



# Neurolens Contoured Prism Technology

Combating Digital Vision  
Syndrome for Your Patients,  
Practice, and Profession







## Contoured Prism Relieves Patients' Digital Vision Syndrome

**W**hen your patients complain about blurred and double vision, dry and red eyes, neck and back pain, and in particular, relentless headaches, the cause is often their use of digital devices. Staring at screens for too long is obviously having a negative impact on your patients.

An average American adult spends about eight hours per day using their digital devices, while young children average 10 long hours every day! As a result, at least two out of three individuals report one or more of the previously mentioned symptoms.

The painful result, known as Digital Vision Syndrome, is "a highly prevalent condition in the general population producing symptoms for extended periods of time," according to the American Academy of Optometry.

### Eye Misalignment: A Common Cause of Digital Vision Syndrome

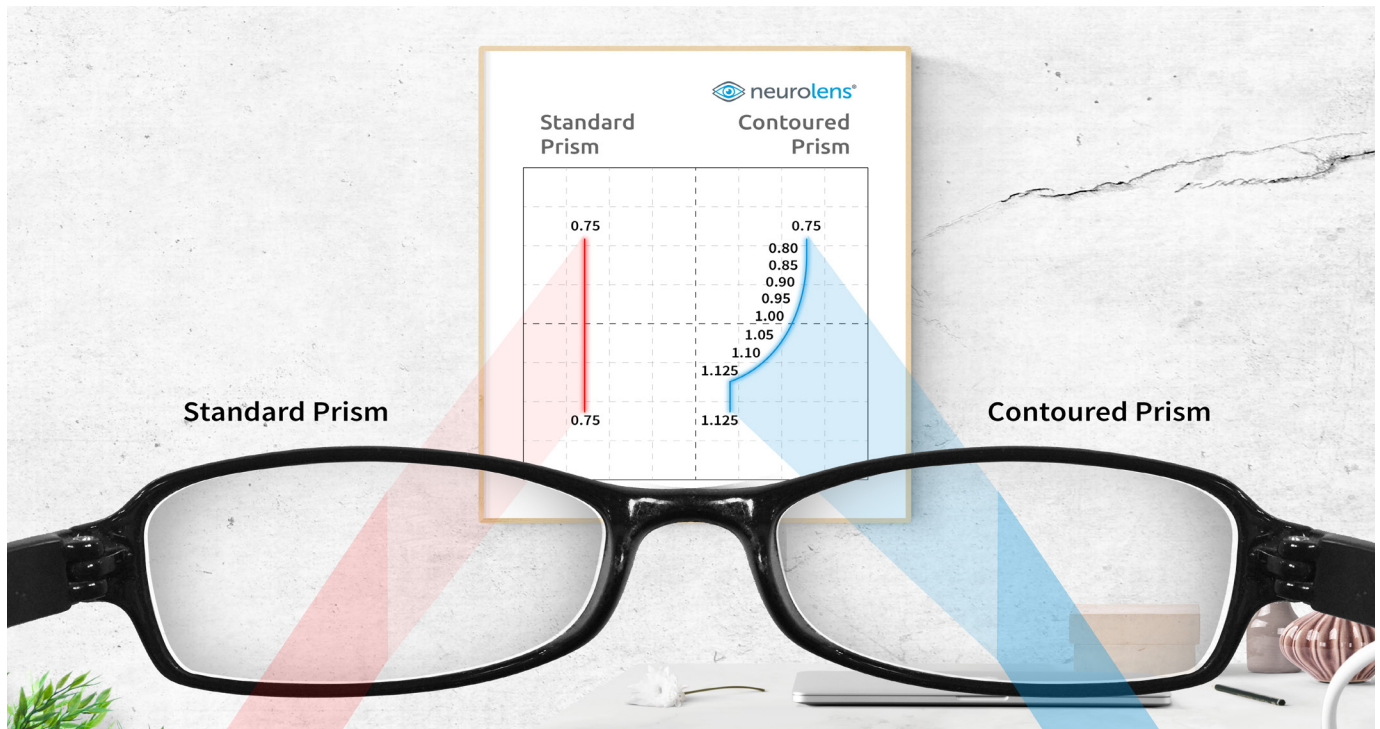
Among the commonly reported causes of Digital Vision Syndrome (also known as digital eyestrain) are non-strabismic binocular vision disorders, such as accommodation and vergence dysfunction. The increasing near visual demand resulting from staring at screens increases the load on the accommodation and

