

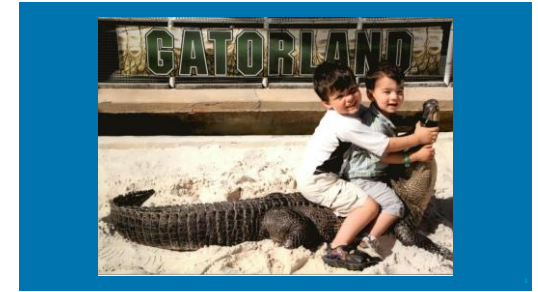


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PLEASE BE CAREFUL..

Any dangerous behavior, we will ask you to leave

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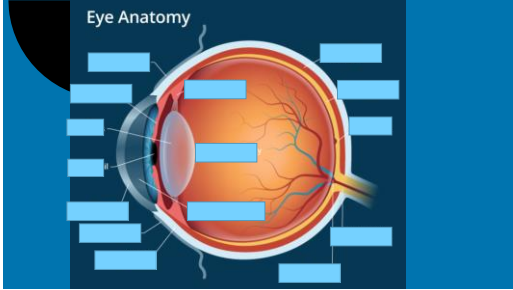
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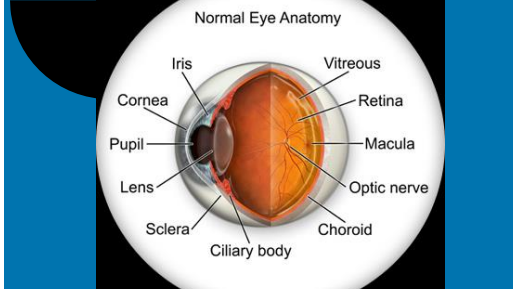
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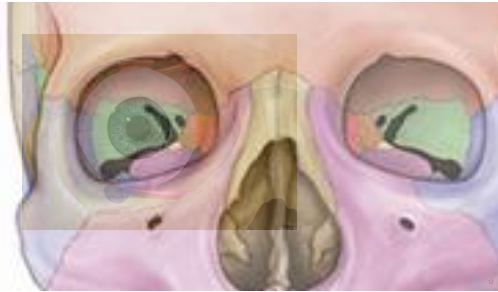
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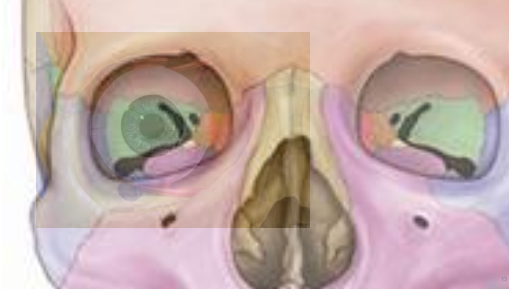
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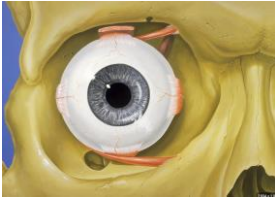
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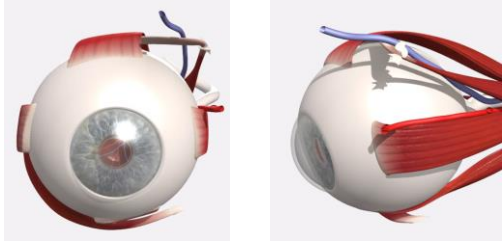
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Anatomy of Eye

- Outer Tunic = Protection
- Middle Tunic = Vascular
- Inner tunic = Neurological

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Anatomy of Eye

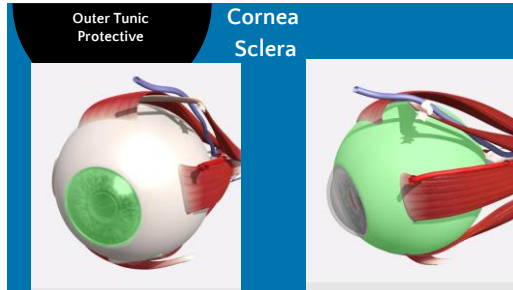
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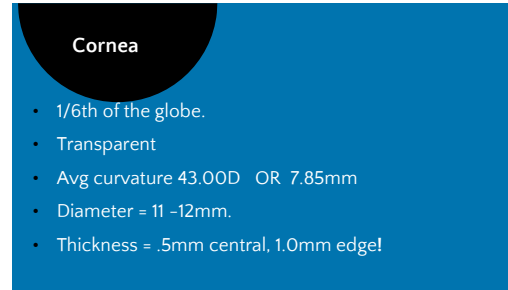
Outer Tunic
Protective

