitamin C, and vitamin B6 are cofactors to GLA metabolism, helping ensure the omega fatty acids are appropriately used by the body.

Many patients may be taking only a low-cost fish oil product from a local store, which will vary in quality and may lack a sufficient dose and type of omega fatty acids. Frequently, the patient doesn’t understand what she actually gets in a supplement. The product from the store shelf may not always be optimal for dry eye, and patients may be more likely to experience challenges with smell, taste, or gastric upset. If a patient cannot validate what she is taking, educate her on how the current product may impact not only her ocular health but also her finances.

Educate, educate, educate

While waiting in exam lanes, why not fill a patient’s time with convincing education. I have found this primes the final discussion I have with the patient and helps her prepare what questions she wants to ask.

As most ODs have discovered, it is difficult for patients to remember everything discussed with them. Don’t be afraid to use the full potential of clinical staff.

A simple lunch and learn with staff can enable them to spark conversation during patient work-ups and empower technicians to provide basic education. Others can attend a dry eye training symposium for continued learning (e.g., Dry Eye Boot Camp, Ocular Surface Academy, Dry Eye Institute, Twin Cities OSD Symposium, Dry Eye University, etc).

For staff with dry eye, offer benefits and discounts on products. This enables staff to experience their effects first hand. Personal experience is powerful. Appoint one staff member as the dry eye educator for the entire clinic, and encourage her to take on the role of discussing how nutritional supplements fit with a patient’s dry eye regimen.

You have heard the saying, “It takes a village.” In order to increase patient compliance—for nutritional supplements as well as other treatments—be prepared to adopt a top-down approach starting with the physician and ending with the staff. ODs are asking patients to make life-altering alterations to their daily routines. For some this is nearly impossible, so teaching compliance is as important as diagnosing and prescribing.

REFERENCES
Complexity of the ocular surface

The tears seem simple enough. Most patients encounter the streams of salty water coursing down their cheeks early in life and don’t realize that there is more than one type of tears. Reflex tears are what most think of as tears; however, reflex tears function primarily as built-in natural emergency eyelashes. They are different from the more complex and structured basal tears that maintain vision and ocular surface protection. It is important that patients understand the distinction.

Viewing tears as simple belies the complexity of tear composition, structure, function, and how tears interact with the ocular surface. The tears and external eye coexist to provide a smooth and stable refractive surface overlaying the relatively irregular corneal epithelium.

Without this stable tear structure, vision would be limited. Especially in a primal environment, early humans may have fallen prey to predators or, being unable to successfully forage for food, starved. In essence, the tears, the ocular surface and the systems that support their interaction are critical parts of an essential survival strategy. A stable tear film and acute vision may be among reasons why man has thrived. Such an originalist view of the ocular surface is key to understanding both function and dysfunction of the tears and ocular surface.

In 2017, the Tear Film and Ocular Surface Society (TFOS) Dry Eye Workshop (DEWS II) defined dry eye as a multifactorial disease of the ocular surface characterized by a loss of homeostasis of the tear film, and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities play etiological roles.1

Although DEWS II offers the most comprehensive view of dry eye to date, its complexity can be daunting for many clinicians, especially in diagnosing and managing the condition.

Perhaps the most powerful part of the current definition is the reference to the loss of homeostasis of the tear film. Because the eye is so critical to survival, much of its function centers around maintaining or, when necessary, regaining the physiologic balance necessary for sustained stable vision, such as protecting and repairing the ocular surface when damage or disruption occurs.

Baudouin, in a seminal treatise on dry eye, approached the disorder combining a comprehensive and holistic perspective. He vicious cycle underscores the complexity and multifactorial nature of what we call dry eye and identifies key elements that are root causes as well as contributing factors. Some are not well recognized.

As mentioned previously, in understanding tear dysfunction, comprehending the original intent of the systems that support structure and function is critical. Baudouin’s approach is particularly valuable for clinicians seeking ways to interrupt the ongoing down-spiral of dry eye.

Do patients actually have dry eyes?

The term “dry eye” remains in common use despite being a poor description of the disease. A truly dry eye would be opaque and dysfunctional. Thankfully, most “dry eyes” remain reasonably functional.

In 2006, the Delphi panel suggested the use of the term “tear dysfunction” rather than “dry eye.” Korb and Blackie described dry eye in 2015 as the wrong diagnosis for millions.4 In a practice limited to dry eye in Phoenix, it rarely, if ever, see purely aqueous deficient dry eye. That includes patients suffering from Sjögren’s syndrome and other immune disorders usually associated with aqueous deficiency. The majority of these patients have meibomian gland dysfunction (MGD) and other contributing factors. In my experience, it seems unlikely that aqueous deficient and evaporative dry eye.

For the majority of dry eye patients, their problem is not a lack of tears but rather dysfunction of the tears they do have.

Real causes of tear dysfunction

Effectively managing tear dysfunction requires an understanding of cause and effect. The effects of dry eye are familiar to both patients and clinicians. They include the usual signs and symptoms like dryness, grittiness, foreign body sensation, red irritated eyes, unstable vision, and corneal and conjunctival staining. The causes are far more complex and potentially confusing to the clinician.

MGD is recognized as both a cause and a contributor to dry eye. It is an obstructive and inflammatory disease that results in insufficient and abnormal production of tear lipids. While most associate MGD with excessive tear evaporation, its role in tear dysfunction is far more complicated.

Meibomian gland lipids are complex and provide a critical element in tear structure.10 Hydrophobic bonding of these lipids creates a tarpaulin-like covering of the ocular surface. Phospholipids in meibum possess both hydrophobic and hydrophilic properties and help bond outer nonpolar lipids to the underlying hydrophilic tear structure.12 Meibomian gland lipids have important tear stabilizing functions beyond serving as an evaporative barrier.13 While eye care practitioners understand the composition of tear lipids in general terms, the profession is years away from assaying and understanding individual variation and its impact on tear structure and function. This is similar to the evolution of blood analysis.

An unstable tear structure leads to surface exposure and, in more severe cases, frank damage. Mainly...
Dry Eye causes

Continued from page 21

taining integrity and function of the ocular surface is so critical that the eye is equipped with a variety of mechanisms such as increased mucin production to maintain an environment to regain homeostasis. Inflammation, which plays an important role in the progression of tear dysfunction, appears to result when balance is not regained, which can lead to even greater dysfunction.1

However, inflammation is a consequence, and with the exception of autoimmune disease, rarely a cause. An unstable tear structure also provides a poor refracting surface, another frequent complaint associated with “dry eye.”

Obstruction is the most widely recognized cause of MGD and resulting tear lipid insufficiency.14 As meibum stagnates and becomes saturated and thickened, pressure within the glands mounts and production is down-regulated. In more severe cases, gland tissue is lost through atrophy or as a consequence of localized inflammation as the body attempts to clear rancid liquids within the glands.

Gland clearance has long been recognized as a treatment for MGD.15 Performed appropriately, this includes the application of heat to help melt congealed meibum and mechanical expression. However, I have found that the regular use of warm compresses and massage, expression of the glands with forceps or paddles, or even the use of advanced technology like automated meibomian gland expression or intense pulsed light (IPL) still results in treatment failure or only temporary relief for some patients.

Based on my experience, understanding and addressing the underlying causes of meibomian gland dysfunction, lipid deficiency, and tear instability can improve patient outcomes dramatically especially when combined with advanced treatment approaches like assisted or automated expression and IPL.

