



CHANGING LIVES

During the recent ESCRS meeting in Vienna, Austria, I was pleased to attend an entire free paper session on customized partial surface ablation and CXL as a combined treatment for progressive keratoconus. My practice introduced this technique—called the *Athens protocol*—many years ago. This is not a refractive procedure to provide patients with spectacle independence but rather a procedure that can stabilize keratoconus and dramatically normalize the cone by achieving effective flattening of ectasia, which can also greatly enhance visual acuity and function. This is where the roads of refractive surgery and therapeutic applications intersect, and I am proud that we as refractive surgeons have accomplished this feat.

Topography-modified refraction (TMR), a promising area of refractive surgery, was the subject of our award-winning poster at this year's ESCRS meeting.¹ Through the treatment of irregular eyes, we have learned that refraction is a dynamic measurement. For many patients with keratoconus, refraction does not always coincide with the true corneal power in an irregular cornea, and, once you attempt to regularize the cornea, you must respect the topographic data with regard to the amount and axis of astigmatism.

More than 2 decades of clinical experience have pushed us to think more deeply about how we can improve clinical outcomes through refraction, even in normal eyes. In our poster, my colleagues and I compared TMR with a standard clinical refraction approach in topography-guided myopic LASIK. If we regularize the cornea on the vertex by performing a topography-guided treatment, then more attention must be paid to the topographic amount of cylinder and axis. Our clinical data showed that TMR offers superior refractive outcomes, with the majority of patients achieving visual acuity of 20/16 or better. This technique, however, requires further and longer-term investigation.

Even beyond the clinical applications of laser vision correction, I believe an important milestone in refractive surgery is that we now have a better understanding of how human physiology works with regard to vision. We now comprehend why some patients dynamically adjust to some slight anatomic irregularities while others do not, and we are able to choose a refraction that can compensate for angle kappa and for slight corneal irregularities. For more than 12 years, we have used toric IOLs in over 90% of routine cataract cases, making this procedure an effective refractive solution.

Although I have 25 years of experience in ophthalmology, I am still a student of this amazing field that has been blessed with brilliant investigators and clinicians. Through their hard work, I am able to become a better clinician, a better researcher, and, ultimately, a better advocate for my patients. I believe that every patient can benefit from a refractive procedure, whether it is laser vision correction, refractive cataract surgery, or keratoconus management. By better addressing refraction—even if with glasses and contact lenses—patients can achieve greater quality of vision and greater quality of life. ■

1. Kanelopoulos AJ. Topography-modified refraction (TMR): Partial to total adjustment of treated cylinder amount and axis provided by topography data measured vs using the standard clinical refraction in myopic topography-guided LASIK. Poster presented at: the 2018 ESCRS Meeting; September 22–26, 2018; Vienna, Austria.



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