



Dr. M.G.R

EDUCATIONAL AND RESEARCH INSTITUTE

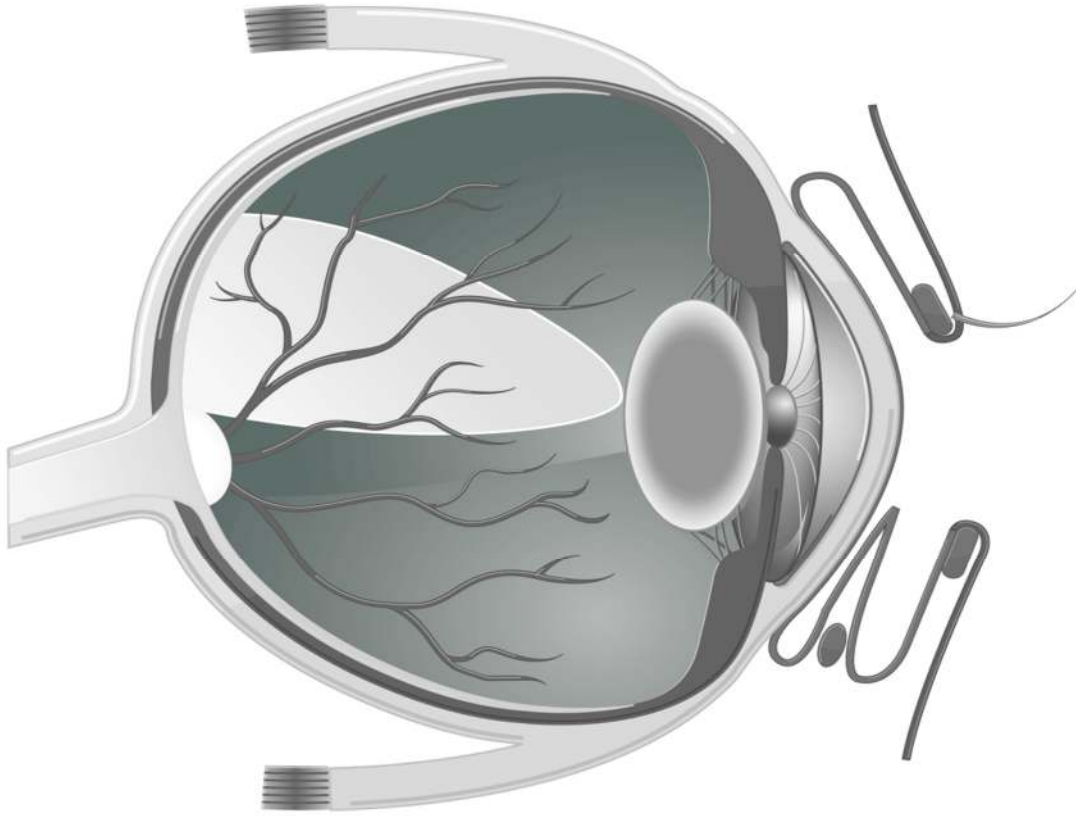
