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M.D. NEWS

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Ming Wang, M.D., Ph.D.

Bridging the Gaps of Need with a Passion for Giving

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Bridging the Gaps of Need with a Passion for Giving

By Diana Hardin

Abject poverty was the only life Kajal knew where she lived near Calcutta, India. She also came to know jealousy, hatred and vengeance when her birth mother and stepmother had an argument over who should have custody of Kajal, during which her stepmother poured acid into Kajal's eyes. Kajal's mother later died, and her stepmother abandoned Kajal at a train station because she no longer wanted to care for a blind orphan.

Margarette, a 10-year-old Haitian girl, was dying of starvation when a Nashville-based missionary encountered her. Though medical missionaries saved Margarette's life, they were powerless to restore her sight, which prolonged starvation and malnutrition had stolen.

Brad, a blue-collar worker from St. Louis, was injured 13 years ago when molten aluminum splashed into his eyes, blinding him and destroying his tear ducts. More than a dozen surgeries at several major medical centers proved futile, and he was declared irreversibly blind 10 years ago. Despite his physical challenges, Brad later married Jackie, but had never seen her.

Dr. Wang performs a complex and novel eye reconstructive surgery on Kajal, a 5-year-old orphan from India who was intentionally blinded by her own stepmother who poured acid into her eyes. The orphanage that rescued Kajal searched the world to find the needed surgical expertise to restore sight in Kajal's terminally blind eyes. They were finally referred to the Wang Foundation, which raised the funds necessary to bring Kajal to the U.S. Dr. Wang donated all his services to help Kajal begin her difficult and courageous journey from darkness to sight.

