



*“Technology is a resource-liberating mechanism. It can make the once scarce, now abundant.”*

- PETER H. DIAMANDIS

# The Transformative Power of *Technology*

Diamandis' insight<sup>1</sup> perfectly encapsulates the transformative power of innovation and technology in our lives. In the context of ophthalmology, the resource Diamandis speaks of can be interpreted as clear vision—scarce for those who have cataracts and astigmatism. Thanks to technological advances, ophthalmologists can liberate this resource and improve the vision of a greater number of individuals.

We humans have an impressive ability to adapt and pivot. Our understanding of the norm shifts rapidly in response to disruptive technology and circumstances. Think of the cell phone. It enables constant contact—regardless of our physical location—and widespread, instantaneous access to the Internet and information. A more recent example is our quick uptake of videoconferencing during the COVID-19 pandemic. It is challenging to imagine living without these technologies.

Our perspective on what constitutes comprehensive treatment evolves as we acquire new skills, techniques, and technologies. When I began my career in the late 1990s, cataract surgery primarily involved removing the cloudy lens and replacing it with a distance-focused monofocal IOL. Patients would then wear glasses or contact lenses to refine their visual acuity. Since that time, astigmatism correction has become an integral part of cataract surgery's successful refractive outcomes. Advanced diagnostics, planning software, axial alignment of toric IOLs, arcuate incision planning, and more precise IOL power calculations have become the norm. Intraoperative aberrometry, automated digital registration and marking, and femtosecond laser arcuate incisions can help reduce

residual refractive error. Postoperative data analysis and nomogram adjustment allow surgeons to improve the outcomes they can deliver.

Correcting astigmatism during cataract surgery has changed from a possibility to an expectation, transforming the goal of cataract surgery from simple disease management to comprehensive vision improvement. The current aim is to allow patients to enjoy the best vision postoperatively and reduce their dependence on spectacles when possible, thereby optimizing their quality of life. Ongoing developments in multifocal, extended depth of focus, accommodating, and adjustable IOLs will shift the field further.

It is crucial to remember that each normative shift represents not just technological innovation but also ophthalmologists' enduring pursuit of improved patient outcomes. Each transformation signifies a collective decision to reject the status quo and embrace change for the better.

Ultimately, the evolving norms in astigmatism treatment during cataract surgery may be viewed as a microcosm of a societal shift propelled by technology. Just as the cell phone, Internet, and videoconferencing reshaped people's daily lives, the ongoing evolution of cataract surgery pushes the boundaries of what is possible. ■

1. Diamandis PH, Kotler S. *Abundance: The Future Is Better Than You Think*. Free Press; 2012.

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