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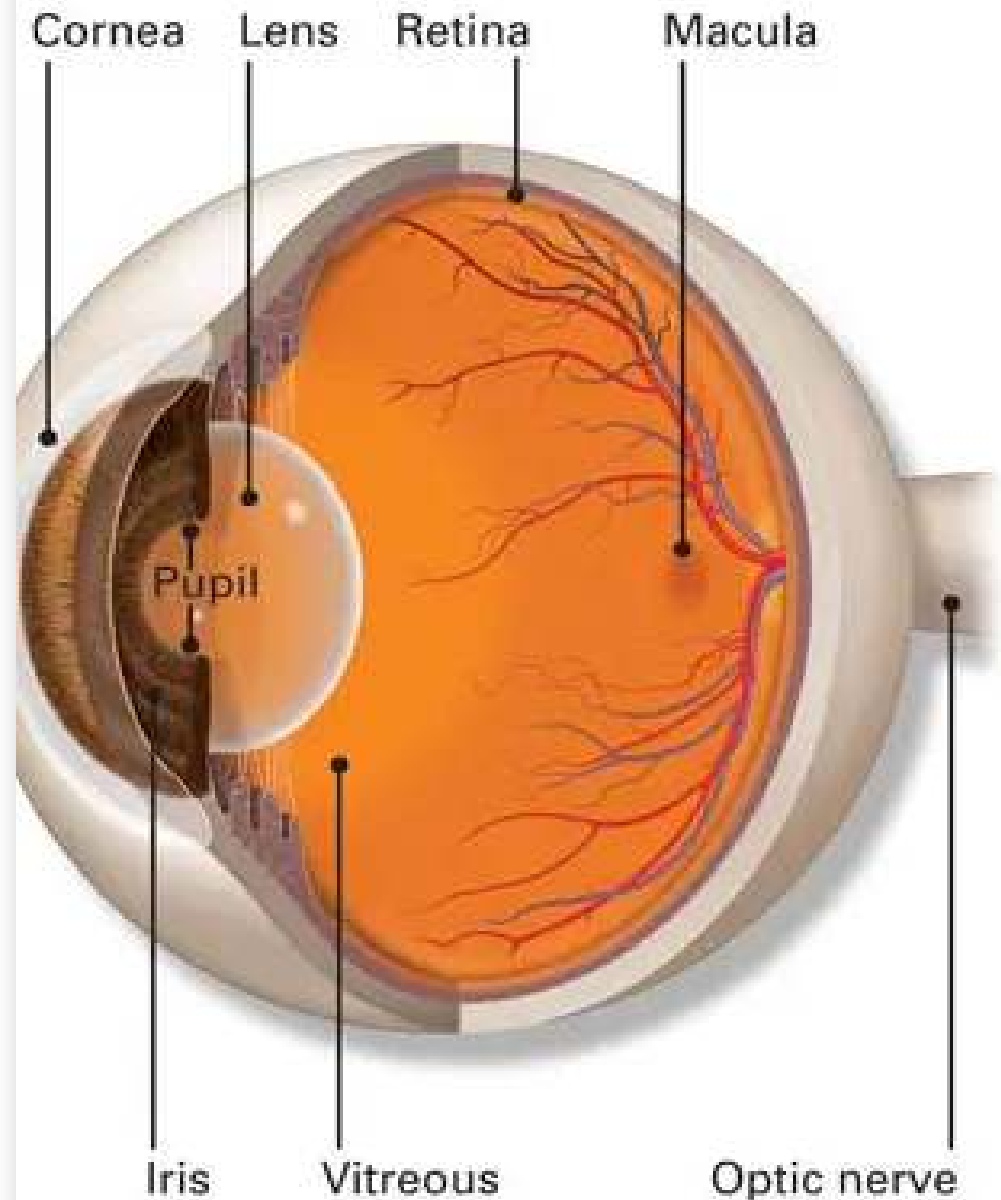


