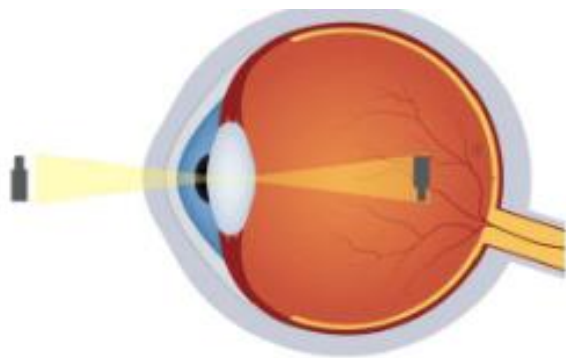
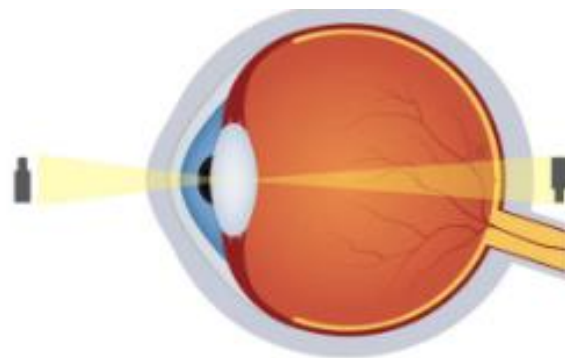


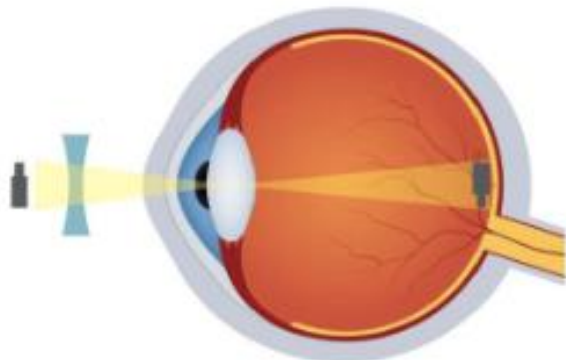
## Myopia, Hyperopia and Astigmatism



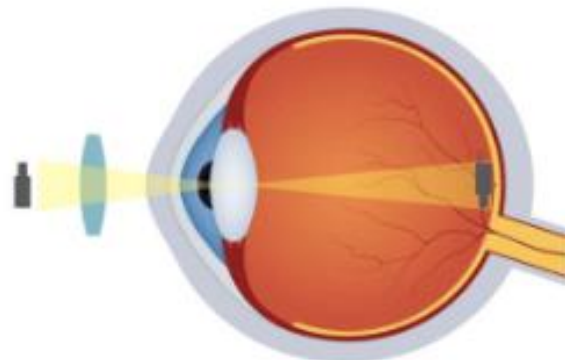
Myopia



Hyperopia



Lenses for myopia



Lenses for hyperopia

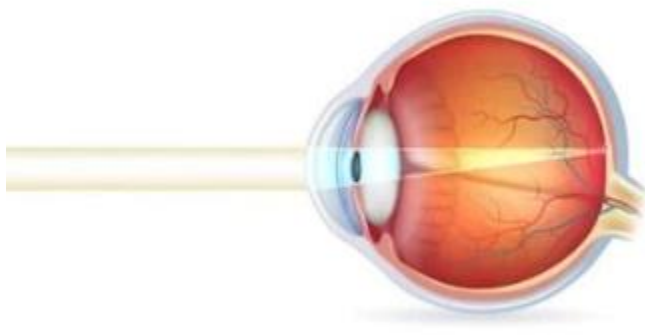


## Explaining Myopia, Hyperopia and Astigmatism

Our eyes work like cameras, focusing light to form clear images. When everything is in focus, we see the world sharply—near and far. But sometimes, the *shape of the eye* causes light to focus in the wrong place, making things look blurry.

These vision problems commonly include *myopia* (nearsightedness), *hyperopia* (farsightedness), and *astigmatism* (different powers in the same eye). All three are very common and can usually be corrected with glasses, contact lenses, or *refractive surgery*.