vergence mechanisms to constantly focus and align objects at closer distances. Clear and single binocular vision is critical for normal visual behavior. Our eyes focus (accommodation) and align (vergence) to the object of interest in the real world, thereby maintaining clear and single binocular vision. Any inaccuracies in the alignment lead to eye deviations.

Considering the fact that at least two-thirds of adults experience the painful symptoms that result from these types of eye misalignments, you can be sure that many of your patients are suffering from Digital Vision Syndrome due to their non-strabismic binocular disorders.

Unfortunately, current treatment options – such as near adds, coated lenses, standard prisms, and vision therapy – have their limitations. Most patients with Digital Vision Syndrome symptoms exhibit different magnitudes of eye misalignment at different viewing distances. However,

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standard prisms provide a constant correction at different viewing distances and therefore may not be beneficial.

#### **The Contoured Prism Solution**

Fortunately, though, there is a contoured prism option that has proven effective for these patients. Neuro-lenses significantly alleviate Digital Vision Syndrome symptoms by correcting eye misalignment using a customizable lens design that incorporates a contoured prism.

In more than 80% of wearers, Neurolenses effectively relieved various Digital Vision Syndrome symptoms, according to surveys of patients wearing them for at least 60 days. The Neurolens difference is its use of contoured prism.

"I was pleasantly surprised by the positive response to this lens, and I quickly found that this lens helped patients in ways I was unable to help them in the last 30 years," said Dora Sudarsky, OD, who incorporated Neurolens into her Burlington, Vt., practice in Decem-

ber of 2019. "I could improve their vision but also help them feel better. When you think about how screen time has increased in the last decade, this lens has become a game changer for my patients. My recommendation to new practitioners would be to test everyone. It impresses patients, it is good advertising, and it helps me provide the best prescription possible."

#### **How Many Patients Truly Need Contoured Prism?**

Of those patients reporting Digital Vision Syndrome symptoms, how many truly have non-strabismic vision disorders that will actually benefit from the use of this contoured prism? A common misconception is that symptomatic patients exhibit a large degree of misalignment. However, several studies have consistently reported evidence contrary to this belief. Simply put, the evidence suggests that the magnitude of eye misalignment does not correlate with the severity of the symptomology.

For instance, a patient with 1PD exophoria and a patient with 10PD exophoria with no other ocular or



**After their first follow up at least one year after initial prescription, the average change in prism for NeuroLens patients was less than 1/3 prism diopter.**



extraocular problems related to Digital Vision Syndrome might experience a similar magnitude of eyestrain and need to be treated appropriately. Therefore, patients exhibiting both large and small degrees of eye misalignment need and benefit from the contoured prism offered by NeuroLens.


"Some patients will instantly get a surprised or relieved face. Others need to experience a full day at work and then realize, 'Wait a minute, I never got a headache,'" said Amanda Nanasy, OD, Director of the Florida Institute of Sports Vision and Partner with The Eye Center of Pembroke Pines, Fla. "There are so many patients suffering unnecessarily because they won't tell us symptoms that they think don't relate to vision unless we ask, so ask every patient if they are having symptoms."