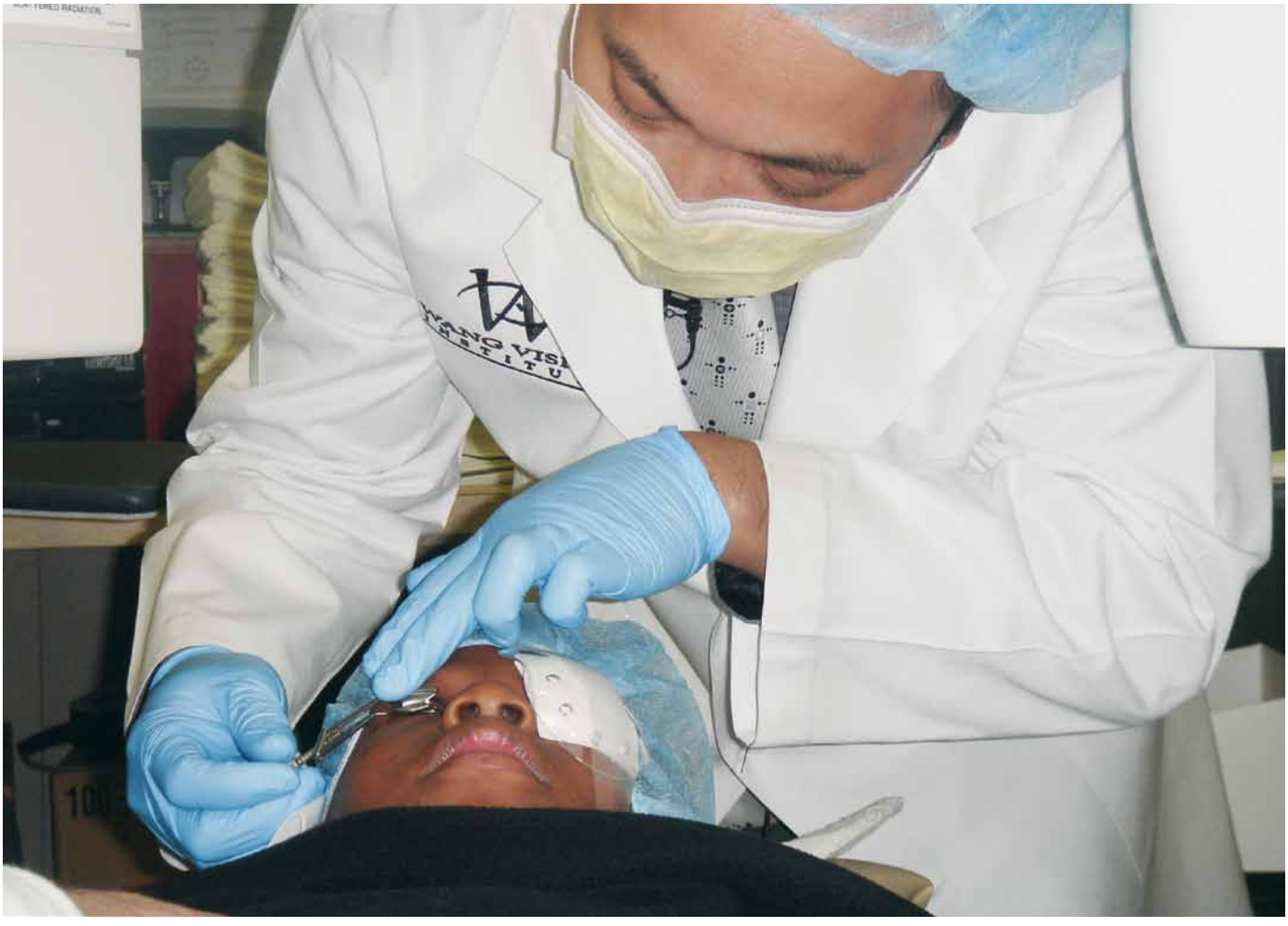
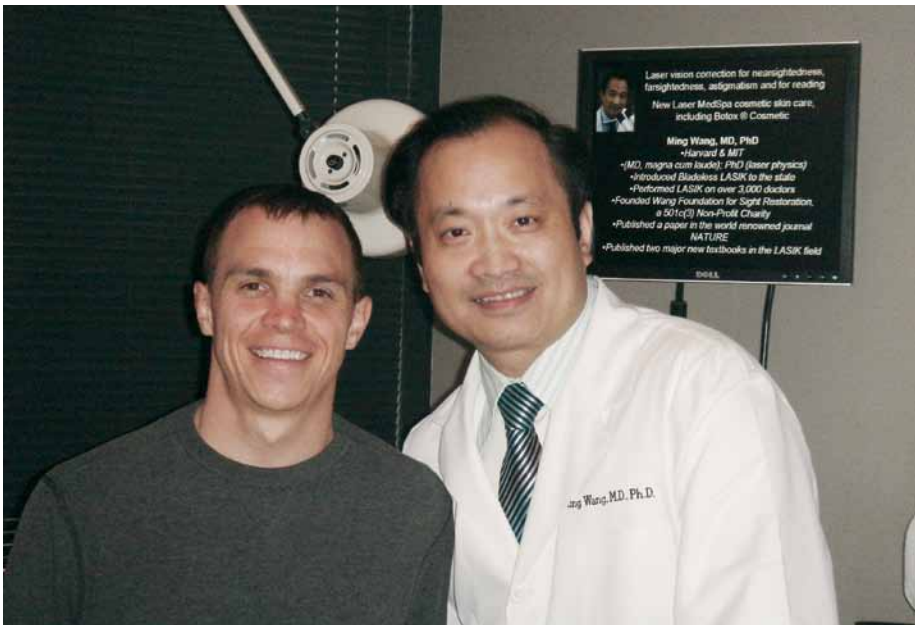


PHOTO COURTESY OF WANG VISION INSTITUTE



Brian Weist bacame one of the first patients in middle Tennessee to receive a new multifocal lens ("Forever Young Lens") after his cataract surgery by Dr. Wang.

Matrix metalloproteinase (MMP) mutation, a rare genetic disease, blinded 6-year-old Anna due to growing white corneal opacities that formed over her eyes. Doctors at Mayo Clinic and Washington University told Anna's parents that there was no treatment currently available to restore her sight. The condition hampered Anna's visual cortex brain development, threatening to leave her blind for life.

An electrical shock to Brian's left eye caused a traumatic blinding cataract. However, his young age meant that traditional lens implantation after cataract surgery would hinder his reading ability, which he needed to make a living.

Blinded for 36 years due to an injury at age 18, Randy underwent multiple failed corneal transplants. His doctors at several medical centers and universities told Randy that he would never be able to see out of that eye again.

