**Contact Lens**

Contact lens specialists at PBMA’s H. V. Desai Eye Hospital evaluate and fit contact lenses that correct for near-sightedness (myopia), farsightedness (hyperopia) and astigmatism. Our optometrists can also recommend new options in soft and rigid lenses for presbyopia. Contact lenses also have therapeutic uses, due to which they are also prescribed for medical diagnosis. Some examples of the same include the prescription of contact lenses following injuries or corneal transplantation, contact lenses with an artificial iris and contact lenses for eye conditions such as keratoconus and aphakia.

**Contact Lens Service**

The Contact Lens Service at the hospital evaluates and fits patients of all ages using the latest contact lens technology and information, often before it has been formally introduced in the offices of general eye practitioners. The Directors of the service are national leaders in the contact lens field and participate in major national studies on advancements in contact lenses. Contact lenses enable people suffering from a wide range of medical conditions to enjoy normal vision. These conditions include:

* Keratoconus
* Corneal transplantations
* Irregular or scarred corneas

Infants and young children often suffer from various visual conditions, and contact lenses can help ensure that their vision system develops normally. At H.V. Desai Eye Hospital, we offer various types of contact lens, which include:

* Hard
* Gas-permeable
* Daily-wear soft
* Extended-wear contact lenses
* Coloured lenses
* Disposable lenses
* Cosmetic lenses (to change eye colour)
* Prosthetic lenses (to hide the ocular surface disorders)
* Specialised keratoconus lenses

As a major eye hospital, the contact lens services at PBMA’s H. V. Desai Eye Hospital meets its goal to educate eye practitioners by sponsoring educational meetings that attract participants nationwide.

**Contact Lenses for Children**

Contact lenses for infants or young people are very useful when eyeglasses are inconvenient or do not provide the best results. In addition, contact lenses provide an optical correction that is in closer proximity to the normal eye. This is important as it provides your child the best chance to develop good vision. Several parents are apprehensive about contact lenses for their children. Yet, with proper care and attention, the risk of complication is low and the potential benefit is high. In addition, we educate parents about taking appropriate care of their child’s contact lenses to avoid potential problems.

**Contact Lens Dispensing Visit (for Children)**

When the contact lenses are dispensed, the parent is taught how to insert and remove them, as well as how to care for the lens when it is not in the child's eye. Patients wearing extended-wear lenses must return in 24 to 48 hours. Patients wearing daily wear lenses should return within one to two weeks.

**Contact Lens Follow-up Visits (for Children)**

Follow-up visits are necessary to ensure that the lenses are fitted properly, the vision is appropriate, and that no adverse reactions have occurred. More frequent visits could be necessary for complex cases.

**What Is Myopia (Near-sightedness)?**

Myopia, also known as near-sightedness, is a common type of refractive error where close objects appear clearly, but distant objects appear blurry. Myopia often progresses throughout the teenage years when the body (including the eye) is growing rapidly. People with myopia have a higher risk of detached retina and glaucoma.

**Symptoms**

* Blurred vision
* Difficulty seeing distant objects

**Causes**

Myopia occurs when the image formed by the focusing mechanisms of the eye is “in front” of the retina. This often occurs if an eyeball is longer than average.

**Risk Factors**

A history of myopia is among the major risk factors for myopia. Certain genetic disorders, such as Marfan syndrome, are also highly associated with myopia.  Retinopathy of Prematurity (ROP) is also a risk factor that is likely to cause myopia later in life.

**Tests and Diagnosis**

Myopia is diagnosed by a careful refraction by an eye care professional.

**Treatment and Drugs**

Myopia is commonly treated using corrective lenses, such as eyeglasses or contact lenses. Refractive surgery can also be used to correct myopia.

**What is Hyperopia (Farsightedness)?**

Hyperopia, also known as farsightedness, is a refractive error that results from a disorder rather than from a disease. A refractive error means that the shape of your eye does not bend light correctly, which results in a blurred image. Hyperopia is usually inherited and children who are hyperopic often become less hyperopic as adults.

**Symptoms**

* Blurred vision
* Difficulty seeing objects that are located nearby
* Crossing of the eyes in children (esotropia)

The symptoms described above may not necessarily mean that you have hyperopia. However, if you experience one or more of these symptoms, contact your ophthalmologist for a complete examination.

**Causes**

Hyperopia occurs when the image formed by the focusing mechanism of the eye is “behind” the retina. This often occurs when the eyeball is shorter than average.

**Risk Factors**

A family history of hyperopia.

**Tests and Diagnosis**

Hyperopia can be diagnosed by a careful refraction by an ophthalmologist.  For children and young adults, a cycloplegic refraction is likely to be necessary to diagnose the correct amount of hyperopia. The focusing mechanism of the eye can mask the full amount of hyperopia, however, during a cycloplegic refraction, eye drops are given to paralyze this mechanism so that the correct amount of hyperopia can be measured and corrected if needed.

**Treatment and Drugs**

Hyperopia is commonly treated using corrective lenses, such as eyeglasses or contact lenses. Refractive surgery may be able to correct certain forms of hyperopia.

**What is Astigmatism?**

Astigmatism usually occurs when the front surface of your eye, the cornea, has an irregular curvature. Astigmatism is among the eye conditions that are referred to as refractive errors, and these errors cause a disturbance in the way light rays are focused within your eye. Astigmatism often occurs with near-sightedness and farsightedness, as these conditions also result from refractive errors. Astigmatism is not a disease, nor does it mean that you have "bad eyes." It simply means that you have a variation or disturbance in the shape of your cornea.

