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Redefining Refractions With Optical Path Diagnostics:

Harvesting more data in less time — with superior patient outcomes and satisfaction

PART 2: AN ONGOING SERIES of OPTOMETRIC PRACTICE TRANSFORMATIONS

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Adding the Right Technology Can Improve Efficiency

Investing in the right equipment can benefit your patients and your bottom line.

Scot Morris, OD

Eye Consultants of Colorado, Conifer, Co.

Without question, technology will have a tremendous impact on our profession in the very near future and we must be deliberate in our technology integration to take advantage of its benefits. Many, myself included, argue that the technology of the next decade could have a greater impact on our profession than diagnostic or therapeutic privileges have had in the past. We have more information at our fingertips than ever before — the question is: What are we doing with it?

Within the last decade, technology has changed the way we view the retina, the optic nerve and the cornea by integrating digital photography, scanning laser ophthalmoscopes and topography, respectively, into our practices. Electronic health records (EHR) and various diagnostic technologies are also shaping the way we “see” our

Impending Reality: Due to changes in healthcare, optometrists will need to see more patients, more efficiently in order to survive on shrinking reimbursement schedules.

patients, in terms of both clinical efficiency and business intelligence. Due to changes in healthcare, optometrists will need to see more patients, more efficiently in order to survive on shrinking reimbursement schedules.

Technology utilization will play a critical role in this survival process. Though many may consider this heresy, we, as optometrists, cannot afford to continue seeing a patient from the history-taking stage, through pre-testing, refraction and the remainder of the exam as we’ve done in the past. This way of operating is incredibly inefficient. It’s time to face the reality that diagnostic refracting systems are more accurate than we are, give us more information in less time and take the guesswork out of many procedures, allowing us to delegate these tasks to capable staff members.

Every task you can delegate leaves more time to do what you were trained to do: interpret and utilize data to treat your patients’ visual and medical issues. For example, when was the last time your primary care doctor drew your blood or checked your weight and blood pressure?

I hear many people say, “I don’t make more money by refracting faster or better.” That may be true but you may lose money by going slower. More efficient visual analysis leads to increased profit from one of two avenues: increased operational efficiency and increasing patient-based revenue. Increased efficiency means greater throughput (ie, you can see more patients) and more time to discuss personalized options for eye wear (ie, doctor-driven dispensing). This leads to a more effective use of your time and the patient’s time, which leads to more effective education and more profitable selling.

Operational efficiency also relates to reducing human transcription error by utilizing an automated system that feeds your visual data directly into your EHR program. For example, what is the cost of one remake, both in terms of the actual physical remake costs and the loss of patient confidence?

In summary, the survival of each optometric practice will depend on how well the practice is run and how efficiently and effectively the patients’ experiences within that practice are managed. To assess this, we evaluate workflow efficiency. You can improve your practice’s workflow efficiency by conducting an in-depth study of each task and how much time it takes. Then evaluate each task to make it more efficient.

Many people feel that visual analysis technology doesn’t create a profit so it should be made a low priority on the “acquisition line,” but I disagree. Remember that since approximately 50% of your office profits come from the optical department, visual satisfaction is crucial to the success of your practice. If newer diagnostic devices can help increase your operational workflow and provide a better visual analysis, then they have value. In other words, you should consider scrapping that old piece of equipment for a new “high tech” device. This purchase may even allow you



Autolensometers:
LM 600 and
LM 1800 series from
Marco

to be more competitive in your local area, especially if you market your cutting-edge technology to your patients and the community.

Lensometers

Lensometers are an essential but overlooked piece of technology in the optometrist’s office. This is especially true when that highly coveted, new patient that you just recruited away from your competitor comes in to complain about their eyeglasses. Without an accurate lensometry reading, you can’t determine how your results compare to theirs which the patient is unhappy with. The new lensometers are user friendly, have ergonomic designs with small footprints and measure accurately everything from pupillary distance to prism and progressive designs. Some of them



OPD-Scan III and Marco M3 Autorefractor

even feature a UV detection unit to assess and report how much UV protection patients are actually getting from their spectacles.

Autorefractors

Now that you’ve determined which eyeglass prescription your patient is wearing, your staff can have them turn their chair ever so slightly and look into your new autorefractor. I must admit that I was not a fan of previous generations of autorefractors but newer versions have changed my mind. Marco’s OPD-Scan III combines refraction, topography, wavefront analysis and a host of other features all into one ergonomic package. Best of all, it feeds directly into my EHR, saving me time and decreasing costly transcription errors. New devices should allow you to evaluate each

patient’s total visual system thus allowing you to correctly diagnose and treat visual complaints.

