Surgery and Contact Lenses

Wearing glasses is an effective way to correct vision. It is also possible to change the shape of the cornea to make the eye refract properly. The cornea is responsible for two-thirds of the refraction that takes place inside the eye. As you know, the eye’s lens changes shape to focus an image, but the shape of the cornea does not ordinarily change.

However, using advanced surgical technology, doctors can change the shape of the cornea. By doing this, they change the way light rays focus in the eye so that the image lines up with the retina. To correct for nearsightedness, surgeons remove tissue from the center of the cornea. This flattens the cornea and makes it less convex so that it will refract less. To correct for farsightedness, surgeons remove tissue from around the edges of the cornea. This increases the cornea’s curvature to make it refract more. Surgery changes the shape of the cornea permanently and can eliminate the need for eyeglasses.

Contact lenses also correct vision by changing the way the cornea refracts light. Contact lenses are corrective lenses that fit directly onto the cornea. The lenses actually float on a thin layer of tears. The moisture, the contact lens, and the cornea all function together. The lens of the eye then focuses the light further. Because the change is temporary, contacts, like eyeglasses, can be adapted to new changes in the eye.

What are two ways of changing the way the cornea refracts light to correct vision?