Achieving Better Refractions

BUYING KNOWLEDGE AND TIME WITH INTEGRATED WAVEFRONT ABERROMETRY



Enhancing Efficiencies PART 1

Matthew S. Forgues, OD

Forgues Eyecare, a member of VisionSource, Worcester, Massachusetts

Process Efficiencies That Meet Patient Demand PART 2

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Technology That Helps Build Trust

April Jasper, OD

Advanced Eyecare Specialists, West Palm Beach, Florida

Improving Patient Experience

Brett M. Paepke, OD

FirstView Eye Care Associates, Plattsburgh, New York

Measuring the Intangibles

Dori Carlson, OD

Heartland Eye Care, Park River and Grafton, North Dakota





PART 1 OF 2

Enhancing Efficiencies

A long time user of the OPD, this optometrist is still discovering how the XFRACTIONSM process can improve patient care and practice efficiency.

An interview with: Matthew S. Forgues, OD

Forgues Eyecare, a member of VisionSource, Worcester, Massachusetts

s an avid enthusiast of the OPD, Matthew S. Forgues, OD, still wasn't prepared for how much more sophisticated the latest version is, especially as part of Marco's overall XFRACTIONSM system.

The XFRACTION system combines the OPD-Scan III (which includes the functions of an autorefractor, a keratometer, a pupillometer, a corneal topographer, and a wavefront aberrometer) with the TRS-5100 digital refractor. The OPD can produce up to 2,520 wavefront analysis points and will automatically select the best refraction

The XFRACTION process eliminates manual data entry. You don't have to interrupt the conversation with the patient. You can explain what data you're collecting as it's being transferred back and forth. And there's no risk of transcription errors.

as the starting point to finalize a patient's prescription. When using the corneal topography component, 11,880 additional data points are mapped.

"More data in less time — for us, it was a no-brainer to upgrade to the new system," Dr. Forgues says.

The 'Wow' Factor

Having the XFRACTION system in his office has improved practice efficiencies and allowed more time for discussing refractive errors with patients.

"This system has increased our office's overall efficiency," he says. "The patient experience has been greatly improved, and that's one reason why I like XFRAC-TION. People have choices when it comes to their eye care. The XFRACTION process helps set us apart by showing patients how precisely we can measure their prescriptions."

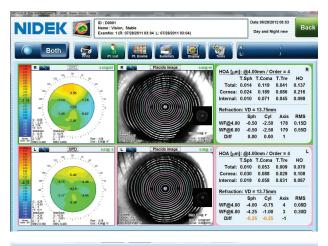
For Dr. Forgues, his "Aha" moment came when he went to evaluate a patient using traditional techniques. "It was then that I realized the XFRACTION process completely changes patient flow," he says. "You make the automated process the focal point and work every other aspect of your practice around it. Its accuracy is unmatched. While we'd all like to think our manual techniques are accurate, this system goes beyond that. It is amazingly reproducible in terms of the measurements it takes, which helps make our practice even more efficient.

"Within the first couple of patients who went on to a full exam, I realized the system gave me great results, and it did so in half the time traditional techniques would have taken."

Getting Patients Involved

Data from the XFRACTION process helps Dr. Forgues quickly explain to patients what their visual issues may be. It actually engages the patient in the refractive process.

"Before patients are even brought into the exam room, the technician will explain what the OPD is doing as it's doing it. Patients learn that it's taking hundreds of measurements so we can see what's going on with the optical system," Dr. Forgues says. "Many electronic diagnostic tools take measurements, but the doctor is the only one who sees the results. Patients never see anything. This automated XFRACTION process actually generates the saved time to educate patients — simply."



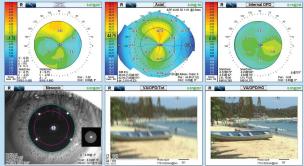


Figure 1 (top) & Figure 2 (bottom).

To increase patient involvement, Dr. Forgues has installed 30-inch HD TVs in each of his exam rooms.