Kajal, Margarette, Brad, Anna, Brian and Randy all have something in common other than sight loss: their sight was restored by Ming Wang, M.D., Ph.D., a corneal refractive surgeon and founder of Wang Vision Institute in Nashville.

Dr. Wang is one of the few LASIK eye surgeons in the world today who holds a Ph.D. in laser physics. He completed his medical and ophthalmology training in three of the top four ophthalmic institutions in the United States: Harvard Medical School and MIT (M.D., *magna cum laude*), Wills Eye Hospital (residency) and Bascom Palmer Eye Institute (corneal fellowship). Dr. Wang is currently a clinical associate professor of ophthalmology for the University of Tennessee, Director of the Wang Vision Institute and a co-owner and International President of Shanghai Aier Eye Hospitals, the largest private eye hospital group in China today, holding 10% of China's entire eye care market.

With several U.S. patents for his invention of new biotechnologies to restore sight, Dr. Wang performed the world's first femtosecond laser-assisted artificial cornea

Kajal enjoys a dance with Dr. Wang at the annual EyeBall, a charity fundraiser hosted by the Wang Foundation for Sight Restoration, a 501(c)(3) charity. The Wang Foundation for Sight Restoration has helped patients from over 40 states and 55 countries, with all surgeries performed free-of-charge.

PHOTO COURTESY OF WANG VISION INSTITUTE

PHOTO COURTESY OF WANG VISION INSTITUTE

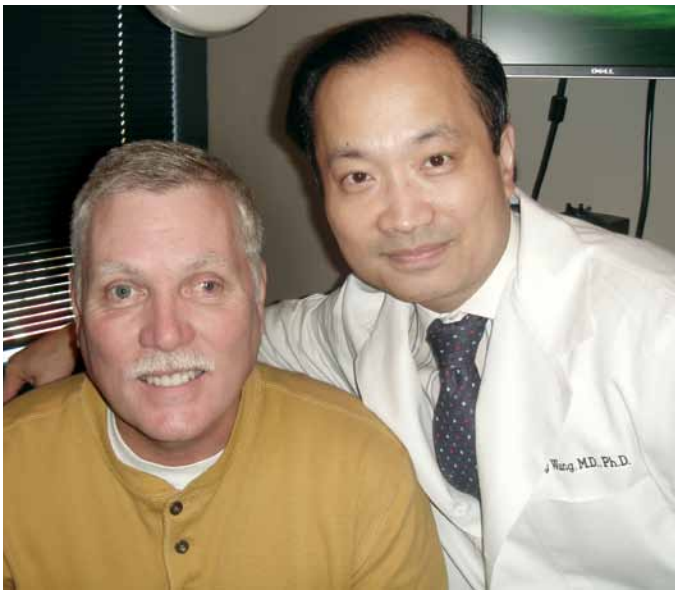
Dr. Wang and his team performed the world's first combined saliva gland transposition and laser-assisted artificial cornea implantation on Brad Barnes, which brought him from darkness to sight. Brad was able to see after 13 years of blindness, and saw his dear wife Jackie for the very first time.

implantation. In all, he has performed more than 20 first-of-its-kind surgeries, including Tennessee's first bladeless all-laser LASIK, and middle Tennessee's first Boston-K artificial cornea implantation.

Additionally, Dr. Wang has published more than 100 peer-reviewed scientific papers and book chapters, including a paper in the world-renowned journal *Nature*. He has edited four major textbooks in the fields of corneal and LASIK surgeries (*Corneal Topography in the Wavefront Era*, *Irregular Astigmatism*, *Keratoconus and Keratoectasia*, and *Corneal Dystrophy and Degeneration*) and was a co-principal investigator of an NIH R01 grant. He received the Achievement Award from the American Academy of Opthalmology and has been selected as one of America's best doctors in the Castle Connelly annual ranking of physicians, an honor bestowed on fewer than 1% of U.S. physicians.

As a former panel consultant to the U.S. FDA Ophthalmic Device Panel, and as a primary reviewer for the FDA's first LASIK clinical trial and approval, Dr. Wang has performed more than 25,000 LASIK procedures, including more than 3,000 on other doctors.

