Types of Eye Defects

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MYOPIA

Myopia, also termed nearsightedness is the most common cause of impaired vision in people under age 40. In recent years, its prevalence is growing at an alarming rate.

**Symptoms of Myopia (nearsightedness)**

Symptoms of Myopia 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)

Nearsightedness is often first detected during childhood and is commonly diagnosed between the early school years through the teens. A child with nearsightedness 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

## Causes of Myopia;

Myopia occurs when the eyeball is too long, relative to the focusing power of the cornea and lens of the eye. This causes light rays to focus at a point in front of the retina, rather than directly on its surface. Nearsightedness can also be caused by the cornea and/or lens being too curved for the length of the eyeball. In some cases, myopia occurs due to a combination of these factors. Myopia typically begins in childhood, and you may have a higher risk if your parents are nearsighted. In most cases, nearsightedness stabilizes in early adulthood but sometimes it continues to progress with age.

## How Myopia is being treated;

Nearsightedness can be corrected with eyeglasses, contact lenses or refractive surgery. Depending on the degree of myopia glasses or contact lens may be needed to be worn all the time or only when you need very clear distance vision, like when driving, seeing a chalkboard or watching a movie.

Good choices for eyeglass lenses for nearsightedness include high-index lenses (for thinner, lighter glasses) and lenses with anti-reflective coating. Also, consider photochromic lenses to protect your eyes from UV rays and high-energy blue light and to reduce the need for a separate pair of prescription sunglasses outdoors.

If you're nearsighted, the first number ("sphere") on your eyeglasses prescription or contact lens prescription will be preceded by a minus sign (–). The higher the number, the more nearsighted you are.

## Controlling myopia

A number of different techniques have been tried, including fitting children with bifocals, progressive lenses and gas permeable contact lenses. All of these have delivered mixed results.

Recent clinical trials showed that low-dose atropine eye drops could slow myopia progression in school-age children, with significantly fewer side effects compared with higher concentrations.

Some kids, though, don't respond well to atropine drops.

Degenerative myopia (also called malignant or pathological myopia) is a relatively rare condition that is believed to be hereditary and usually begins in early childhood.

In malignant myopia, the elongation of the eyeball can occur rapidly, leading to a quick and severe progression of myopia and loss of vision. People with this condition have a significantly increased risk of retinal detachment and other degenerative changes in the back of the eye (such as bleeding in the eye from abnormal blood vessel growth).

Degenerative myopia also may increase the risk of cataracts.

**ASTIGMATISM**

Astigmatism is a type of refractive error caused by the irregularities in the shape of a person’s cornea. The condition is not an eye disease or eye health issue. In this condition, the eye fails to focus the light equally on the retina leading to blurred or distorted vision. It can be present at the time of birth, or can develop gradually in life. Astigmatism is a common eye condition which usually occurs with myopia (nearsightedness) or hyperopia (farsightedness) and can be easily diagnosed with a simple eye exam.

Symptoms of astigmatism include;

* Blurred vision or some level of distortion at all distances
* Dizziness
* Eye strain
* Headache
* Squinting
* Eye irritation

## Causes of Astigmatism;

Astigmatism is usually caused by an irregularly shaped cornea. Instead of the cornea having a symmetrically rounded ball shape, it is shaped more like an egg, with one side (meridians) being significantly more curved than the side perpendicular to it.

The steepest and flattest meridians of an eye with astigmatism are called the principal meridians. In some cases, the problem is caused by the distortion of shape of the lens inside the eye. This is called lenticular astigmatism, to differentiate it from the more common corneal astigmatism.

Types of Astigmatism;

There are three primary types of astigmatism:

* **Myopic astigmatism.**

One or both principal meridians of the eye are nearsighted. (If both meridians are nearsighted, they are myopic in differing degree.)

* **Hyperopic astigmatism.**

One or both principal meridians are farsighted. (If both are farsighted, they are hyperopic in differing degree.)

* **Mixed astigmatism.**

One principal meridian is nearsighted, and the other is farsighted.

Astigmatism is also classified as regular or irregular.

 In **regular astigmatism**, the principal meridians are 90 degrees apart (perpendicular to each other). In irregular astigmatism, the principal meridians are not perpendicular.

For most, the condition is regular corneal astigmatism, which gives the front surface of the eye an oval shape.

**Irregular astigmatism** can result from an eye injury that has caused scarring on the cornea, from certain types of eye surgery or from keratoconus, a disease that causes a gradual thinning of the cornea.

It is common for babies to be born with astigmatism, but it usually clears up in the first year or so of the child's life. The percentage of children with astigmatism decreases significantly as they reach 5 to 9 years of age. While most children outgrow eye astigmatism, it is more likely to occur in kids who also struggle with either myopia or hyperopia. Like with adults, mild to severe astigmatism in children can be treated with glasses (or contact lenses if they’re old enough).

Babies do not need to wear glasses to treat their astigmatism as they’re likely to outgrow it before it becomes an issue.

## Astigmatism tests;

Astigmatism is detected during a routine eye exam with the same instruments and techniques used for the detection of nearsightedness and farsightedness.

Your eye doctor can estimate the amount of the condition you have by shining a light into your eye while manually introducing a series of lenses between the light and your eye. This test is called Retinoscopy.

## How to correct astigmatism

Options to correct astigmatism can usually be corrected with eyeglasses, contact lenses or refractive surgery.

Refractive surgery is one of the less common astigmatism treatment options; however, since it is a laser procedure that changes the shape of your eyes, it comes with risks associated with most laser surgeries.

Astigmatism should be treated as soon as possible. Once diagnosed; regular visits to an eye doctor are required as astigmatism can fluctuate over time, making it necessary for prescriptions to be modified.