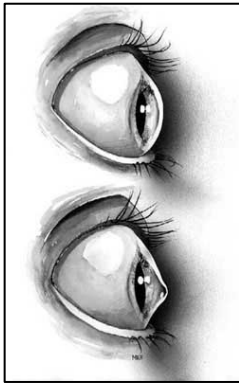


Keratoconus (Cone-Shaped Cornea)

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Overview



Keratoconus (pronounced ker-uh-toh-**cone**-uhs) is a genetic eye condition in which the cornea, or the clear, outer portion of the eye, becomes thinner and weaker. Over time, the weakened cornea starts to bulge outwards in a “cone” shape, due to the natural pressure exerted on it from inside the eye. This “coning” eventually leads to scarring on the cornea and astigmatism - blurry vision caused by the distortion of the cornea. People with keratoconus often find their glasses prescriptions change frequently and notice worsening glare and light sensitivity.

Keratoconus typically affects people in their teens or early twenties and progresses until they reach their mid thirties, at which point it

may stabilize.

[Photo](#) from Google images

Additional Resources:

[Discovery Eye Foundation](#)

[The National Keratoconus Foundation](#)

Causes and Symptoms



Keratoconus is a genetic condition that weakens the corneal tissue. We do not know the exact cause. Since the condition is inherited we cannot prevent it from developing. The early signs are subtle and easily missed during eye exams. As the condition progresses, your eyesight becomes blurred and distorted and cannot be corrected with glasses.

Photo from [National Keratoconus Foundation](#). Keratoconus can result in double-vision so you see multiple images.

Screening and Diagnosis

The definitive way to diagnose keratoconus is with a corneal topography – a simple test which maps the surface of the cornea and can detect early cone formation. As the condition progresses, the diagnosis becomes more obvious.

Treatment

Initially, the astigmatism can be corrected with glasses. However, as the cornea continues to bulge outwards, glasses are no longer effective and a rigid contact lens is required. If the keratoconus continues to get significantly worse and scarring develops, the only definitive treatment is a corneal transplant. However, in most cases, the cornea stabilizes before severe coning occurs, in which case surgery is not needed.

While glasses and contact lenses are relatively easy and safe options, corneal transplants often carry significant risks. Research is being done to find non-invasive, or minimally invasive treatment options for patients with advanced Keratoconus.

New treatments

Some of the newer treatment approaches include the following:

- Intacs® implants. Thin plastic implants are inserted into the cornea to flatten it back into its correct shape. This procedure is already being offered at a limited number of Kaiser Permanente facilities.
- Anterior lamellar grafts. **This is a partial corneal transplant that replaces the distorted front of the cornea with healthy donor tissue but preserves the normal back of the cornea. The advantage of this procedure is that the eye is stronger, recovery is quicker and there is very little chance of rejection which occurs frequently in a full thickness transplant. The disadvantage of this procedure is that the final vision is often not as good as a full thickness transplant. This procedure and the visual outcomes are currently being evaluated at some Kaiser Permanente facilities.** Early results have been promising.
- Research regarding the use of riboflavin (Vitamin B2) and UV light to strengthen corneal tissue is ongoing. **The procedure is called Riboflavin Crosslinking and it may be useful in early stages of keratoconus. It is currently being performed in Europe. In the U.S. an FDA trial to assess the effectiveness and complications associated with this therapy is ongoing. We await the outcome of the FDA study and will offer this therapy immediately if it is shown to be safe and effective.**

Living with Keratoconus

Most people with Keratoconus can function normally for many years by using glasses and/or contact lenses. We will check your eyes regularly and it is important to let us know if you have sudden vision changes. It is also important to note that if you have keratoconus, glasses and contact lenses are the best options for maximizing your vision. Keratoconus patients should never have LASIK or any other corneal refractive surgery.

Getting your care at Kaiser Permanente

During the early stages of Keratoconus we can help you manage your symptoms in the Optometry Department. If the disease advances significantly, we will refer you to one of

our cornea specialists for a surgical evaluation. Cornea surgeons are located at most of our medical centers in Northern California.

If you have changes in your vision, or other eye symptoms, or need to schedule an eye exam, you can make an appointment by calling our call center (415) 833-2200. The call center can also put you through to an advice nurse if you need immediate advice about your eye. Our advice nurses are available 24/7. You can also email your doctor through our web site www.kp.org. Once you have registered for a user ID, you can access your prescription information, look at your lab results, view summaries from previous doctor's visits as well as send a message to your physician.