Here's how Dr. Wang applied his laser and eye



Randy Mathenia became the first patient in middle Tennessee to receive the new Boston K artificial cornea implantation, performed by Dr. Wang, and his sight was restored after 36 years of blindness.

reconstructive surgery expertise when treating the aforementioned patients:

Kajal: Dr. Wang performed a major reconstructive surgery that restored a limited degree of Kajal's sight. He has planned several additional surgeries to complete Kajal's healing process.

Margarette: She had only 5% of the sight left in her right eye when she came to see Dr. Wang, and her left eye was completely blind. Dr. Wang successfully performed an advanced laser procedure on her right eye, and on Valentine's Day, Margarette was brought from darkness to light, regaining 90% of her sight.

Brad: Working with an ENT surgeon at Washington University who referred Brad to Nashville and the Wang Foundation for Sight Restoration, Dr. Wang and his team performed the world's first combined saliva gland

Anna with Dr. Wang and her parents after her advanced laser eye surgery that removed her corneal opacities. Anna became the world's first patient with the rare MMP gene mutation to have her sight restored.

PHOTO COURTESY OF WANG VISION INSTITUTE

transposition and femtosecond laser-assisted artificial cornea implantation. Brad's sight was restored after 13 years, and he saw his dear wife Jackie for the very first time.

Anna: Because of Dr. Wang's expertise, Anna became the world's first patient with a rare MMP gene mutation to undergo an advanced laser eye procedure to remove her corneal opacities. For the first time Anna is able to see, and can now walk around the house without bumping into things or falling, and is thrilled to see objects and colors. Also for the first time, Anna's parents were able see the beautiful color and pupils of their beloved daughter's eyes!

Brian: He had heard about Dr. Wang's new Forever Young Lens, an innovative multifocal intraocular lens technology for treating presbyopia (reading) and for cataract surgery, and became one of the first patients in the state to receive this lens. He regained clear vision for both distance and reading, and he expects to maintain this for life.

Randy: Dr. Wang performed middle Tennessee's first Boston K artificial cornea implantation on Randy. As a result, for the first time in 36 years, Randy was able to see!

WANG FOUNDATION FOR SIGHT RESTORATION

Though Dr. Wang's charity work is world-renowned, less commonly known is the extent of his benevolence and its motivation. Although a passive connection between a physician and medical charity work may seem obvious, for Dr. Wang the connection is intricate and deep, and this is an area of Dr. Wang's life about which he is dedicated and passionate.

Dr. Wang describes his charity and volunteer work as identifying gaps of need, and then devising creative ways to bridge them. In 2003 he established the Wang Foundation for Sight Restoration, a 501(c)(3) nonprofit charitable organization to help indigent patients undergo advanced sight restoration surgeries performed *gratis* by the foundation doctors. To date, the foundation has helped patients from more than 40 states in the U.S. and 55 countries worldwide (like some of those patients previously mentioned), with all sight restoration surgeries performed free-of-charge.

With a paper in the world renowned journal *Nature* and several U.S. patents for his invention of new biotechnologies to restore sight, Dr. Wang performed the world's first femtosecond laser-assisted artificial cornea implantation.

WANG FOUNDATION FOR SIGHT SCHOLARSHIP

Another example of Dr. Wang's charity work in identifying and bridging gaps is his work to help students afford laser vision correction. Inspired by Martin Luther King, Jr.'s "I Have a Dream" speech, Dr. Wang wanted to help financially struggling students to be able to have modern laser vision surgeries at a time in their lives when they need it the most and could benefit from it the longest, yet have the least ability to pay. The Wang Foundation for Sight Scholarship offers laser vision surgery scholarships for medically qualified students who have demonstrated academic excellence and a financial need.

"Helping those who would benefit the most and for the longest period of time, yet are the least able to afford it, makes the most sense to me," Dr. Wang said. "These young people have a lifetime of service ahead of them, so if they can see better and serve more effectively, everyone benefits."

