

What is astigmatism?



Astigmatism is a common condition which occurs when the cornea (the clear front surface of your eye) or the lens inside your eye is irregularly shaped.

Normally the cornea and the lens are smooth and curve equally in all directions, like a soccer ball. This enables light rays to focus directly onto your retina (the camera film at the back of your eye). When the cornea or lens are not smooth or regularly shaped, like an AFL

football, light rays are not refracted (bent) properly onto the retina, causing blurry vision at any distance.

If the cornea alone is irregularly shaped, you have corneal astigmatism, and if the lens is distorted, you have lenticular astigmatism.

Astigmatism often occurs with other vision conditions such as **myopia** (near-sightedness) and **hyperopia** (far-sightedness). Together these conditions are called refractive errors because they affect how your eyes bend or refract light.



Left: Normal eye. Right: Astigmatism.

What causes astigmatism?

It is not yet known why corneal shape varies from person to person, but the likelihood of developing astigmatism is inherited and it is usually present from birth.

Non-congenital astigmatism can occur in other ways, including:

- When the curvature of the lens inside your eye alters, bringing either an increase or decrease in astigmatism. This change occurs frequently in adulthood and may precede the development of cataracts.
- After an eye injury or eye surgery.
- Through uncommon eye conditions such as keratoconus where the cornea becomes progressively thinner and cone-shaped, or pellucid marginal degeneration.

What are the symptoms of astigmatism?

- Blurry vision
- Distorted vision
- Eyestrain
- Eye discomfort
- Headaches
- Squinting to try to see clearly

How is astigmatism diagnosed?

Astigmatism is diagnosed through a **comprehensive eye examination** where your ophthalmologist will:

- Measure your refraction
- Examine your eyes with a slit lamp
- Measure the curvature and generate a contour map of your cornea using a corneal topographer.

How is astigmatism treated?

Treatment aims to improve vision clarity. There are several options available for treating your astigmatism which include:

- Glasses
- Contact lenses
- Laser and other refractive surgery procedures which improve vision and reduce the need for glasses or contact lenses.

Your ophthalmologist will discuss your most appropriate options with you.

Need to know more?

Please contact the Lions Eye Institute to make an appointment with one of our ophthalmologists.
Phone: (08) 9381 0777; email: carecentre@lei.org.au; or see our website: lei.org.au