Digitally Controlled Refraction Systems

Patients hate the series of questions “Which is better: 1 or 2?” even more than we do. Many people aren’t great decision-makers and this forces them to make a choice. Let’s not assume for a second that patients don’t realize that they’re doing the same exact test (on maybe the same piece of equipment) that they did 5, 10 or even 15 years ago. People expect and demand the most current



Marco TRS-3100 and TRS-5100 automated refraction systems

technology. Aside from patient expectations, anything that can make this process more efficient and less stressful for you, your patient and your staff should be considered.

Many of the new automated refractors allow you or a staff member to look at your patient’s prescription, visual acuity and chart letters simultaneously. The best part is that they allow you to alternate very quickly between the patient’s current prescription and the “new and improved” prescription you give them, helping them understand immediately that they need new lenses. Our practice’s favorite refractor is the Marco TRS-5100. Not only is it quiet, fast, efficient and comfortable, but it also has the “cool” factor. It allows us to evaluate, document and auto-populate (using our Exam Writer software) each patient’s unaided visual acuity, lensometer reading, acuities with eyeglasses, auto-refraction, subjective refraction values, associated acuities, phorias and even the keratometer readings (if your ARK or OPD is synched up). You can even check and document phorias, vergences, fusion status, stereopsis, near acuities, NPA, NPC, NRA and PRA. If the TRS-5100 could read and fit soft contact lenses, it might be able to examine patients without me!

Make the Change

So what are you waiting for? Acquire and integrate a more comprehensive vision analysis system and merge it with EHR to improve patient satisfaction, increase your efficiency and improve your bottom line. ■

Technology That Helps Build Trust

The accuracy, speed and efficiency of the XFRACTIONSM Process nets tangible & intangible benefits.

April Jasper, OD

Advanced Eyecare Specialists, West Palm Beach, Fl.

When optometrist April Jasper relocated her West Palm Beach, Fla. practice 2-1/2 years ago, she more than doubled the square footage of the office and was able to add two more examination lanes. After just 1 month in her new location, Dr. Jasper realized the technology that had made a significant contribution to the practice's efficiency in her old office would be just as valuable in her new office. She promptly ordered two more XFRACTIONSM systems — the OPD-Scan III wavefront aberrometer and the TRS-5100 digital autorefractor — from Marco.

"I first purchased the technology for my original location, where I had approximately 870 square feet of space and one examination lane," Dr. Jasper says. "With the XFRACTION system's speed and accuracy, I was able to grow the practice in the space that I had. I now have 2,100 square feet and three lanes. At first, I thought I needed just the one system, but after only a month in the new office, I realized I needed all three lanes running with the same process. It's been a tremendous benefit to the practice."

Powerful Partners: XFRACTION and EHR

At about the same time Dr. Jasper purchased her first XFRACTION system, she began converting all of her paper charts to EHR. "This turned out to be a huge benefit," Dr. Jasper says. "With the touch a button, we can transmit all of the components of the refraction, including lensmeter readings and PD measurements, from the TRS-5100 to the EHR system. This eliminates the potential for errors, and when you're manufacturing eyeglasses, that's a big deal. The last thing you want is a data entry error that will result in remakes and complaints."

Not only is the XFRACTION system accurate, it is also efficient, with a time savings that Dr. Jasper was able to quantify. "When I looked at all of the entries we would have to do manually, I found we were eliminating, on average, about 50 clicks which I estimated to be about 5 minutes per patient."

Fast, Comprehensive Data Capture

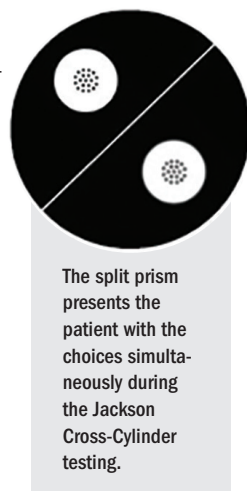
The OPD-Scan III harvests 2,520 data points from the optical path and provides more than 20 wavefront diagnostics in 10 seconds per eye. In addition to autorefraction, it measures 11,000 corneal topography locations and identifies higher-order aberrations. The TRS-5100 completes the required refraction with digital speed and accuracy. The system also interfaces with my LM-600 auto lensmeter.

"The difference between this and other technologies is that it captures more data points from the cornea and throughout the optical path, enabling me to identify pathology that I might not have seen otherwise," Dr. Jasper says. "Armed with this information, I know if the refraction will be a simple process or if some pathology may interfere with a patient's ability to achieve 20/20 vision. If pathology is present, I can explain to patients that there may be some limitations and show them why, using the images that were captured during the process."

Instill Trust

With the TRS-5100 digital autorefractor, you can demonstrate a patient's current prescription and, with the touch of a button, show them how they will see with the new refraction. Rather than try to explain a small change, which a patient may or may not notice, you can show them. "To be able to demonstrate these differences to patients is invaluable," Dr. Jasper says. "They love it completely. Patients who might not have purchased eyeglasses will buy them because they can see the benefit. They trust that the purchase will be worthwhile."