Overlooked causes for tear dysfunction

From my perspective, the most overlooked causes and potential cures for tear dysfunction are:

- Changes to the visual environment
- Shifting diet
- Altered lid microbiome and enzymatic degradation of tear lipids
- Lagophthalmos and nocturnal exposure

Changes to the visual environment

The ocular surface and tear film didn’t anticipate Guttenberg and his printing press or Steve Jobs and the iPhone and iPad. Both book reading and computer use result in decreased blink rates and increases in partial blinks.11,12 Because meibum release depends upon normal lid function including full and complete blinking, decreased clearance and stagnation of meibum is a likely consequence of our modern visual environment and excessive digital device use inhibiting normal blink function. Blinking exercises can be beneficial, but the importance of reestablishing normal blink patterns must be reinforced. Dry eye expert Donald Korb, OD, FAAO, has long been a proponent of blink training and with his patient referring to the area of exposure—more commonly seen in patients who have a poor Bell’s phenomenon—is highly suggestive of nocturnal exposure.

Lagophthalmos can be quite severe. Some patients will share that they sleep with a bottle of artificial tear drops on their nightstand. It is also more severe in patients who have greater tear instability or those using forced air breathing devices that seal poorly and blow air over the exposed ocular surface.16 Sleeping with eyes partially or mostly open is a common occurrence with infants and children and is considered harmless with no damage occurring likely because of greater natural tear stability in this age group.

Management for poor nocturnal lid closure has traditionally been petroleum-based ointments; however, they are variably effective, messy, and difficult to remove. I currently use EyeSeals 4.0 (EyeEco), which creates a tight seal and maintains high moisture levels throughout the night for most patients.

In my experience, restoring protection at night can produce improvement in these patients with reduction of symptoms on waking and throughout the remainder of the day.

Conclusion

What eye care practitioners call dry eye appears to be simple, but it is complex, reflecting the critical role the tears and ocular surface play in human function. An over-simplistic view often results in clinical failure, but an over-complicated approach is equally perilous. Understanding the underlying disease and targeting the causes of tear dysfunction rather than the subsequent signs and symptoms is a more effective strategy for managing this rapidly growing patient population.

REFERENCES


Dry Eye

Dry Eye causes

Without wood, no heat would be produced. Likewise, the meibomian glands require essential fatty acids (EFAs) as raw materials to produce the lipids that make up meibum.13 Over the past century, changes in our intake of EFAs have increased the ratio of omega 6 to omega 3 fatty acids.13 Despite the controversy of the results of the DREAM study,14 personal experience reinforces the importance of omega 3 supplementation.21 After in-office testing, I currently recommend to patients 2.5 g daily of a re-esterified triglyceride formula containing a 3:1 EPA to DHA ratio or greater. At least two sources are available: PRN DE which requires four gel caps daily and Nordic Naturals EPA-Xtra which requires three gel caps.

Altered lid microbiome and enzymatic degradation of tear lipids

MGD is associated with alterations in the lid microbiome.22 Biofilm accumulation and bacterial overpopulation of the lids with subsequent release of bacterial toxins and elaboration of lipase and other bacterial digestive enzymes occurs.23 Staphylococcal toxins target competing species, but they are pro-inflammatory and cause irritation and inflammation when they get into the eye.

Bacterial elaborated lipase in the tears breaks down and saponifies meibum, producing soaps that cause burning, tear frothing that can be observed on slit-lamp exam (see Figure X), and, more importantly degradation of tear structure and stability.22 This often occurs in the background and is easily missed by the clinician who fails to recognize the importance of the altered microbiome and lid staph overpopulation frequently associated with MGD.22

Management is straightforward and requires the application of hypochlorous directly to the lids and surrounding peri-orbital skin.23 Hypochlorous acid is naturally occurring, produced by neutrophils to counter infection and inflammation.22 It also disrupts bacterial digestive enzymes like lipase and has been used successfully to treat necrotizing fasciitis as well as blepharitis and MGD.22 There are two primary ways to make hypochlorous acid: direct generation and variations of electrophoresis.

I direct patients to spray the hypochlorous acid directly onto their closed eyelids, flutter the lids for a second or two to spread the solution, then keep their eyes closed for 10 seconds before wiping the solution away with a tissue or onto their cheeks if they have rosacea. In my experience, topical hypochlorous acid appears to reduce skin inflammation in these patients with rosacea.22 I recommend this as part of a morning and evening hygiene routine.

Recently launched HyClear (Contamac) is my preferred hypochlorous acid product. I have found that it is stable; according to the company, it remains active and useable for more than a year after the bottle is opened, has minimal chlorine odor, and is effective clinically, and acts rapidly with most patients experiencing relief within a day or two. Other available hypochlorous acid products are available from OcuSoft, We Love Eyes, Avenova, and Bruder, among others.

Lagophthalmos and nocturnal exposure

Complete eye closure at night is important not just to create a seal preventing tear evaporation but also to allow the ocular surface time to regenerate after exposure. Extended environmental exposure during waking hours.22 Nocturnal exposure is a frequent and easily established finding in many patients. In my experience, it occurs in as many as 40 percent of patients presenting with dry eye complaints and may be a sign of underlying tear instability as a primary cause or contributor to dry eye signs and symptoms.

Exposure is discovered simply by asking the patient if he experiences dryness in the middle of the night or upon waking. It is confirmed by assessing lid closure by observation with a transilluminator or penlight with the head tilted back about 30 degrees. A horizontal band of fluorescein staining, corresponding to the area of exposure—more commonly seen in patients who have a poor Bell’s phenomenon—is highly suggestive of nocturnal exposure.

Lagophthalmos can be quite severe. Some patients will share that they sleep with a bottle of artificial tear drops on their nightstand. It is also more severe in patients who have greater tear instability or those using forced air breathing devices that seal poorly and blow air over the exposed ocular surface.26 Sleeping with eyes partially or mostly open is a common occurrence with infants and children and is considered harmless with no damage occurring likely because of greater natural tear stability in this age group.

Management for poor nocturnal lid closure has traditionally been petroleum-based ointments; however, they are variably effective, messy, and difficult to remove. I currently use EyeSeals 4.0 (EyeEco), which creates a tight seal and maintains high moisture levels throughout the night for most patients.

In my experience, restoring protection at night can produce improvement in these patients with reduction of symptoms on waking and throughout the remainder of the day.
Strategies for the Treatment of Meibomian Gland Dysfunction


100% PRESERVATIVE-FREE

ZIOPTAN® (tafluprost ophthalmic solution) 0.0015%

Visit us at Booth #6438 AAO 2019

©2019 Akorn, Inc. All rights reserved. JA001 Rev 4/19
IN BRIEF

New mobile EHR features for iOS, Apple Pencil

SUNNYVALE, CA—DrChrono Inc. announces that the company rolled all of the DrChrono features from Apple’s iPad and iPad Pro into iPhone mobile electronic health records (EHR)/practice management app.

DrChrono EHR is fully compatible with the new iPad 7, iPhone 11 and iPhone 11 Pro, according to the company.

In addition, for the first time ever, a medical records app can now use Apple Pencil features, says DrChrono.

New iPhone EHR features
DrChrono created parity, putting all of the DrChrono features from iPad and iPad Pro into the iPhone.