**Symptoms**

* Distortion or blurring of images at all distances
* Headache and fatigue
* Squinting and eye discomfort or irritation

The symptoms described above may not necessarily mean that you have astigmatism. However, if you experience one or more of these symptoms, contact your ophthalmologist for a complete examination.

**Causes**

Normally, the cornea is smooth and equally curved in all directions and light entering the cornea is focused equally on all planes or in all directions. In astigmatism, the front surface of the cornea is curved more in one direction than in the other. This abnormality is likely to result in vision that is much like looking into a distorted, wavy mirror. The distortion results because of an inability of the eye to focus light rays to a single point. If the corneal surface has a high degree of variation in its curvature, light refraction may be impaired to the degree that corrective lenses are needed to help focus light rays better. At any time, only a small proportion of the rays are focused and the remainder are not, so that the image formed is always blurred. Usually, astigmatism causes blurred vision at all distances.

**Risk Factors**

A small amount of astigmatism is very common and the tendency to develop astigmatism is inherited.  A larger amount of astigmatism can be associated with diseases such as keratoconus.

**Tests and Diagnosis**

The amount of astigmatism in the eye can be measured in various ways. The auto-refraction or subjective refraction, based on the patient’s response, which is performed at the beginning of an eye exam is one way to measure astigmatism. The amount of astigmatism caused by the cornea is measured in the clinic by a diagnostic instrument known as a keratometer.

**Treatment and Drugs**

If the degree of astigmatism is slight and there are no other problems of refraction, such as near-sightedness or farsightedness, corrective lenses may not be needed. If the degree of astigmatism is high enough to cause eye strain, headache, or distortion of vision, corrective lenses will be needed for clear and comfortable vision. The corrective lenses needed for astigmatism are called toric lenses, and they have an additional power element known as a cylinder. They have greater light-bending power in one axis as compared to others. Your ophthalmologist will perform precise tests during your exam to determine the ideal lens prescription. Refractive surgery also may be an option for correcting some forms of astigmatism. Astigmatism may increase slowly. Regular eye care can help to insure that proper vision is maintained. You may have to adjust to wearing eyeglasses or contact lenses if you do not wear them now. Other than that, astigmatism probably will not significantly affect your lifestyle.

**What Is Presbyopia?**

Presbyopia is the result of the normal aging of the lens inside your eye. It is a refrective error that is caused most frequently by a disorder and not from a disease. This condition commonly occurs after the age of 40, when the lens of the eye becomes more rigid and does not flex as easily. As a result, it is more difficult to read at close range. It is the normal aging process of the lens, however, it can also occur along with myopia, hyperopia or astigmatism.

**Symptoms**

* Objects located nearby appear blurred
* Difficulty in seeing objects located nearby

The symptoms described above may not necessarily mean that you have presbyopia. However, if you experience one or more of these symptoms, contact your ophthalmologist for a complete examination.

**Causes**

Presbyopia is caused by the natural aging of the crystalline lens inside the eye.

**Tests and Diagnosis**

A careful refraction by your eye care professional will reveal whether you are experiencing the symptoms of presbyopia.

**Treatment and Drugs**

Presbyopia is commonly treated using corrective lenses, such as eyeglasses or contact lenses.

**Keratoconus**

**What Is Keratoconus?**

Keratoconus, meaning "cone-shaped," is a condition in which the cornea (the clear front window of the eye) progressively becomes steeper and thinner. This abnormal shape of the cornea can cause the distortion of visual images.

**Symptoms**

* Frequent changing of glasses or contact lens prescriptions with high levels of astigmatism
* Blurring and distortion of vision
* Glare
* Light sensitivity and irritation

The symptoms described above may not necessarily mean that you have keratoconus. However, if you experience one or more of these symptoms, contact your ophthalmologist for a complete exam.

**Causes**

The cause of keratoconus are unknown. It usually appears in individuals during their late teens or early twenties. The disease usually progresses for 10 to 20 years as the cornea steepens and thins. Although both eyes are likely to be affected, one eye is usually more affected than the other.

**Risk Factors**

Genetics may contribute to your risk of developing keratoconus. Vigorous eye rubbing is believed to add to the development and progression of this disease, therefore patients with keratoconus are advised to avoid rubbing their eyes.

**Tests and Diagnosis**

The signs of keratoconus can be seen during a routine eye examination. These are likely to include high degrees of astigmatism during the examination of the eye refraction or changes in the cornea during examination with the help of a slit lamp microscope. The diagnosis is often confirmed using corneal topography and photographs that measure the curvature of the cornea to highlight irregularities that normally indicate the presence of keratoconus.

**Treatment and Drugs**

Although there are no medicines available to help prevent the progression of the disease, mild cases of keratoconus can be successfully treated with glasses or specially designed contact lenses. A customisable oversized hard contact lens device, known as Prosthetic Rehabilitation of the Ocular Surface Ecosystem (PROSE), can also help improve the vision of several patients suffering from keratoconus. When vision is no longer satisfactory with glasses or contact lenses, a corneal transplant is likely to be recommended.

In addition, intra-corneal rings have been approved by the FDA for the treatment of keratoconus. These crescent-shaped plastic rings are surgically placed into the outer edges of the cornea. Collagen cross-linking is a new treatment that strengthens the cornea and is likely to slow the progression of keratoconus.  This treatment is currently being studied by the FDA and is not yet commercially available in the United States.