"The technicians display our Day/Night map (**Figure 1**) results of the OPD to show patients. When we walk in the room, the patient is already looking at the OPD results and it gives me the opportunity to then change the maps to the topography (**Figure 2**) and really concentrate on their questions. If the topography shows an issue, I can explain it right away.

"Patients are put at ease. I tell them the system has taught us a great deal about their eyes, and that we're going to give them as close to high-definition vision as possible."

The information captured by the OPD is imported directly into the TRS Refraction System.

Soft Sell into Optical Departments

This system can also help convert more patients into optical department sales in a subtle way, Dr. Forgues says. "If patients have an old pair of eyeglasses, we can rapidly

compare their old prescription with the new prescription — emphasizing the difference and validating how much a change in the prescription may alter the patient's vision," Dr. Forgues says. This feature, combined with more accurate measurements, translates into fewer lens remakes, happier patients, and more profitable practices.

"What's interesting is that it seems like there's a lot going on, but the exam literally takes half the amount of time as a traditional exam. It's pretty impressive. And even though we don't 'hard sell' patients into buying eyeglasses with a new prescription, since we're so much more efficient, we're seeing more patients, thus increasing the potential number of new prescription eyeglasses purchased," he says.

Preference for Electronic Capture

Perhaps what has impressed Dr. Forgues the most is the ability to electronically capture all types of data. "The OPD measures more than we can with traditional techniques, but more importantly, when we're measuring patients traditionally, the doctor has to spend time either writing all that information down by hand, or if he's using electronic records, typing in all the results," Dr. Forgues says. "The XFRACTION process eliminates manual data entry. You don't have to interrupt the conversation with the patient. You can explain what data you're collecting as it's being transferred back and forth. And there's no risk of transcription errors."

Saving Time

The XFRACTION system also seamlessly integrates with electronic health records systems, which helps improve practice efficiencies as well, Dr. Forgues says. "It's the simplicity of it all — with the touch of a button, you can fill in a great number of fields in your electronic records. That is such a time saver for the office staff," he says. "For me, that was yet another 'Wow' factor about XFRACTION."







Optical Path Diagnostix & Wavefront Optimized Refraxion.

PART 2 OF 2

Process Efficiencies That Meet Patient Demand

XFRACTIONSM process to increase practice volume, while delivering top standards of care

An interview with: Matthew S. Forgues, OD

Forgues Eyecare, a member of VisionSource, Worcester, Massachusetts

ith 8 years of OPD experience, Matthew S. Forgues, OD, is well versed in its performance. With the advent of the XFRACTIONSM process, which integrates the OPD-Scan III with the TRS-5100 digital refractor, not only can he collect over 14,000 combined wavefront and topography data points for more precise clinical results, he can also increase patient volume.

It's not your standard technology purchase.

"Doctors tend to see the technology and think, 'How is this going to be better than what I've always done? And how can I do this in addition to what I already do?' But the XFRACTION process actually replaces multiple steps

Training Engaged Technicians

Obtaining accurate imaging is easy with the OPD-Scan III - you can quickly train a technician to obtain perfect images from the start.

Dr. Forgues spends more time teaching techs how to explain the process. "When someone performs a test without any explanation, patients think it's routine. I want patients to appreciate that this isn't routine — it's above and beyond the typical exam."

Techs explain what patients are seeing and help them understand how the OPD-Scan III works and how accurate the system is. The doctor even developed a reference sheet to guide conversations in the pre-testing room.

This enhanced role sits well with Dr. Forgues' technicians. "Technicians love using the technology. It makes them part of the exam, instead of just moving patients through the machines. If something looks abnormal, they point it out to me. They enjoy feeling like they're a key part of each patient's evaluation — especially with satisfied patients."

required in a traditional exam. Instead of taking more time, it takes less. You're more efficient — I comfortably see two more patients per hour — and we increase our practice income, while improving our clinical accuracy and diagnostic speed."