### How the Eye Focuses Light

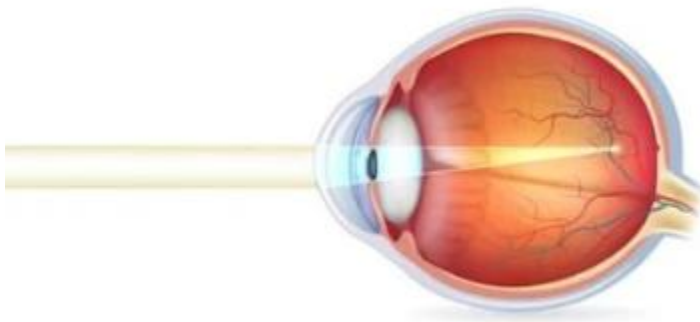


**NORMAL VISION**  
FARAWAY OBJECT IS CLEAR

To understand these conditions, it helps to know how the eye works.

Light enters through the *cornea*, the clear window at the front of the eye, and then passes through the *crystalline lens*, located behind the pupil. The cornea and lens bend (or refract) light rays in order to focus them together onto the *retina*—the light-sensitive layer at the back of the eye. The retina turns these light rays into signals that travel to your brain, creating the images you see.

When the eye is the perfect shape, light focuses exactly on the retina, and vision is clear. But if the eye is too long, too short, or the cornea is unevenly curved, the light focuses incorrectly. That's when blurred vision happens.



### MYOPIA

NEARSIGHTED EYE

THE EYEBALL IS TOO LONG

FARAWAY OBJECT IS BLURRY

## What Is Myopia?

Myopia, also called nearsightedness, means you can see nearby objects clearly, but distant objects look blurry. For example, you might have no trouble reading a book, but road signs or faces across a room may be hard to see.

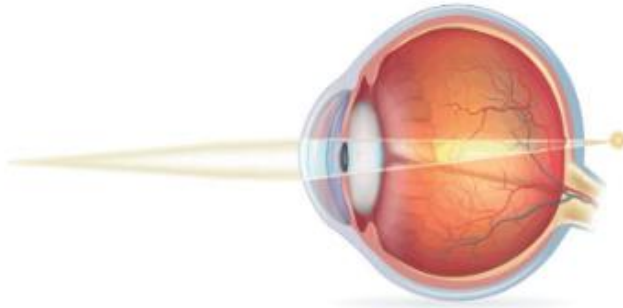
This happens when:

- The eyeball is too long (deep), or
- The cornea is too steeply curved.

Because of the corneal shape or the depth of the eye, **light focuses in front of the retina** instead of onto it, so when it reaches the retina, each point becomes a blur circle. The term ‘myopia’ comes from the Greek for ‘strong eye’.

Myopia often begins in childhood or the teenage years and can increase as the eyes grow. Spending long hours doing close-up activities—like reading or using screens, particularly in poor lighting—may increase the risk of developing or increasing myopia. Genetics also play a big role: if one or both parents are myopic, their children are more likely to be short-sighted as well.

Myopic children tend to experience a prescription change during **growth spurts**, around the ages of 7 years, then 12 or 13 years old.



### **HYPEROPIA**

FARSIGHTED EYE

THE EYEBALL IS TOO SHORT  
NEAR OBJECT IS BLURRY

## **What Is Hyperopia?**

**Hyperopia, or far-sightedness means you can see faraway objects more clearly than nearby ones.**

For example, you might see street signs clearly, but reading a book or using a phone can be difficult. This happens when:

- The eyeball is too short, or
- The cornea is flatter than it needs to be.

**Light then focuses behind the retina** instead of directly on it. The crystalline lens inside the eye however can bring it into focus. This is not possible in myopia as the lens can only **increase the optical power** of the eye. This is the same action as ‘focusing’ on a near object, even if you are looking far away, and can make your eyes prone to fatigue.

