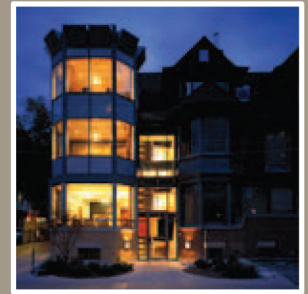




ADVANCED TREATMENT FOR KERATOCONUS

Corneal Crosslinking (CXL)
+
Photorefractive Keratectomy (PRK)



CXL was introduced in Canada by the surgeons of the Bochner Eye Institute over 4 years ago. In Europe, where the procedure was pioneered, it has been performed for over 14 years ago. There are many long-term studies that demonstrate the efficacy and safety of the procedure.

The most effective treatment to prevent progression of keratoconus and improve vision is the combination of CXL + Photorefractive Keratectomy (Topography-Guided PRK).

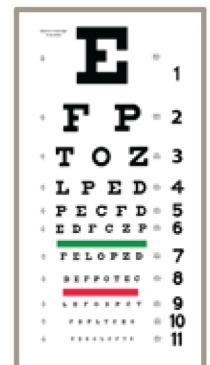


WHY IS CXL AN IMPORTANT PROCEDURE FOR KERATOCONUS PATIENTS?

The purpose of CXL is to strengthen a cornea to prevent progressive bulging and thinning that interferes with vision. With a stronger and more stable cornea, vision can be stabilized, and the risk of requiring a corneal transplant is practically eliminated.

WHY IS PRK AN IMPORTANT ADJUNCT TO CXL?

PRK (Topography-Guided PRK) is a sophisticated technique in which over 20,000 data points on the curvature of the cornea are inputted into the computer of the Allegretto laser. The laser is used to smooth the cornea by flattening steep areas and steepening flat areas. This treatment can reduce irregular astigmatism and enhance vision with glasses or contact lenses.



WHY IS IT BETTER TO HAVE CXL AND PRK AT THE SAME TIME?

The outcomes are better if the two procedures are performed on the same day rather than on sequential days. If the laser treatment is performed at a later date, the cornea can be weakened by removing some of the strengthened crosslinked tissue. In addition, the PRK outcomes are less predictable weeks or months after CXL, and there is a greater chance of developing corneal haze.

WHAT IS THE SUCCESS RATE OF CXL?

At the Bochner Eye Institute over 3,000 eyes have been treated with CXL over the past 4 years. This is more than any other centre in the world. Patients have travelled from all over North America. The success rate at preventing progressive bulging and thinning has been over 98%.



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IS THERE AN IDEAL AGE FOR CXL?

Usually, the younger the patient the greater the chance of preserving vision with CXL. Patients treated at the Bochner Eye Institute have ranged in age from 10 to 60 years age. With treatment, the corneal contour is preserved, and therefore it is best to have CXL when the shape is only mildly distorted. Patients with advanced disease can have CXL but the vision may be less than ideal with glasses or soft contact lens necessitating the use of a rigid contact lens.



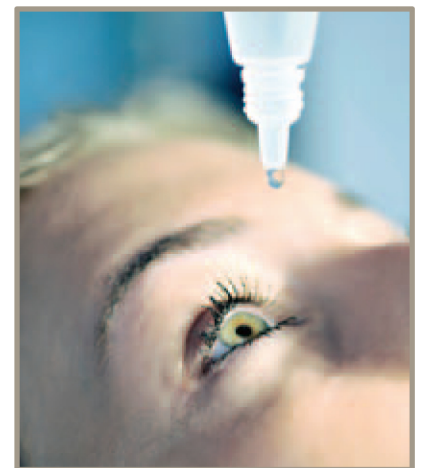
ARE SOME KERATOCONUS PATIENTS NOT GOOD CANDIDATES FOR CXL?



Patients must have satisfactory corneal thickness for the procedure to be performed. A thickness of 400 microns is required prior to the ultraviolet light application. Corneas with a thickness between 320 microns and less than 400 microns can usually be treated by using specialized drops to swell the cornea to 400 microns or greater prior to the ultraviolet light application. In addition, patients with corneas that have significant central scarring that interferes with vision are not good candidates for CXL.

HOW IS THE PROCEDURE PERFORMED?

The procedure is divided into 4 steps. Most patients find the procedure very easy and are comfortable. Anesthetic drops are instilled, which numbs the surface of the eye, and makes the procedure pain free. The first step of the procedure is the removal of the central corneal epithelium. A very gentle brush is used to polish away the soft cells of the front of the cornea referred to as the epithelium. The second step is the PRK treatment to smooth the cornea. The third step is the instillation of specialized drops containing Riboflavin. Drops are typically used for 20 minutes. The fourth part of the procedure is the use of ultraviolet light (UV-A), which is typically used for less than 10 minutes.



WHAT IS REQUIRED AFTER THE TREATMENT?

Immediately after the procedure a soft bandage contact lens is inserted which is worn for approximately 5 days. This allows enhanced comfort and promotes healing of the corneal epithelium. An antibiotic drop is used for 5 days and a steroid drop is used for 2 weeks. Artificial tears can be used as needed for comfort.

WHAT ARE THE POTENTIAL COMPLICATIONS OF THE TREATMENT?

The complication rate is extremely low with CXL. The risk of infection is rare. In fact ultraviolet light can be used to kill bacteria and parasites in patients with corneal infections. Occasionally there is a delay in the healing of the corneal epithelium, which can delay the return of best vision.