Inspired New Patient Flow

Dr. Forgues looked to experienced Marco reps to help him channel patient flow through the XFRACTION process. The result is an exam experience that resonates with each patient, as well as the doctor himself. The exam now flows as follows:

- Patients enter pre-testing, which includes the OPD-Scan III (A 5-in-1 multimodality technology that combines autorefractor, keratometer, pupillometer, corneal topographer, and wavefront aberrometer).
 The technician explains the process so patients can appreciate how it is different from a traditional exam.
- The technician downloads data (more than 20 clinical metrics harvested in 10 seconds per eye), from the OPD-Scan III software to the TRS-5100 refractor.
- As patients sit in the exam lane, they look at a 30-inch HDTV display of their mapped data, including a day/night map from their OPD-Scan III results.
- Dr. Forgues enters the exam room and talks to patients on a personal level. He inquires about vision problems, other symptoms and lifestyle. The conversation often begins easily because patients have questions about the screen they've been viewing.
- Dr. Forgues performs the refraction, using the TRS-5100. This allows him to show patients what he's measuring. And, patients can instantly compare their old and newly identified prescription, and appreciate the difference. At the end of the exam, a single



button instantly sends patient data directly into the practice's EMR system.

 Patients move to the front desk or to the optical area, where their prescriptions are already available.



Viewing software allows greater patient education.

"From waiting room to optical area, patients are in the practice for 30 to 40 minutes, and they see me for 10 to 12 minutes," Dr. Forgues says. "I spend all of that time performing the exam and talking to my patients — not studying pieces of paper or entering data into the EMR system. It's fantastic that I have the freedom to spend more time talking with patients while better addressing their needs ...and I absolutely enjoy my work more."

Standout Patient Experience

What happens when you reorient a patient visit around the XFRACTION process? In Dr. Forgues' practice, patients notice.

"They say, 'This is new!' and I explain that I've always taken these measurements, but now I can finally show them, in greater detail. It's such an impressive presentation, and I like that it gives patients an appreciation for what we do," the doctor explains. "Some capabilities that they remark on actually are new. For example, it's part of my protocol to measure vision over contact lenses and with a trial lens. The TRS-5100 is so accurate that I can gain some insights into how close I am with the refraction."

Marriages of patient "wow factor" and clinical advantage are common with XFRACTION. "The process delivers both traditional and wavefront autorefraction, as well as bright and dim illumination. Complex prescriptions, such as high levels of astigmatism or irregular astigmatism,

are visible immediately on the map, as are abnormalities such as keratoconus or cataracts. My prescriptions are more precise, and I don't waste time on vision correction for problems that require other treatment."

Dr. Forgues finds that the XFRACTION process has increased his prescriptions of both day and night eyeglasses. It's also easier to discern if eyeglasses or special contact lenses are a patient's best option.

"We can figure this out with traditional methods, but with the XFRACTION process, we can do it in seconds, rather than going over multiple checklists. When I'm prescribing special contact lenses or multiple prescriptions, I know I'm doing a better job of meeting my patients' needs."

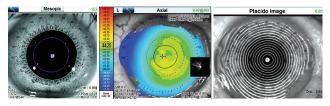
Rewarding Investment

The TRS-5100, OPD-Scan III and 30-inch displays are significant purchases. So why does Dr. Forgues think the XFRACTION investment is a "no-brainer"?

"For starters, there are some concrete reasons. Seeing two more patients per hour is a clear advantage, which adds more than \$100,000 annually to the practice. Add the boost in contact lens revenue, fewer remakes (because of the gained precision and virtually eliminated risk of transcription error), increased sales from day and night eyeglass prescriptions and better optical capture based on my comparison of old and new eyeglasses — and that's just part of the return."

Dr. Forgues calls the XFRACTION process "one of the best returns on investment for any equipment I've ever purchased," and he says some of the additional benefits are harder to quantify.

"Our practice is known for being high tech, cutting edge. Adding the review software and display in the exam lane has raised that visibility, which in turn has led patients to refer their friends and family. We make patients happy, and they know that they're getting something they can't find anywhere else."



Optical Path Diagnostix & Wavefront Optimized Refraxion.

Technology That Helps Build Trust

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

An Interview with: April Jasper, OD

Advanced Eyecare Specialists, West Palm Beach, Florida

hen optometrist April Jasper relocated her West Palm Beach, Fla. a few 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 refractor 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."

