

Treatment options for a cone-shaped cornea (keratoconus)

Ophthalmology Department

Information for Patients

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Introduction

Keratoconus means “cone-shaped cornea”. The cornea is the clear window at the front of the eye. Keratoconus is a condition where the normally round, dome-shaped cornea becomes thinner over time and changes to a cone-shape. This makes the vision more short sighted and irregular. As a result the vision can become distorted and blurry. It usually affects both eyes, although one eye may be affected before the other.

Who gets keratoconus?

We do not know exactly who or how many people get keratoconus, however, it has been estimated to occur in 1 out of every 2000 people, although this can vary depending on where you live, with more cases found in people whose origins are from hot, sunny environments.

What are the causes?

The cause of keratoconus is unknown. However, it may be linked with allergies such as asthma and eczema or could be passed on in a family (genetic). Rubbing of eyes is a known cause that can increase the risk of the condition getting worse and is linked with being a cause.

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Keratoconus does not commonly appear until or after puberty and develops over time. Although no one can be sure how far keratoconus will develop **the condition does NOT cause blindness**. In extreme cases the condition can be treated with surgery. With the current treatment available most people should be able to lead a normal lifestyle despite this condition.

What are the signs and symptoms?

In the early, mild stages, keratoconus may result in an increase in short sightedness and distorted vision (astigmatism). As the condition progresses the vision may be affected with glare and sensitivity to light. With further progression, the vision may become more distorted and the cornea may start to become scarred.

If the keratoconus becomes advanced, one complication may be that the patient may experience a sudden clouding of vision in 1 eye. This is due to fluid seeping into the stretched cornea. If this sudden change occurs then the patient should go to the Eye Emergency Department for treatment. If this occurs, the vision does become clearer over a period of weeks or months with treatment or sometimes by itself.

Keratoconus can progress and change over many years. The eye can become stable by itself, but this will vary from person to person, and it can become stable at any stage, from mild to severe. It is often picked up by the optician. They will refer patients they think may have it to the hospital. The diagnosis is confirmed by a scan of the eye which maps the shape of the cornea (topography). It can sometimes be difficult for the optician to check for early or mild cases because there may not be any major signs. The optician may not often have the correct machine to scan the cornea.

What are the treatment options?

Glasses/contact lenses

When vision is affected it can sometimes be corrected with glasses. If the vision can not be corrected with glasses the first line of treatment is usually with rigid contact lenses, although some people with early keratoconus may be able to wear soft contact lenses.

Risks with wearing contact lenses

There is a small risk of infection when wearing contact lenses and the risk becomes greater if the lenses are not kept clean. It is important to strictly follow the hygiene instructions which are given when the contact lenses are fitted. It may be difficult to get good vision at times, like when the condition becomes advanced and/or you can not tolerate or cope with contact lenses. Contact lenses do not slow down the rate of progression of the condition, but they can give good vision when they are worn.

The condition does eventually become stable, although it can take many years for this to happen.

Collagen cross linking

A treatment called “Collagen cross linking (CXL)” is available in our service. This is a surgical procedure which may be an option in patients where the condition is shown to be getting worse (normally when the scan is repeated at a follow up visit). The treatment does not cure the condition but it reduces or stops the progression in 9 out of 10 patients. Please see CXL treatment for keratoconus (leaflet 906).

Cornea transplant

In about 1 to 2 out of 10 keratoconus patients the cornea may become very steep, scarred, thin and irregular, or the vision can no longer be corrected with contact lenses. If this happens you may need to have a transplant operation to replace the cornea with donor tissue.

Sight recovery after a transplant takes a long time to settle down, sometimes as long as 2 to 3 years. Although vision is usually better than before surgery, in some cases glasses or contact lens may be needed to improve the overall vision. There may be a risk of the body rejecting the transplant, although over 9 out of 10 corneal transplants for keratoconus are successful.

Other options

There are various other surgical options, but these do not stop the condition from getting worse. They may help improve vision. If you would like to discuss these possibilities with a surgeon, we can arrange for you to be reviewed in clinic.

Further information

Useful websites:

UK Keratoconus Self-help and Support Association

www.keratoconus-group.org.uk

National Keratoconus Foundation

www.nkcf.org

Contact details:

Windsor Eye Clinic (0116) 258 5409

Balmoral Eye Clinic (0116) 258 5125

These are not emergency numbers.

**If you have an emergency, then please contact your GP or the Eye
Emergency Department on (0116) 258 6273.**

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