



المرحلة الاولى ٢٠٢٣-٢٠٢٤

## Anatomy of the eye

### 9<sup>th</sup> Lecture : **Anterior chamber of the eye - Definition - Drainage angle**

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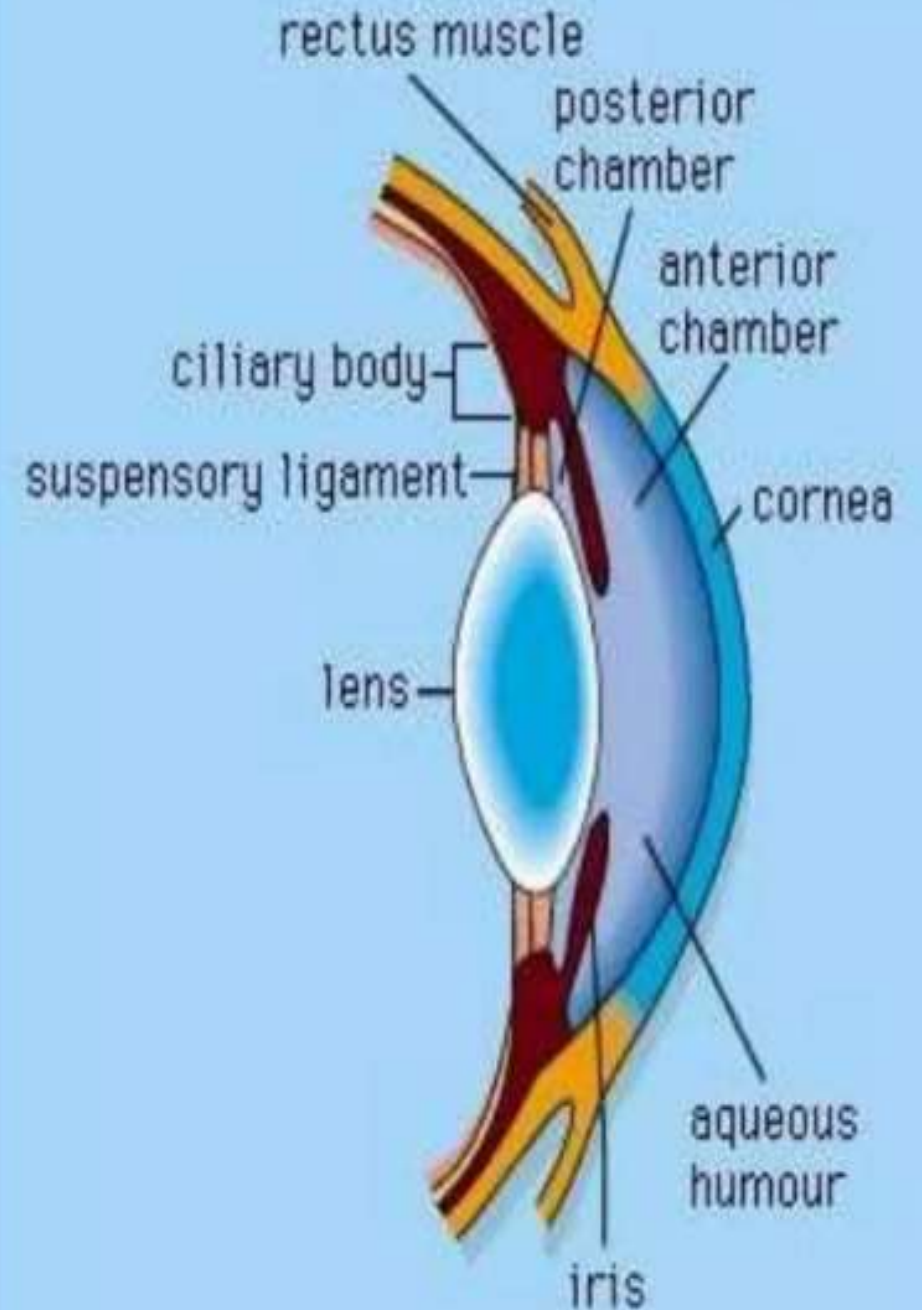
## Anterior chamber:

The anterior chamber is the front part of the eye between the cornea and the iris.

