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MATRIC NO: 18/ENG08/005

DEPARTMENT: BIOMEDICAL ENGINEERING

ASSIGNMENT:

Write short notes on any two eye defects

ANSWER:

THE EYE DEFECTS

- MYOPIA
- HYPEROPIA

- **MYOPIA:**

This is also known as near-sightedness or short-sightedness. This is a common vision condition (or defect of vision) in which far objects appear blurred but near objects are seen clearly. It occurs when the shape of the eye causes light rays to bend (refract) incorrectly.

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.

Myopia may develop gradually or rapidly, often worsening during childhood and adolescence. It also tends to run in families and can be confirmed through a basic eye exam.

Some symptoms of nearsightedness include:

- i. Blurry vision when looking at distant objects.
- ii. The need to squint or partially close the eyelids to see clearly.
- iii. Headaches caused by eyestrain.
- iv. Difficulty seeing while driving a vehicle, especially at night (night myopia)

However, the blur can be compensated for through the use of medically prescribed eyeglasses (concave lens), contact lenses or refractive surgery.

Shortsightedness is corrected using a concave (curved inwards) lens which is placed in front of a myopic eye, moving the image back to the retina and making it clearer.

- **HYPEROPIA OR HYPERMETROPIA:**

This is also known as farsightedness or long-sightedness.

This is a defect of vision in which near objects appear blurred but far objects are seen clearly. This vision problem occurs when light rays entering the eye focus behind the retina, rather than directly on it. The eyeball of a farsighted person is shorter than normal. Many children are born farsighted, and some of them "outgrow" it as the eyeball lengthens with normal growth.

Some symptoms of farsightedness include:

- i. Blurred vision, vision disorder, or distorted vision.
- ii. Eye strain or squinting.
- iii. Headache.

Longsightedness is corrected using a convex (outward facing) lens. This is placed in front of a hypermetropic eye, moving the image forward and focusing it correctly on the retina.