

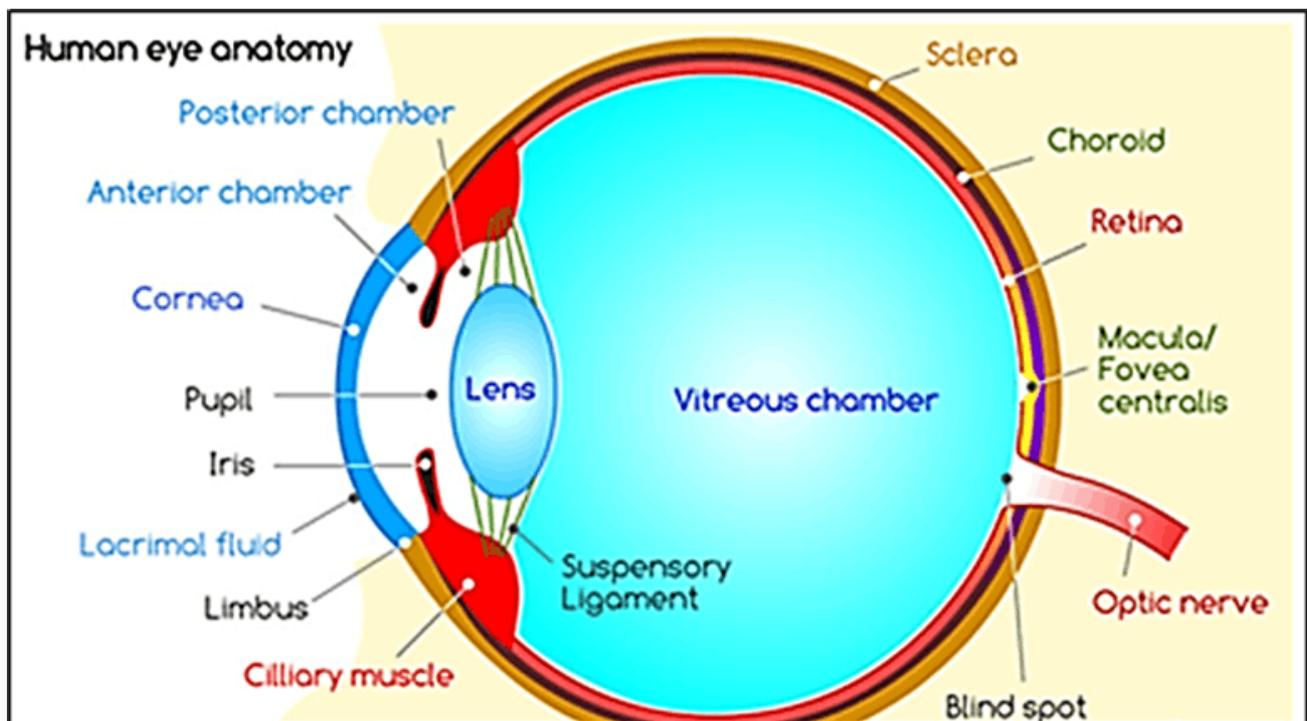
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Human Eye-Anatomy of Eye and Its Functions, Common Vision Problems (For CBSE, ICSE, IAS, NET, NRA 2022)

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Human Eye - Anatomy of Eye and Its Functions

Anatomy of Human Eye



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- The eye is a sensory organ.
- It absorbs light rays from our environment and transforms them in such a way that the information in the brain can be processed further.

- An eye and brain form a unit that has developed together during visual system
- This processing is called seeing, watching, or looking.
- The visual impression is essentially generated from visual memory, in which only little new information from the eye is incorporated.

The Cornea

- Imagine this to be like a window to a human eye.
- It contributes to major refraction of light (bending of light rays) entering our eyes.
- It forms the clear front surface of a human eye. It also makes sure that foreign substances do not enter the eye.

The Iris

- This lies right behind the cornea.
- It controls the circular opening called the pupil.
- It functions like an automatic camera shutter, controlling the amount of light entering a human eye.

The Crystalline Lens

- The lens further focuses the light rays entering our eyes.
- We can compare this to how an autofocus lens functions in a camera.
- This is called the accommodating power of the eye.
- Depending on where the object lies, the lens tries to focus that object.

The Vitreous Humor

- This is a jelly like substance that fills most of the inner chamber of the eye.
- It helps the eye maintain its spherical nature.
- The light rays after passing through the opening, travel through the vitreous humor before striking the retina.

The Retina

- Retina is a light-sensitive inner lining of the human eye. Ideally, light rays should focus on the retina forming an image.
- It is the innermost lining of the inner tissue which consists of the sclera and the choroid as well.
- Whenever light finally strikes the retina, an electric signal is sent to the brain (the visual cortex) via the optic nerve. The brain then processes the image and finally we see what we see.
- There are other parts of a human eye with supporting functions like lubrication of the eye (tear formation) and muscles that allow eye movement.
- The eyelids play a very important role in protecting the eye from external damage.
- Apart from the optic nerves, there are other sensory nerves that relay information to the brain regarding pain and other abnormalities.

Common Vision Problems

- The most common vision problems are
 - **myopia** (nearsightedness)
 - **hyperopia** (farsightedness)

- **presbyopia** (age-related farsightedness)
- **Astigmatism.**
- Other eye problems include glaucoma (increased fluid pressure, which can damage the optic nerve) , cataracts (clouding and hardening of the lens) , and macular degeneration (degeneration of the retina) .

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