Cornea
Sclera

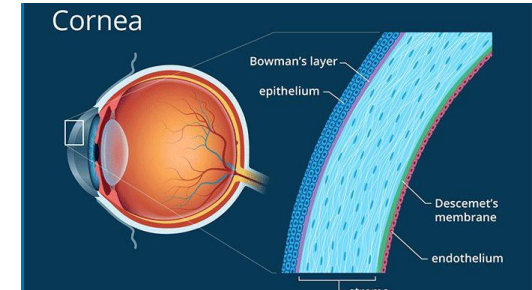
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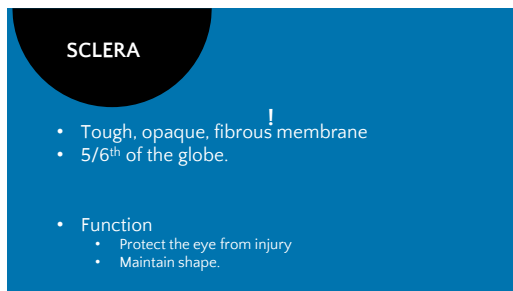
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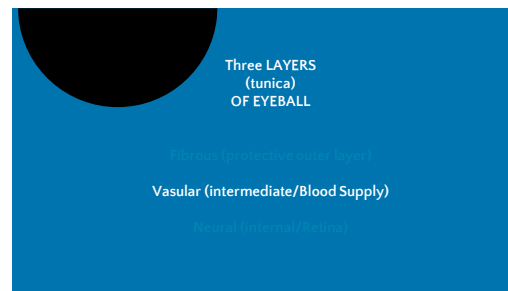
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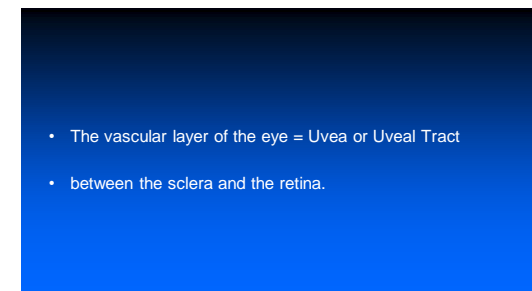
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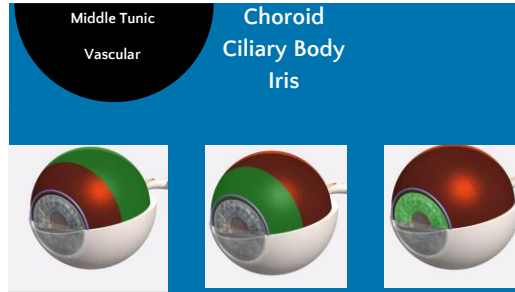
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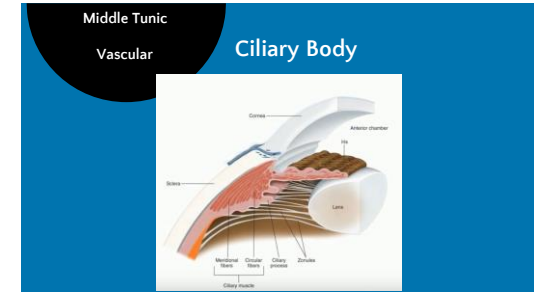
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The Iris

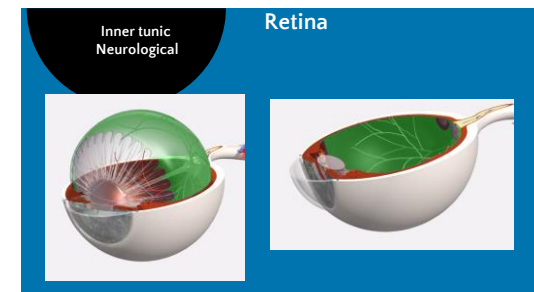
- A thin circular disc lying in the frontal plane and perforated near its center by the pupil.
- The anterior surface = two zones:
 - 1-2mm wide pupillary zone
 - Boundary = collarette
 - remainder being the ciliary zone.