Fast, Comprehensive Data Capture

The OPD-Scan III projects up to 2,520 light vectors through the optical path, harvests the same number of data points and provides more than 20 wavefront diagnostics in 10 seconds per eye. In addition to autorefraction, it measures more than 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 the 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 refractor, 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.

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."



"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 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. (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





Marco
OPD-Scan III
Wavefront
Aberrometer
and
TRS-5100
Digital
Refractor

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."

... I think trust isn't the same as it once was. The XFRACTION process helps me build trust with my patients.

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.

"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 really of value to patients."

Improving Patient Experience

Speed, accuracy and efficiency can be quantified, but some other benefits of XFRACTIONSM have immeasurable value.

An Interview with: Brett M. Paepke, OD

FirstView Eye Care Associates, Plattsburgh, New York

nyone involved with the business of eye care knows the value of metrics. Whether you add functionality to your website, change your recall system or add new equipment, you want tangible evidence that these changes have had a positive impact on your practice. When optometrist Brett M. Paepke, OD, started looking at new equipment for FirstView Eye Care Associates in Plattsburgh, N.Y., he knew exactly where he wanted to see improvement. "First, I was looking for a way to make the flow of refractive data more efficient," he says. "Second, I was looking for greater accuracy in refractions."

Dr. Paepke's third objective, however, was not so easily quantified. "I also wanted to improve the patient's experience," he says. "Knowing that patients don't really like refractions, I wanted to provide them with something different, superior and, ideally, more enjoyable."

Since adding the OPD-Scan III wavefront aberrometer and the TRS-5100 digital refractor — the key components of Marco's XFRACTIONSM system — along with the LM-600 auto lensmeter last fall, Dr. Paepke is realizing the measurable and immeasurable benefits he was seeking.

Speed, Accuracy, Efficiency

The OPD-Scan III combines numerous functions — autorefraction, keratometry, pupillometry, corneal topography, wavefront aberrometry, retroillumination and day/night measurements — to produce more than 20 diagnostics in 10 seconds per eye. In less than 1 minute, it provides a wavefront-optimized refraction that demonstrates whether or not a patient requires an extended refraction to achieve optimal visual acuity. Data transfers to the TRS-5100 completing the required refraction with digital speed and accuracy.

"I like the accuracy and comprehensive nature of the data I receive from the XFRACTION process," Dr. Paepke says. "When I enter the examination room, the results are on my screen. At a quick glance, I have a feel for what the patient's optical path looks like and what his best-corrected vision should be."

The LM-600 auto lensmeter reads the patient's current correction, which is transferred to the TRS-5100 via smart card and is seamlessly uploaded into the practice's smart EHR system. "All refractive data are available on one touchscreen-based control unit on the TRS-5100," Dr. Paepke says. "I can effortlessly and immediately

Making the Comprehensive **Eye Exam More Comprehensive**

Being able to acquire so much data in so little time with the XFRACTION process broadens the range of a comprehensive eye examination, and in at least one case at Dr. Paepke's practice, it restored a patient's credibility with his wife.

"All of my patients have technician-guided topography and OPD-Scan III performed as part of a comprehensive eye examination," he says. "I then review the data with the patient in the examination room, making sure to connect any anomalies to his complaints. Having topography data available for every patient has shown me many cases of corneal conditions that I might not have detected otherwise."

"I've even saved marriages with it," Dr. Paepke says with a smile. He is quick to explain: "A 60-year-old truck driver had a chief complaint of nighttime glare that was shaped like a cross. His wife thought he was making it up, but I was able to show her a point-spread function map that clearly demonstrated the cross-shaped glare that was being generated by the patient's cataracts."



Added Value: Patient Education

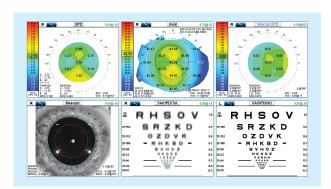
Dr. Paepke's expectations for the XFRACTIONSM process were well-grounded and realistic: accuracy, speed and efficiency topped his list. He was surprised by an unexpected benefit.

