

## Keratoconus

### Overview:

- Keratoconus occurs when the cornea thins and gradually bulges outward into a cone shape.
- Rubbing the eyes vigorously can affect the corneas.
- People of all age groups can develop keratoconus.
- The most common symptom of keratoconus is rapid visual impairment that can lead to vision loss.
- Keratoconus cannot be cured, but some means can help slow disease progression.
- Generally, keratoconus cannot be prevented, but there are ways to manage the condition.

### The cornea:

The outer, transparent structure that covers the front of the eye. It functions like a lens that controls and focuses the entry of light into the eye.

### Keratoconus:

Keratoconus is an eye disorder which results in progressive thinning of the cornea causing it to bulge outward into a cone shape. A cone-shaped cornea results in vision problems and nearsightedness (myopia).

### Causes:

The exact cause of keratoconus is still unknown, but it could be attributed to:

- Genetics.
- Rubbing the eyes vigorously, especially due to certain type of allergies.

### Symptoms:

- Visual impairment and a need for frequent changes in eyeglass prescriptions during the early stages.
- Increased sensitivity to light.

### Diagnosis:

The eye doctor or optometrist conducts several keratoconus diagnostic tests regularly to monitor the progression of the condition over time. These tests include:

- Eye refraction: In this test the doctor can determine the patient's exact lens prescription to correct vision problems.
- Keratometry.
- Corneal topography for mapping the affected areas.
- Corneal pachymetry.

### Risk factors:

Although people of all age groups can develop keratoconus, it often first appears among people in their early twenties. Both eyes are affected, but one is usually worse than the other. This condition progresses more rapidly in younger patients, but when a patient reaches their mid-30s, it may begin to slow down or stop progressing.

### Most vulnerable groups:

- People with certain eye conditions (such as: Leber congenital amaurosis, Retinitis pigmentosa).
- People with certain genetic diseases (such as: Down syndrome, Turner syndrome, Osteogenesis imperfecta (brittle bone disease), Marfan syndrome, Ehlers–Danlos syndrome).

**Not all people who suffer from keratoconus have these conditions, and vice versa**

### **Complications:**

In advanced keratoconus, the cornea may become scarred, particularly where the cone forms. A scarred cornea causes worsening vision problems.

Corneal hydrops is a rare complication of keratoconus, and it occurs when fluid from inside the eye enters cornea, which leads to further vision issues.

### **Treatment:**

Keratoconus cannot be treated with eye drops or other medications, but some means can help slow or even stop disease progression.

1- In the early stages, glasses or soft contact lenses may be used to correct vision.

2- When the eyesight worsens, rigid contact lenses with high oxygen permeability are used.

3- In advanced cases cornea transplant surgery is needed.

### **Prevention:**

Generally, keratoconus cannot be prevented, but there are ways to slow down symptom progression; these include:

- All family members over 10 years should undergo regular eye tests, especially if there's a family history of keratoconus or if any risk factors are present.
- In case of eye allergies, the patient should try to manage the condition and avoid rubbing the eyes.
- The doctor's instructions must be followed closely and any notable developments must be reported immediately.

- It's important not to take any medications that are not prescribed by a doctor, even if they were recommended by another patient with keratoconus.
- It's important to always keep the eyes clean and avoid rubbing them.
- Anything that can irritate the eyes should be avoided.
- It is advisable to protect the eyes during swimming or other physical activities.

### Frequently Asked Questions:

#### **1. Is it common for the doctor to prescribe different lens measurements for each eye?**

Doctors examine and measure each eye independently, then prescribe the lenses accordingly. The results for each eye may vary and therefore, it is possible for the lenses to be different. You can discuss this issue with your doctor to get more information about the causes.

#### **2. Can keratoconus affect a person's balance?**

Balance is achieved and maintained by a complex set of control systems that include sensory input from the ears, eyes and nerves.

In keratoconus, different lens measurements may affect your balance, so consult your doctor to fix the issue and make sure it is not caused by other factors, especially if your balance problems get worse.

#### **3. Since keratoconus is usually bilateral, how can unilateral cases be explained?**

In such cases the other eye may also be affected but the patient still doesn't feel the effects. The eye may get worse over time and symptoms begin to develop or it may remain as it is.



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### Misconceptions:

- **Glaucoma causes keratoconus.**  
This is not necessarily the case.
- **It is normal for keratoconus patients to have red eyes.**  
Eye redness signals problems with lens measurements or dry eye problems. It is advisable to consult a specialist about this issue and keep the lenses clean, and regularly lubricate your eyes with artificial tear eye drops.

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