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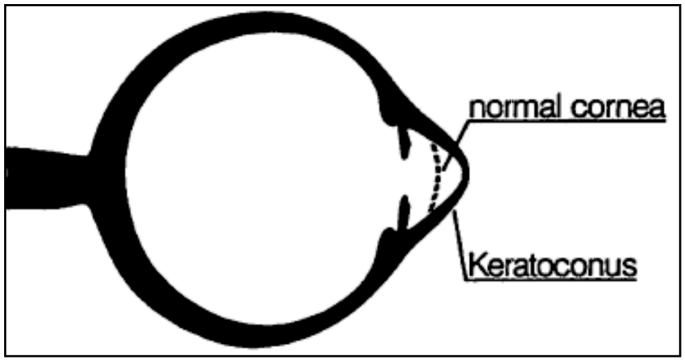
# Keratoconus

**What Is Keratoconus?**
Keratoconus is an uncommon condition in which the cornea (the clear front window of the eye) becomes thin and protrudes. Keratoconus literally means a cone shaped cornea. This abnormal shape can cause serious distortion of vision.




**What Causes Keratoconus?**
Despite continuing research, the cause of Keratoconus remains unknown. Although Keratoconus is not generally considered an inherited disorder, the chance of a blood relative having Keratoconus is thought to be as high as one in 10.

Vigorous eye rubbing, although not the cause of Keratoconus, can contribute to the disease process. Therefore, patients with Keratoconus are advised to avoid rubbing their eyes.

**What Are the Symptoms of Keratoconus?**
Blurring and distortion of vision are the earliest symptoms of Keratoconus. Symptoms usually appear in the late teens or early twenties. The disease will often progress slowly from 10 to 20 years, and then stop.

In the early stages, vision may be only slightly affected, causing glare, light sensitivity and irritation. Each eye may be affected differently. As the disease progresses and the cornea steepens and scars, vision may become distorted.

A sudden decrease in vision can occur if the cornea swells. The cornea swells when the elastic part of the cornea develops a tiny crack, created by the strain of the cornea's protruded cone-like shape. The swelling may persist for weeks or months as the crack heals and is gradually replaced by scar tissue.

**How Is Keratoconus Treated?**
Mild cases are successfully treated with glasses or specially designed contact lenses. When vision is no longer satisfactory with glasses or contact lenses, corneal crosslinking is usually recommended.

Corneal crosslinking is a treatment aimed at strengthening the cornea so that corneal transplant is not required. The procedure begins with the instillation of anesthetic eye drops to ensure the comfort of the patient. Then, the corneal epithelial layer is often removed so that riboflavin solution can penetrate deeper into the corneal stroma. Following this step, riboflavin (vitamin B2) solution is then applied to the eye. The surgeon will use a UV-A light in order to activate the riboflavin for approximately 30 minutes. Riboflavin is capable of forming bonds between adjacent collagen strands in the cornea. This will preserve and increase the strength of the cornea and reduce the protrusion of the cornea.

There are other surgeries such as special heating of the cornea (thermokeratoplasty) or adding additional corneal tissue (epikeratophakia) that can also be done.

If sudden corneal swelling occurs, your eye doctor may prescribe eye drops for temporary relief. However there are no medicines known which prevent progression of the disease.

Lastly, if a corneal transplant is necessary for advanced Keratoconus, vision usually improves. As in any eye surgery, complications such as transplant rejection, infection and loss of vision can occur, so results cannot be guaranteed.