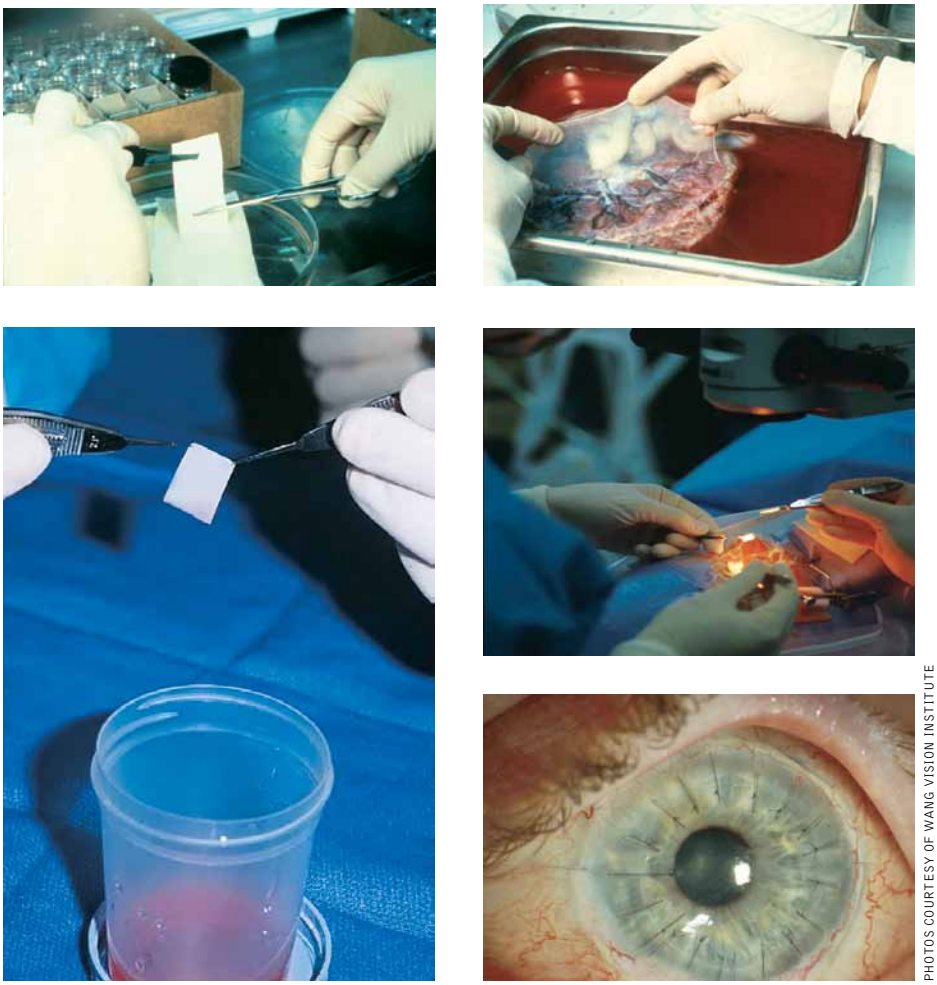
"This is my dream," Dr. Wang said, "that one day all students in our country will be able to afford modern laser vision surgery regardless of their ability to pay, and thus enjoy many years of visual freedom!"

SOJOURN FROM CULTURAL REVOLUTION TO COMPASSIONATE REDEMPTION — DR. WANG'S TESTIMONY OF FAITH AND HOPE

Dr. Wang grew up in communist China in the 1970s. As a teenager, he had to play a Chinese violin in order to escape deportation to a remote part of the country where he would be condemned to a life of poverty and hard labor, a devastating fate that fell upon millions of Chinese youth during the Cultural Revolution (1966-1976).

A chance meeting with an American professor ultimately led to Dr. Wang's 1982 journey to America. With $50 in his pocket (borrowed from that professor) and a Chinese-English dictionary, along with his persistent drive and determination spawned by the Cultural Revolution's repression and despair, Dr. Wang arrived in the United States with a big American dream.

The progeny of physicians, Dr. Wang learned the value of knowledge from his parents early on. But mere science and knowledge couldn't answer his soul-searching questions. A professor Dr. Wang respected greatly then introduced the Chinese immigrant to the teachings of Jesus Christ.



PHOTOS COURTESY OF WANG VISION INSTITUTE

Series of photos detailing Dr. Wang's laboratory experiment with an amniotic membrane. Dr. Wang published the first paper in scientific literature demonstrating laboratory success in the reduction of corneal scarring and keratocyte apoptosis with amniotic membrane transplantation. He obtained a U.S. patent and built the world's first amniotic membrane contact lens.

