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**DEPARTMENT: NURSING SCIENCE**

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**ASSIGNMENT TITLE: SPECIAL SENSES**

**COURSE TITLE: PHYSIOLOGY**

**COURSE CODE: PHS 212**

**QUESTION: WRITE SHORT NOTES ON ANY TWO EYE DEFECTS**

**ANSWER:**

-**MYOPIA**

**What Is Myopia?**

Myopia is the medical term for nearsightedness. This is a refractive disorder of the eye where a person sees objects clearly when they are up close, but they become blurry once they are far away. Approximately 30% of the population in the USA suffers from myopia.

Myopia generally first occurs in younger children between the ages of 6 and 12, and the eye continues to adjust until at least age 20. Kids who suffer from myopia may need new corrective lenses made every year until their eyes stop adjusting. However, myopia can also occur in adults with no prior vision problems.

**What Causes Myopia?**

Myopia occurs when the eyeball is too long or the cornea is abnormally shaped and has too much curvature. The cornea is the clear outer covering of the eyeball. Because of these morphological differences, light does not focus correctly when it enters the eye, thus making objects that are distant look blurry. Instead of light focusing on the retina itself, light focuses in front of the retina, and this causes the myopic symptoms. There is a debate whether myopia is hereditary or caused by excessive eye strain, though it is likely due to a combination of the two. Individuals who spend a great deal of time on the computer or reading are more likely to develop myopia.

 

Myopia is a condition where light focuses in front of the retina rather than on the retina.

**Myopia Symptoms and Treatment**

The primary symptom of myopia is blurred vision when viewing distant objects. Usually, if someone is experiencing myopia, they will squint or frown when trying to focus on objects that are far away. They may also experience eyestrain and headaches. In some cases, symptoms may only occur at night or when blood sugar is low.

An optometrist can diagnose myopia by performing a vision exam. If vision is dramatically obscured, glasses or contact lenses can be worn to counteract the problem, and this is the most common treatment type. Specialized contact lenses that actually reshape the curvature of the eye may lessen the symptoms of myopia, or surgical procedures may reshape the cornea. If myopia is stress-related, vision therapy may help correct the problem.

-**HYPERMETROPIA** **(LONG SIGHTEDNESS)**

**WHAT IS HYPERMETROPIA (LONG SIGHTEDNESS)**

Long sight occurs when light from near objects is not quite brought to focus in time to hit the retina. The point of focus would in fact be behind the retina, if the light could get that far. The lens tries hard to change its thickness (becomes fatter or more rounded) in an attempt to bring the light into focus on the retina - a process called accommodation. However, people with long sight cannot accommodate fully and so the light does not focus on the retina and vision is blurred. This occurs because the eyeball is too short, the cornea is too flat (and so bends the light rays less), or the lens cannot become round enough (and so lacks power).

People with a minor degree of long sight can usually see at distance, as this light does not require the same strength of focusing. Their near sight may also be clear. However, they may get tiring of the eyes, often with a headache and vision discomfort, because the lens has to work so hard. People with more severe hypermetropia are not able to see near objects clearly in focus. Long sight means exactly what the term suggests: you can see objects which are a long distance from you quite clearly.

**What causes long sight (hypermetropia)?**

The causes of long sight are usually hereditary (genetic). Long sight can occur at any age but it tends to become more noticeable above the age of 40 years. In rare cases, long sight is caused by other conditions such as diabetes, small eye syndrome (microphthalmia), cancers around the eye and problems with the blood vessels in the retina.

Many babies and very young children tend to be slightly long-sighted but usually grow out of this by about 3 years of age. A particular type of age-related long sight (presbyopia) occurs because the lens of the eye becomes stiffer with age.

**What are the symptoms of long sight (hypermetropia)?**

The main symptom is a difficulty with near vision. 'Tiring' of the eyes (asthenopia) is common and long-sighted people may have headaches and uncomfortable vision.

There may be difficulties with seeing with both eyes (binocular vision), as the brain will tend to ignore signals coming from the most long-sighted eye. Lazy eye (amblyopia) or squint (strabismus) can therefore also occur in long sight.

Long-sighted people may have difficulty with depth perception (3-dimensional vision), as this needs two eye to work together, more or less equally.

If severe long sight (hypermetropia) is present from a very young age, lazy eye (amblyopia) can result. The eye with less good vision does not learn to see properly because the brain ignores its signals and concentrates only on the better eye. Visual development in the brain occurs in the first few years of life and if this problem is not spotted until after vision has finished developing, the poorer eye will not fully develop its 'information route' into the brain, so will never see as well.

**What is the treatment for long sight (hypermetropia)?**

**Glasses**

The simplest, cheapest and safest way to correct long sight is with glasses. Convex prescription lenses (called plus lenses) are used to bend light rays slightly inwards to give a little bit of additional focusing power to the eye. The light rays then have a lesser angle to bend travelling through the cornea and lens and the lens has less work to do. As a result, the light rays are able to focus on the retina

**Contact lenses**

These do the same job as glasses but they sit right on the surface of the eye. Many different types of contact lenses are available. Lenses may be soft or rigid gas-permeable. They can be daily disposable, extended wear, monthly disposable, or non-disposable. Contact lenses tend to be more expensive than glasses. They require more care and meticulous hygiene. They are more suitable for older teenagers and adults, rather than very young children.