Using the new “Messages” icon on the DrChrono EHR on iPhone, physicians can get any information about their practice including incoming and outgoing faxes, lab results, prescription requests, referrals, and online appointments.

“Tasks” are also now available on iPhone to allow staff and physicians to track complex patient workflows.

For example, if a provider orders a lab for a patient, a task can be set for the provider to follow up with that patient.

On iPhone, some of the new “Tasks” features include task creation, custom statuses, categorization, filtering, searching, setting due dates, the ability to associate a task to inbox messages and/or patients, and task templates for common tasks.

New iPad EHR and Apple Pencil feature
DrChrono also supports the new 7th generation iPad which includes a 10.2-inch retina display, support for Apple Pencil, a full-size smart keyboard, and A10 fusion chip at a $329.00 price point.

DrChrono also just launched the first Apple Pencil medical record experience, allowing providers to double tap on Apple Pencil while drawing on medical record images.

“We are excited about the new iPad, iPhone and Apple Watch that were just announced. With our commitment to Apple, DrChrono just launched a big enhancement to our mobile EHR app on iPhone to ensure that we’re creating the very best experience on both iPad as well as iPhone,” says Daniel Kivatinos, co-founder and COO of DrChrono.

“We envision a world in which providers can do everything on iPhone, making a physician’s life easier.” Kivatinos says. “It is the little things that make an amazing experience—for example, the new Apple Pencil double-tap is a ‘wow’ experience which allows providers to do their very best work while seeing patients.”

Vision therapy solution available for lazy eye

SAN FRANCISCO—AmblyoPlay has launched a software-based vision therapy solution in the U.S. market.

With AmblyoPlay, users perform vision therapy exercises through red and blue glasses and interactive gaming software and are rewarded with tokens sent to their homes to exchange for physical awards.

The program stimulates the eye muscles through two 15-minute sessions per day.

According to the company, users have three subscription options for gaining access to AmblyoPlay: three months, six months, or 12 months.

The different subscription durations address the needs of the user, which can be affected by the user’s age, severity of vision problem, and how regularly he completes the vision therapy exercises.

Parents can monitor the progress of their child through AmblyoPlay’s automated progression tracker and share the results with their child’s doctor at subsequent eye examinations.

Pricing for AmblyoPlay starts at $110 for a three-month subscription.

The software is available for purchase on AmblyoPlay’s website for Windows and Mac computers, Android tablets, and iPads.

6 TIPS ON ACTIVATING YOUR BRAND

1: HAVE A FOCUS

Ask yourself what brings you joy and what your purpose is. Consider your target demographic. How can you be of service to them and also aligned with your own joy? Now pick just one message and start there. If you are focused on one clear message it is easier to create content that supports your brand.

2: ESTABLISH YOUR VALUES

You want your brand to come across as being human, with the same challenges and obstacles as your target demo. The only difference is that you can show you have found solutions to these challenges and obstacles – which you are willing to share with others.

3: TELL YOUR STORY

Create a story around your brand that your audience can engage with and align with your values. Ask yourself and reflect:

• Why do you do what you do?
• What lights you up about your work?
• It’s a good day when…
• Tell us an experience that challenged you but inevitably made you a better person
• One word: breakthrough. What comes to mind?

4: BE CONSISTENT

You have to demonstrate consistency across your communication, and appearance. Don’t underestimate how tiny inconsistencies can derail personal brand effectiveness.

5: CREATE A POSITIVE IMPACT

The best strategy to continue and build your brand is to grow a community. You can grow an online community through social media. Just remember you actually have to be social on social media. It is not just about the likes, you must engage, comment and start building relationships.

6: LIVE YOUR BRAND

Your brand should follow you everywhere you go. Self-awareness leads to true personal branding. The better you know yourself, the easier it is to be authentic.

Source: Jackie Janiec, director of marketing at Zyloware
TearCare® is indicated for the application of localized heat when the current medical community recommends the application of a warm compress to the eyelids. Such applications would include Meibomian Gland Dysfunction (MGD), Dry Eye, or Blepharitis.

©2019 Sight Sciences. All rights reserved.
06296.A
Use aesthetics to treat lid and periorbital conditions

Offer new technology options to patients with bags, dark circles, and fine lines

Technology and innovation has improved many aspects of health care and eye care, including ocular aesthetics. The options at optometrists’ disposal to treat periorbital skin changes are increasingly more effective, more affordable, and more available than ever before.

Let’s take a look at these physiological changes, what causes them, and how they can be managed.

Causes of eyelid and periorbital skin damage

Time, sun, and other environmental factors, including gravity itself, are the mortal enemies of youthful, tight skin. The anatomy of the skin can be simplistically compared to the cornea (see Figure 1).

The epidermis is the relatively thin, superficial skin layer most directly exposed to the environment, similar to the corneal epithelium. The middle skin layer, the dermis, comprises the bulk of the skin’s thickness just as the stroma does in the cornea, while the skin’s subcutaneous tissue (i.e., hypodermis) loosely correlates with the cornea’s endothelium.

Collagen, the main component of connective tissue, comprises about one-third of the total protein content of the body. In the skin, Type I collagen, and to a lesser degree Type III, are present in the dermis and subcutaneous tissue and are responsible for skin tautness.1,2 Elastin, on the other hand, is another connective tissue protein present in the body that has rubber-like consistency. Elastin fibrils slide over one another and recoil, providing elasticity.

The aging process reduces collagen production and changes the composition of the collagen that remains, yielding a loss of skin tightness.1,2

As a result:2

- The dermis thins to reveal blood vessels, and melanin levels may increase (which appear as dark circles around the eyes when those vessels dilate)
- The skin sags, and pockets of edema can form, producing “bags” under the eyes (i.e., malar edema)
- Fine lines (e.g., crow’s feet) develop

Damage from the sun’s ultraviolet rays reduces elastin synthesis, which when combined with other environmental and gravitational changes yields loss of skin elasticity (e.g., dermatochalasis) and the formation of deep wrinkles (i.e., rhytids).1,2

What, if anything, can be done?

Preventive advice for patients

As the old saying goes, “An ounce of prevention is worth a pound of cure.” Yet sometimes the preventive advice ODs could offer is so obvious that it is easy to overlook. To minimize damage to the periorbital tissue, including the risk of malignancy, ODs should proactively recommend our patients use:

- Sunscreen and other skincare products with sun protection factor (SPF) protection (even on the eyelids) to slow the development of rhytids and dermatochalasis
- Ultraviolet coatings on all clear and sunglasses

TAKE-HOME MESSAGE

Many eyelid and periorbital skin concerns still require an oculoplastics referral, but patients now have more options than ever before at their disposal. More so than in any other area of eye care, dedicated staff and consistent marketing are a must to succeed in any aesthetic endeavor. Fortunately, RF, IPL, laser skin resurfacing, and ultrasound therapies can be performed by a trained technician, freeing the doctor’s schedule to see other patients.

FIGURE 1: Anatomy of the skin. Image courtesy Cynosure

BY CHRIS WROTEN, OD, is owner-partner at a three-location private practice in southeast Louisiana

FIGURE 1: Anatomy of the skin. Image courtesy Cynosure
spectacle lenses
- Sunglasses with large eye sizes and/or wraparound designs to maximize protective coverage whenever outdoors
- Polarized sun lenses to reduce squinting and the development of “crows’ feet”

Obviously, even if patients follow these recommendations, clinical signs of damage to the lids and periorbital skin tissue will eventually still develop. What then?