VITREOUS BODY

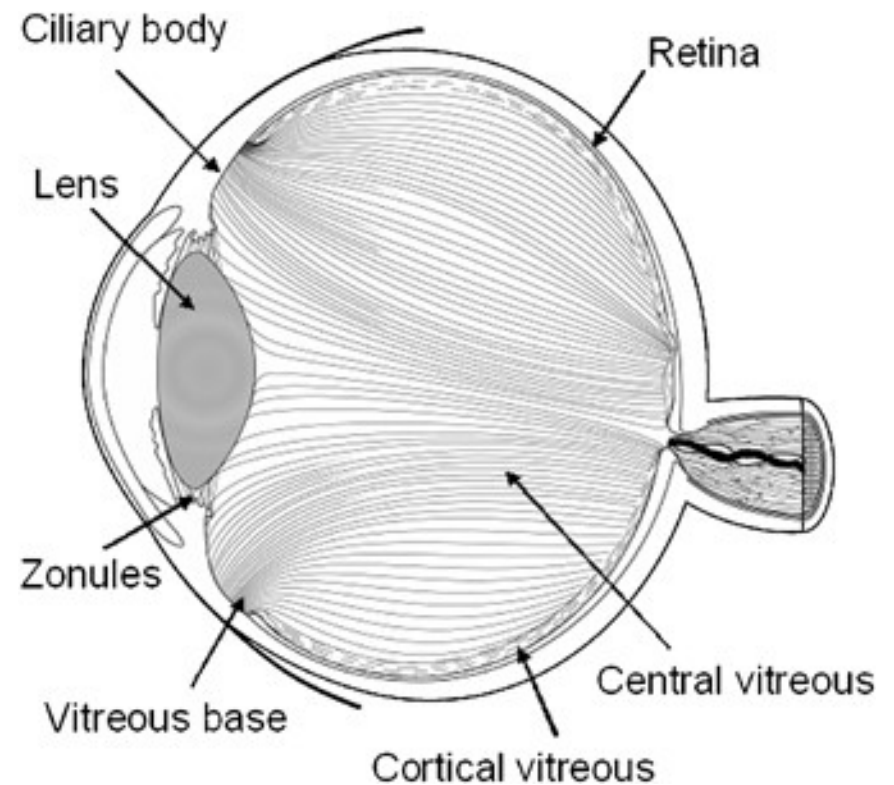
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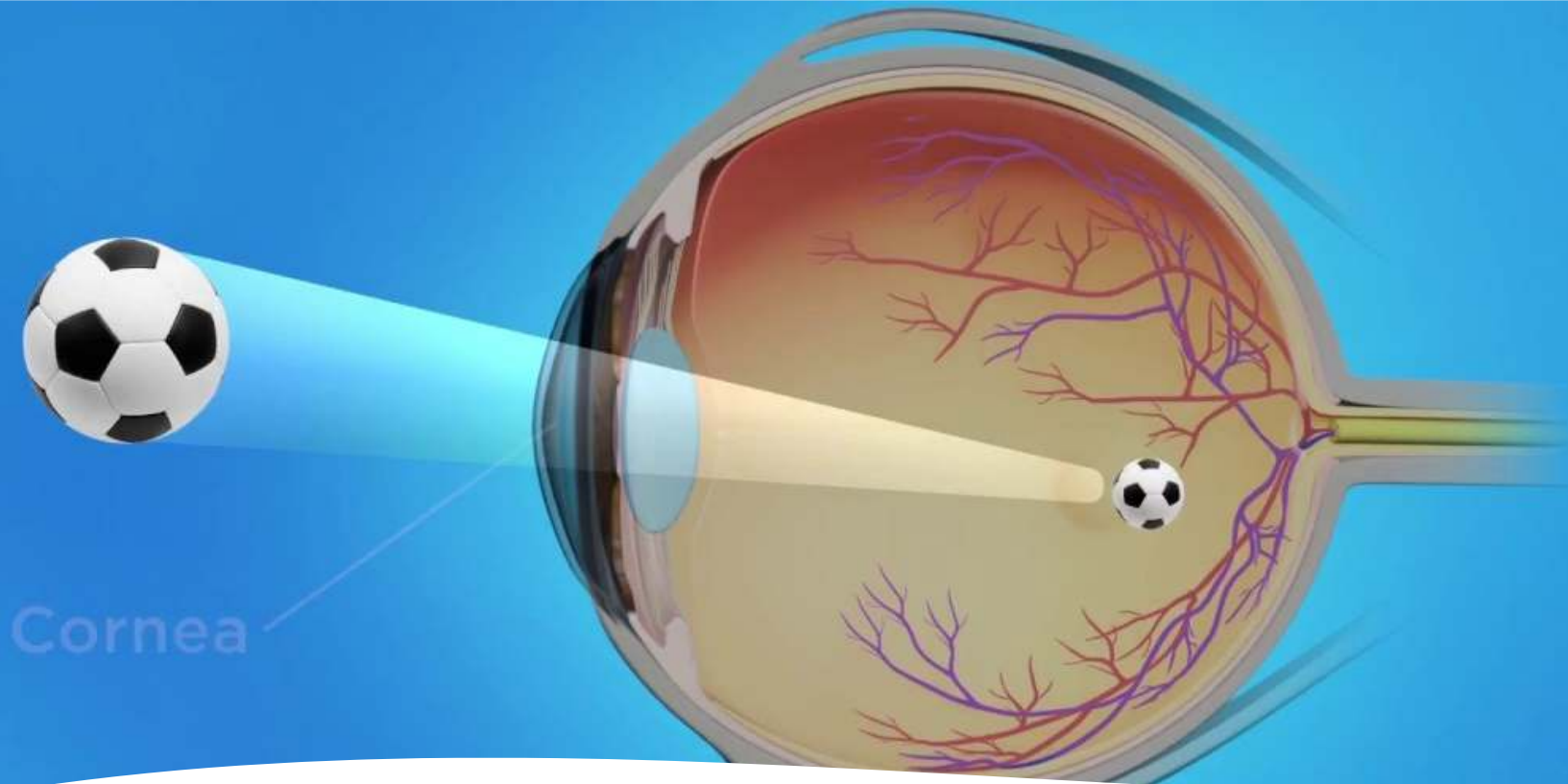
vitreous body

- The **vitreous body** forms about four-fifths of the bulb of the eye. It fills the concavity of the retina, and is hollowed in front, forming a deep concavity, the **hyaloid fossa**, for the reception of the lens.
- It is transparent, of the consistence of thin jelly, and is composed of an albuminous fluid enclosed in a delicate transparent membrane, the **hyaloid membrane**.



