

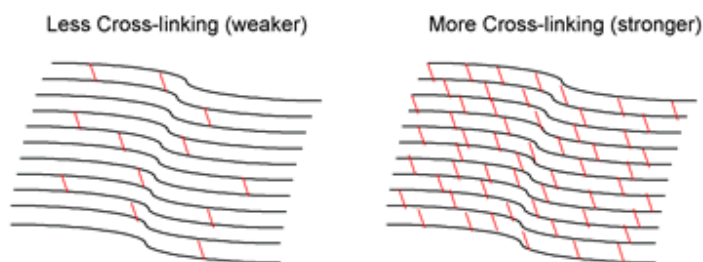
## **The Caribbean Eye Institute (CEI) introduces CORNEAL CROSS LINKING (CXL) for KERATOCONUS.**

CEI continues to make available the latest, relevant and affordable technologies in Ophthalmic eyecare.

Previous initiatives by CEI include:

1. Intraocular lens (IOL) surgery for cataract (1984).
2. A-scan biometry for IOL surgery (1986).
3. Phacoemulsification (small incision, no-stitch) cataract surgery (1995).
4. Optical Coherence Tomography (OCT) for retinal (macular) disease and nerve fibre analysis in Glaucoma (2003).
5. Digital retinal angiography for Diabetic retinopathy and macular disease (2005).
6. Amniotic membrane grafts in corneal surgery (2006).
7. Corneal Crosslinking for Keratoconus – 2008.
8. Our surgeon has been doing Corneal Transplants since 1986.

**Corneal Cross Linking (CXL)** is a non-invasive procedure that has been proven to strengthen the weak corneal structure in keratoconus. **This method works by increasing collagen cross-linking, which are the natural "anchors" within the cornea.** These anchors are responsible for preventing the cornea from bulging out and becoming steep and irregular (which is the cause of keratoconus).



The figures above show the parallel corneal layers (white) and the collagen cross-linking (red) which are increased after Corneal Cross Linking treatment.

**WHAT IS KERATOCONUS:** A condition in which the front transparent layer of the eye, the cornea, becomes gradually pointed (or conical), and distorted (irregular). Vision deteriorates and may be corrected initially by spectacles and later contact lenses to correct increasing astigmatism and myopia. Change in spectacle prescription is needed more frequently. The vision may be so distorted and the cornea may become scarred requiring a corneal transplant.

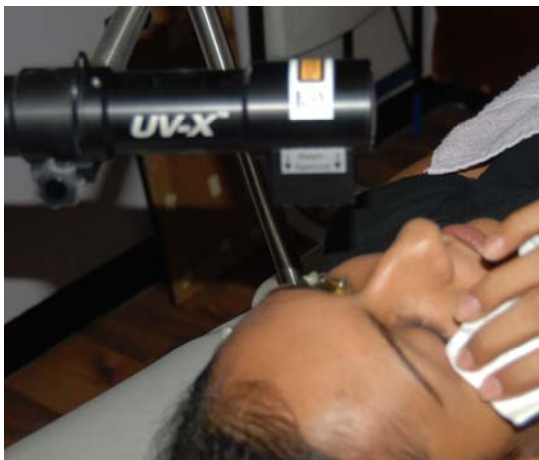
**EARLY SIGNS:** Vision problems due increasing Myopia and astigmatism associated with irritable and itchy eyes and constant rubbing of the eyes and frequent change in spectacles



Corneal Scarring from Keratoconus requiring a Corneal Transplant.

Keratoconus is the commonest reason for corneal transplant surgery in Trinidad and Tobago. The cost and risks of a transplant may be avoided by early diagnosis and CCL treatment. Early Diagnosis is the key to successful treatment. To achieve this, the most advanced corneal topography technology, the PENTACAM, is employed to analyze the structure of the cornea.

**CXL:** The 30-minute Corneal Cross Linking treatment is performed in our office and is a one-time treatment. During the treatment, custom-made riboflavin eyedrops are applied to the cornea, which is then activated by a special light. This is the process that has been shown in laboratory and clinical studies to increase the amount of collagen cross-linking in the cornea and strengthen the cornea.



Corneal Crosslinking in progress at the Caribbean Eye Institute.

Eye physicians in Germany, who performed initial studies, reported results of treatments done as long ago as 1998, so there is a good track record for this procedure. Results indicate that CXL is a safe and effective treatment for Keratoconus. The mechanical strengthening of the cornea reduces the risks of progressive worsening of the corneal deformity. Thus it reduces the need for corneal transplants.

G. Wollensak reported no progression of Keratoconus<sup>1</sup> in 48 eyes followed for five years after crosslinking therapy.

Eberhard Spoel et al concluded that as long as the cornea treated has a minimum thickness of 400 [µ]m (as recommended), the corneal endothelium will not experience damage<sup>2</sup>, nor will deeper structures such as lens and retina.

Call: 368 9334.

*References:*

1. No Progression of Keratoconus 5 Years after C3-R.

*Wollensak G. Crosslinking treatment of progressive keratoconus: new hope. Curr Opin Ophthalmol. 2006 Aug;17:356-60.*

2. Safety of special light-Riboflavin Cross-Linking of the Cornea

*Eberhard Spoerl, PhD, Michael Mrochen, PhD, David Sliney PhD, Stephen Trokel, MD, Theo Seiler, MD, PhD, Cornea 2007; 26:385-389*

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