**Therapeutic options**
Numerous in-office therapies and procedures can now be offered to improve the function of the lids and periorbital skin tissue as well as to enhance their aesthetic appearance.

Recommendations, especially for reducing dark circles and bags around the eyes, include:
- Applying cold compresses in the morning
- Suggesting patients ingest caffeine (a vasoconstrictor) in the morning (in moderation because excess caffeine can dehydrate tissue)
- Staying well-rested (seven to nine hours of sleep per night)
- Maintaining proper hydration
- Limiting salt intake
- Avoiding excess alcohol consumption, especially late in the evening
- Treating underlying allergies which can contribute to malar edema
- Potentially using over-the-counter creams and lotions containing retinol and/or other appropriate ingredients to remove makeup and to reduce fine lines, rhytids, and malar edema (Note: There are a multitude of options, but do your research and recommend only those products you are confident have a clinically proven effect; several product lines, such as We Love Eyes and Ocusoft’s Zoria products, can be made available for direct in-office sale)

Several therapeutic procedures are also available for patients.

**Radiofrequency therapy**
Radiofrequency therapy (RF) has been in use in medicine for nearly a century. This technology uses radio waves to selectively warm tissue. Radio waves have an affinity for intracellular water molecules, causing them to vibrate, which produces heat within the cell itself.5

One key consideration is that the tip of the RF probe never gets hot. It is simply a transmitter that emits radio waves into tissue, causing cells to heat from the inside out.

At high frequencies, RF can be used to vaporize the water molecules, causing the cell to lyse and allowing tissue to be incised with a simultaneous hemostatic effect (e.g., essentially bloodless lid lesion removal with an Ellman unit or similar RF device).

In recent years, it was discovered that at lower frequencies RF selectively delivered to the epidermis and dermis to achieve temperatures of approximately 42°C can:5
- Induce collagen denaturation (i.e., contraction)
- Stimulate new collagen synthesis (neocollagenesis)
- Significantly increase the uniformity of elastin

This elective procedure consists of applying an ultrasound gel to the area receiving treatment, activating the RF probe, gently applying the probe to the skin, activating the RF generator, and moving the probe in a corkscrew pattern over the skin while subjectively and objectively monitoring tissue temperature until it reaches ~42°C (Fig. 3).

Over the course of the next four weeks post-treatment, rearrangement and reformation of collagen and elastin occurs, resulting in tightening of the skin, reduction of rhytids and malar edema, and even mild-to-moderate elevation (2 to 3 mm) of the upper lids in dermatochalasis.

See Lid conditions on page 28
Usually three to four treatments in total are necessary over a four-to six month period for maximum therapeutic effect, followed by an annual maintenance session. Note that RF is not a replacement for blepharoplasty in moderate-to-severe cases.

**Intense pulsed light therapy**

Intense pulsed light (IPL) therapy (photorejuvenation) has been available for many years as a U.S. Food & Drug Association (FDA)-approved treatment for acne and rosacea. A handpiece emits brief, powerful bursts of light in the 500 to 800 nm range to thermally coagulate cells and produce vascular thrombosis, resulting in decreased hyperemia and reduction of problematic skin flora.

Rolando Toyos, MD, reported that in addition to reducing telangiectasia and enhancing skin appearance, many patients with dry eye syndrome (DES) reported a significant reduction in their symptoms post-IPL. Thus IPL is now being used to treat meibomian gland dysfunction (MGD) and DES, in addition to the aesthetic benefits it provides.

Additionally, as with RF, research using IPL as a therapy for MGD and DES has shown significant efficacy when treatments are applied to the eyelids because the combination of heat and massage is known to help evacuate the meibomian glands. One study found Pellevé RF therapy was equivalent to LipiFlow (Johnson & Johnson Vision) in objective and subjective measures.

**Other therapies**

For states with broad optometric scopes of practice, aesthetic laser therapies are available, collectively known as laser skin resurfacing, which employ various fragmentation lasers.

Additionally, non-invasive, FDA-approved ultrasound technologies are able to eliminate wrinkles and stimulate collagen production.

On the more invasive front, some states allow doctors of optometry to inject botulinum toxin to smooth and shape the periorbital region, treat essential blepharospasm, and employ commercially available injectable fillers to tighten skin.

Care should especially be given to appropriately assess patient risk, follow approved protocols, and maximize safe, effective outcomes for all invasive procedures.

**Conclusion**

Many eyelid and periorbital skin concerns still require an oculoplastics referral, but patients now have more options than ever before at their disposal. More so than in any other area of eye care, dedicated staff and consistent marketing are a must to succeed in any aesthetic endeavor. Fortunately, RF, IPL, laser skin resurfacing, and ultrasound therapies can be performed by a trained technician.
(most manufacturers provide training and certification), freeing the doctor’s schedule to see other patients.

These therapies can allow a practice to differentiate itself while expanding services and meeting patients’ needs with these private-pay procedures. In states with a more limited scope of practice, check with the state optometry board to insure these arrangements comply with all state statutes and regulations.

The tip of the RF probe never gets hot; it is simply a transmitter that emits radio waves into tissue, causing cells to heat from the inside out.

As patients continue to seek solutions for these conditions, it is exciting to have these novel therapies available, so consider implementing them as they make sense within individual practices.

REFERENCES
As seen on TV: Doing harm, not help, to the ocular surface

Dry eye can be exacerbated by poor advice and harmful products, including home remedies.

An interesting ophthalmologic emergency room (ER) study found that 40.5 percent of the patients who reported to the ER for an eye-related condition used a self-prescribed therapy to solve their eye problems.

Remedies for the eye concern include:
- “Homemade” eye solutions
- Folk remedies
- Herbal infusions
- Breast milk
- Lemon juice
- Holy water
- Boric acid mixtures
- Urine,
- Commercially available or pharmacist-recommended products

Amazingly, use of these therapies went beyond treating the common red eye and were used to manage acute, vision-threatening injury.

This information begs the question as to what your patients may be using to soothe, treat, or “beautify” the components of the ocular surface system.

Balanced functional unit
Consider that dry eye disease is a multifactorial disease that affects one or more elements of the ocular surface functional unit. The ocular surface functional unit includes:
- Tear film
- Cornea
- Limbus
- Conjunctiva
- Lid margin
- Muco-epidermal junction
- Lacrimal gland tubulo-acinar epithelia
- Lacrimal drainage system
- Eyelids

Added to this are considerations of blink rate and completeness, tear spreading abnormalities related to conjunctival degenerations or compromised eyelid position and/or function.

Are your patients manipulating this delicately balanced environment in any way?

Since the first television commercials, television broadcast has marketed products to viewers, including those that are “eye related.”

Now, there are a myriad of information suppliers and marketing platforms that include Instagram and Twitter as well as online suppliers, most notably Amazon, that can advertise and supply items from around the globe.

Remember that many of these are products that are unregulated or monitored by any governing agency.

Digital device usage
In the setting of ocular surface disease, a patient’s blink rate and blink excursion is of significant concern. Any ergonomic, positional, dysfunctional, surgical, or other component that can negatively impact the proper mechanism of the natural, complete blink may tax the tear film’s efficacy and hence, ocular surface homeostasis.

Digital device use has been associated with dry eye syndrome, in part related to compromising the quality of the blink. Reductions in blink rate may be substantial.