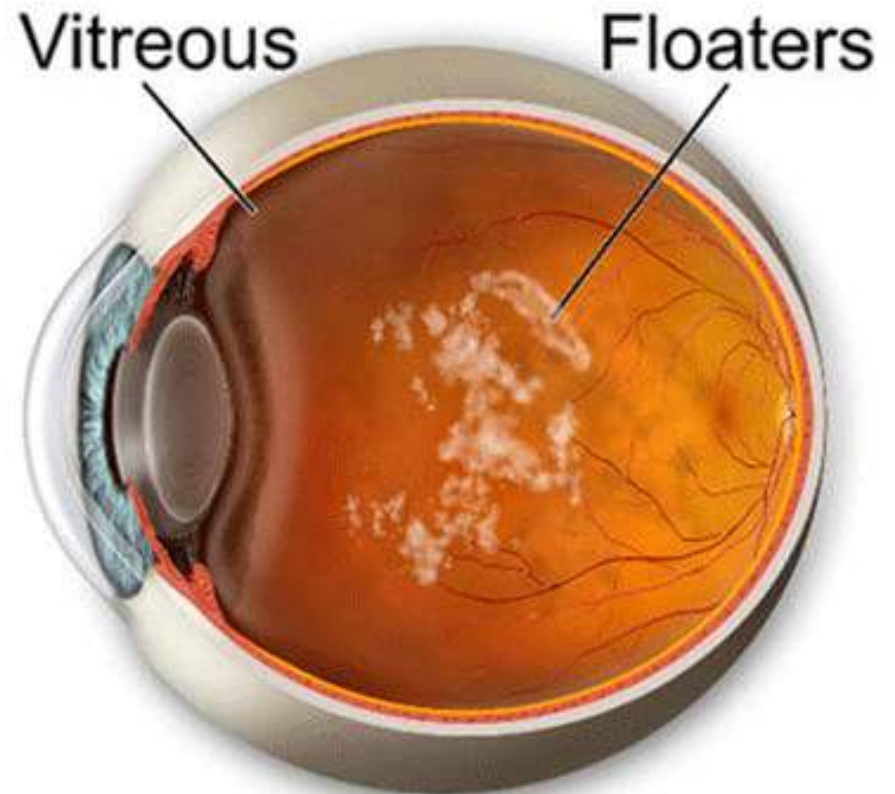
- The vitreous humor is a transparent, colorless, gelatinous mass that fills the space in the eye between the lens and the retina. It is surrounded by a layer of collagen called the vitreous membrane (or hyaloid membrane or vitreous cortex) separating it from the rest of the eye. It makes up four-fifths of the volume of the eyeball. The vitreous humour is fluid-like near the centre, and gel-like near the edges.