Instilling trust in patients is one of Dr. Jasper's goals. "Stephen M.R. Covey, author of The SPEED of Trust, theorizes that one of the main reasons for the economic downturn is that people don't trust that they're spending money on something that they should be," she says. "I'm not saying



"The difference between this and other technologies is that **it captures more data points from the cornea and throughout the optical path**, enabling me to identify pathology that I might not have seen otherwise," Dr. Jasper says.

our patients don't trust us, but I think trust, in general, isn't the same as it once was. The XFRACTION process helps me build trust with my patients. I've never really had a good way to answer those common questions: 'How much did my prescription change? Do I need new glasses?' That problem is eliminated with this system, as value is realized by the patient."

Don't Just Use It, Explain It

Integrating the XFRACTION process into practice is seamless, Dr. Jasper says. In fact, she purchased her first system at about the same time she was converting her office to electronic health records (EHR). (See "Powerful Partners: XFRACTION and EHR.") Her advice to new users has more to do with their interactions with patients.

"Technology is great to have and to look at, but it's even better if we can describe it to patients in a way that helps them understand its value," Dr. Jasper says.

When describing the XFRACTION process to patients, Dr. Jasper emphasizes its simplicity and accuracy. "One of the things patients fear most about a visit to the eye doctor is the refraction," Dr. Jasper says. "They're afraid they'll give wrong answers and their eyeglasses will be wrong. It's nice to be able to address that fear ahead of time, so patients know the work has already been done. I can tell them the technology is so accurate that all they need to do is relax and help me to get to the final number."

Speed Minimizes Patient Fatigue

Another aspect of the XFRACTION system that patients appreciate, even though they may not realize it, is its speed. This is a benefit that can ultimately pay off in the optical. "When the refraction is quicker, the entire examination is quicker, and patients do what they really want to do, which

is shop for new eyeglasses," Dr. Jasper says. "Some experts believe that, on average, if patients can't make it from reception through the examination and to the optical in 40 minutes, they're less likely to make a purchase in your optical. They've lost interest. They just want to go home. They'll either purchase something to hurry up and get it done, or they won't buy at all."

Exceptional Experience

An exceptional overall experience at Dr. Jasper's practice, enhanced by her use of the latest, most efficient equipment, often prompts patients to refer friends and family members to the practice. On at least one occasion, however, it was the equipment itself that brought in a new patient.

"One of my patients did a great deal of online research to find out how to get the most accurate refraction," she says. "He learned about the XFRACTION process and then found our website, where we have a photo of the equipment. He drove 30 miles to our office exactly for that reason."



LM-1800, OPD-Scan III, and TRS-5100 from Marco.

"Patients may not come in saying, 'I want that refraction system,'" Dr. Jasper says, "but they often say, 'My friends told me this is where I will get a great pair of glasses easily, and without taking all day.' Advanced technology is absolutely recognized and of real value to patients." ■

Buying Quality Time

Save time every day when you turn your manual refractions into integrated, automated 'Xfractions'.SM

John Warren, OD

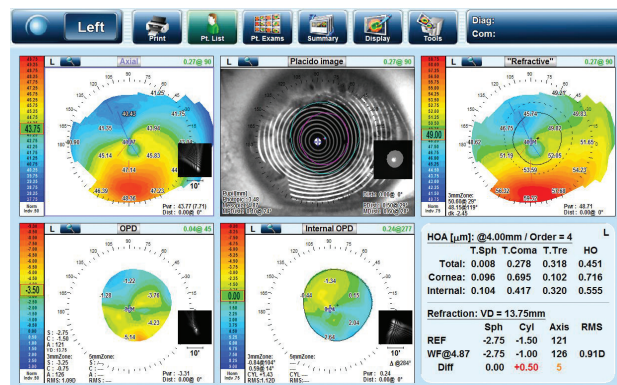
Warren Eye Care, Racine, Wi.

If you could save 4 minutes or more per patient encounter all day every day, what would that mean to you? Would you see more patients per day? Would you work fewer hours? Would you spend more time in patient consults? To Racine, Wis., optometrist John Warren, it means he can spend more quality time connecting with his patients on a personal level, which supports his mission to continually improve each patient's experience in his office. He attributes his improved efficiency to the XFRACTIONSM Process.

Dr. Warren has been performing XFRACTIONS using Marco's OPD-Scan III wavefront aberrometer and TRS-5100 digital autorefractor for several years. Here is how the system helps him save time and enhance his patients' experiences.