For example, Patel et al reported a mean rate of 18.4 blinks per minute before computer use, decreasing to 3.6 blinks per minute during operation. Tsubota and Nakamori observed a mean rate of 22 blinks per minute among office workers under relaxed conditions, reducing to seven blinks per minute when viewing an electronic display.

Across all age groups in developed nations, engagement with digital devices has increased substantially in recent years, particularly in the field of mobile media.

Lid margin tattooing has been associated with a shortened tear break-up time, increased ocular surface staining, and meibomian gland loss.

A European study reported that by 3 years of age, 68 percent of children regularly use a computer, and 54 percent undertake online activities.

In older age groups, use of technology is growing rapidly. Between 2011 and 2017, the proportion of the population classed as “recent Internet users” (within the last three months) more than doubled in the 75 years and over age group, and increased from 52 percent to 77.5 percent in those aged 65 to 74 years.

U.S. data indicates that 37 percent of adults aged 60 years and over spend five or more hours per day using digital devices.

Marketed to parents of infants and children, teenagers, working adults, and seniors, are a multitude of gizmos and gadgets, gimmicks and hacks to make digital devices “easier” for extended viewing in inappropriate, visually-sound postures.

Additionally, electronic games and toys, educational products, and entertainment are produced and distributed to younger and younger
OCULUS Keratograph® 5M
Dry Eye Evaluation and Topography

The Keratograph® 5M incorporates analysis of the upper and lower meibomian glands along with other essential ocular surface testing. Technician driven imaging brings efficiency to your pre- and post-op evaluations. All the information you need for your dry eye care!
Harming ocular surface
Continued from page 30

demographics.
In fact, the ubiquity of technology in modern society has led to the American Academy of Pediatrics adapting its screen-viewing recommendations for children. The guidelines encourage families to identify an appropriate balance between screen viewing and other activities.10

Cosmetics and the ocular surface
Ubiquitously available and with worldwide self-proclaimed “expert” bloggers, Internet and other informational content, of significant concern to the ocular surface and eyelid margins is the use of cosmetics.

Broadly, the impact of eye cosmetics on the adnexa and ocular surface includes:11
- Increased risk of eye infection
- Toxicity
- Allergy
- Changes in the tear film lipid layer
- Changes in tear stability
- Changes in eyelid comfort
- Changes to contact lens wear
- Changes in pigmentation of the conjunctiva and periocular skin
- Masses in the lacrimal system

Note that the law does not require cosmetic products and ingredients—other than color additives—to have FDA approval before they go on the market. Cosmetic products contain preservatives that include but are not limited to preservatives that include benzalkonium chloride (BAK) and formaldehyde (FA)-releasing preservatives. BAK and FA exert toxic effects on cells of the ocular surface and adnexa.12

In a similar category is the practice of eyelid tattooing—or cosmetic blepharopigmentation. Tattooing instruments, inks, shields, and guides are deliverable with one click to anyone with an online store account.

Cases of inadvertent corneal pigmentation, limbbal conjunctival pigmentation, full-thickness eyelid penetration during/after the tattooing process have been documented. Lid margin tattooing has been associated with a shortened tear break-up time, increased ocular surface staining, and meibomian gland loss. Post-procedure keratitis related to the tattooing process have been described anecdotaly.13,14 Furthermore, tattoo inks may contain heavy metal ingredients that can create artifacts on magnetic resonance imaging (MRI) and/or discomfort, burning sensation, or redness during MRI testing at the lid area of tattoo.15

Other tattoo-like procedures include microblading (semi-permanent tattoo using a small blade made up of tiny needles to deposit pigment under the skin) or long-lasting cosmetics designed to pigment the eyelid/eyelid margin area.

Not to be forgotten are eyelash heater curlers, chemical perms (perm to hair permanent curling), and dyes that are documented by the manufacture as toxic or poisonous.

In the quest for eyelash enhancement, eyelash extensions/false lashes are posted on multiple information channels including YouTube and beauty blogging sites. Eyelash extensions involve the gluing of fibers (natural or synthetic) to the natural lashes. Ocular disorders secondary to the eyelash extension process include keratoconjunctivitis from invasion of eyelash glues or removing agents onto the ocular surface, allergic blepharitis due to glues, conjunctival erosions from procedural eyelid fixing tapes, allergic blepharitis to the eyelid-fixing tape, subconjunctival hemorrhage as well as possible irritation from the formaldehyde and other sensitizing glue ingredients, and bacterial conjunctivitis.16

In the air
Finally, challenges to the skin, nasal passages, and ocular surface include those carried in the ambient air.

Allergens; fragrances and chemicals in air sprays and room fresheners/deodorants; and formaldehydes released from personal and homecare products, clothing, building materials, fertilizers, and pesticides can be hidden, potential offenders of the ocular surface.

Dry eye hero
As seen on TV and other information platforms, many of these seemingly harmless products can impact sensitive or at-risk individuals and compound disease management.

Think outside the box. Ask your patients lifestyle, hobby and occupation questions. Be an ocular surface sleuth and a dry eye hero.


Dr. Mastrota discloses relationships with Novartis, Sun Pharma, and OcuSoft. katherinemastrota@msn.com
Implement a hiring process to net staff

Incorporate these three phases for interviewing and onboarding the most ideal candidates

A well-established hiring process can help ODs onboard the best candidates in town for their practices. When done well, it can lead to hiring loyal, smart-working team players who can assist in growing a practice and creating an über customer experience for patients.

Over the past 15 years in practice, we have made some serious hiring mistakes.

From hiring staff who stole and embezzled from the practice to receiving ridiculous unemployment claims from the U.S. Department of Labor, we have learned a lot from those mistakes—what works, what does not, where the best candidates hang out, and the best way to interview and onboard them.

Hiring, onboarding, and retaining staff was not easy in the past. Staff would call in sick daily or not show up. We once had a full day of patients booked, and a staff member told us she had to leave immediately because she thought her husband was cheating on her while she was at work. She left. She was our only employee at the time.

I confess: We used to just hire a “body”—any “body,” as long as this “body” could answer the phone.

People would quit the same day with no notice. Staff would go to lunch and never come back, and we would get a call from the Department of Labor for unemployment benefits. It was horrible. We learned the hard way. But other ODs do not have to.

Candidates can look amazing on paper. They

can tell a potential employer everything she wants to hear in an interview.

But how can an OD determine if a candidate is a good fit for her practice?

Our hiring process

In our practice, we have staff who have been with us for over a decade. We also have seasonal staff we call on when we are overbooked or for busy seasons, such as back-to-school time. These staffers are happy to get away from their everyday lives and help out to make extra money—even if it is just for a couple of hours a year.

Our practice is able to have seasonal backup staff because of how they are brought onboard.

When hiring staff in the past, we experienced what some experts call “revolving door employee turnover.”

Here are three phases our practice uses to attract, retain, and ease hiring while onboarding the best candidates in town.

1. Application

The first phase is an online application that allows a candidate to schedule a phone interview. If the candidate does not follow directions or does not fill out the form entirely, he is unable to schedule a phone interview.

This process filters the best candidates for our practice: those who read and follow instructions.

For this phase, our practice uses an online scheduler system called Acuity Scheduling.

While there is a free version available, our practice uses the paid version, which allows for attaching videos, links, sending automatic email reminders to candidates, setting up different accounts for staff members, scheduling online performance reviews for current staff, and scheduling business phone calls.