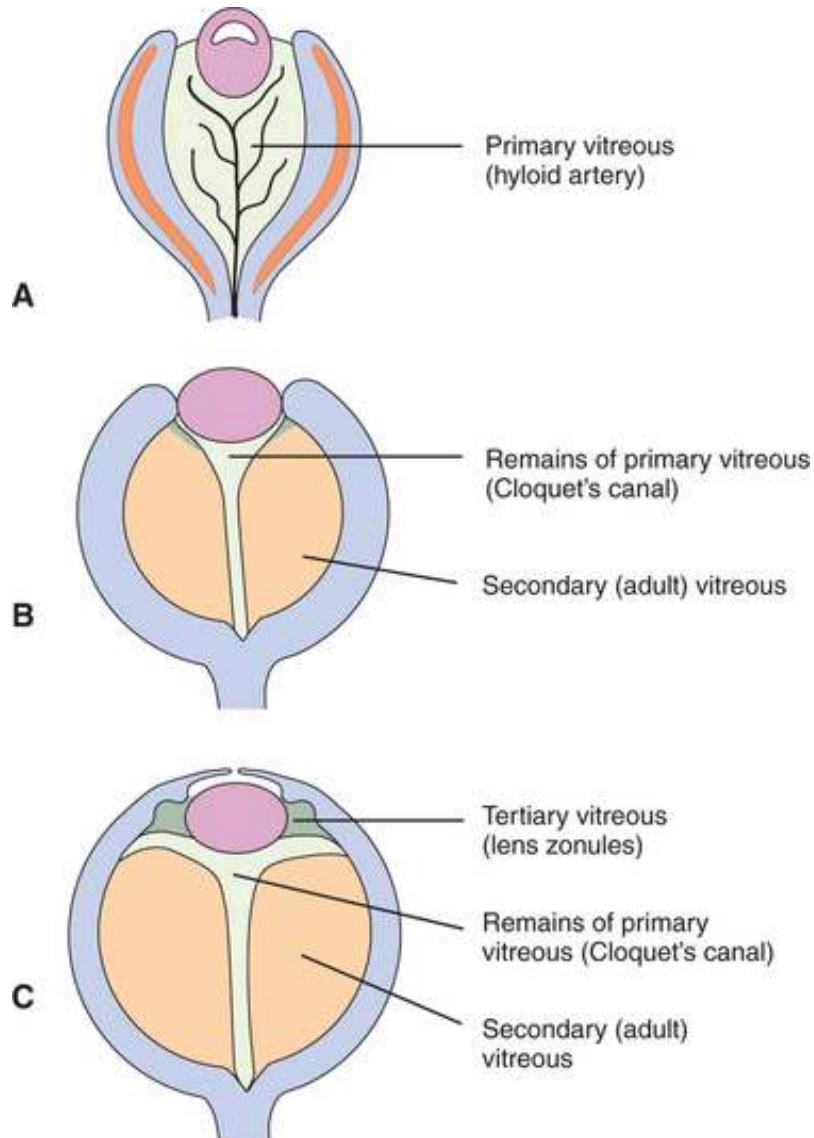


- The vitreous body (vitreous meaning "glass-like", from Latin vitreus, equivalent to vitr(um) glass + -eus -ous) is the clear gel that fills the space between the lens and the retina of the eyeball (the vitreous chamber) in humans and other vertebrates.
- It is often referred to as the vitreous humor (also spelled humour, from Latin meaning liquid) or simply "the vitreous". Vitreous fluid or "liquid vitreous" is the liquid component of the vitreous gel, found after a vitreous detachment. It is not to be confused with the aqueous humor, the other fluid in the eye that is found between the cornea and lens.

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- The fluid from the vitreous body is nearly pure water; it contains, however, some salts, and a little albumin.
 - No bloodvessels penetrate the vitreous body, so that its nutrition must be carried on by vessels of the retina and ciliary processes, situated upon its exterior.



