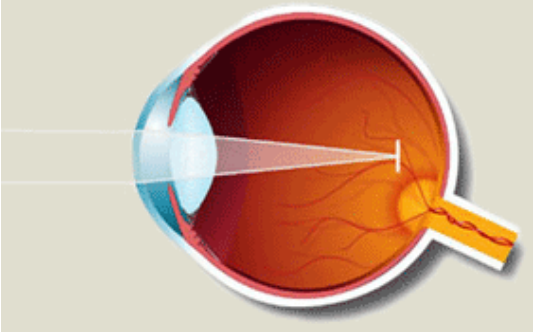
MYOPIA (NEARSIGHTEDNESS)



The medical name for nearsightedness is myopia. In myopia the eye's natural optical system focuses the light rays in front of the retina and thus the image on the retina is out of focus.

Myopia is called nearsightedness because, without correction, these individuals can see objects clearly only if they are near. Traditionally, eyeglasses or contacts were needed to properly focus the light in order to see in the distance.

What causes nearsightedness?

Myopia most often occurs because the eyeball is too long, rather than the normal, more rounded shape. Another less frequent cause of myopia is that the cornea, the eye's clear outer window, is too curved. There is some evidence that nearsightedness may also be caused by too much close-vision work.

Who is affected by nearsightedness?

Myopia usually occurs between the ages of 8 to 12 years. Since the eyes continue to grow during childhood, nearsightedness almost always occurs before the age of 20. Often, the degree of myopia increases as the body grows rapidly, and then levels off in adulthood. During the years of rapid growth, frequent changes in prescription eyewear may be needed to maintain clear vision.

How is myopia diagnosed?

Myopia is often suspected when a teacher notices a child squinting to see a blackboard or a child performs poorly during a routine eye screening. Further examination will reveal the degree of the problem. A comprehensive eye health examination will detect myopia. Periodic examinations should follow after myopia has been discovered to determine whether the condition is changing, and whether a change in prescriptive eyewear is needed. Eye exams also help to ensure that vision impairments do not interfere with daily activities.

How is myopia treated?

Corrective concave lenses are prescribed to help focus light more precisely on the retina, where a clear image will be formed. Depending on the degree of myopia, glasses or contact lenses may be needed all of the time for clear vision.

How will nearsightedness affect my lifestyle?

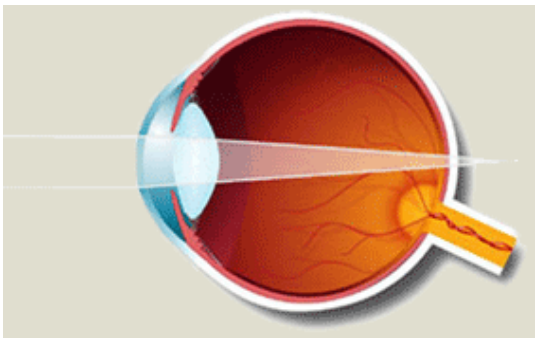
If glasses or contact lenses are prescribed, it may take you a few days to adjust to them. After that, nearsightedness will probably not significantly affect your lifestyle. However, more severely nearsighted individuals may find the condition limits their choice of occupation in some cases.

Nearsightedness in children:

School-age children may have vision problems ranging from mild to severe. When problems are suspected, it is important that the child have a comprehensive eye health examination to determine the nature of the problem and to rule out serious eye diseases. When vision conditions are treated properly, the child will enjoy the best possible sight.

To help a child cope with nearsightedness:

- Avoid referring to the child's eyes as "bad eyes;" instead, tell the child that his or her eyes just bend light differently and corrective lenses are needed to help focus light rays.
- Use illustrations and simple explanations to help the child understand how a differently-shaped eyeball may result in his or her nearsightedness.
- Consider contact lenses as an option.
- Do not restrict the child's activities because of poor vision.
- Include the child in discussions about his or her eyesight.
- Encourage the child to verbalize concerns about the adjustment to rapidly changing vision.