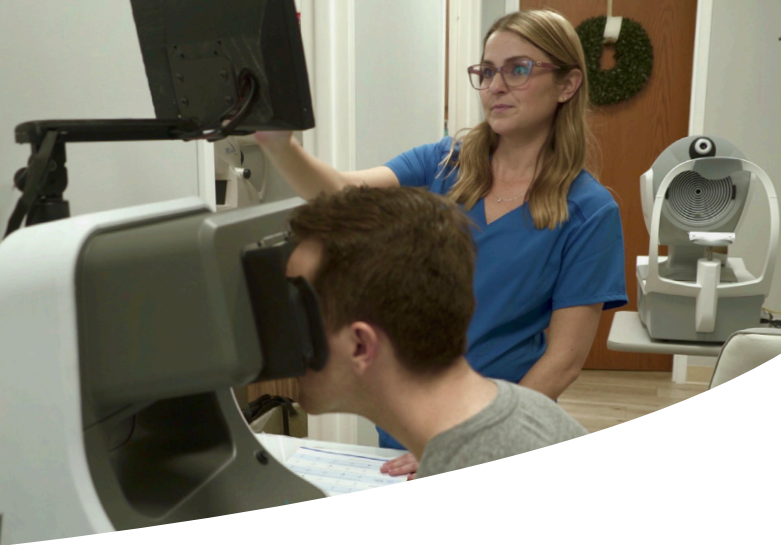
#### **Will Patients Adapt to Contoured Prism?**

There is a commonly held belief among many eyecare professionals that patients adapt to—or 'eat'—prism. There is reasonable basis for this belief, given that an older study found adaptation frequency reported with standard prisms to be as high as 80%. However, this has not been found to be the case with NeuroLens contoured prism.

For context, recall that an alignment response to an object of interest in the real world comprises outputs from two components of the vergence mechanism, a fast (reflex) and a slow (adaptive) responding controller

that have different temporal characteristics. Previous studies have reported that the strength/magnitude of the response of this slow adaptive component often correlates with the presence of symptomology in patients with binocular vision dysfunction. Patients with no binocular vision dysfunction generally adapt to prisms, as these patients tend not to be symptomatic and have a normally functioning vergence mechanism. However, patients who are symptomatic are less likely to adapt to prism and will benefit from a prism correction. The combination of inconsistent clinical practices, inability to accurately measure and represent patients' symptoms, and variability in the individual's ability to adapt to a prism would leave the clinician with a lot of unanswered questions that make them hesitant to prescribe a prismatic correction to their patient.

The NeuroLens process provides a simple, accurate, and repeatable way to assess an individual's binocular vision, which ultimately helps clinicians treat and diagnose a patient's condition with confidence. After their first follow up at least one year after initial prescription, the average change in prism for NeuroLens patients was less than 1/3 prism diopter; 45% had no change at all. This stability also improves over time. After their second follow up at least one year after the first follow up, the average change in prism was much lower (about 1/10 prism diopter). Almost 60% had no change at all. 



## Neurolens Accurately Measures Prism to Alleviate Digital Vision Syndrome

**T**he NeuroLens system is a method proven to alleviate the symptoms of Digital Vision Syndrome in more than 80% of wearers. It achieves this high level of success by accurately measuring eye misalignment in each individual patient and by customizing lenses with contoured prism to correct this misalignment. This is accomplished by using a small, practice-friendly device known as the NeuroLens Measurement Device, Gen 2, or NMD2, which objectively, accurately and quickly measures eye misalignment to 1/100 prism diopters.

A simple way to measure eye misalignment, the NMD2 can determine binocular vision along with interpupillary distance and AC/A measurements. The NMD2 is 100% objective, while traditional tests used to measure binocular vision require varying levels of subjectivity.

Traditional clinical tests evaluating binocular vision are subjective, depending on either the patient's response or the clinician's expertise. This subjectivity could cause inaccurate estimates of the phoric posture with poor repeatability. In addition, because of the subjectivity, these tests are not suitable for young children or differently abled individuals who cannot provide an accurate verbal response.

"My favorite part is that it has peripheral stimuli during the test to give me the best 'real life' idea of how their system is working while in the instrument," said Amanda Nanasy, OD, Director of the Florida Institute of Sports Vision and Partner with The Eye Center of Pembroke Pines, Fla.