The beauty of this online scheduling system is that an OD or hiring manager can set her availability. The candidate then chooses his time zone and appointment time slots. There is no going back and forth trying to schedule the best day and time that might work for both parties.

All questions in the application are required to be answered by the candidate. Otherwise, he cannot schedule a phone interview.

Applicants are encouraged to upload their resumes; however, some candidates look fantastic on paper but fail to measure up in real-life scenarios.

That is why it is crucial for ODs to know specific information—such as experience in optical and customer service—before they decide to onboard a team member.

While this is ideal, ODs are often open to candidates who may not have optical experience but have worked in previous jobs that gave them skills that will help them become an asset to their teams.

Our practice is able to have seasonal backup staff because of the way they are brought onboard

All of the questions we ask in the application are carefully curated. The questions are based on the position we are hiring for.

Once the application is complete, the applicant can schedule a phone interview. Our application process takes 15 to 20 minutes to complete. If a candidate is interested, he will take the time to complete it.

If the candidate is looking for just any job, he will likely get bored, lose interest, or prefer not to continue the application process. This is a blessing in disguise because we don’t waste time on candidates who are not committed or don’t take seriously our onboarding process.

The phone interview

We call the candidate at the number he gave us on the day and time he scheduled his phone interview. If he is not available, he has already proven to have bad organization and time management skills and will not be an ideal hire.

The phone interview is important because we want to know what the candidates sounds like over the phone. This person will be answering our phones, scheduling appointments, and speaking to patients daily. We want to make sure he speaks clearly.

In our practice, 80 percent of our patients speak Spanish. We do most of our phone interview in Spanish to be able to determine if candidates can communicate efficiently, effectively, and accurately with our patients.

During the phone interview, we ask open-ended questions like:

- What do you value?
- Tell us about a time you made a mistake but were able to turn it around.
- Ask curate open-ended questions that will help you find the best candidate for the position you are looking to fill in your practice.

If the phone interview goes well, we invite the candidate to our second phase.
Hiring process
Continued from page 33

2. Face-to-face interview
If the candidate passes the phone interview, he is sent a link via email using Acuity Scheduling to answer three questions and schedule the in-person face-to-face interview.

The three questions we ask at our practice are:

- How would your best friend describe you?
- Describe where and how you see yourself in 5 years!
- Tell me about a time you had a negative experience with a coworker or client who complained about you. How did you fix the problem to improve the relationship and resolve the situation?

ODs can ask any question they believe is congruent with the position they are looking to fill. It is essential to ask questions that encourage an engaging conversation and helps an OD get to know the candidate better.

Before the interview, we invite prospective employees to a “backstage” tour of our practice. We call it a “backstage” tour because we show them everything that happens “behind the scenes,” as in our on-premise lab, administrative offices, a meeting room, and lounging areas. We believe it is vital that candidates know that “the stage” is what patients see, hear, and experience. “Backstage” is what goes on behind the scenes that helps us deliver an über customer experience.

One of the most critical aspects of the face-to-face interview is how candidates interact the moment they walk into the practice for the interview. Do they have a teammate attitude? Or are they condescending and rude to staff when they come in?

We encourage our entire staff to interact with candidates before we conduct our face-to-face meeting or during our backstage tour to determine if candidates have a good attitude.

If the candidate passes the second phase, we invite them to Phase 3.

3. Paid working interview
At the end of the day, an employer wants to know if candidates have a good attitude, can do the job, treat patients with compassion, and work well with a team. The best way to do this is by having a working interview.

During the working interview, we give the candidate an overall look at an average day in our practice. We look at how fast the candidate learns as well as how she interacts with our staff and patients. We will usually know after a couple of hours if the candidate is a good fit.

Wrapping up
When executed in order, these three phases can funnel in the most qualified candidates.

REFERENCES

IN BRIEF

Costa recognized for eco-responsibility at 15th annual Essilor Global Operations Award ceremony

Costa’s Untangled collection—sunglasses with frames made from recycled fishing nets—was recognized for excellence in sustainability at Essilor’s 15th annual Global Operations Awards ceremony, held in Créteil, France.

The competition drew over 200 entries from around the world and highlighted projects from Global Operations teams across the group in nine categories:

- Customer satisfaction
- Service Improvement
- Society
- People development
- Safety and working conditions
- Eco-responsibility
- Cost competitiveness
- New products and services
- Innovation

The eco-responsibility category highlights initiatives aiming to reduce or reuse materials, reduce water, reduce energy consumption, and/or reduce waste generation.

“Untangled represents a true cross-functional team effort for Costa, with a goal of reducing and eliminating the most harmful form of ocean plastic pollution while educating consumers on issues through a groundbreaking, sustainable, and fully recyclable product line,” says TJ McMeniman, vice president of marketing at Costa.

Costa’s Untangle Our Oceans campaign and the Untangled collection have generated over 600 million media impressions to date, helped to strengthen the company’s leadership in conservation and sustainability, expansion into new markets—such as California—and contributed to a better alignment with new partners like Patagonia and REI, according to McMeniman.

“Not to mention selling over 25,000 sunglasses utilizing 2200 pounds of fishing nets,” McMeniman says.
MAKING LENS CARE EASY

CLEAR CARE® PLUS IS A CLEAR CHOICE FOR PATIENTS AND PRACTICES

An excellent way for eye care professionals to improve their practice’s performance is by helping more patients become successful contact lens wearers. Because of their convenience and benefits over conventional lenses,® daily disposable lenses are typically my first choice, but I also have patients whose lifestyle needs are best addressed with monthly replacement lenses. I just recently met with such a patient.

I explained that CLEAR CARE® PLUS, her question was: “How can it help me?”

When I recommend CLEAR CARE® PLUS to my patients, I always take a few minutes to show them the solution bottle and case, and walk them through the five simple steps for use. Consider employing the “How to Use CLEAR CARE® PLUS” video and Patient Tip Card with coupon. Patients appreciate having these available to them, whether they need a quick refresher, or want to spread the word!

Using CLEAR CARE® PLUS only takes a few simple steps. As I walked my patient through the process, her growing enthusiasm was obvious. One key attribute of CLEAR CARE® PLUS is that users do not need to rub their lenses prior to disinfection. As many of us often see in practice, studies show that the rub step required when cleaning lenses with MPS is frequently skipped,® so being able to offer lens care that does not require rubbing is a big opportunity for eye care professionals looking to simplify lens care for patients. In addition, CLEAR CARE® PLUS provides a visual cue — the bubbling action — that serves as a helpful reminder to patients. Users know that they will only see the bubbles if they use fresh solution every time they disinfect their lenses (minimum recommended disinfection time is 6 hours) and replace their case at the recommended interval.

In light of these differences, it is not surprising that comparative studies show that peroxide-based disinfection provides a significant compliance advantage over MPS.® This includes better overall compliance with directions for use,* as well as reductions in specific non-compliant behaviors: a 4x lower likelihood of reusing (“topping off”) solution and a 7x lower likelihood of using lens cases beyond three months.® On top of that, in a survey of habitual MPS users who tried CLEAR CARE® PLUS for 21 days, 93% of participants said that they found it easy to clean their lenses with CLEAR CARE® PLUS.® If lens care is easy, patients will be more compliant — and that is attractive to all eye care professionals!