Obtain More Usable Data Faster

The OPD-Scan III combines the functions of an autorefractor, keratometer, pupillometer, corneal topographer and wavefront aberrometer. It produces 2,520 data points across up to a 9.5 mm pupil and automatically selects the best refraction as your starting point to finalize



By reviewing the maps generated by the OPD Scan III, significant factors affecting the patient's optical system are known before beginning the exam.

idea of what their visual system will be like and how well I can make them see," he says. "I review their OPD data before even stepping foot into the exam room, allowing me to know everything there is about their optical system and ametropia. For example, the OPD-Scan III gives me information about a patient's vision when his pupils dilate in low light, helping me to accurately predict potential problems he may have when driving at night."

In some cases, the corneal topography and wavefront data reveal previously undetected anatomical anomalies, explaining why some patients may not be able to achieve 20/20 visual acuity — also essential to managing their expectations.

Demonstrate Rx Differences

The other key component of the XFRACTIONSM Process is the TRS-5100 digital autorefractor. "With the quantitative and qualitative information provided by the OPD-Scan III, I have a really solid starting point to complete the process with the TRS-5100," Dr. Warren says. "My typical refraction used to take 4 to 10 minutes, but I can often finalize an XFRACTION in about 45 seconds."

With the direct comparison feature of the TRS-5100,

practitioners can instantly show a patient how he will see with his old and new prescriptions, so he can verify the recognizable change and appreciate any enhancements. "This is a great way for me to demonstrate how much better a patient will see with an updated prescription," Dr. Warren says. "Even patients with small changes, who, in the past, might not have purchased new eyeglasses, see the difference and often decide the change is enough to warrant new glasses. This one feature has helped to significantly increase sales in my optical department."

According to Dr. Warren, utilizing the split prism feature to refine the cylinder portion of the prescription greatly speeds up the Xfraction process. Patients can simultaneously see both of the choices for the cylinder power and axis, preventing the "show me that again" that is all too common when I use the Jackson cross cylinder test to refine cylinder. "I didn't realize how much time I would save and how much easier that would be for me and for the patient," he says.

Save Your Rotator Cuff

Another benefit of the XFRACTION Process is one that only an eye doctor can appreciate. "The control panel on the TRS-5100 drives the entire refraction process," Dr. Warren explains. "I don't have to touch the refractor or change the eye chart through the entire XFRACTION process. All of the controls are right in front of me, so I'm not constantly bending, stooping, twisting and turning. I didn't realize just how nice that would be until I used it for a while."

Although Dr. Warren did not develop any physical ailments from the repetitive motions of refractions, he knows some doctors who have experienced some

That Was Easy!

Patients who are new to Dr. Warren's practice and have experienced only traditional refractions often comment about the speed and simplicity of the XFRACTION Process. "They'll say, 'Wow! That's different!' or 'We're done already?' or 'That was easy,'" he says. "Instead of asking, 'Which is better 1 or 2, 2 or 3 ... 18 or 19?' I ask only 3 to 5 questions per eye, and we're done."

Patients confirm their satisfaction with Dr. Warren's service and professionalism in their reviews of his practice, writing "always on time," "always on schedule," "uses the latest technology." As he notes, "The feedback from patients about our efficiency has been huge."

From "Welcome" to "Have a Nice Day" in 30 Minutes or Less

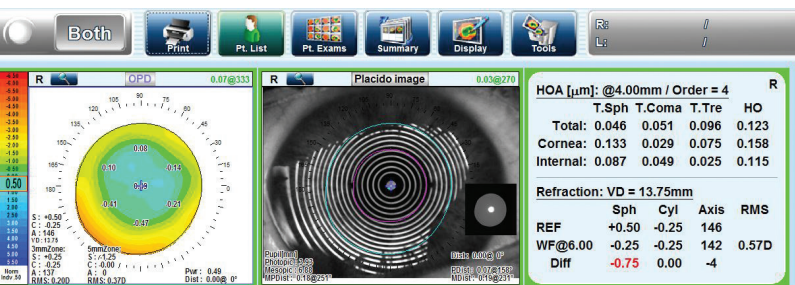
"I'm always looking for ways to make the patient's experience in my office better," Dr. Warren says, "and although it may be a blow to the ego, patients don't want to spend an hour or more with me having their eyes examined. They'd rather get in, have their problem solved, and go on with their day. I like to respect their schedules.

"With the XFRACTION system, I don't strive to see a vastly larger number of patients, but my examination time for a typical patient who has no complicating factors is about 25 minutes from the time he arrives until he's ready to leave. XFRACTIONS save time, and patients love that."

issues. "I know many doctors who perform their own refractions and after 25 years, they have developed rotator cuff problems because they constantly have one or both of their arms out to their side, adjusting the manual refractor," he says. "Some of these doctors adopted the XFRACTION Process and immediately had relief because they were not performing those repetitive tasks."

