

DEFINITIONS

Fact Sheet

Refractive Disorders & Conditions:

Millions of Americans have refractive disorders, which include myopia (nearsightedness), hyperopia (farsightedness) and astigmatism (distorted vision), and everyone will eventually develop the age-related eye condition known as presbyopia (aging eyes). A refraction is a prescription that is used to refocus the image on the retina for those patients who require optical assistance due to a refractive disorder or eye condition.

Astigmatism: (Distorted Vision)

In an eye with astigmatism, the front of the cornea is not equally curved; it is slightly oval in shape, like a football. Light rays entering the eye bend unequally, resulting in a distorted image. Astigmatism usually occurs in conjunction with myopia or hyperopia. Symptoms alone can be difficult to detect, but those affected may notice a subtle difficulty focusing on printed words. Doctors can identify this condition during a vision exam. Eyeglasses, contact lenses and refractive surgery can effectively treat astigmatism.

Hyperopia: (Farsightedness)

With hyperopia, people may see objects that are far away, but have difficulty focusing on near objects or may have to strain the eyes to maintain focus. Hyperopia occurs when the eyeball is too short or the cornea is too flat, causing light to be focused behind the retina instead of directly on the retina for normal vision. Symptoms of hyperopia can include eyestrain, blurred vision or headache (especially when reading or at the end of the day), and will increase over time if not treated. Doctors prescribe a "plus" or convex corrective lens (eyeglasses or contact lenses) for the disorder. Hyperopia can also be surgically treated by steepening the central cornea or by flattening the peripheral cornea.

Young people with hyperopia (30 to 45 years) may have fine distance vision, but might strain their eyes to maintain focus on close-up objects. Middle-aged hyperopes (45 to 55 years) may need glasses for distance especially to drive at night and may require reading glasses, while older hyperopes (55 years and up) often cannot see things in the distance or close up, requiring bifocals.

Myopia: (Nearsightedness)

People with myopia have difficulty seeing objects in the distance, but may have no problems focusing on objects that are up close. Myopia occurs when the eyeball is too long or the cornea is too steep. When light enters a myopic (long) eyeball it is focused in front of the retina, instead of directly on the retina for normal vision. Symptoms of myopia can include eyestrain, blurred vision or headaches. Doctors prescribe "negative" or concave corrective lenses (eyeglasses or contact lenses) for this condition. Surgically, flattening the central cornea treats myopia.

Presbyopia: (Aging Eyes)

The Greek word for "aging eye," presbyopia is the most prevalent eye condition in America, affecting all people sometime after age 40 (everyone over age 51). Presbyopia is a natural result of the aging process and impacts the eye's ability to focus, causing a gradual decline in near vision (i.e., the ability to see things up-close). Presbyopia affects everyone, whether they are myopic, emmetropic (no refractive error) or hyperopic, making everyday tasks, such as reading, dialing a cell phone or doing hobby work difficult without the aid of magnifying reading glasses.

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