

# Laser Eye Center

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AMERICAN UNIVERSITY of BEIRUT MEDICAL CENTER  
المركز الطبي في الجامعة الأمريكية في بيروت

Our lives are dedicated to yours







## About Us

The Laser Eye Center at AUBMC is a state-of-the-art, continuously updated facility with a mission to provide high-precision refractive surgery to correct visual errors.

Staffed with top-notch surgeons, the center uses cutting-edge technology and sound clinical decisions to attend to patients' eye care needs.

## History and Mission

Originating from a department that has been providing eye care since 1897, the Laser Eye Center at AUBMC was established in 2001, and has gone on to become one of the prime specialized eye care centers in Lebanon and the region.

A core philosophy at the center is to provide the most updated, yet proven safe technological tools through a high level of surgical expertise, sub-specialized medical knowledge, and academic and ethical decision-making.

**The Laser Eye Center's surgeons are sub-specialized in both cornea and refractive surgery, and are among the region's most experienced surgeons.**

# Services

## Laser Vision Correction

The Laser Eye Center offers both LASIK surgery and laser surface ablation (PRK) for patients who suffer from myopia, hyperopia, and/or astigmatism.

Both procedures rely on excimer laser technology to reshape the cornea.

In LASIK, a flap is created and then lifted, and the laser reshaping is performed inside the cornea. In PRK, the laser reshaping is performed on the corneal surface.

LASIK offers faster visual recovery, but PRK is indicated whenever the initial eye exam is less than optimal, in order to maximize the safety profile.

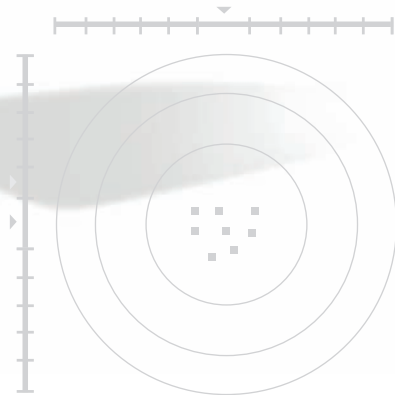
The final visual results in both procedures are the same.



## Corneal and Ocular Eye Imaging

The Laser Eye Center has a wide range of state-of-the-art technology for corneal and ocular eye imaging.

The latter is essential not only to determine the suitability of a candidate for laser vision correction, but also to screen and follow up on different eye diseases, as well as to plan different surgeries like intra-corneal ring segments, special types of cataract surgery, and customized wavefront-guided treatments, among others. Imaging armamentarium includes dual Placido and dual Scheimpflug imaging, focused cone Placido imaging, wavefront aberrometer, and corneal optical coherence tomography (Corneal OCT).



# Additional Technologies in Laser Vision Correction

## Femtosecond LASIK (IntraLASIK)

In Femtosecond LASIK, also known as IntraLASIK, a small flap is created in the front portion of the cornea using a specialized femtosecond laser instead of the traditional micromechanical system.

Small laser bubbles are created and the surgeon later connects them, hence creating a flap.

Femtosecond LASIK provides the same visual results as LASIK with the mechanical flap, but offers an increased margin of safety, especially in borderline corneal parameters identified during the exam.

An excimer laser, which is the same one used for conventional LASIK or laser surface ablation, then sculpts the cornea, after which the flap is repositioned.



## Customized Laser Vision Correction

Customized laser vision correction, or wavefront-guided LASIK or PRK, uses wavefront technology to measure and treat optical imperfections in the human eye or cornea.

Optical aberrations of either the whole eye or just the cornea are measured using a special device.

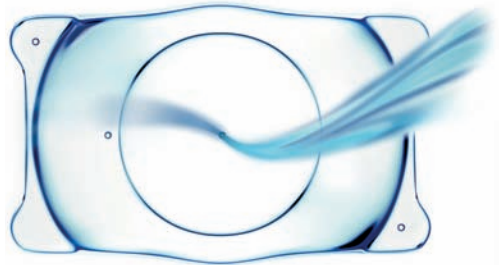
A 3D visual map of the eye's optical system is then created and is fed into the laser computer to create a customized treatment profile.