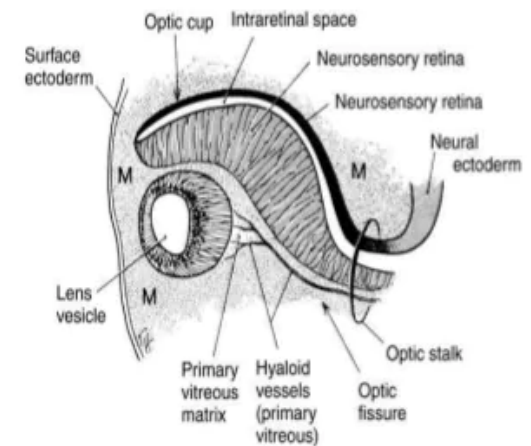
Development



Embryology of vitreous

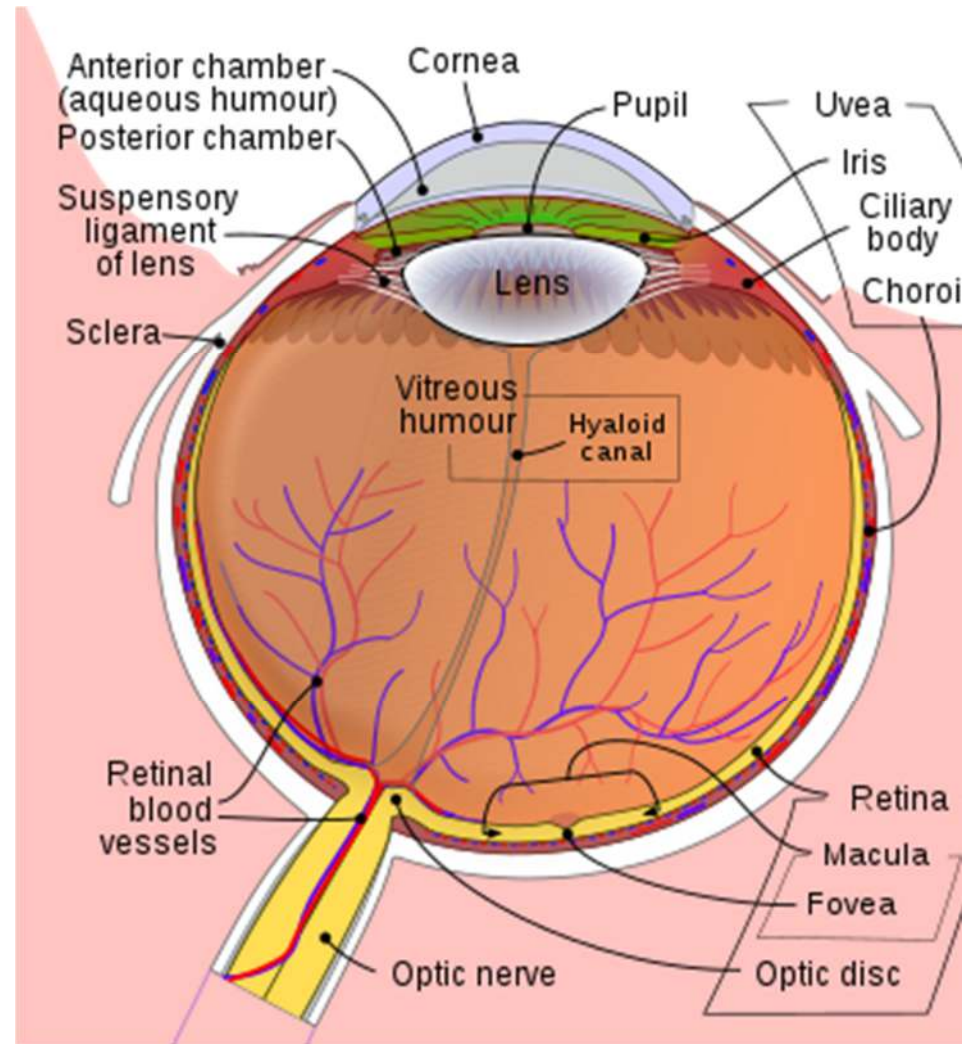
Cells of origin of the vitreous gel include

- Cell of the surface ectoderm(lens anlage)
- Cell of the neuroectoderm(retina and ciliary epithelium)
- Mesodermal cells b/w the surface and neural ectoderm at the anterior rim of the developing optic cup
- Mesodermal cells migrating into optic cup via fetal fissure with hyaloid system



