

Name: Ikumogunniyi Anita Jibola

Assignment Title: Special senses

Course Title: Renal Physiology, Body fluid & Temperature Regulation and Autonomic Nervous System

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Question: discuss the defects of the eye

**Hypermetropia:** Hypermetropia also known as long-sightedness is a defect of an eye where a person cannot see nearby objects clearly. This defect of eye is caused due to: Low converging power of eye-lens and eye-ball being too short. In case of hypermetropia the image of an object is formed behind the retina and therefore, a person cannot see clearly nearby objects. The near-point of an eye having hypermetropia is more than 25 cm. The condition of Hypermetropia can be corrected by putting a convex lens in front of the eye.

**Presbyopia:** This defect of vision usually happens in old age when ciliary muscles become weak and can no longer adjust the eye-lens. The muscles become inflexible in this condition and cannot see nearby objects clearly. The near-point of an old person having presbyopia is much more than 25 cm. Presbyopia can be corrected by wearing spectacles having convex lens.

**Myopia:** (nearsightedness) is a defect of eye in which far objects appear blurred but near objects are seen clearly. The image is focused in front of the retina rather than on it usually because the eyeball is too long or the refractive power of the eye's lens too strong. Myopia can be corrected by wearing glasses/contacts with concave lenses these help to focus the image on the retina.

**Astigmatism:** This defect is when the light rays do not all come to a single focal point on the retina, instead some focus on the retina and some focus in front of or behind it. This is usually caused by a non-uniform curvature of the cornea. A typical symptom of astigmatism is if you are looking at a pattern of lines placed at various angles and the lines running in one direction appear sharp whilst those in other directions appear blurred. Astigmatism can usually be corrected by using a special spherical cylindrical lens.