Taking advantage of every opportunity to satisfy patients is a critical part of building and maintaining practice success. As more patients who wear monthly replacement lenses have become happy CLEAR CARE® PLUS users, the less I find myself reminding them about the importance of lens care compliance or managing issues related to non-compliance. This has helped me dedicate more time to providing the best comprehensive vision care for my patients’ needs. For patients who wear monthly replacement contact lenses, the choice is simple. Not only does CLEAR CARE® PLUS make lens care easy and support compliance,® but it also provides excellent disinfection efficacy* and supports comfortable lens wear,® making it an optimal lens care option for patients and for practices.

Blackfin launches Aura collection of beta titanium frames, acetate rims

Blackfin is launching a new collection of optical frames called Aura.

Colors for both styles include light tobacco, honey, army green, glossy black, dark tobacco, and transparent. These pair with structural frames available in black, gunmetal gray, olive green, or metallic blue. Palos also comes in pink with dark tobacco/pink rims.

Among the women’s featured frames are Florida Bay and the more squared cat-eye of Port Elizabeth.

The latest release includes five new styles with acetate rims and a beta titanium structure. These include a men’s squared style—Dunkirk—and Palos, a unisex pantos-inspired round frame.

Color palettes for these styles incorporate warmer tones, transparent acetates, florals, solid colors, or gradient shadings paired with beta titanium in black, champagne gold, dark blue, brown, powder pink, burgundy red, and bright silver.

All of the Aura frames are fitted with the brand’s new tilting nose pads and ergonomic-design Swordfish temple tips.
Fysh debuts fall collection of linear and lightweight designs

Thin, linear designs and lightweight constructions define the Fysh collection for Fall 2019. With patterns and contemporary color combinations, these new styles feature an unconventional play with shapes.

F-3637 is a round, combination frame transformed into a cat-eye shape with pierced end pieces. The monoblock front features a cut-down around the rims and outlined in an accent hue. This style is offered in black rose, brown gold, teal grey, and purple black.

F-3639 and F-3640 feature titanium styles of semi-rimless top rims outlined by a flat wire browline. Contrasting finishes and two-tone coloring complete the look. F-3639 is available in black-rose-gold, navy ice blue, and brown gold. F-3640 is available in black light gun, brown gold, and pink rose gold.

F-3641 exhibits a round shape with a double-bridge bar in a stainless-steel style. Featuring an engraved botanical pattern on the front and the temples, this model is sealed with an accent color on the bridge and the end pieces. Available color combinations include black rose, brown gold, wine black, and rose black.
Moncler Lunettes release sunglass, eyeglass collection

The latest sunglasses and eyeglasses collections from Moncler Lunettes feature rubber-coated temple tips, flat shapes, and a hexetate material exhibiting lightness, flexibility, durability, and recyclability.

Puffy shapes from the duvet designs are made using a process called "thermoforming," which makes acetate surfaces shinier and more rounded for a lighter structure.

Original logomania motif on the temples and thick frame fronts emphasize the brand’s identity. Bright, contrasting colors and streaked shades are featured alongside more classic tones such as black and Havana. The shapes range from square, unisex styles to round, cat-eye designs, and pilot styles.

**Sunglass collection**

**ML0095**
- Exhibits an acetate pilot style. A slight wrap is featured along the front of the frames. Thick temples are etched with the brand logo and stripe detail.

**ML0097**
- These frames feature a round, acetate design with a logomania motif on the temples. The soft, flat shapes call to mind the lightweight effect of down jackets, the very core of the brand.

**ML0098**
- A classic and masculine square shape, these acetate frames feature the brand’s logo on the temple and puffy-effect temples tips.
**ML0104**
These contemporary, feminine oval frames stand out for their soft shapes, a clear reference to the universe of iconic padded jackets. The puffy effect is made even more evident through an innovative acetate process, which makes the surfaces shinier, rounder, and lighter. Flat lenses complete the design.

**ML0102**
Is stylized as cat-eye frames with a puffy-effect external frame front that contrasts with its flat interior. The accentuated shapes are made shinier through thermoforming. The acetate and metal temples are completed with rubber-coated tips personalized with the logo.

**ML0103**
Features round men’s frames, which combine a thick hexetate frame front and colorful acetate rims with slim acetate temples housing a metal core.

**ML0106**
The unisex, wraparound style of ML0106 showcases a versatile design. Featuring bold edges, the thick temples are adorned with a logomania motif and colorful rubber nosepads.

**ML0104**
The slim metal frames of ML0104 exhibit a navigator style with a logo insert on the removable rubber double bridge and thick edges personalized with a logo motif. The slim metal temples feature a rubber-coated tips for greater comfort and grip.
Moncler Lunettes
Continued from page 39

**Eyeglass collection**

**ML05050**
ML05050 is designed in super flat acetate with an oval shape and streaked color variations. Nosepads and round temple tips are also featured.

**ML5059**
ML5059 feature round metal frames with adjustable nosepads to suit a variety of face. A thin metal temple and puffy-effect temple tips complete the style.

**ML5052**
The acetate frames of ML5052 feature a keyhole bridge and slightly thick frame front. Puffy-effect temple tips finish the look.
Williams Eye Institute is seeking a full-time Medical Optometrist. Our mission is to provide patients with high quality, efficient and cost effective eye care in a kind, professional and ethical manner. Our ideal candidate is a compassionate, team-oriented individual with a special interest and experience in ocular disease. We are looking for someone who can provide pre and post-operative care and work closely with the physicians in taking care of the medical and surgical needs of our patients. We have locations in Hammond and Merrillville, Indiana.

Responsibilities:
- Ocular disease management including glaucoma
- Comprehensive eye exams
- Pre and post-operative care
- Establish a working relationship with referral sources to ensure continuity of patient care.

Requirements:
- Indiana license
- Fellowship training preferred or 5 years experience with pre and post-operative care.
- Strong interpersonal skills with the ability to effectively communicate with other providers and staff members.

What we offer:
- Competitive pay
- Benefits include major medical, dental, 401K with generous profit sharing, disability and life insurance
- Malpractice insurance
- Work-life balance with no scheduled evening or weekend hours
- Generous PTO and paid holidays
- Fully trained support staff

Please send resume/curriculum vitae and cover letter to aanile@williamseye.com

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.
Why switch from pharmacy to opticianry? Deep down, I always knew I wanted to be an optometrist—I did a project on optometrists in the fifth grade. I was blessed to have an influential and impactful OD who didn’t treat me like the kid that I was but involved me in eye care. It sparked this interest. Given that my mom was in pharma sales, in college I quickly realized it was a great side job and I could get paid more than average for the same amount of time. So, I decided to work as a pharmacy tech, which helped me solidify that I really wanted to pursue optometry. Because I am cautious, I took a year off and worked full time as an optician tech, which helped me solidify that I really wanted to pursue optometry. Given that my mom was in pharma sales, in college I quickly realized it was a great side job and I could get paid more than average for the same amount of time. So, I decided to work as a pharmacy tech, which helped me solidify that I really wanted to pursue optometry.