Be the Only XFRACTIONist in Town

Would Dr. Warren advise colleagues to consider purchasing an XFRACTION system? "I tell my competitors not to get one, so I'm the only eye doctor in the area who has one," he says, tongue in cheek. "Seriously, this system makes examinations more thorough and life easier. It causes patients less angst over the refraction process, and it makes the process much more efficient. By bringing in this technology, you're buying time and improving the patient-driven portion of the patient's experience. You can use this time to see more patients per day or hour or week, or you can see the same number of patients in less time and have more time off, or you can see the same number of patients in less time but have more quality time with them. That's what XFRACTION did for me. I use those extra 3 to 5 minutes to talk to patients not only about their visual needs, but also about their kids' soccer games, the latest movies, even the weather. When people ask about how XFRACTION has benefited my practice, I tell them that, above all other benefits, I certainly have more quality time with my patients, and that's exactly what they want." ■



This patient's Lasik ablation zone is smaller than their mesopic pupil, and therefore has a myopic shift of -0.75 Diopters as their pupil enlarges.

a patient's prescription. (Corneal topography mapping utilizes an additional 11,000 data points.)

According to Dr. Warren, the wealth of information provided by the OPD-Scan III enables him to anticipate patients' needs and how to address them. "Before I even see patients face to face for the first time, I have a good

Creating a High-touch Experience With High-tech Equipment

The XFRACSM process saves time, improves efficiency and enhances the patient's experience.

Nathan Bonilla-Warford, OD

Bright Eyes Family Vision Care, Tampa, FL.

After purchasing his Tampa, Fla., practice in 2006, then renovating and rebranding it as Bright Eyes Family Vision Care, Nathan Bonilla-Warford, OD, still had some key pieces of equipment on his wish list. Several years later, he was able to check off the OPD-Scan III wavefront aberrometer and the TRS-5100 digital autorefractor from that list and incorporate Marco's XFRACSM process into his practice routine. "What's unique about the XFRACSM process is that it quickly provides accurate clinical data in an efficient way that saves time and doesn't interfere with patient flow," Dr. Bonilla-Warford says. We asked Dr. Bonilla-Warford to recap some of the outstanding features of the XFRACSM process.

Fast, Accurate Data Acquisition

The OPD-Scan III combines the functions of an autorefractor, a keratometer, a pupillometer, a corneal topographer and a wavefront aberrometer. It produces 2,520 data points across up to a 9.5-mm and automatically selects the best refraction as the starting point to finalize a patient's prescription. (Corneal topography mapping utilizes an additional 11,000 locations.) In less than 1 minute, you can discern which patients will need minimal refinements to their prescriptions and which patients will require full refractions. The TRS-5100 digitally-controlled refractor completes the required refraction with speed and accuracy. According to Dr. Bonilla-Warford, this knowledge is particularly helpful, given his patient population.

"The demographic makeup of my practice is somewhat unusual for Florida," Dr. Bonilla-Warford says. "About 40% of the patients I see at my primary office are children un-

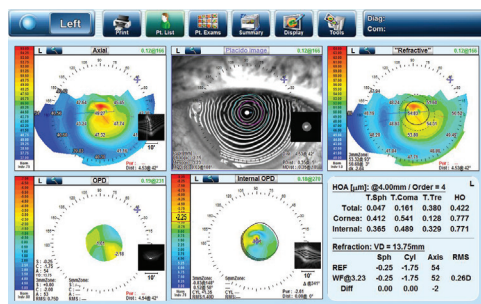


Figure 1. This patient has significant corneal irregularity due to EBMD and surface drying, which limits their visual acuity. Knowing this early in the clinical process saves considerable time in examination and educating the patient, and setting expectations.

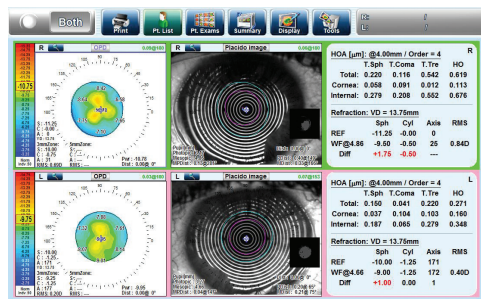


Figure 2. This patient's right eye has a cataract, causing very different visual result for their two eyes. The OPD Scan III maps make it easy for the patient to understand why their vision is different.

begin the process. Not only does the XFRACSM process save time, but it also helps my chairside manner."

