

Keratoconus is a progressive, non-inflammatory disease affecting the cornea. It can occur in early teens or mid-twenties. Collagen, the main protein present in the cornea, can be lost in great quantities as keratoconus progresses. This process results in a weakening in the corneal structure, leading to the cone-shaped cornea which gives the condition its name, keratoconus.

If you have any questions or concerns regarding this procedure, do not hesitate to consult your doctor.

The world leader in corneal cross-linking for keratoconus

IROC Innocross is developing and manufacturing state-of-the-art products for corneal cross-linking in close collaboration with the inventors of the procedure.

IROC Innocross products embody the cutting-edge knowledge in the field of corneal cross-linking.

Corneal cross-linking for keratoconus

IROC Innocross AG
Switzerland
www.innocross.ch



IROC INNOCROSS

1. Causes

It is uncertain what really causes keratoconus. Eye-rubbing, possibly caused by allergies has been investigated, since an increased incidence of keratoconus in patients with allergic eye disease has been found. Genetic factors could also increase incidence.

2. Symptoms

Symptoms of keratoconus include blurred vision, increased astigmatism, corneal thinning, a decrease of visual acuity and an increased sensitivity to light at night. Patients with keratoconus would normally be required to wear a rigid gas permeable contact lens (RGP), which flattens the cone, restoring vision. If the keratoconus progresses further and a RGP can no longer be fitted or corneal edema and scarring develop, corneal transplantation may be required.

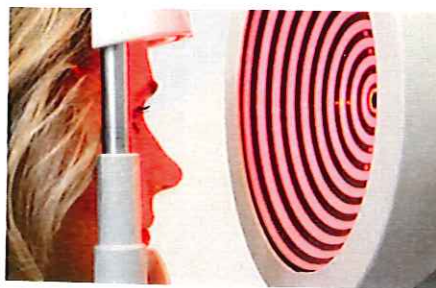
Symptoms include blurred vision and sensitivity to light at night (glare).



3. Methods to diagnose keratoconus

Corneal shape changes can be visualized using corneal topography. Most ophthalmologists will diagnose keratoconus using elevation maps from a Scheimpflug. This digital rotating device can be used for various diagnostic parameters such as central corneal irregularities, irregular shaped corneal surfaces and irregular astigmatism.

Corneal topography maps will also be taken to help with the diagnosis of keratoconus.



4. Method for keratoconus treatment

Corneal cross-linking (CXL) is a one hour surgical procedure. The protective layer of the cornea, the epithelium, has to be removed initially before the cornea is soaked with riboflavin (vitamin B2) for 30 minutes. The cross-linking reaction is then activated by exposing the soaked cornea to UV-A light for 10 minutes.



Local anesthetic drops will be applied to the cornea before, during and after the procedure to avoid pain or discomfort.

5. How CXL works

The combination of UV-A light and riboflavin to the cornea creates cross-links between the collagen fibers within the cornea which strengthens the corneal structure, therefore halting the progression of keratoconus.

During corneal cross-linking, riboflavin acts as a shield during irradiation to the cornea, protecting deeper ocular structures such as the endothelium, lens, and retina from excessive UV-A irradiation.

6. Treatment risks and side effects

There is very little risk involved with CXL treatment. Vision might be blurred for a few days following the procedure due to epithelial re-growth. Clinically, it is known that vision can temporarily become worse in the first month following treatment.

7. What to expect after Corneal Cross-Linking

It is normal to feel slight pain up to 48 hours after treatment; your clinician will provide you with drops to alleviate the pain. Bandage contact lenses will be placed on your eye on the day of surgery which will promote healing and hydration to the cornea after cross-linking. The use of the bandage lenses is painless and they will be removed a few days after treatment. It is important to visit your ophthalmologist regularly in order to track your progress following cross-linking. Clinical studies have shown stabilization and in some cases a reduction in corneal keratometry (steepness of cone) one year after treatment. Once the cornea is stable, you may need to be fitted with custom made contact lenses to improve your vision.

IROC INNOCROSS