The customized laser sculpting of the cornea attempts not just to treat myopia, hyperopia and astigmatism, but also the eye's optical imperfections, potentially leading to a better quality of vision. Upon completing the initial evaluation, patients are advised whether they are candidates for customized laser vision correction.

## Implantable Corrective Lenses

Implantable corrective lenses are a great solution for patients who are not good candidates for laser vision correction.

They provide excellent visual quality and are able to correct or reduce errors as high as  $-20$  D of myopia, and high levels of astigmatism and hyperopia.



# Treatments and Solutions

## Presbyopia Treatment

Corneal inlays are a revolutionary new technology to treat presbyopia. Corneal inlays make use of the pin-holing principle to increase the depth of focus of an eye.

A typical corneal implant is placed in one eye (the non-dominant eye) under a LASIK flap after completing laser corneal reshaping to correct myopia, hyperopia, and/or astigmatism, or through a laser-produced corneal pocket if the patient's far vision is considered excellent.

Corneal inlays significantly improve near and intermediate vision while preserving far vision.

Best of all, the surgery is reversible as corneal inlays can be easily explanted.

## Keratoconus Solutions

Patients suffering from progressive keratoconus can achieve stability by undergoing UV corneal cross-linking, while patients with suboptimal visual quality and not tolerating hard contact lenses would benefit from intra-corneal ring segment placement.

The latter are plastic rings that are inserted in the mid periphery of the cornea using the femtosecond laser. Intracorneal ring segments flatten the cornea and render it more regular, hence decreasing visual errors and improving visual quality.

Customized laser surface ablation can be sometimes combined with UV corneal cross-linking to improve visual quality and minimize visual errors in mild to moderate keratoconus patients.





# Who Is a Candidate for Some Procedures?

## 1. Laser vision correction procedure:

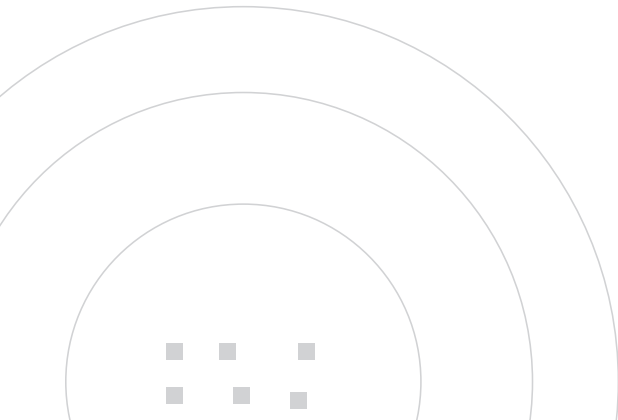
Candidates for the procedure are individuals older than 18 years of age, who have a refractive error in terms of myopia, hyperopia, and/or astigmatism, which has been stable over the past year, and have acceptable eye measurements as determined by a preliminary exam.

## 2. Presbyopia treatment:

Candidates for the procedure are individuals older than 40 years of age, who typically need eye glasses to perform activities like reading, texting, and working on the computer.

## 3. Keratoconus procedure:

Candidates for the procedure are individuals who suffer from keratoconus, which is a disease affecting the cornea, or the front portion of the eye. Keratoconus typically leads to a distorted vision, which is not fully correctable with eyeglasses.



“Undergoing LASIK at the Laser Eye Center at AUBMC was a very pleasurable experience from the very friendly staff performing the eye measurements and assisting in surgery, to the professionalism and expertise of the surgeon and his attention to details, to the continuous care throughout the follow-up visits.”

Maya Boulos, Laser Eye Center patient



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