

## KERATOCONUS

The cornea is the clear "window" at the front of the eye that sits like a watch glass over the colored iris. The cornea (rather than the lens inside the eye) is the main part of the eye's focusing system, so any irregularity or distortion of the corneal surface will profoundly affect vision.

Keratoconus is a condition in which the cornea, gradually over many years, weakens and becomes cone-shaped, like a weak spot in a tire. This distorts its focusing ability and results in blurred vision.

Problems usually begin in the middle to late teenage years. The degenerative process continues until sometimes between the ages of 25 to 40, when it slows down or stops. Keratoconus usually (but not always) affects both eyes, though its severity may be different in each eye. It occurs in both sexes and all races. It is an inherited condition (recessive) that sometimes occurs as part of other hereditary conditions.

### *Symptoms*

The first symptom of Keratoconus may be frequent increases or a sudden large increase in nearsightedness (myopia), which is not very much different from typical, normal myopic progression. For a while, changes in the eyeglasses may fully correct vision to 20/20, but eventually they may not be able to correct vision much at all.

With or without glasses, images may appear severely blurred or distorted. Glare problems, especially noticeable when driving at night, and "rainbows" and "rings" around lights can also occur. Very rarely, vision in an eye can blur suddenly or even be lost—and then be regained, over weeks—as the cornea stretches, cracks, and heals; this is called a hydrops (water-swelling) of the cornea.

## *Diagnosis*

The earliest changes in the shape of the cornea may cause visual symptoms, yet not be easily identified during an eye examination. Later, however, they will become visible with a slit lamp (clinical microscope). Other instruments, such as a retinoscope, a keratometer (also called an ophthalmometer), or a Placido disc, can help identify the irregular corneal surface. These diagnostic tools may be used to investigate and measure the shape of the corneas on each visit, so that over a period of time the progress of any changes can be compared. All these tests and examinations are painless.

## *Treatment*

As long as visual problems are slight, they can be managed by changing the prescription of your eyeglasses. When an eye cannot be adequately corrected with glasses, a contact lens often provides good vision; the difference is that a contact lens sits directly on the cornea and becomes, in effect, a "new cornea" having an optically smooth surface. For some patients, contact lenses continue to work well for a lifetime, although many changes of fit and prescription may be needed over the years.

If the keratoconus continues to progress, the time may come when you can no longer wear contact lenses, either for reasons of comfort or because the cornea has become so distorted that, the lens will not stay in place. At that time, a corneal transplant may be necessary. In this surgical procedure, a normal donor cornea is used to replace the abnormal cone-shaped cornea. Corneal transplants for keratoconus are highly successful (over 90 percent). Even after a successful transplant, however, you may still need to wear eyeglasses or contact lenses to obtain good vision.

Since the corneal problem usually stabilizes by the age of 40, you are not likely to require surgery after that age if you did not need it before then.