"I didn't anticipate the system would be so valuable from a patient-education perspective," he says. "For example, being able to demonstrate to a patient why a certain contact lens option is better for him based on his corneal topography has been a welcome benefit."

Dr. Paepke reviews topographic data with all contact lens patients and with any patients who show issues in need of discussion. "I use the uncorrected/corrected beach scenes to show parents how their children see versus how they should see," he says. "I use the retroillumination views to demonstrate to people who have cataracts why they're having trouble with their vision and how surgery will help. Pretty much anything refractive that I would need to discuss with a patient can be done using the array of OPD maps and the examination room viewing software of the XFRACTION process."

show the patient differences between his habitual correction and today's refractive result, which allows for an easier justification of the investment in new eyeglasses."

Improvements in efficiency and accuracy have been noticeable. "Having all refractive pretest data flow into the examination room and then having the final data flow into the EHR has saved time and eliminated the potential for transcription errors," Dr. Paepke says. "Considering the time needed for printing and transcribing the data, I estimate I'm saving 3 to 5 minutes per encounter. That's significant found time each day."



An Experience Patients Appreciate

In his 12 years of practice, Dr. Paepke has come to realize what many patients won't admit. "Most patients don't enjoy the refraction process," he says, "so having a faster, better defined, more accurate starting point, which in many cases might be the final prescription, interested me."

The XFRACTION process did not disappoint. "In traditional setups, a technician might perform an autorefraction and manually enter data in the record," Dr. Paepke says. "With XFRACTION, everything is at my fingertips with minimal effort and capable of being uploaded to our EHR with the same ease."

With XFRACTION, everything is at my fingertips with minimal effort and capable of being uploaded to our EHR with the same ease.

Patients have noticed the difference, too. "Feedback has been great," Dr. Paepke says. "Patients love the XFRACTION experience, because it's different. It looks cool to them, and it helps me solve their problems. If I can be more efficient and accurate while providing a better patient experience, that's a solid technology."

Dr. Paepke has also realized a financial benefit since introducing the XFRACTION process. "We've restructured our professional fee schedule to account for the technology and done so in a way that more than covers the monthly payment on the equipment," he says. "This makes increased efficiency and sales of multiple pairs of eyeglasses icing on the cake."

Differentiate Your Practice

"There's no question that high-tech systems such as the XFRACTION process helps to differentiate my practice," Dr. Paepke says. "I think patients get tired of the same eye care experience over and over, and I think they're savvy enough to know when a practice is investing in technology to enhance their care. Anything I can do to elevate the patient's experience interests me."



Measuring the Intangibles

The XFRACTIONSM process saves time, allowing physicians to assess more information and focus more on the patient.

An interview with: Dori Carlson, OD

Heartland Eye Care, Park River and Grafton, North Dakota

ptometrist Dori Carlson considers herself fortunate to have two offices, and to have adopted Marco's XFRACTIONSM process, which combines the TRS-5100 digital refracting system with the OPD-Scan III (a 5-in-1 multimodality autorefractor, keratometer, pupillometer, corneal topographer, and wavefront aberrometer) in one of those offices.

"We put the TRS in the smaller of our two locations in 2012 for two specific reasons," she says. "First, I was having issues with neck and back strain, and the ergonomics of the TRS were much better. Overall, it's substantially more comfortable to use, with its portable control pad, than any other system I've used. Second, this system takes less time to accomplish its tasks with a rapid method to compare old and new prescriptions, so the patient is less fatigued as well."

Marco's EPIC system (which places the TRS in a custom workstation) is used in the larger of the two offices, which has four exam lanes, so staff members and technicians can perform patient refractions. "Because we have both the lane-based TRS and EPIC refracting systems, we've been able to compare them to see the individual advantages of each system," says Dr. Carlson. The bottom line: "They both save time over traditional refractors, which allows me to spend more critical time with my patients," she says.

Pain Relief

Dr. Carlson had been performing all the refractions herself, which led to significant physical pain. "I would sit in front of the phoropter and have my hands and arms raised up and over to perform the refractions. The TRS system has a portable desk console, so I don't have my arms up all the time while performing refractions."