### Is It Possible to Measure Prism Accurately?

It is possible to measure prism correctly with the NMD2 because its eye-tracking system captures thousands of data points per patient by following the patient's eyes while they are dissociated and associated. In this way, it eliminates clinician and patient biases or variabilities by not relying on subjective responses, leading to accurate, objective, and repeatable results.

"Measuring prism objectively has made me prescribe more prism in regular prescriptions as well," said Dora Sudarsky, OD, who incorporated NeuroLens into her Burlington, Vt., practice in December of 2019. "In the past, patients I would have classified as 'normal' can actually be very symptomatic. A little prism can make a real difference."


### Overcoming Binocular Vision Testing Inaccuracies

The NMD2's ability to measure eye misalignment in under two minutes is another factor contributing to its accuracy. The amount of time other tests require to dissociate the eyes before taking a measurement could lead to inaccurate estimates and a lack of repeatability. Previous research reported a dissociation time as long as 5-25 minutes would be necessary.

Unfortunately, 5-25 minutes is not possible in a clinical setting. Also, given the limited ability of an unaided eye to identify and track very small and slow eye motion, it is difficult to say if measurements are indeed obtained after the eye stabilizes in a certain phoric posture under dissociated conditions. This, again, would potentially cause estimation errors.

Another major complexity associated with existing binocular vision testing is that the clinician must typically perform a battery of tests to decide on the type and magnitude of the corrective option. This is especially challenging in busy individual practices that may not be able to invest a significant amount of time into performing a battery of tests.

A much more effective alternative, the NMD2 recommends a prism correction value that the doctors can readily use, using a proprietary algorithm that was developed based on patient outcomes across hundreds of thousands of measurements and outcomes.

"You don't have to be afraid of prism anymore," said Dr. Nanasy, OD. "This is why I love talking to other docs about NeuroLens. It provides docs who may not have been able to offer this elevated level of care to their patients with the tools to do so." 

# Neurolens Can Impact Your Practice as Much as It Does Your Patients' Lives

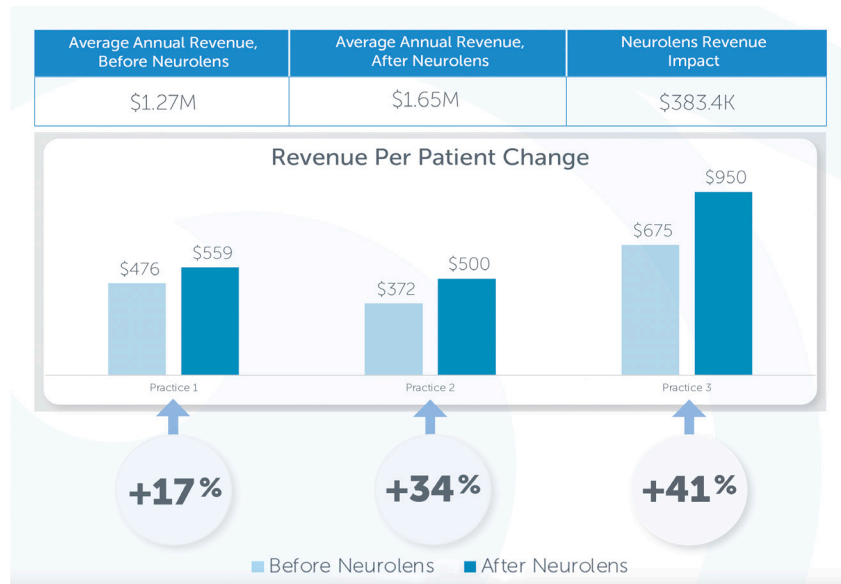
While Neurolens and its contoured prism can change the lives of your patients, its impact on your practice can be equally revolutionary. Not only does it provide your patients with the “wow” factor by dramatically alleviating their debilitating Digital Vision Syndrome symptoms, but it also quickly turns your investment into profit by increasing your revenue per patient.