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Anatomy of Eye

Outer Tunic = Protection
Middle Tunic = Vascular
Inner tunic = Neurological


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Retina


- Optic Disc
- Macula / Fovea
- Blind Spot



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The Ciliary Body

- Triangular in cross section
 - from the anterior end of the choroid to the root of the iris.
- Consists of two zones:
 - Pars Plana- smooth posterior 4mm
 - Corona Ciliaris- Corrugated anterior 2mm which consists of 70-80 radiating ridges known as the ciliary processes.



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The Retina:

- The nervous layer lining the inner surface of the globe behind the ora serrata.
 - Vitreous in front
 - Attached to Bruch's membrane of the choroid.
- The retina consists of ten (10) layers.
- Light falls on photoreceptors to trigger response
 - Impulses through optic nerve then to brain to be interpreted.

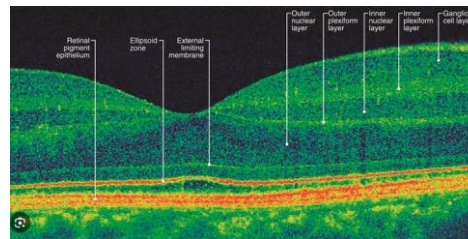
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The Retina

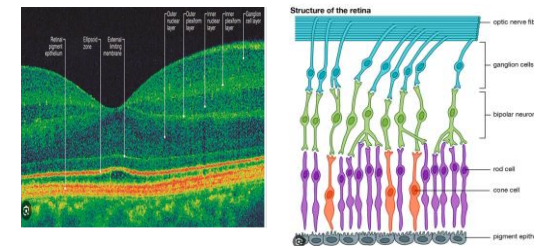
- Optic Disc: Exit site of retinal nerve fibers from the eye
 - Blind Spot
- Macula Lutea (Yellow Spot): Small, specialized central area of the retina, surrounding the fovea.
- Fovea:
 - Central pit in the macula that produces sharpest vision
 - Highest concentration of cones
 - Avascular (no retinal blood vessels)



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Tapetum Lucidum

- Better night vision
- responsible for the 'glowing' eyes of animals as light reflects in dark

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INSIDE THE EYE

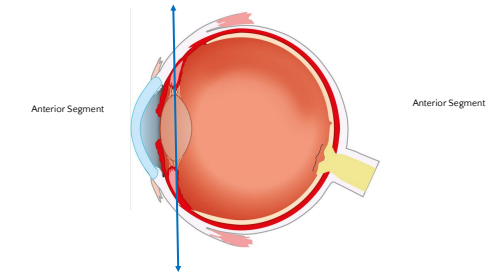
The Anterior Segment/Front of EYEBALL

- Anterior and Posterior Chambers
- Aqueous Humour (liquid)
- Trabecular Drainage

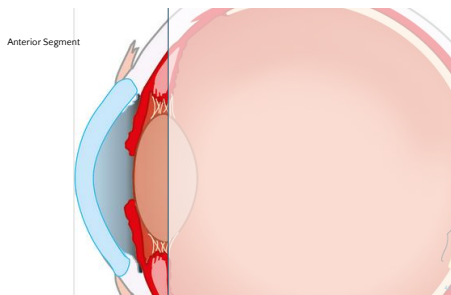
The Posterior Segment

- The Vitreous Chamber
- Vitreous Humor (gel substance)

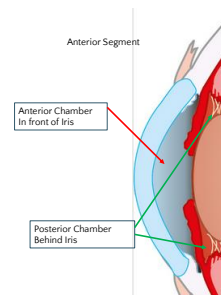
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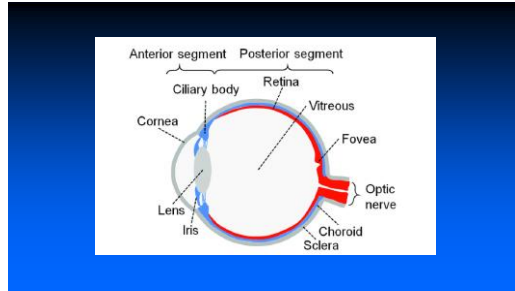


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The Anterior Segment

Cornea to Crystalline lens

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The Anterior Segment

- Anterior Chamber: space between the cornea and the iris
- Posterior Chamber: space between the iris to lens
- Aqueous Humour: A "watery" fluid produced by the ciliary epithelium.
 - Maintains IOP, supplies nutrition, and removes waste products.

