

If there is an emergency at night, during a weekend or on a holiday, come for emergency care to the Institute, which is available 24 hours. Always mention the file number and name of the patient in your communications.



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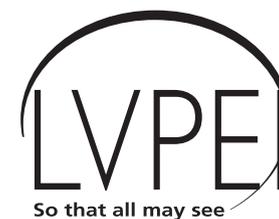
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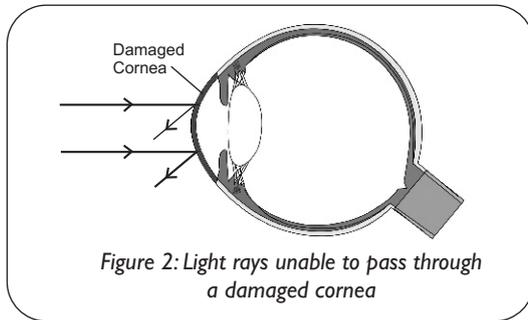
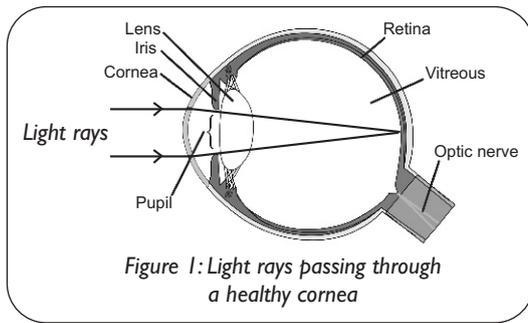


LV Prasad Eye Institute

Boston Keratoprosthesis



Boston Keratoprosthesis



The cornea is the outermost, transparent layer of the eye, just like the glass dial of a watch. When the cornea is normal or clear, light passes through uninterrupted and we can see clearly (Figure 1). However, when the cornea becomes white or opaque (due to disease or injury), light does not pass through the eye and one can not see (Figure 2). In such cases, the doctor may advise a surgery called corneal transplantation.

In a corneal transplant, the diseased cornea is removed and replaced by a healthy donor cornea to restore its clarity and enhance the transmission of light, thus enabling the patient to see things clearly. However, sometimes, a corneal transplant may not be successful and repeated corneal transplant surgeries

may have a higher risk of failure. Such patients are likely to benefit from a new kind of surgery, known as Boston Keratoprosthesis (Boston KPro).

What is keratoprosthesis?

Keratoprosthesis is an artificial cornea which is used as an alternative to a standard corneal transplant (kerato = cornea, prosthesis = artificial device). The Boston KPro consists of two plates made of polymers joined by a stem, which is the optical part of the keratoprosthesis.

There are two types of Boston KPro - Type I and Type II. Type I is used for patients who have a normal tear film in the eye and good blinking action of the lids (Figure 1). Type II is done for patients who have end stage dry eyes. This is done through the lids. Type II Boston KPro is still under development and is not available for clinical use yet.

Who is suitable for Boston KPro?

Keratoprosthesis is reserved for patients who have bilateral and severe visual impairment after repeated unsuccessful corneal transplants. Other indications are patients with ocular trauma, herpetic (viral) keratitis, aniridia and corneal opacities in children. Patients with limbal stem cell deficiency in both eyes, for instance after chemical injury, are also suitable for Boston KPro.

Who is not suitable?

Patients with advanced stage glaucoma or retinal pathology are not suitable for Boston KPro. Patients who may benefit from regular penetrating

keratoplasty or corneal transplant are also not advised a Boston KPro.

How is the surgery done?

Surgery is done preferably under general anesthesia but local anesthesia may also be used. If the patient has an intraocular lens, it is retained. If there is a normal lens in the eye, it is removed at the time of surgery. The method of surgery is similar to that of penetrating keratoplasty except that the assembled keratoprosthesis is sutured in place in the eye. A bandage contact lens is placed on the eye after surgery.

Some potential risks

As with any surgery, there are certain risks involved with Boston KPro. Your doctor will explain these in detail to you before scheduling surgery. Some of the risks include: eye infection, retroprosthetic membrane or membrane behind the artificial cornea, corneal stromal necrosis, persistent epithelial defect of the cornea, glaucoma or retinal detachment.

It should be borne in mind that Boston KPro is advised *only* when all other options for sight restoration are unsuccessful. Hence, the risks of surgery should be balanced against the benefits of the treatment.

Follow up visits

This surgery is advised only for patients who can adhere to the follow-up schedule and visit the hospital as required. The follow-up will be after the first day, one week, one month, thereafter every 2-3 months. Your referring doctor can collaborate with LVPEI doctors for after care.