The iris controls the amount of light that enters the eye by opening and closing the pupil.

The iris uses muscles to change the size of the pupil.

The anterior chamber is a crucial part of our visual system, playing a significant role in maintaining the health and functionality of the eye.



The anterior chamber refers to the front part of the eye, which is filled with a clear, watery fluid called aqueous humor. It is located between the cornea, the transparent outermost layer of the eye, and the iris, the colored portion of the eye responsible for controlling the size of the pupil.

#### Definition of Anterior Chamber

- Definition: Front part of the eye filled with aqueous humor
- Location: Between the cornea and the iris
- Functions: Maintaining eye shape, intraocular pressure, and protection

## Functions of the Anterior Chamber

- Maintaining eye shape and structure
- Regulation of intraocular pressure
- Protection of delicate eye structures

The anterior chamber serves several vital functions. It helps maintain the shape and structure of the eye by exerting pressure, known as intraocular pressure (IOP). This pressure is necessary for proper focusing of light and maintaining the overall integrity of the eye. Additionally, the anterior chamber acts as a protective cushion, shielding delicate structures of the eye from potential damage.

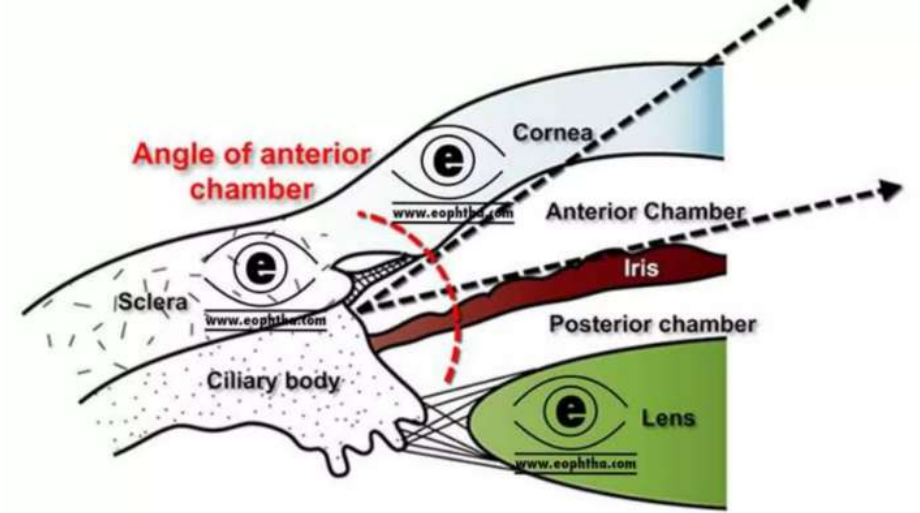
## Introduction to Drainage Angle

Definition: Area where the cornea and the iris meet. Importance of the drainage angle in regulating aqueous humor.  
**The drainage angle is the point in the eye where the coloured part of the eye (iris) and the white covering over the eye (sclera) meet.**