HYPEROPIA (FARSIGHTEDNESS)

Farsighted individuals have a condition called hyperopia, which is just the opposite of myopia. In hyperopia the natural optical system of the eye focuses behind the retina causing blur. Hyperopic individuals tend to be able to see distant objects clearly but have trouble focusing on objects nearby.
The most common symptoms for hyperopic individuals are blur, headaches and eyestrain after viewing nearby objects for an extended period. Children who are farsighted may find reading difficult.

What causes farsightedness?

Hyperopia most commonly occurs because the eyeball is too short; that is, shorter from front to back than is normal. In some cases, the cornea having too little curvature may cause hyperopia. Exactly why eyeball shape varies is not known, but the tendency for farsightedness is inherited. Other factors may be involved too, but to a lesser degree than heredity.

How does farsightedness affect sight?

Our ability to “see” starts when light enters the eye through the cornea. The shape of the cornea, lens and eyeball help bend (refract) light rays in such a manner that light is focused into a point precisely on the retina. If, as in farsightedness, the eyeball is too short, the “point of light” focuses on a location behind the retina, instead of on the correct area of the retina, known as the fovea. As a result, at the point on the retina where a fine point of light should be focused, there is instead a disk-shaped area of light. Since light is not focused when it hits the retina, vision is blurred. Convex lenses are prescribed to bend light rays more sharply and bring them to focus on the retina.

Who is affected by farsightedness?

Many people have a degree of farsightedness, yet it is only a problem if it significantly affects your ability to see well or causes headaches or eyestrain.

How is it diagnosed?

Hyperopia is seldom diagnosed in school -- these eye-screening tests typically test only the ability to see objects at a distance. A comprehensive eye health examination that checks both near and far vision is necessary to diagnose farsightedness.

How is it farsightedness treated?

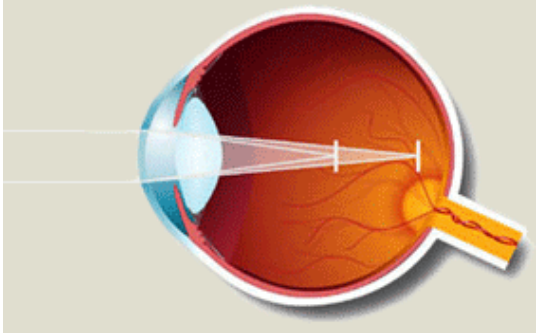
Convex lenses -- eyeglasses or contact lenses -- are usually prescribed. They bend light rays more sharply and bring the rays into focus on the retina. To determine the best avenue of treatment, your eye care professional may ask a number of questions about your lifestyle, occupation, daily activities and general health status. For instance, you may be asked whether or not you frequently need near vision. Providing candid, considered answers to the questions and working with your eye care professional will help assure that your corrective lenses contribute to clear sight and general comfort.

A comprehensive eye examination at the recommended intervals will ensure that minor changes in vision are diagnosed and treated so that your vision will remain as clear and comfortable as possible.

How will hyperopia affect your lifestyle?

If glasses or contact lenses are prescribed, it may take a few days to adjust to them. After that, farsightedness probably won’t significantly affect your lifestyle.

ASTIGMATISM



Astigmatism is a very misunderstood term that describes a fairly simple vision problem. Describing it, however, is made difficult by the fact that astigmatism has to be understood in three dimensions. Astigmatism occurs when the eyes' natural optical system is focused on more than one point. This is caused most often by different curvatures of the cornea in different meridians. An individual with astigmatism has a cornea shaped like a football as opposed to a spherical shape such as a basketball.
Some symptoms of astigmatism are distortion or blurring of images at all distances, headache, fatigue, squinting and eye discomfort.

How is it diagnosed?

Astigmatism is diagnosed in the course of a thorough eye examination. If the degree of astigmatism is slight and no other vision correction such as nearsightedness or farsightedness, are present, corrective lenses may not be needed. If the degree of astigmatism is great enough to cause eyestrain, headache or distortion of vision, prescription lenses will be needed for clear and comfortable vision.

How is it treated?