Patient Education Tool

Data acquired from XFRACSM also help Dr. Bonilla-Warford educate his patients. "I find it's incredibly useful in explaining a patient's condition, particularly if the best-corrected visual acuity of one eye differs from the other," he says. "I can show the patient the asymmetry and some of the measurements and explain why, given this irregularity, he will not be able to achieve the same level

der the age of 18, and the adults tend to range from 30 to 60 years old. With this young, healthy patient population, I believe they can achieve 20/20 or better visual acuity. Before I started using the XFRACSM process, I would enter the examination room for a routine eye examination assuming everything would be normal. If it wasn't, and if a patient didn't achieve 20/20 visual acuity, I would spend an inordinate amount of time performing manual refractions, trying to get there.

"Using the XFRACSM process, however, I already know if a patient's prescription will be more complicated than the norm — perhaps because of early cataracts or a corneal deformity — before I enter the examination room (Figure 1). That knowledge helps me set my expectations as well as the patient's expectations before we

of acuity in both eyes (Figure 2). Knowing why there is a difference gives patients some peace of mind. Similarly, if a patient has atypical or unusual topography and I need to refer him to a corneal specialist, for example, I can show him the differences between two pictures and explain what the issue is and why he needs to see a specialist."

Dr. Bonilla-Warford has realized an unexpected benefit of the OPD-Scan III when examining children for the first time. "Occasionally, a parent will bring in a child because a screening at school or at the pediatrician's office indicates the child is having trouble seeing clearly. If I find a deficit that can be corrected with eyeglasses, I explain this to the parents. With the OPD-Scan III, I can also demonstrate to parents how their children are currently seeing without correction, and then I can show them how their child will see with eyeglasses (Figure 3). It is a persuasive way to show parents the true need for vision correction for their children."

Efficiency in Orthokeratology

When performing orthokeratology, Dr. Bonilla-Warford routinely uses the OPD-Scan III to track each patient's progress. He evaluates changes in the shape and power of the cornea and the visual effects caused by those changes. "I can show patients their baseline status and the chronological progression of their corneal reshaping over time," he



Figure 3. Utilizing a picture of a beach scene (or acuity charts), the OPD Scan III can demonstrate for parents how their child sees with and without optical correction.

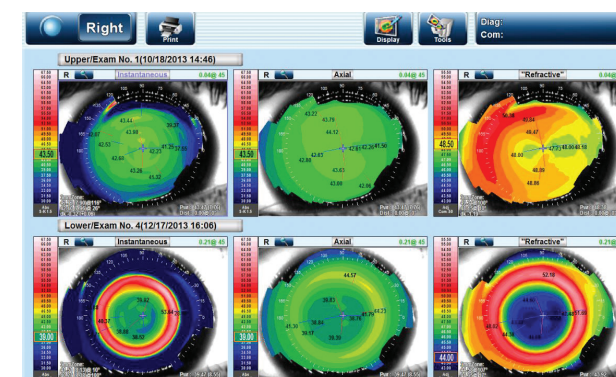


Figure 4. By directly comparing the topography maps at each stage of Ortho-Keratotomy, to the topography before the process was initiated, progress can be tracked, and results demonstrated.

explains (Figure 4), noting the OPD-Scan III provides all of the relevant data in one instrument.

"I used to have to go through a separate set of workup steps on a different instrument to obtain all of the information I needed, and then access it in the examination room," Dr. Bonilla-Warford explains. "But now the patient sits at one machine, I obtain multiple readings, which I can pull up and click through in the examination room in front of the patient. I've been performing orthokeratology for a long time, but in the past, it was more time-consuming than I wanted it to be. The OPD-Scan III had made it much more efficient for me to see these patients."

Don't Stress, Demonstrate

Dr. Bonilla-Warford also appreciates the direct comparison feature of the TRS-5100. "Being able to show patients the difference between their current prescription and what I'm finding today is remarkable, because there really isn't a good way to do that with a manual refractor," he says. "In the past, after I had completed a manual refraction, patients often would ask, 'How much of a change is there? Is it a little change? A big change?' These questions are sometimes difficult for optometrists to answer. When patients can directly compare their prescriptions, they will tell us how big of a change it is. Using the TRS-5100 as part of the regular workflow minimizes a patient's uncertainty about the need for new eyeglasses. What's more, the opticians in my office appreciate it, because it makes their job easier."

A High-touch Experience

There's no doubt that XFRACSM improve efficiency and save time, but Dr. Bonilla-Warford has not yet used that extra time to see more patients. "In my practice, we aim for a high-touch experience," he says. "I like having more time to talk to patients, to ask about their families and what's going on in their lives. In some cases, we have a more serious conversation about their vision and eye health. Many patients comment that they haven't had an eye doctor in the past who really listened to them. Basically, I have more time to focus on my patients."