It's rare for a lens technology to deliver the win-win-win of proven patient outcomes, improved top and bottom lines, and awareness and appreciation of optometry. But that's exactly what Neurolens can do for your patients, your practice, and your profession.

## Improving Your Top and Bottom Lines

There are two ways to increase your top line – see more patients or increase your revenue per patient. Neurolens makes it easy for a practitioner to increase their receipts by seeing the same or fewer patients per day while still increasing their bottom line.

“As for the return on investment, Neurolens increased my revenue per patient by \$200 the first year,” said Dora Sudarsky, OD, who incorporated Neurolens into her Burlington, Vt., practice in December of 2019. “It paid for itself faster than anything else I have added, and when you impact someone's quality of life in a positive way, that's a true win-win.”



## Building Awareness

Third-party consultants studied the success of Neurolens and the effectiveness of practices generating interest in the technology. The practices studied found that marketing Neurolens was simple and cost effective. Networking with medical professionals in the area is a key opportunity for Neurolens providers. From headache clinics to neurologists to general practice MDs, building effective referral networks is especially important when you are implementing technology in your practice that provides an optical solution to a medical problem.

Practices also found that direct-to-patient outreach through email, direct mail, social media, and various other media outlets effectively helped drive patients' interest in Neurolens. The most successful marketing tactic employed leveraging platforms such as social media to share testimonials from patients who authentically

share how their overall quality of life has improved; not only through better vision, but also through the reduction—or even elimination—of frequent symptoms such as headaches.

Neurolenses are also financially risk-free for patients, as the company provides a guarantee on its technology that providers can extend to patients. If a patient is dissatisfied, both the patient and the practice are out zero dollars. This satisfaction guarantee not only protects the practice and patient from financial risk, it also demonstrates the level of confidence Neurolens has in the effectiveness of the technology.

Still, even with the money-back safety net, Amanda Nanasy, OD, Director of the Florida Institute of Sports Vision and Partner with The Eye Center of Pembroke Pines, Fla. said, “I have only had one return in over a year and a half. I would say that speaks volumes.”





# Testing Everyone for NeuroLens Brings the Highest Return on Investment

By Troy R. White, OD  
Kapperman White McGarvey  
Chattanooga, Tenn.

I first heard about NeuroLens from another optometrist at a Leadership OD meeting. Its use of contoured prism was fascinating to me because I had already treated adult patients with glasses with different prisms, whether for distance, for computer, or for reading.

Then I actually saw the device in action when I was measured on it at SECO. That was SECO 2020, when the pandemic hit, so it wasn't until later that year that we were able to introduce NeuroLens in our practice.

## Onboarding the NeuroLens Measurement Device

Our sales rep came with someone to install it. Then for two days they trained us how to use the instrument. We measured everyone on our staff! We checked for phoria, and we discovered, 'Wow, we have a lot of convergence insufficiency in our staff!'

Because our rep had told us that everyone who is symptomatic in the office will get a pair of glasses, I said, 'Be ready to give away a bunch of glasses! Because probably over half our staff will be symptomatic.' Sure enough, a good percentage of our staff was symptomatic, which helped them buy into the NeuroLens technology even more as it helped alleviate symptoms they already had.

**I knew this was something that could not only help people see better but feel better also.**

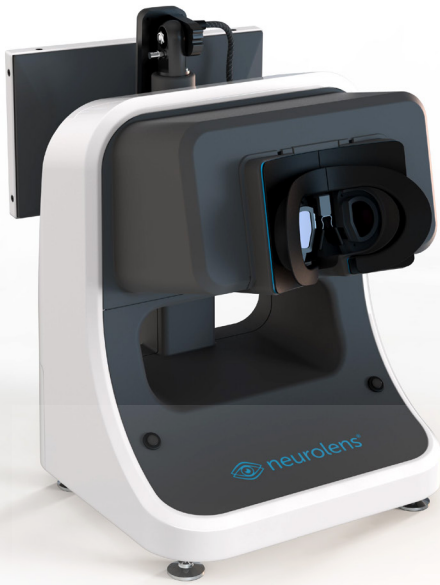
## Discussing Eye Misalignment Brings Referrals

I jumped on board with it, and by testing every patient I could then discuss the link between eye misalignment and its symptoms. That would then open up the conversation to NeuroLenses.