She says the physical strain of performing a tradition-

al refraction was something she'd just gotten used to, but now that the device sits on a desk, "it's one of the most positive added benefits of the system."

The XFRACTION process has given me exactly what I want — more time to spend with patients discussing their refractive needs or the overall health of their eyes in a much more interactive way.

Fast, Accurate, Efficient

The OPD-Scan III "has five unique features," Dr. Carlson says. "The OPD acquires the patient's prescription without the patient having to say anything. It's an objective method rather than a subjective one, and that's always preferred. The OPD-Scan III gives you — the optometrist — more information to evaluate your patient. And it works great with children and special needs adults."

Other features include a keratometer, "which measures the curve of the front of the eye; a pupillometer, which measures the pupil under photopic and mesopic conditions, and integrates that data with the wavefront analysis; a corneal topographer, which provides a more detailed map of the cornea; and then there's the wavefront aberrometer," she says. "Instead of gathering information from one data point as with a traditional auto refractor, the OPD gathers information about the patient's visual system by using up to 2,520 wavefront data points of information, while more than 11,000 data points define the topography maps.

"This system has truly shortened the time it takes



to gather this data," she continues. In less than a minute, the system can help doctors discern which patients will need minimal refinements to their prescriptions and which patients will need full refractions and a more indepth discussion about their vision changes or corrective limitations.

"The XFRACTION process has given me exactly what I want — more time to spend with patients discussing their refractive needs or the overall health of their eyes in a much more interactive way than I could with a traditional system," she says.

Engaging the Patient

Dr. Carlson says patients truly appreciate the "compare and contrast" aspects of the technology and are taking a much more proactive interest in their own prescriptions and eye health.

"The system measures vision in both daytime and nighttime lighting conditions," she says. "Some people complain about their night driving, and it's purely because they have an entirely different prescription need when they're in different (darker) lighting situations than they do during daytime situations." The wider optical path reveals many additional potential aberrations.

By explaining how the XFRACTION process can help differentiate the patient's visual needs based on the time of day, Dr. Carlson says patients intuitively "get" it, but she "drives the point home" by turning down the lights in the exam room and projecting the prescription images up on the wall — and then she turns up the lights and shows them the second prescription image.

"It's easy for patients to understand after demonstrating with the lighting changes," she says.

Subtle Prescription Changes Make a Difference

Dr. Carlson also believes the system has encouraged patients to be more inquisitive about their visual system and overall eye health.

"In the past, when patients had small prescription changes, they would ask me if it was significant enough to warrant ordering new lenses. And depending on my answer, the patient would either get new glasses or not — based solely on my recommendation," she says.

Predictably, patient satisfaction levels were mixed.

"XFRACTION actually shows patients the difference between their existing prescription and the new one," she says. "I can smoothly and rapidly toggle between the two with just one button to demonstrate the visual difference. I was amazed to find that some patients value and order new lenses — even for the smallest of refractive changes that, in the past, might not have led me (without their input) to recommend new eyeglasses."

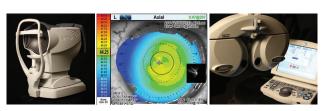
Hands-on Experience

Dr. Carlson says the ease of data acquisition and user-friendly aspects of the XFRACTION process have had an additional unexpected benefit — reducing the patient's stress of having their eyes examined. Where traditional systems involve flipping lenses back and forth and asking the patient to recall and choose the better image, the XFRACTION process displays the images side-by-side.

"It's easier for the patient," she says. "With the simultaneous views, the patient is able to quickly tell the difference between the two and decide which image is clearer. This way, they're not asking if we can flip back to the first image, or back to the second image. With the two images directly in front of them, it reduces their stress and reduces the time needed in the office to finish the testing."

The Art of Helping Patients

Dr. Carlson says that before she had the XFRACTION process, she felt a bit like a number-taker. XFRACTION has helped her get back to the art of optometry — helping patients see better — because she can devote more time to actual patient care while allowing more patients to experience this new refractive process.



Optical Path Diagnostix & Wavefront Optimized Refraxion.



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.