Although patients may not appreciate that the extra time is a product of the type of equipment in Dr. Bonilla-Warford's practice, he certainly does. "By having my diagnostic equipment integrated with my EHR, I can push a few buttons, all of the information is entered into the chart, and I can write the prescription, all while I'm talking," he says. "Without this efficient technology, I would not have the same amount of time to dedicate to conversing with patients. In this day and age, patients like that." ■

A New Age in Digital Refractions

The XFRACTIONSM process integrates wavefront diagnostics and quickly reports a wealth of data in faster, more accurate refractions.

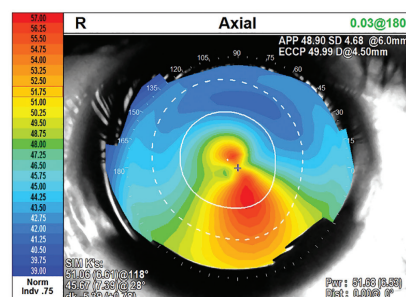
Ben Gaddie, OD

Gaddie Eye Centers, Louisville, Ky.

Refraction is the cornerstone of vision correction, and over the years, companies have designed faster and more accurate refractors to streamline the process. The latest advance, the XFRACTION process from Marco, combines two powerful tools — the OPD-Scan III autorefractor/keratometer/pupilometer/wavefront aberrometer and the TRS-5100 digital refractor — to produce a wavefront-optimized refraction in less time. The savings in time alone can be significant, and according to Ben Gaddie, OD, owner and director of Gaddie Eye Centers in Louisville, Ky., this system elevates the comprehensive eye examination to an entirely new level of understanding the optical pathway. Here's how.

Wealth of Information

The OPD-Scan III fills the optical pathway with light vectors, captures 2,520 data points, and provides more than 20 wavefront diagnostics in 10 seconds per eye. In addition to autorefraction, it measures corne-



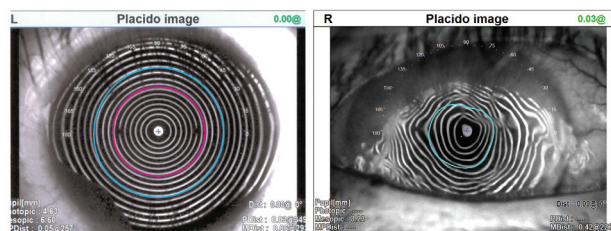
Axial map (topography) showing irregular, and asymmetric astigmatism indicative of corneal ectasia, as seen in this case of keratoconus.

al topography and identifies higher-order aberrations. “Most eye doctors have topographers, but we typically use them for our contact lens patients or when we suspect pathology,” Dr. Gaddie says. “Therefore, many of our patients don’t receive topography and the diagnostic value that comes from it. The OPD-Scan III measures topography automatically, presenting all of the data for me to easily analyze.

“Sometimes, I’m surprised by what the topography reveals, especially if I obtained a good refraction and the patient is seeing well,” Dr. Gaddie says. “I’m reminded of the value of the OPD-Scan III every time I diagnose heretofore undetected pathology, such as keratoconus or pellucid marginal degeneration. This instrument simply helps me to be a better doctor.”

Efficient Flow

Because the OPD-Scan III includes corneal topography, patient flow is streamlined. “We don’t have to move patients



The Placido disc image shows the tear film surface. Distorted mires could indicate either corneal surface distortion, or tear film irregularities. The left image shows a normal surface, the right image shows distorted mires due to significant ocular surface disease.

Solving the Night Vision Dilemma

Another unique and valuable function of the OPD-Scan III is automatic acquisition of daytime and nighttime refractions. “We’ve all been stumped by patients who say they’re having trouble with driving at night, even though they’re seeing 20/15 in the office,” Dr. Gaddie says. “By analyzing the eyes in scotopic and photopic settings, the OPD-Scan III quickly identifies the small percentage of pa-

tients who experience a significant shift in vision as the pupils widen in dim light.

Sometimes patients have media opacities that are not in the visual axis during daylight hours, but at night when the pupils dilate, all of a sudden they’re compromising the patient’s vision.”

Being able to demonstrate to a patient that he has a significant change in vision at night and to explain the reason why supports Dr. Gaddie’s recommendation of a second pair of eyeglasses with a prescription specifically for nighttime activities, most importantly, driving.



Night and Day: This patient has a refractive shift from 3 mm pupil size to 5 mm size consisting of 0.50 D increase in myopia and a decrease in astigmatism of 1.00 D. The scenes demonstrate the “uncorrected” vs “corrected” views to the patient.

from one room for autorefraction to another for topography, load their information into the topographer, obtain the image and either print it or push it via our software to the examination room,” Dr. Gaddie says. “This saves at least 4 to 5 minutes per patient, which is time that could be better spent with a patient or seeing more patients per day.”

