AUCKLANDEYE

KERATOCONUS

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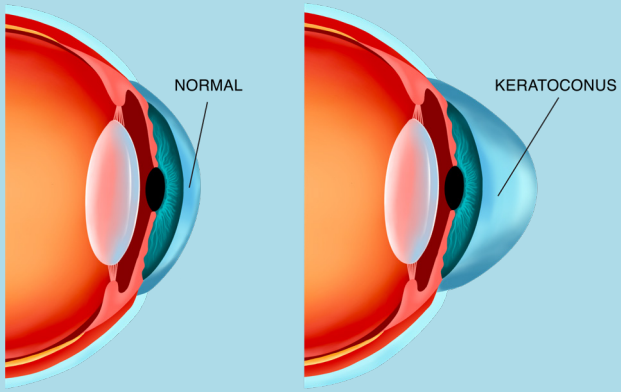
KERATOCONUS

Keratoconus is an inherited condition which affects the cornea, the transparent front surface of the eye. In keratoconus, the normally round cornea becomes thinned, distorted and irregular, with its shape becoming increasingly cone-like. Initial symptoms can be slight blurring or distortion of vision with increased sensitivity to glare and light. As the condition progresses, vision may become more distorted.

The abnormal shape of the cornea prevents the light entering the eye from being focused correctly on the retina, the light-sensitive membrane which enables sight. This results in distortion of vision. Because of the cornea's irregular shape, patients with keratoconus are usually very near-sighted and have a high degree of astigmatism that is not correctable with glasses.

SIGNS AND SYMPTOMS

- Near-sightedness.
- Astigmatism.
- Blurred vision - even when wearing contact lenses or glasses.
- Glare at night.
- Eye rubbing.
- Light sensitivity.
- Frequent prescription changes in glasses and contact lenses.



CAUSES AND RISK FACTORS

- Genetics. Up to 50% of family members of patients with keratoconus will have at least subtle signs of early keratoconus.
- Down Syndrome: keratoconus is more common in people with down syndrome.
- Association with certain conditions: keratoconus is linked to variety of diseases, including eczema, hay fever and asthma.

DEVELOPMENT OF KERATOCONUS

In its earliest stages, keratoconus causes slight blurring and distortion of vision and increased sensitivity to glare and light. These symptoms usually appear during the late teens or early twenties. Keratoconus may progress for 10-20 years before slowing in its development. Each eye may be affected differently; one eye may have very poor vision while the other eye retains perfect vision.

As keratoconus progresses, the cornea bulges more and the vision may become more distorted. Because the keratoconic cornea is weaker than the normal cornea, it is vulnerable to damage from minor trauma. For this reason, people with keratoconus should not participate in contact sports.

HYDROPS

In a small number of cases, hydrops may occur. This is where there is swelling in the cornea, causing a sudden and significant decrease in vision. This occurs when the stretching of the cornea causes a tiny split to develop in its inside surface. The swelling may last for weeks or months as the crack heals and is gradually replaced by scar tissue. If this sudden swelling does occur, your doctor can prescribe eyedrops for temporary relief. However, there are no medicines that can prevent the disorder from progressing.

Often the scarring causes the vision to be somewhat worse after an attack of hydrops. Sometimes, however, the scarring may improve the shape of the cornea, enhancing vision. The cornea may become very thin, but it is very unlikely to spontaneously rupture.

TREATMENT - GLASSES AND CONTACT LENSES

Treatment of keratoconus depends on the severity of the condition. Initially, glasses or soft contact lenses should be successful in correcting the myopia (near-sightedness) and astigmatism.
As the disorder progresses and the cornea continues to thin and change shape, hard contact lenses can be prescribed to correct vision. In most cases this is adequate, but the contact lenses must be carefully fitted by an optometrist. Frequent check-ups and lens changes may also be needed to achieve and maintain good vision. A government subsidy may be available to help with the costs of contact lens wear.
Contact lens wear in keratoconus does not alter the progression of the disease or cure the condition. It merely gives improved vision while the lenses are being worn. When good vision can no longer be attained with contact lenses because of corneal scarring or intolerance to contact lens wear, surgery may be necessary.

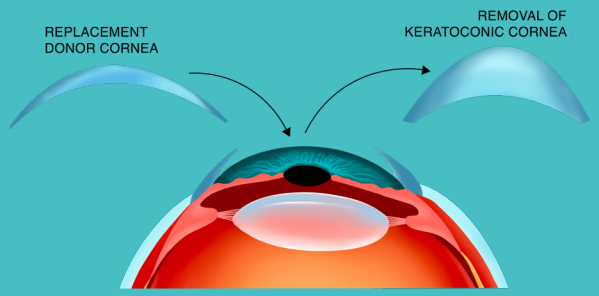
TREATMENT - SURGICAL PROCEDURES

CORNEAL COLLAGEN CROSS-LINKING

Most people with keratoconus develop slowly worse vision for a few years, and then, usually in their 20's or 30's, the cornea stops changing and vision stabilises. There is a treatment available - corneal collagen cross-linking - which will make the cornea stronger and halt progression at an earlier stage.
Cross-linking takes about an hour, and is carried out under local anaesthetic in an operating theatre.
To be a candidate for this, the shape of the cornea must be shown to be still changing. If the cornea has stretched too much already, it may become too thin for the treatment. Because of this the treatment is best carried out in the early stages of keratoconus, and may prevent a person from progressing to more severe vision loss.

CORNEAL IMPLANTS

Some patients may be suitable for **corneal implants**, which work by flattening the steep part of the cornea to reduce the vision distortion caused by keratoconus. The result attained from this will depend on the degree of keratoconus being treated.
For severe keratoconus, **corneal transplantation** (or graft surgery) may be the only option. This procedure is usually performed under general anaesthetic. The keratoconic cornea is removed and a donor cornea (human tissue provided by the National Eye Bank after careful quality screening) is then sutured in its place. A prolonged period of post-operative care is required to ensure the graft remains healthy.



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