Your Guide to:
Corneal Collagen Cross Linking Procedure

UV-X®
Radiation system for corneal cross-linking

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What is the Cornea?

The cornea is the front window of the eye. It is like a densely packed sandwich and it is made up of five different layers. Normally the human cornea has a smooth curvature and it is shaped like a football. Conditions like keratoconus, pellucid degeneration (thinning disorders of the cornea) can affect the shape and thickness of the cornea. In advanced cases of keratoconus, because of thinning the corneal shape can be completely distorted (like a rugby ball).

What is Corneal Collagen Cross Linking?

Cross linking is a new procedure which has been shown to be effective in increasing the mechanical stability of the cornea, thus arresting and sometimes even reversing the progression of thinning of cornea.

How Does the Cross Linking Procedure Work?

The mechanical stability of the cornea is increased by creating additional chemical bonds within the corneal stroma. These chemical bonds are created by means of a highly localised photopolymerisation procedure.

The Principle

Riboflavin-5-Phosphate (Vitamin B2)

\[ \text{Singlet Oxygen} \quad \text{O}_2^* \]

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What Does the Procedure Involve?

The procedure is performed in the minor operating room, as a day case procedure, under local anaesthesia to the eye. The superficial layer of the cornea (epithelium) is gently peeled away by using a special spatula. Following this Riboflavin (vitamin B2) eye drops are placed in the cornea every few minutes for about 30 minutes.

The eye will be checked with a slit-lamp biomicroscope by your surgeon, to ensure that the riboflavin drops has completely penetrated the cornea. Once your surgeon is satisfied with this step, a clip will be placed in your eye to gently spread open your eye lids. A calibrated ultraviolet light device is then focused on your cornea and then switched on for 30 minutes. It is important to lie still during this procedure. Your surgeon and other medical personnel will periodically check to make sure that the device is in the correct position. During this 30 minutes you may have more riboflavin drops instilled in to your eye.

Once the procedure is complete a bandage contact lens will be placed over the treated cornea, which will be removed by your surgeon in 2 to 3 days.

How Long Does it Take for the Cross Linking to Work?

Cross linking and strengthening of the corneal stroma takes place as a result of exposure to ultraviolet light. The corneal rigidity increases soon after the procedure and this continues over a period of few days after the treatment. The final effect on corneal shape takes longer. In some individuals corneal flattening does not occur. The main goal of cross-linking is to arrest the progression of corneal thinning.

Post Operative Care

Following the treatment you will have a bandage contact lens inserted in your treated eye. Post operatively you will be given, antibiotic, steroid eye drops and artificial tears for a period of 4 to 6 weeks. The bandage contact lens will be removed 3 to 4 days after the treatment.