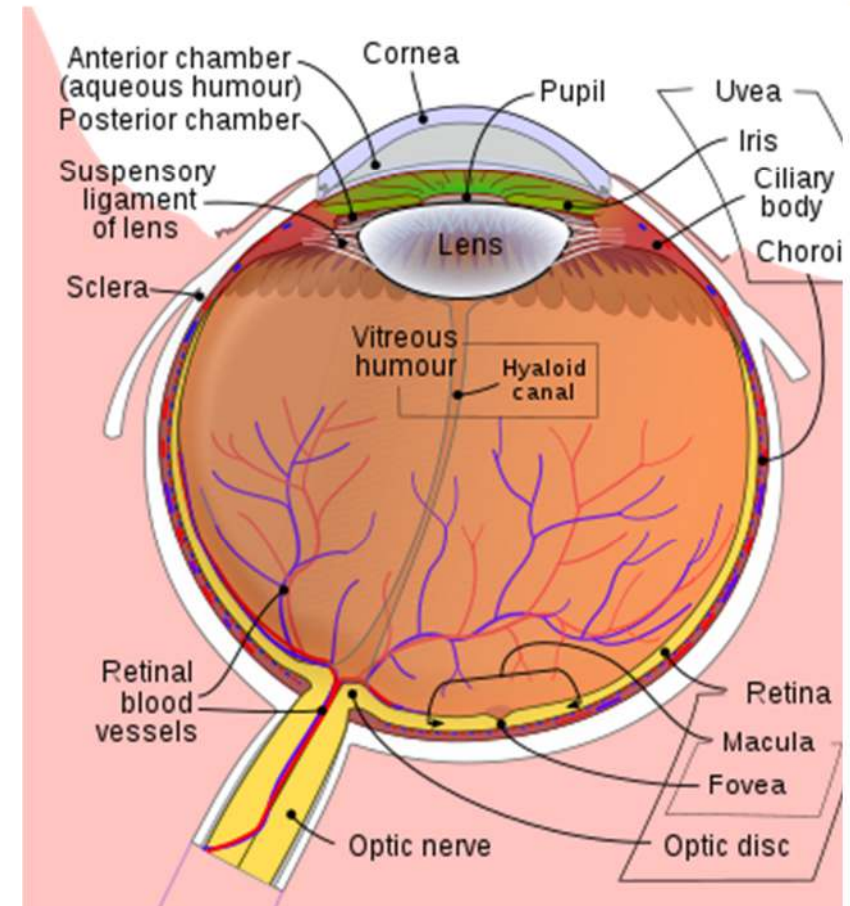
Anatomical features

- The vitreous has many anatomical landmarks, including the [hyaloid membrane](#), Berger's space, space of Erggelet, Wieger's ligament, [Cloquet's canal](#) and the space of Martegiani

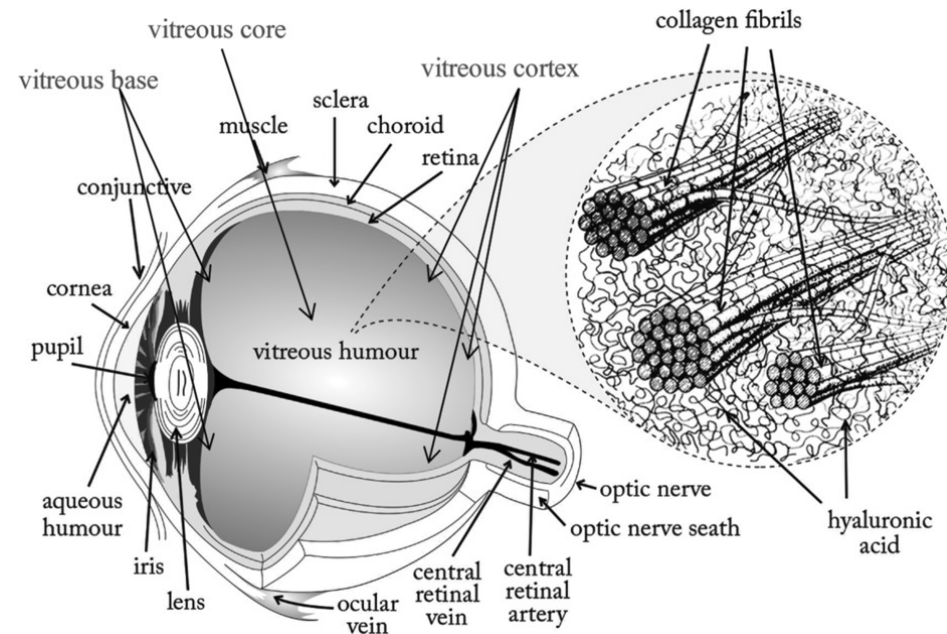


Surface features:

- Patella fossa: Shallow saucer-like concavity anteriorly, in which the lens rests, separated by Berger's space
- Ligamentum hyaloideocapsulare (Wieger's ligament): Circular thickening of vitreous 8-9mm in diameter, delineates the patella fossa
- Anterior hyaloid: Vitreous surface anterior to ora serrata. Continuous with and invests in the zonular fibres, and extends forward between the ciliary processes
- Vitreous base: Denser cortical area of vitreous. Firmly attached to the posterior 2mm of the pars plana, and the anterior 2-4mm of retina



- Posterior hyaloid surface: Closely applied to retinal internal limiting membrane. Firm attachment sites: Along blood vessels and at sites of retinal degeneration
- Space of Martegioni: A funnel shaped space overlying the optic disc with condensed edge
- Cloquet's canal: A 1–2 mm wide canal within the vitreous, from the space of Martegioni to the space of Berger, along an S-shaped course mainly below the horizontal.
- Mittendorf's dot: A small circular opacity on the posterior lens capsule, which represents the site of attachment of the hyaloid artery before it subsequently regressed.





Biochemical properties

- Its composition is similar to that of the cornea, but the vitreous contains very few cells. It is composed mostly of phagocytes, which remove unwanted cellular debris in the visual field, and hyalocytes, which turn over the hyaluronan.
- The vitreous humour contains no blood vessels, and 98–99% of its volume is water (as opposed to only 75% in the cornea). In addition to water, the vitreous consists of salts, sugars, vitrosin (a type of collagen), a network of collagen type II fibrils with glycosaminoglycan, hyaluronan, opticin, and a wide array of proteins.



