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**Assignment**

Write short notes on any two eye defects

**Answer**

1. **Astigmatism**

Astigmatism is a common vision problem caused by an error in the shape of the cornea. With astigmatism, the lens of the eye or the cornea, which is the front surface of the eye, has an irregular curve. This can change the way light passes, or refracts, to your retina. This causes blurry, fuzzy, or distorted vision. Farsightedness and near-sightedness are two other types of problems with the way light passes to your retina. Farsightedness is called hyperopia. Near-sightedness is called myopia. The two main types of astigmatism are corneal and lenticular. A corneal astigmatism happens when your cornea is misshapen. A lenticular astigmatism happens when your lens is misshapen.

**Causes of Astigmatism**

It’s not known what causes astigmatism, but genetics is a big factor. It’s often present at birth, but it may develop later in life. It may also occur as a result of an injury to the eye or after eye surgery. Astigmatism often occurs with near-sightedness or farsightedness. Astigmatism can occur in children and adults. Your risk of developing astigmatism may be higher if you have any of the following:

* A family history of astigmatism or other eye disorders, such as keratoconus (degeneration of the cornea)
* Scarring or thinning of your cornea
* Excessive near-sightedness, which creates blurry vision at a distance
* Excessive farsightedness, which creates blurry close-up vision
* A history of certain types of eye surgery, such as cataract surgery (surgical removal of a clouded lens)

**Symptoms of Astigmatism**

The symptoms of astigmatism may differ in each person. Some people don’t have any symptoms at all. The symptoms of astigmatism include:

* Blurry, distorted, or fuzzy vision at all distances (up close and far away)
* Difficulty seeing at night
* Eyestrain
* Squinting
* Eye irritation
* Headaches

See a doctor if you have symptoms of astigmatism. Some symptoms may also be due to other health or vision problems.

1. **Myopia (Near-sightedness)**

Near-sightedness (myopia) is a common vision condition in which you can see objects near to you clearly, but objects farther away are blurry. It occurs when the shape of your eye causes light rays to bend (refract) incorrectly, focusing images in front of your retina instead of on your retina. Near-sightedness may develop gradually or rapidly, often worsening during childhood and adolescence. Near-sightedness tends to run in families. A basic eye exam can confirm near-sightedness. You can compensate for the blur with eyeglasses, contact lenses or refractive surgery.

**Symptoms**

Near-sightedness symptoms may include:

* Blurry vision when looking at distant objects
* The need to squint or partially close the eyelids to see clearly
* Headaches caused by eyestrain
* Difficulty seeing while driving a vehicle, especially at night (night myopia)

Near-sightedness is often first detected during childhood and is commonly diagnosed between the early school years through the teens. A child with near-sightedness may:

* Persistently squint
* Need to sit closer to the television, movie screen or the front of the classroom
* Seem to be unaware of distant objects
* Blink excessively
* Rub his or her eyes frequently

**Diagnosis**

Near-sightedness is diagnosed by a basic eye exam, which includes a refraction assessment and an eye health exam. A refraction assessment determines if you have vision problems such as near-sightedness or farsightedness, astigmatism, or presbyopia. Your doctor may use various instruments and ask you to look through several lenses to test your distance and close-up vision.

Your eye doctor likely will put drops in your eyes to dilate your pupils for the eye health exam. This may make your eyes lighter sensitive for a few hours after the exam. Dilation enables your doctor to see wider views inside of your eyes.

**Treatment**

The standard goal of treating near-sightedness is to improve vision by helping focus light on your retina through the use of corrective lenses or refractive surgery. Managing near-sightedness also includes regular monitoring for complications of the condition, including glaucoma, cataracts, retinal tears and detachments, and damage to central retinal areas.

**Prescription lenses**

Wearing corrective lenses treats near-sightedness by counteracting the increased curvature of your cornea or the increased length of your eye. Types of prescription lenses include:

* Eyeglasses: This is a simple, safe way to sharpen vision caused by near-sightedness. The variety of eyeglass lenses is wide and includes single vision, bifocals, trifocals and progressive multifocals.
* Contact lenses: These lenses are worn right on your eyes. They are available in a variety of materials and designs, including soft and rigid, gas permeable in combination with spherical, toric and multifocal designs. Ask your eye doctor about the pros and cons of contact lenses and what might be best for you.

**Refractive surgery**

Refractive surgery reduces the need for eyeglasses and contact lenses. Your eye surgeon uses a laser beam to reshape the cornea, which results in a decreased near-sighted prescription. Even after surgery, you may need to use eyeglasses some of the time.

* Laser-assisted in situ Keratomileusis (LASIK): With this procedure, your eye surgeon makes a thin, hinged flap into your cornea. He or she then uses a laser to remove inner layers of your cornea to flatten its domed shape. Recovery from LASIK surgery is usually more rapid and causes less discomfort than other corneal surgeries.
* Laser-assisted Subepithelial Keratectomy (LASEK): The surgeon creates an ultra-thin flap only in the cornea's outer protective cover (epithelium). He or she then uses a laser to reshape the cornea's outer layers, flattening its curve, and then replaces the epithelium.
* Photorefractive Keratectomy (PRK): This procedure is similar to LASEK, except the surgeon completely removes the epithelium, then uses the laser to reshape the cornea. The epithelium is not replaced, but will grow back naturally, conforming to your cornea's new shape.

Talk with your doctor about the possible side effects, as this procedure is not reversible. Refractive surgery is not recommended until your near-sighted prescription is stable.

**Treatments to slow or stop progression of near-sightedness**

Researchers and clinical practitioners continue to seek more-effective approaches to stop near-sightedness from getting worse over time. Therapies that show the most promise to date include:

* The topical medication, atropine: Topical atropine drops are commonly used to dilate the pupil of the eye, often as part of eye exams or before and after eye surgery. Atropine eye drops in various doses may also help slow the progression of near-sightedness. The exact mechanism for this effect is unknown.
* Increased time outside: Spending time outdoors during adolescence and your early adult years may decrease the lifetime risk of near-sightedness. Researchers think exposure to the sun's ultraviolet (UV) rays may change the molecular structure of the sclera and cornea and help maintain a normal shape.
* Dual focus contact lenses: A new type of dual focus contact lens has been shown to slow the progression of near-sightedness in children between 8 and 12 years old.
* Orthokeratology: In this procedure, you wear rigid, gas permeable contact lenses for several hours a day until the curvature of your eye evens out. Then you wear the lenses less frequently to maintain the new shape. If you discontinue this treatment, your eyes return to their former shape. There is evidence that this lens does slow down the elongation of the near-sighted eyeball, which decreases myopia.