Why three externships in such diverse areas? I wanted to focus on ocular disease. I had rotations with a therapeutic optometrist, neuro-opthommetrist, and at Southern College of Optometry. I wanted to push myself fourth year. Instead of doing a residency, I wanted to give it my all at the hardest possible rotations. Right after school, I had the opportunity to do post-ops for a corneal specialist. I had been here about two weeks, and he up and moved to Colorado. I inherited hundreds of corneal transplant patients. I had to learn quickly how to take care of them. Now I realize I thrive in that atmosphere of figure-it-out, call-us-if-you-need-anything, good-luck. [Laughs]

What is it like being married to another OD? It is wonderful because I have a phone-a-friend 24 hours a day, 7 days a week. Being able to talk with him about eyes, ping ideas off of each other, and go to CE together is very nice. Even though we are very similar, he is much better suited in private practice and I am much better suited in an MD/OD atmosphere.

What drew you into speaking? When I inherited patients with corneal issues, it was within weeks of Shire’s Xiidra (lifitegrast) launch. A lot of these patients had previously tried Restasis (cyclosporin, Allergan) or other dry eye medicine. The previous doctor wrote, “Consider Xiidra when a corneal transplant patient persistently doesn’t improve with other options.” So, one by one, if they weren’t getting any relief, I would switch them. After seemingly hundreds of patients, I was noticed by my local rep, and the next thing I knew Shire was asking me to be on their advisory board and speak.

What do you wish you knew before you went to optometry school? I wish that I understood how close the relationships could be that I would make with my patients. After you see people year after year, you are up to date on their cancer prognosis or their family friend who is going through this and you establish this connection. The doctor/patient relationship is very important, but I wish I knew before optometry school where to draw that line versus being too much of a friend to the point where they call you on your cell phone at night. [Laughs] I never realized I would become such friends with my patients, and I don’t see them as patients anymore.

What’s your guilty pleasure food? Cheese. [Laughs] I’m not a chocolate gal or even a sweets gal. On a trip, I sample every cheese they have to offer. [Laughs]

Why go into practice vs. academia or industry? I always was interested in academia, and those same qualities help me teach my technicians. I teach patients about their own eyes every day. I didn’t go into academia because I was presented this incredible opportunity right out of school to work in my dream job seeing exactly the patients I wanted to see. Had it not, I may have considered residency and maybe academia, but my dream job had an opening so I took it and ran.

How do you see what you do changing in 10 years? Arkansas ODs are in the process of possibly expanding scope. I feel prepared for when that time comes to be one of the people to really dive right in. It’s all about helping our patients in Arkansas, and I’m ready when the state of Arkansas is ready.

What’s the craziest thing you’ve ever done? I used to have this fear of going too low and too high. In college, I became a certified scuba diver and have gone cave diving, volcano diving, night diving, open water diving. I still get nervous but I’ve conquered the fear of going down low. Since I met my husband, I’ve tried to conquer all the tall things. On vacation, I climb all the tall structures, every single bell tower, every single cliff. But the craziest was crossing a suspension bridge with a clear bottom at the top of the Swiss Alps in Grindelwald. Absolutely terrifying. It is on the side of the cliff, it sways, and it is straight down thousands of feet. It was wet and rainy, so my feet were slippery and sliding. I’m usually encouraged with the promise of getting a squished penny souvenir. [Laughs] For some reason if I can have a squished penny after, I’ll do this crazy thing. I now have a collection of squished pennies from different countries, but I had to conquer something to get the penny. The Eiffel Tower, terrifying, but I did it for a squished penny. [Laughs]

—Vernon Trollinger

Ocular disease, cheese, going high and low

Jade Coats, OD
Optometric physician at McDonald Eye Associates in Rogers, AR

I wish that I understood how close the relationships could be that I would make with my patients. After you see people year after year, you are up to date on their cancer prognosis or their family friend who is going through this and you establish this connection. The doctor/patient relationship is very important, but I wish I knew before optometry school where to draw that line versus being too much of a friend to the point where they call you on your cell phone at night. [Laughs] I never realized I would become such friends with my patients, and I don’t see them as patients anymore.

What’s your guilty pleasure food? Cheese. [Laughs] I’m not a chocolate gal or even a sweets gal. On a trip, I sample every cheese they have to offer. [Laughs]

Why go into practice vs. academia or industry? I always was interested in academia, and those same qualities help me teach my technicians. I teach patients about their own eyes every day. I didn’t go into academia because I was presented this incredible opportunity right out of school to work in my dream job seeing exactly the patients I wanted to see. Had it not, I may have considered residency and maybe academia, but my dream job had an opening so I took it and ran.

How do you see what you do changing in 10 years? Arkansas ODs are in the process of possibly expanding scope. I feel prepared for when that time comes to be one of the people to really dive right in. It’s all about helping our patients in Arkansas, and I’m ready when the state of Arkansas is ready.

What’s the craziest thing you’ve ever done? I used to have this fear of going too low and too high. In college, I became a certified scuba diver and have gone cave diving, volcano diving, night diving, open water diving. I still get nervous but I’ve conquered the fear of going down low. Since I met my husband, I’ve tried to conquer all the tall things. On vacation, I climb all the tall structures, every single bell tower, every single cliff. But the craziest was crossing a suspension bridge with a clear bottom at the top of the Swiss Alps in Grindelwald. Absolutely terrifying. It is on the side of the cliff, it sways, and it is straight down thousands of feet. It was wet and rainy, so my feet were slippery and sliding. I’m usually encouraged with the promise of getting a squished penny souvenir. [Laughs] For some reason if I can have a squished penny after, I’ll do this crazy thing. I now have a collection of squished pennies from different countries, but I had to conquer something to get the penny. The Eiffel Tower, terrifying, but I did it for a squished penny. [Laughs]

—Vernon Trollinger
The ONLY Balanced Anolytic Hypochlorous Acid™
for Essential Daily Eyelid Health Management

Introducing the next generation of hypochlorous acid for essential daily eyelid health management. With a broad-spectrum of antimicrobial activity from the pure hypochlorous acid .01%, HyClear kills most ocular pathogens in 15 seconds*.

HyClear is an exclusive brand for Optometrists and Ophthalmologists for sale directly to their patients. It will provide a safe, easy to use treatment for eyelid hygiene without the high cost or hassle of being a prescription product.

Visit getHyClear.com and create an account today!
ACUVUE® OASYS with Transitions™ Light Intelligent Technology™—
the first-of-its-kind contact lens that seamlessly adapts to reduce the stressful impact of light*—
day or night, indoors or out.1,2

See ACUVUE® OASYS with Transitions™ in action at JNJVISIONPRO.COM

*By helping your vision recover from bright light faster and reducing squinting.
Lenses are not a replacement for sunglasses.

Important Safety Information
ACUVUE® Brand Contact Lenses are indicated for vision correction. As with any contact lens, eye problems, including corneal ulcers, can develop. Some wearers may experience mild irritation, itching or discomfort. Lenses should not be prescribed if patients have any eye infection, or experience eye discomfort, excessive tearing, vision changes, redness or other eye problems. Consult the package insert for complete information. Complete information is also available from Johnson & Johnson Vision Care, Inc. by calling 1-800-843-2020, or by visiting www.jnjvisionpro.com.


ACUVUE® OASYS is a trademark of Johnson & Johnson Vision Care, Inc. Transitions, the Transitions logo and Transitions Light Intelligent Technology are trademarks of Transitions Optical, Inc. used under license by Transitions Optical Limited and Johnson & Johnson Vision Care, Inc. All other trademarks are the intellectual property of their respective owners.
©Johnson & Johnson Vision Care, Inc. 2019 | GCC19059 | February 2019