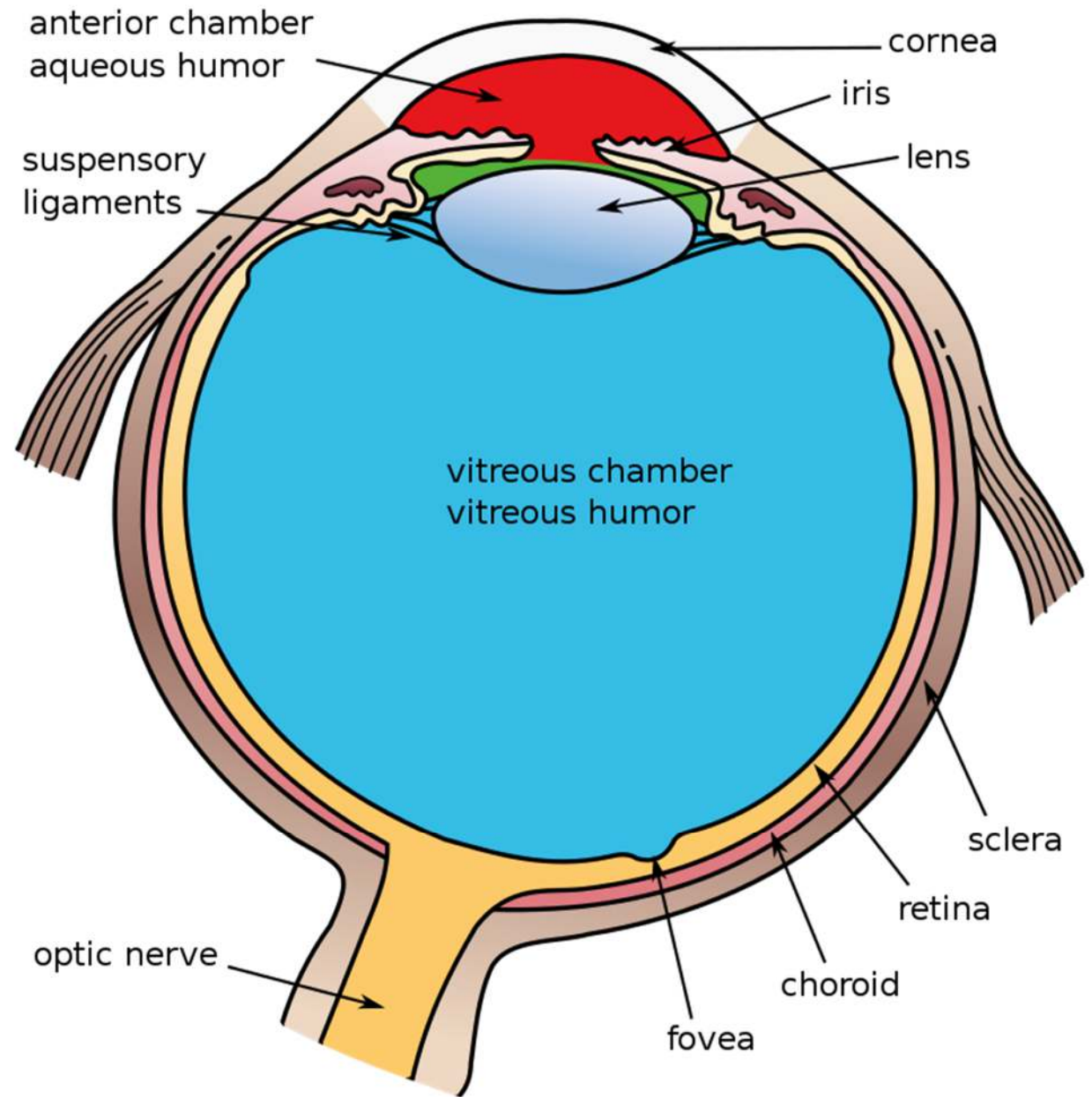
Biochemical properties

- Despite having little solid matter, the fluid is substantial enough to fill the eye and give it its spherical shape. This contrasts with the aqueous humour, which is more fluid, and the lens, on the other hand, which is elastic in nature and is tightly packed with cells.
- The vitreous humour has a viscosity two to four times that of water, giving it a gelatinous consistency.
- It has a refractive index of 1.336.

REFERENCE

- https://en.wikipedia.org/wiki/Vitreous_body#/media/File:Three_Internal_chambers_of_the_Eye.svg
- AK Khurana Comprehensive Ophthalmology

THANK YOU





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