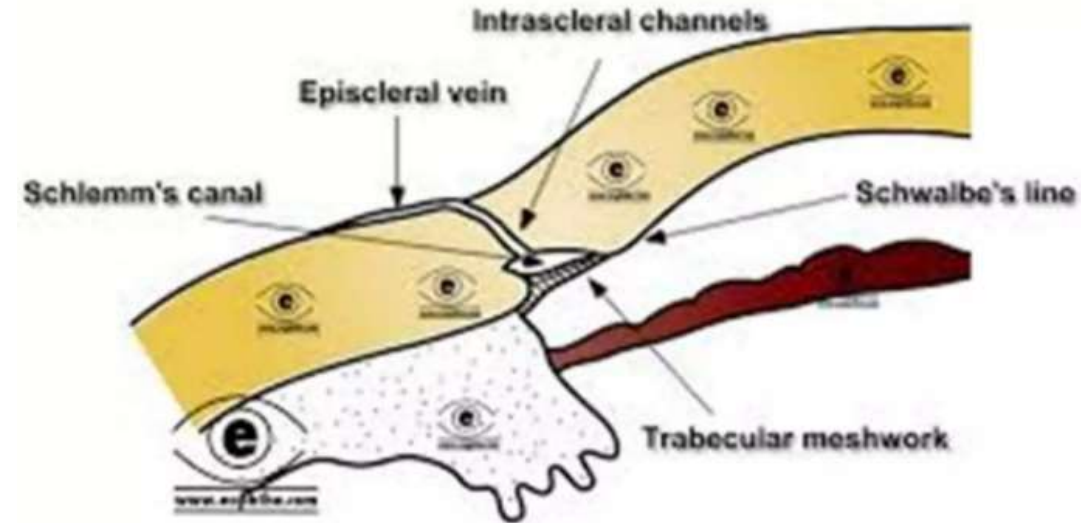
**This is where fluid within the inner eye (which is different from tears that lubricate the eye's outer surface) drains.**

The drainage angle refers to the area where the cornea and the iris meet. It is crucial for the regulation of the aqueous humor within the eye. The aqueous humor is continuously produced by the ciliary body, a structure located behind the iris. It circulates through the posterior chamber, passes through the pupil, and enters the anterior chamber.

- Volume: 220  $\mu\text{L}$ .
- Chamber Volume decreases by 0.11  $\mu\text{L}$ /year life
- Diameter: 11.3-12.4mm
- Depth: 3.15mm (2.6- 4.4mm)
- Chamber depth decreases by 0.01mm/year of life.
- Chamber deepens by 0.06mm for each diopter of myopia.



- Chamber depth is slightly diminished during accommodation, partly by increased lens curvature & partly by forward translocation of the Lens.
- Wide angle of anterior chamber denotes the eye in which the angle between iris and surface of the trabecular meshwork is between 20 to 45 degrees.
- Angles less than 20 degrees are termed as narrow angles



## Structures of the Drainage Angle

- Trabecular meshwork: Function and location
- Schlemm's canal: Function and location

The drainage angle plays a vital role in maintaining the balance of aqueous humor within the eye. It serves as a pathway for the outflow of aqueous humor, allowing it to leave the eye and maintain a stable intraocular pressure. The drainage angle consists of two main structures: the trabecular meshwork and the Schlemm's canal.

The trabecular meshwork is a specialized tissue located near the junction of the cornea and the iris. It acts as a sieve-like structure, allowing the aqueous humor to filter through it. From there, the filtered aqueous humor enters the Schlemm's canal, a circular channel that encircles the cornea. The Schlemm's canal acts as a drainage channel, collecting the filtered aqueous humor and facilitating its flow out of the eye.

#### Aqueous Humor Circulation

- Production by the ciliary body
- Passage through the posterior chamber, pupil, and entry into the anterior chamber



## Role of the Trabecular Meshwork

- Function as a sieve-like structure
- Filtering of aqueous humor

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## Role of Schlemm's Canal

- Function as a drainage channel
- Collection and outflow of filtered aqueous humor

Maintaining a healthy drainage angle is crucial for the prevention of a condition known as glaucoma. Glaucoma is a group of eye disorders characterized by increased intraocular pressure, resulting in damage to the optic nerve and potential vision loss. A compromised drainage angle can lead to impaired outflow of aqueous humor, causing a buildup of pressure and contributing to the development of glaucoma.

## Importance of a Healthy Drainage Angle

- Prevention of glaucoma
- Maintaining stable intraocular pressure

## Glaucoma and Drainage Angle Compromise

- Explanation of glaucoma as increased intraocular pressure
- Impact of compromised drainage angle on aqueous humor outflow

**THANKS SEE YOU IN NEXT  
LECTURE**