Mild hyperopia is common in children and may cause little trouble because young eyes can adjust their focus easily. However, as people get older, this focusing ability weakens, and near tasks can become more demanding.

## What Is Astigmatism?

Astigmatism is a very common condition that causes blurred or ghostly vision at all distances.

Instead of being perfectly round like a basketball, the cornea is shaped more like a rugby ball or oval. There is a difference in the curvature of the cornea in different planes, normally opposing by 90 degrees (known as 'regular astigmatism').

If the two most different curves are not separated by 90 degrees it is known as 'irregular astigmatism'.

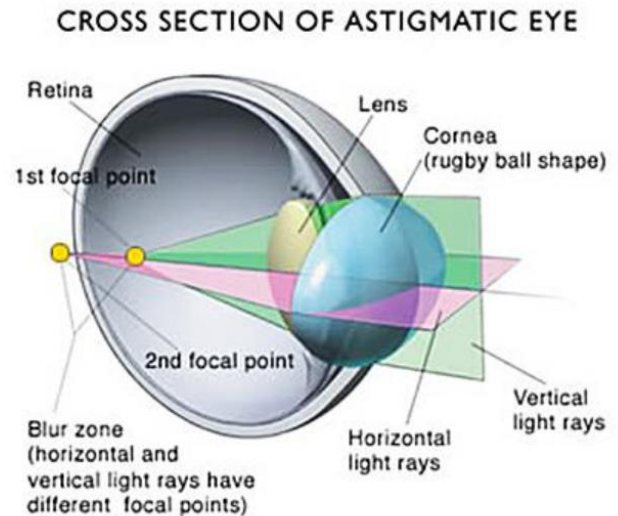
Because of this uneven shape, the light is not all focused properly on the retina.

Instead, it *focuses at different depths*, causing:

- Blurred or distorted vision including ghosting/ shadows
- Difficulty seeing fine details, far away and at near
- Eye strain or headaches, while trying to concentrate.

## How Is Astigmatism Corrected?

- **Glasses** – Spectacle lenses will focus light evenly onto the retina.
- **Contact lenses** - Soft 'toric' lenses or rigid lenses can provide clear and stable vision.
- **Refractive surgery** - (such as LASIK) Can reshape the cornea to correct the focus.



## Common Symptoms

### Both myopia and hyperopia can cause:

- Blurry vision (either up close or at a distance)
- Eye strain or tired eyes
- Headaches after reading or screen use
- Difficulty focusing



If you notice these symptoms, it's a good idea to schedule an eye exam with your optometrist.

## How Are Myopia and Hyperopia Diagnosed?

A comprehensive eye exam is the best way to find out if you are myopic or hyperopic.

Your optometrist will:

- Ask about your vision and any symptoms
- Measure how clearly you can see at different distances
- Use special lenses and instruments to determine the exact optical prescription you need for clear vision.



These tests are quick, painless, and very accurate.

## How to Correct Myopia or Hyperopia?

The most common methods are:

**Glasses** – A simple and safe way to correct blurry vision.

**Contact lenses** – A good cosmetic option for people who prefer not to wear glasses.

**Refractive surgery** (like LASIK) – Can permanently reshape the cornea to correct the focus.



Your optometrist will recommend what's best for your eyes and lifestyle.

## Can Myopia or Hyperopia Be Prevented?

There's no guaranteed way to prevent myopia or hyperopia, but you can use these steps to protect your eyes:

**Have regular eye exams**, especially for children and teens (every 2 years or as advised)

**Spend time outdoors**—research suggests it may help slow myopia progression in kids.

**Take breaks from close-up work** or screens using the 20-20-20 rule: every 20 minutes, look at something 20 feet away for 20 seconds.

**Use good lighting** when reading or working – don't use a screen in a dark room!



## In Summary

Myopia, hyperopia and astigmatism are common vision conditions caused by the way the eye focuses light.

With the right prescription glasses, contact lenses, or in some cases surgery, eyecare professionals can help you to see clearly and comfortably at all times.

Regular eye exams are the key to early detection and lifelong healthy, comfortable vision.