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INSIDE THE EYE

- The Crystalline Lens
 - In capsule
 - Connected to suspensory ligaments/zonules of zinn
 - Attached to Ciliary Body

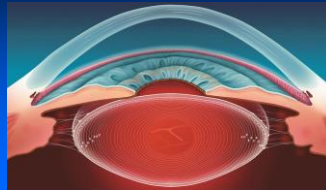
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The Crystalline Lens

- A transparent
- biconvex
- 9-10mm in diameter and 4-5mm in thickness.
- Attached to the ciliary processes suspensory ligaments (aka zonules of Zinn)

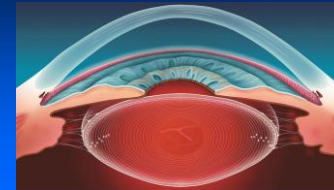
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The Crystalline Lens



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The Crystalline Lens



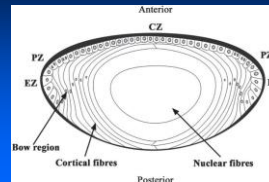
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The Crystalline Lens: Layers

- The Capsule: A transparent elastic membrane
 - thicker in front and at the equator
- The Anterior Epithelium:
 - single layer of cubical cells at central/anterior surface below the capsule.
 - laterally become columnar
 - Further elongated until they become lens fibers

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The Crystalline Lens



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The Crystalline Lens: Layers

- The Stroma:
 - Consists of lens fibers.
 - fibers are formed from the posterior epithelium. Later fibers are formed from the peripheral portion of the anterior epithelium.
- The oldest fibers at the center become compressed and form the nucleus
- The newer fibers make up the cortex

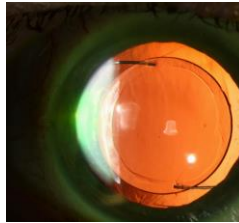
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Cataracts



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PCIOL



ACIOL

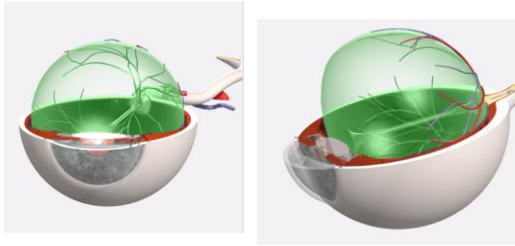


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The Posterior Segment:

- The Vitreous Body:
 - A transparent gel which occupies the inner most part of the eye between the lens and the retina.
 - Attached at the ora serrata and at the optic disc.
 - A narrow canal known as the hyaloid canal runs from the optic disc to the back pole of the lens.

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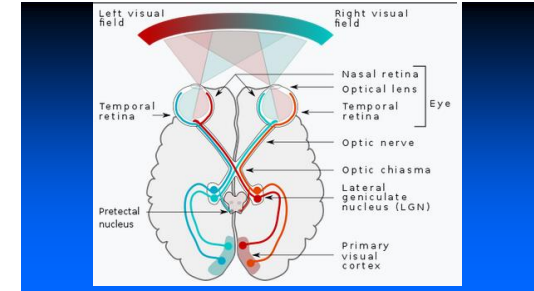


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The Visual Pathway: Optic Nerve

- Comprised of the axons of the retinal ganglion cells surrounded by pia, arachnoid, and dura sheaths.
- Intrabulbar portion: 0.7-1.0mm, nerve fibers pass through sclera.
- Intraorbital portion: 25-30mm, from sclera to optic canal
- Intracranial: 10-12mm from canal to chiasma

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Questions?

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