Even if that patient wasn't symptomatic, the discussion might lead to them saying that their sister gets car sick or their child has trouble reading or whatever, and that would prompt referrals. It does take a little time, but I was completely bought in because I got it and it helped me. I didn't mind spending that extra time because I knew this was something that could not only help people see better but feel better also.

## Accurately and Objectively Measure Prism

In the past, we would measure phoria in the phoropter, but that would vary. It was all over the place. Now that we've had



the NMD for about 14 months, we're just starting to get patients back in for retesting, and it's amazing how consistent it's been.

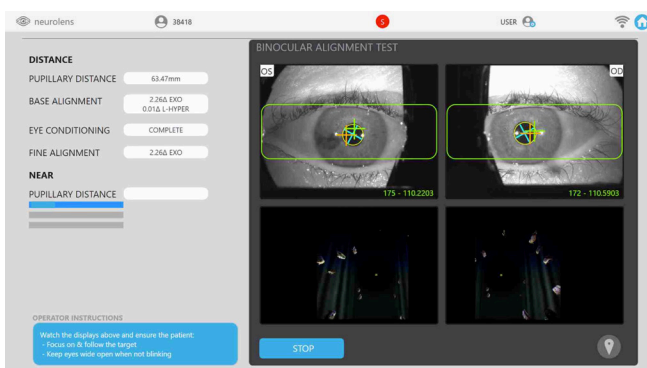
We've had patients whose migraines have gone away or been greatly reduced. We've even had a few put their glasses on in the dispensary and start crying because their eyes just felt so good.

Before NeuroLens, my main tech had car sickness so bad she couldn't even read a text. With NeuroLens, the last car trip she went on she read for about two hours on and off. When I hear these stories, I think, 'This is too good to be true,' but you just keep getting them. Another tech was getting headaches only on the weekends and realized she had been wearing her NeuroLens only at work during the week. She put her NeuroLens on during the weekend, and her headaches got better. Another patient's massage therapist asked, 'What have you been doing? Your neck is not as stiff.' Until you've experienced it and seen patients react, sometimes it's hard to believe.


**It's definitely been a huge return on investment, maybe my biggest return on any investment.**

Every patient is going to react differently, but I can usually tell now based on their alignment and based on the symptom questionnaire if they check 'always headaches, often car sickness' etc., I know this lens is going to help them. I could easily see that contoured prism would just be a part of the prescription for eyeglasses in the future.

NeuroLens has been hugely successful for us. The cost of the instrument was not that big of a deal. I knew I'd easily fit at least 10 a month to help cover the cost. What I liked about it too was that I could give the patient something they could not get somewhere else. It's definitely been a huge return on investment, maybe my biggest return on any investment. But you're going to make a patient feel better, and you can't put a price on that.



## Conclusion

Clearly, NeuroLens, with its unique contoured prism individually customized to each patient, is the solution for many patients presenting with Digital Vision Syndrome. NeuroLens truly changes your patients' lives by correcting their eye misalignment and relieving them of the symptoms of Digital Vision Syndrome. 





# Neurolens Toolkit

## What is Neurolens?

[Neurolens general overview article](#)

[Neurolens general overview video](#)

## Do that many patients really need prism?

Most patients experience symptoms, and even  
small corrections have a big impact!

[Here is why.](#)

## Is it possible to measure prism accurately?

With the NMD2, YES!

[The Neurolens Measurement Device, Gen 2](#)

## Do patients adapt to prism?

With Neurolens contoured prism, NO!

[Prism adaptation with Neurolens](#)

## What financial impact does Neurolens have on practices?

[Neurolens: A game changer for your patients  
and your bottom line](#)