Accurate, Reliable Data

With XFRACTION, preclinical data collected from wavefront-guided autorefraction and lensometry are transmitted to the lane and used for subjective refraction. “It’s a totally different refractive experience that patients receive,” Dr. Gaddie says. “In addition to being fast and efficient, pretesting with XFRACTION yields a more accurate starting point for subjective refraction. I can usually refine a wavefront-guided refraction in less than 2 minutes. In today’s pressured clinical world, time is money, and efficiency is the key to staying on schedule.”

Dr. Gaddie also appreciates being able to integrate clinical testing data with his EMR. “The time saved by not

having to read, record and transcribe this information into our electronic health record may be incrementally small, but over the course of thousands of patients, it translates to real money for the bottom line,” he says. “And, more importantly, the seamless accuracy and integrity of data recording allow me to spend more time discussing visual problems and solutions with patients.”

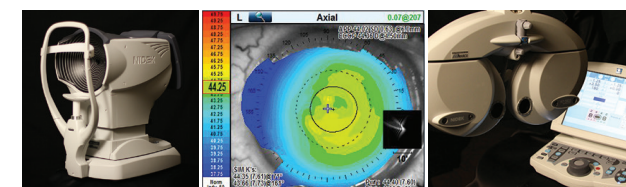
Increased Optical Conversions

Optical conversions depend on many factors, not the least of which is a patient’s perception of his need to update his prescription. According to Dr. Gaddie, one of the most common questions patients ask after a refraction is, “Has my prescription changed?” Usually, the answer is yes, so the next question is, “Has it changed enough for me to need new glasses?”

“With the OPD-driven TRS-5100 digital refraction process, I can compare today’s refraction with the prescription in a patient’s current eyeglasses,” he says. “With one touch of a button, patients can instantly compare their old and new prescription and see for themselves the improvement they will gain with their new prescription. A change that might be inconsequential for one patient might be a big improvement for another, and I can’t judge that based on the magnitude change of a number. Being able to simultaneously compare new versus old prescriptions is a game-changer for patients, and my conversion rate and my key performance metrics in the clinical area reflect that.”

New Level of Precision

Wavefront optimized refraction represents a new age in digital refractions. “I have used various autorefractors in my career, and many have provided a good starting point for subjective refraction,” Dr. Gaddie says. “However, with the OPD-Scan III and the TRS-5100, I now have the accuracy of wavefront-guided refractive data to quickly and precisely generate the best refractive endpoints and visual satisfaction.



Optical Path Diagnostix & Wavefront Optimized Refraction.

To be able to optimize an autorefraction based on the aberrations in each patient’s visual system takes refraction to a whole new level of precision ... and personalization.” ■

XFRACTIONSM

Optical Path Diagnostix & Wavefront Optimized Refraction

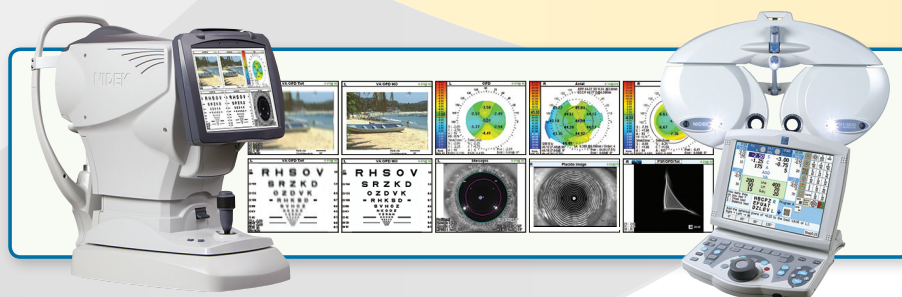
XFRACTIONSM

is a groundbreaking refractive process for today's thriving eyecare practice.

In this process, unique Optical Path Diagnostix are employed to define the physiological alignment of all optical path components. The OPD-Scan III runs over 20 diagnostics, corneal analytics, aberrometry, topography, and establishes the correct refractive starting point. This data is directly transferred to the TRS-5100 digital refractor, where either minor adjustments or full refractions are completed.

Refractions are reduced by 5 to 7 minutes on wavefront patients (compared to manual refractions), and the vast diagnostic information about the patient's optical pathway provides full understanding of their physiological optics — only possible with the addition of unique Marco wavefront technology. Other benefits include greater time efficiencies, superior patient flow, daily patient capacity increases, optical revenue growth in the 15-20% range, and more quality time with each patient. Patients requiring cataract and/or refractive procedures will also benefit from optimized IOL selections and surgical outcomes.

The overall patient experience is greatly elevated through shorter wait and exam times, more time for doctor interaction/consultation, and greater satisfaction with prescriptions. In addition, the advanced technology experience is one that is reflected in higher patient loyalty and positive references to the practice.



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