Your eye care professional will recommend corrective eyewear, contact lenses or spectacles, to help the eye direct light in a more effective manner. The corrective lenses needed when astigmatism is present are called Toric lenses and have an additional power element called a cylinder. They have greater light-bending power in one axis than in others. Your eye care professional will perform precise tests during your eye examination to determine the ideal lens prescription.

What causes astigmatism?

Astigmatism usually occurs when the front surface of the eye, the cornea, has an irregular curvature. 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. With the cornea's shape more like that of an American football or rugby ball than a basketball, the light hitting the more curved surface comes to a focus before that which enters the eye through the less curved surface. Thus, the light is focused clearly along one plane, but is blurred along the other so only part of an image can be in focus at any time. This abnormality may 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 point.

How does astigmatism affect sight?

The crystal clear cornea is situated at the very front surface of the eye and enables light to enter the eyeball. The cornea accomplishes about four-fifths of the refractive work needed for clear vision, bending light rays toward one another into a point. The lens, located behind the cornea, further refines the refractive work begun by the cornea and directs the point of light toward a precise location on the retina, known as the fovea. If light is not focused into a fine point on the fovea, the image that reaches the retina cannot be clearly transmitted to the brain.

When astigmatism is present, the surface of the cornea is distorted instead of being spherical. It is unable to focus light rays entering the eye into the fine point needed for clear vision. At any time, only small proportions of the rays are focused and the remainder is not, so that the image formed is always blurred. Usually, astigmatism causes blurred vision at all distances.

Why are corneas shaped differently?

Not all corneas are perfectly curved, just as sets of teeth are seldom perfectly aligned. The degree of variation determines whether or not you will need corrective eyewear. 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.

The exact reason for differences in corneal shape remains unknown, but the tendency to develop astigmatism is inherited. For that reason, some people are more prone to develop astigmatism than others.

Who develops astigmatism?
Astigmatism is very common. Some experts believe that almost everyone has a degree of astigmatism, often from birth, which may remain the same throughout life. Of interest to parents and those who work with children, astigmatism may contribute to poor schoolwork but is often not detected during routine eye screening in schools.

Does astigmatism get worse?
Astigmatism may increase slowly. Regular eye care can help to insure that proper vision is maintained.

How will astigmatism affect my lifestyle?
You may have to adjust to wearing contact lenses or eyeglasses if you do not wear them now. Other than that, astigmatism probably will not significantly affect your lifestyle at all.

AMBLYOPIA (LAZY EYE)

What is Amblyopia?
Commonly known as lazy eye, amblyopia is poor vision in an eye that does not receive adequate use during early childhood.

What Causes Amblyopia?
Amblyopia is often a consequence of one of the eyes not being used, from either crossed eyes (strabismus) or ptosis, which is a drooping of the upper eyelid. It may also be caused by one eye simply having better vision and a child relying on it more heavily.

How Can You Correct Amblyopia?
With early diagnosis and treatment, the sight in the lazy eye can be restored. However, left untreated, the eye may become functionally blind. Treatments include patching or covering the better-seeing eye, eye drops or ointments, contact lenses, glasses, or surgery.

STRABISMUS (CROSSED EYES)

What are the symptoms of strabismus?
Strabismus is a general term for eyes that are misaligned and point in different directions. Typically this is seen as crossed-eyes and is almost always accompanied by lazy eye (amblyopia). Your child may have strabismus if
- Their eyes are crossed or wall eyed
- Their eyes do not move together
- The point of light reflected in each eye is not symmetrical
- They tend to tilt their head to one side
- They are unable to gauge depth
- They squint into the sun with only one eye

What causes strabismus?
No one knows why some children’s eyes are misaligned, although it does seem to run in families. Because misaligned eyes don’t focus together, double vision occurs. A young child with strabismus will unconsciously ignore one of the two images they see—and the related nerve connections between their eye and brain will fail to develop. This brings about lazy eye (amblyopia).

How can you correct strabismus?
In order to develop good vision the affected eye must be made to work. There are several treatments that may be used alone or in combination, depending on the type, severity, and cause of your child’s strabismus. They include glasses, eye drops or ointment, injected medication, surgery, patching or covering the better-seeing eye.