

18/MHS07/044

PHS 212

assignment: discuss the defects of the eyes

Answer:

a. Myopia or Near-Sightedness

Myopia is a defect of vision wherein far-off objects appear blurred and objects near are seen clearly. Since the eyeball is too long or the eye lens's refractive power is too high; the image forms in front of the retina rather than forming on it. Correction of myopia can happen by wearing glasses/contacts made of concave lenses to help focus the image on the retina.

b. Hypermetropia or Longsightedness

Hypermetropia is a defect of vision wherein there is difficulty in viewing objects that are near but one can view far objects easily. Since the eyeball is too short or eye lens's refractive power is too weak hence the image instead is of being forming upon the retina, its forms behind the retina. Correction of hypermetropia can happen by wearing glasses/contacts containing convex lenses.

c. Cataract

Cataract is the clouding of the lens, that prevents the formation of a clear, sharp image. A cataract forms when old cells after they die, stick in a capsule wherein with time a clouding over lens happens. Because of this clouding blurred images are formed. Correction of cataract can happen through a surgery. An artificial lens in place of the opaque lens is after removing it via surgery.

d. Presbyopia or Old-age Longsightedness

Presbyopia is a natural defect that occurs with the age. In presbyopia, the ciliary muscles become weak and are no longer able to adjust the eye lens. The eye muscles become so weak that no longer can a person see nearby objects clearly. The near point of a person with presbyopia is more than 25cm. Correction of presbyopia can happen by wearing bifocal glasses or Progressive Addition Lenses (PALs) wherein the upper portion of the lens contains concave lens and lower portion contains a convex lens. A person with presbyopia can also have just myopia or just hypermetropia.

e. Astigmatism

Astigmatism is a defect wherein the light rays entering the eye do not focus light evenly to a single focal point on the retina but instead scatter away. The light rays in a way where some focus on the retina and some focus in front of or behind it. This happens because of non-uniform curvature of the cornea; resulting in a distorted or blurry vision at any distance. Correction of astigmatism can happen by using a special spherical cylindrical lens.