QUESTIONS AND ANSWERS

Among the issues that vexed Dr. Wang at Harvard Medical School was this: How can one study the scarless fetal wound-healing process to benefit an adult-injured eye without harming the fetus? Dr. Wang saw this conflict as a reflection of a larger issue: research and faith sometimes clash in an apparently contradictory world. What Christianity has done in Dr. Wang's life is provide him with the faith to believe that God has created this world, and it is without contradiction. "It may appear to be contradictory to us because we do not know better," Dr. Wang said, "so the point is that we need to persist, persevere, and truly have faith and trust in Him."

Hungry to understand the secret of the scarless fetal wound-healing process, Dr. Wang and Professor Tseng began a series of pioneering experiments to transplant an amniotic membrane onto an adult-injured cornea, hence recreating a fetal-like healing environment in an adult. Successful, they published the first paper in scientific literature that demonstrates laboratory success in reducing corneal scarring and keratocyte apoptosis with an amniotic membrane graft.

Obtaining a U.S. patent for the world's first amniotic membrane contact lens was exciting enough, but for Dr. Wang personally, even more meaningful was the validation of his belief that the world created by God is indeed perfect and without contradiction. Dr. Wang believes that God really wanted scientists to use the amniotic membrane (which is discarded after a child is born) to understand the scarless fetal wound-healing process to benefit an adult without harming the baby. "God has shown us a way to conduct scientific research while still maintaining our conscience and morality," Dr. Wang said.

PHOTO COURTESY OF WANG VISION INSTITUTE

Dr. Wang has a dream of granting sight to as many people as possible, regardless of their ability to pay.

WANG FOUNDATION FOR CHRISTIAN OUTREACH TO CHINA

In China today, people are living better materially, but spiritually and morally they are in need of more guidance and a new code of conduct, particularly with the collapse of communist ideology.

Dr. Wang wants to help bridge this moral gap in China today by distributing Bibles there, and establishing Christian mentorship and fellowship. To do that, he needs to bridge another gap — one that exists geographically, culturally and linguistically between the Chinese who receive the Bibles and the Christians in the West who send them. So, Dr. Wang created yet another foundation, the Wang Foundation for Christian Outreach to China. His goal is to recruit hundreds of U.S. volunteers to use e-mail to correspond with Chinese citizens who have received the Bibles sent by the foundation to foster long-term and lifelong mentorship. To further help his homeland China, Dr. Wang also founded Tennessee's first Chinese Chamber of Commerce, which facilitates education, communication and business relationships between citizens of China and Tennessee.

Dr. Wang describes his charity and volunteer work as identifying gaps of need, and then devising creative ways to bridge them.

Why would a busy physician so deeply concern himself with matters of charity, and spend so much time and effort as a volunteer bridging a myriad of gaps? It is, according to Dr. Wang, "simply the desire to help, which is actually the very reason we as physicians got into medicine in the first place." ■

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Services Offered at Wang Vision Institute

Surgical

- Bladeless LASIK/PRK/Custom Wavefront laser vision correction (for nearsightedness, farsightedness, astigmatism and for reading)
- International referral center for treating LASIK complications, including C-CAP
- Advanced eye reconstructive surgeries for corneal blind eyes
- Presbyopia (reading) treatment with LASIK and Forever Young Lens
- Laser Medspa and cosmetic skin care including Botox® and Latisse®
- Forever Young Lens for treating presbyopia and for cataract surgery
- Implantable contact lens for treating high myopia
- Laser-assisted Intacs for keratoconus
- Laser-assisted corneal transplantation
- Endothelial cell, amniotic membrane and stem cell transplants
- Artificial cornea implantation (Alphacor, Boston K)
- PTK laser treatment for corneal scarring
- Sutureless pterygium removal with amniotic membrane and biological glue (instead of sutures)

Medical

- Comprehensive and family eye care (cataract, glaucoma, diabetes, etc.)
- Corneal and external diseases (Fuch's, EBMD, keratoconus, dry eyes, etc.)
- Contact lens fittings (SCL, RGP) and eye care
- Children's eye care